

NATIONAL INSTITUTE OF DESIGN, PURBACHAL



SUBMITTED

By

Walid hossen

Student ID: 11208022

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Abstract

The National Institute of Design (NID) is internationally acclaimed as one of the foremost multi-disciplinary institutions in the field of design education and research. The institute is embedded with young professionals to generate creative designer in Bangladesh to enhance the technical Board. NID prepares students for professional excellence in design, fashion, communication, business and industrialization by providing the premier educational experience that fosters creativity, career focus, and a global perspective. This paper depicts the entire procedure of how National institute of design, purbachal has been composed on an amazingly extraordinary site. The procedure includes obsession of outline targets, program development, contextual study, zoning of site, all-inclusive strategy arrangement to itemizing out of institutional zone having an essential idea of holding the topographic uniqueness and peacefulness of the proposed site.

Acknowledgements

All graces to the Almighty for everything I have achieved and I have become. I am thankful to my family for their unconditional support, encouragement and sacrifices. I would like to take the opportunity to show my full gratitude to my mentors and Architecture department of BRAC University, who has guided me throughout this journey, taught me to see not just to preview but to perceive and explore different perspectives of life and cherish the simple details even in the most insignificant things nature has to offer.

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1.1 Project Background

The concern of NID is to offer world-class design education and to promote design awareness and application towards raising the quality of life by and through education to create design professionals of excellence to help meet Bangladesh's diverse design needs. Moreover it train design trainers for other design and design-related institutions and positions in the 21st century as global leaders in Design education and research by recognizing the changes in economic and business environment nationally and globally.

As an under developing country it is highly essential in Bangladesh to increase design knowledge, experience and information on products, systems, materials, design and production processes related to traditional as well as modern technologies for the upcoming generation. National institute of Design is a platform for the students who want to explore and become professional about various design related issues by obtaining a systematic way of technical learning.

Bangladesh is engaged with various traditional industries. It is highly essential for creating a design learning field for the betterment of these traditional fields of design for keeping upgraded with other country in designing sector.

- Textile based industries like Jamdani (narayangang),
- Bamboo-based cottage industries in Shariatpur, Madaripur, Rajbari and Faridpur.
- Bangladesh handicraft industries.
- Bangladeshi jute products including traditional jute rug -- Satranji (Rangpur).
- Cane industry in sylhet.
- Metal casting industries in Tangail, Kushtia, and

Dhaka.

- Glass and ceramic industry.
- Blacksmith industry etc.

The National Institute of Design (NID) at sector 8 in Purbachal new town is a proposed project under Ministry of Education. The new campus aims to improve the existing facilities within the institute and expand their student base. NID officially started its journey on 2008 in Dhanmondi residential as its temporary campus. The existing campus began with different courses in different time period.

In National institute of Design chosen instructors are fine artists, production managers, costume designers, manufacturing and marketing consultants, entrepreneurs who own successful design firms, and industry executives. The National Institute of Design (NID) is a fast growing institute in Dhaka. It also affiliated with University and Industry Alliance, Dhaka University.

1.2 Project Brief

Project Title: National Institute of Design (NID)

Site Location: Sector-8, Purbachal new town, Dhaka

Latitude: 23°50'0.94" Longitude: 90°26'21.1"

Situated -Rupganjthana thana of narayanganj

Distance from Dhaka city: 34km

Approach road: 300' road

Site Area: 10.8 acres

Client & finance: Private organization

Project type: Creative Educational Institute.

1.3 Project Introduction

National institute of design (NID) is place for sharing and acquiring knowledge and a platform for expanding knowledge within the new generation considering the basic needs of modern Bangladesh's Design field. NID is a preplanned field of designing which behold the culture, lifestyle, habit, value, economy of modern Bangladesh. The project creates a preplanned ground to realize, practice, and spared designing knowledge within the institution for creating well skilled designer for upcoming Bangladesh.

1.4 Aims and Objectives of the Project

- Creating an open and **free learning environment** and which inspires creative thinking.
- To design a campus which merge with the **primary objectives and goals** of the existing institution.
- To provide **interdisciplinary and progressive knowledge** of design but with a focused understanding of an area of specialization.
- Growth is an inevitable factor in every institution in a country like ours. There must be scope for **inclusive growth** of the institution in the future.
- Keeping in view the explosive rise in **energy consumption** across the globe and its radical effects, the institution must be an example of low energy **sustainable development**.
- Creates learning field that will **interest people** to explore and enrich knowledge about design and design related issues.

- Establish an open learning environment and education system so that artisan can develop their own ideas and thinking.
- Make an interactive learning platform by creating **open exhibition spaces**.
- Create an **international platform** of sharing, learning and research of diversified knowledge.
- Create an **institution** of Knowledge, Comprehension, Analysis, Reasoning, Problem Solving and Creativity related issues.
- Prepares students for **professional excellence in design**, fashion, and business by providing the premier educational experience.
- Offer **world-class design education** and to promote design awareness and application towards raising the quality of life.
- Creates a **hub for design knowledge**, experience and information on products, systems, materials, and design production processes related to traditional as well as modern technologies.
- Opportunity **to develop innovative and exploratory thinking**, necessary technical skills and the ability to locate individual design approaches within the appropriate professional context.
- To develop a sense of social and **professional commitments**.
- Ability to develop critical, analytical, speculative and reflective **problem-solving skills** in an integrated manner.
- To understand the scenario cum user based and **culture centric approach** of design.
- To provide thorough understanding of technical, managerial and design fundamentals along with a strong exposure to **real life situations**.

1.5 Rationale

“The mother art is architecture without architecture of our own we have no soul of our own civilization”

-Frank Lloyd Wright

Architecture and design of a community tells about its inherited beauty, possibilities, goals, heritages, life style, culture and other various noticeable aspects. As a developing country though industrialization and manpower and other aspects modern Bangladesh face multiple problems and limitations within its own limited resources. As a fixed and tiny placement comparing to other nations it is high time for noticing the issues that are concerning for upcoming Bangladesh. Design of any system or structure can play a vital role for the whole community.

In Bangladesh there are noticeable school of architecture throughout the country but architects has a specific duty focusing mostly building, infrastructure, urban community, housing and other socio economic issues. But comparing with other nations it is quite hard to believe that only few of design based institution is found in Bangladesh, moreover most of them are private institution and crowded with various inexperienced and unqualified faculties and staff which is more harmful for upcoming generation. As a result for our own development in designing sector it is quite essential for a higher institute like national Institute of Design which focus is on the core factor of designing needs.

National Institute of Design prepares students for professional excellence in Merchandising, Fashion design, Interior Design, Graphics Design and other various designs by providing a premier educational experience that fosters creativity, career focus, and a global perspective. National institute of design founded on 7 January 1983 but the institute starts in journey in Hose-38/1, Road-2, Dhanmondi, Dhaka on 2008. The existing campus is a temporary campus with a short list of courses. The new permanent campus under ministry of education is proposed in Sector-8, Purbachal new town where various new courses on design are offered. The vision of NID is to ensure that the NID is recognized as a dynamic body representing designers in Bangladesh by promoting the highest ethical and professional standards through education, information, event management and other important aspects.

1.6 Methodology

The data used in the report mostly collected through online research and interview. In this study there is a limitation for gathering first hand data because of the project duration. However the existing site is not so improved now and site is developing by RAJUK. So in this case for site study existing urban context was not found yet and for that reason futuristic urban plan and context is followed provide by RAJUK.

Chapter 02: Literature Review

2.1 Definition of design

Design is a simultaneous process of developing purposeful and innovative solutions that embody with functional and aesthetic demands based on the needs of the intended user. Design applied in various sector basically development of goods, services, process messages and environments.

Design is all about clarifying and solving problems and giving a better solution to day to day life where Problem solving is one thing and aesthetic pleasure is another. Combining these two, make the designer sketch like an artist and the artist analyse like a designer and that is how design is generated continuously. (Pahl and Beitz, 2013).

2.2 Design levels

There are different degrees of difficulty in design; those stages are adaptive design, developed design and new design. (Haik and Shahin ,2010).

2.2.1 Adaptive design

In this stage the designer work will be concerned with the adaptation of existing designs. Here branches of manufacturing is found which developed has practically ceased. So in these stages is hardly anything left for designers except make minor modification usually of the dimension of the product. Moreover design activity of this

kind demands no special knowledge or learning or skill and problem which are presented can be easily solved by designer with ordinary techniques. (Haik and Shahin ,2010)

2.2.2 Development design

For development design concededly more scientific training and design ability are needed. In this process the designer starts from an existing design but after designing the final outcome may differ from the initial design. Traditional tube based to modern plasma or LCD television is one of example of this design. (Haik and Shahin ,2010)

2.2.3 New design

There are a few example of new design. This is the most difficult level in generating a new concept which design is not linked to any traditional design. Example of this design is designing of automobile wheel, air plane, and bus etc. (Haik and Shahin ,2010).

2.3 The Engineering Design Process

2.3.1 Engineering design and creativity

The most essential part of engineering design process is creativity, which is a integral part of design. In design without creativity the potential for innovation is nothing much. (Mumford and Gustafson, 1988; Amabile, 1996) for understanding the importance of creativity recent figures were released from the UK treasury indicates that the modern day top innovating companies from all over the world produce 75% of revenue from products or services that did not exist 5 years ago (Cox, 2005).

2.3.2 Engineering design process flow chart

Engineers and designers use the engineering design process, shown in the diagram and table, to solve a problem by creating new products, systems, or environments.

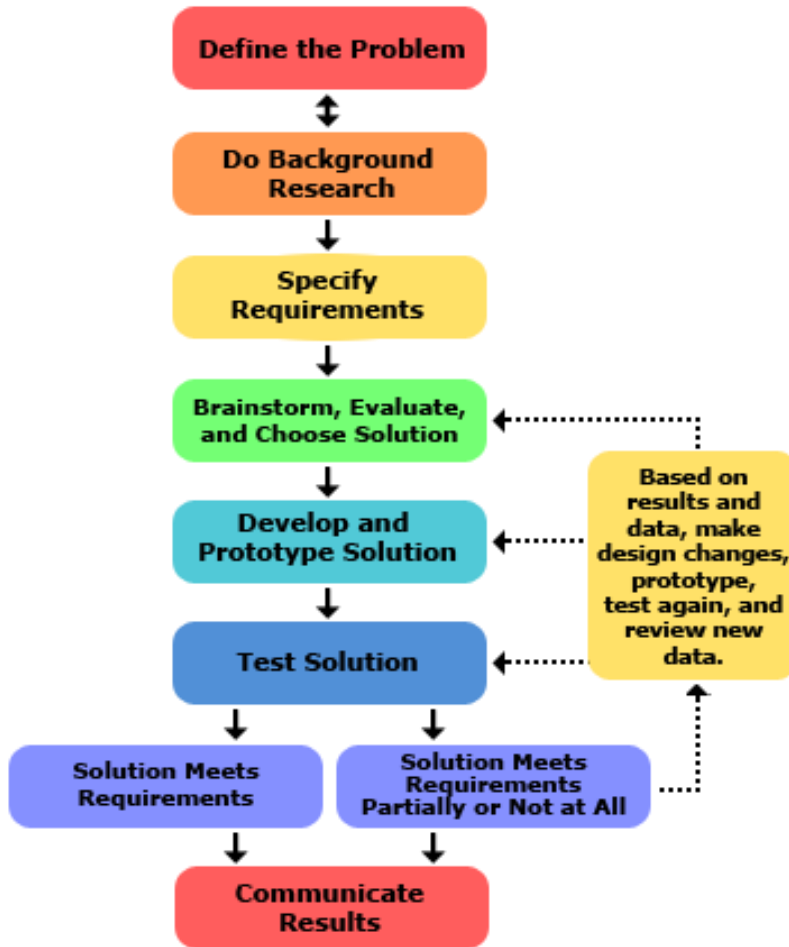


fig:001 Engineering Design Process, source: www.sciencebuddies.org

The process rarely moves in a linear fashion. Instead, designers jump back and forth between the steps as they move toward the final solution.

2.3.3 Definition of engineering design

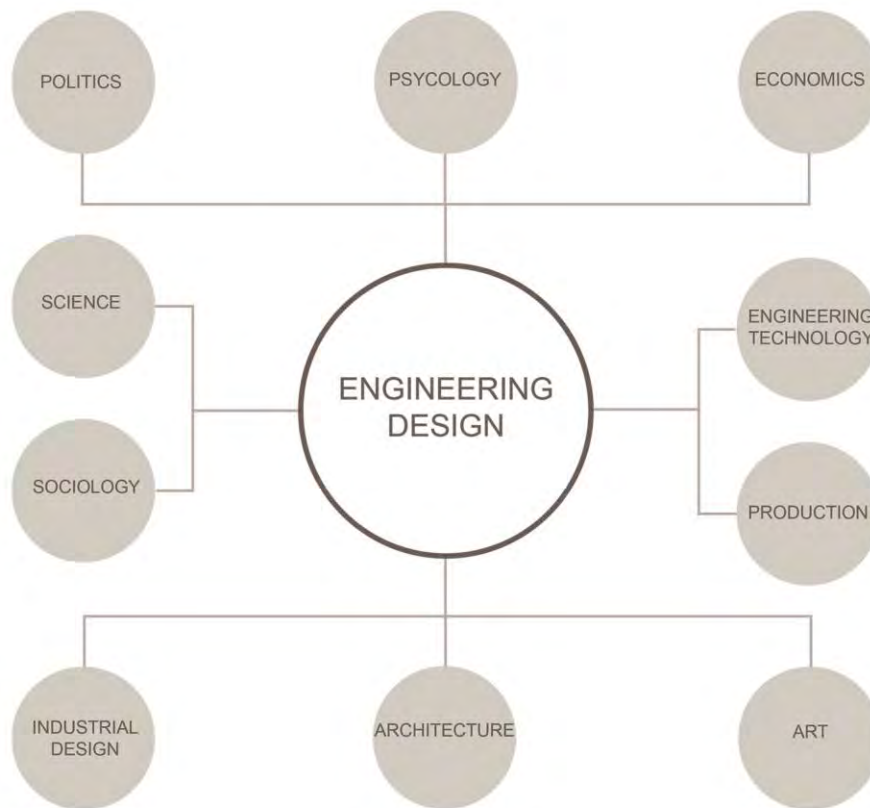
According to (ABET) Accreditation board for engineering and technology, design process is the process of continuous system, component or process to meet desire needs, it is a decision making process where basic science mathematics and engineering science is used for convert a particular resource in a stated objective. (Haik and Shahin ,2010).

2.3.4 Component of engineering design

The engineering design component of a curriculum must include- development of student creativity, development and use of modern design theory, use of open- ended problems, production processes, formulation of design problem statement and detail system description. (Haik and Shahin ,2010).

2.3.5 The central activity of engineering design

Engineering central activity has an unique relation between art to politics on the other hand science to production the diagram listed below show the central activity of engineering design process.



ENGINEERING DESIGN

fig:002 Engineering design central activity, source: (Hossen, 2016)

2.3.6 Impact on design process

The most important impact in nowadays on the design process and on the activities of designer has emerged from computer based data processing , organizational structure, computer Aided Design (CAD) is influencing design method. Moreover creativity and

thought process of individual designer are being introduced in design process. For innovative designing those process are supported by computer tools which increase creativity, engineering knowledge and experience of designers. (Pahl and Beitz, 2013).

2.4 Understanding design institute

- An institution to create design expertise for upcoming challenges for any nation's design needs and design related fields.
- A platform for creative design development, design promotion and partnerships across many creative sectors for integrating design with traditional and technological resources.
- Workshops or training facilities to create awareness and providing the modern knowledge of design and design related issues.
- A design knowledge center providing resources for public and spaces for exhibitions and education programs, which is a very essential part of design institute for providing design related knowledge and skill for upcoming generations.
- Moreover it can be a community space for the locality and the admirer of designer. It is the place of sharing design knowledge with different communities.

2.5 Types of design disciplines

Different types of design disciplines

- Architecture
- Fashion design
- Graphic design
- Game design
- Interaction design
- Interior design
- Product design
- Applied design

- Instructional design
- Web design
- Transportation design
- Tool design
- Automobile design
- Product photography
- Model building
- Lighting design
- Glass technology
- Safety clothing design
- engineering design
- glass design
- ceramic design
- process design

2.6 History and evolution

2.6.1 Graphic design



fig:003 Graphic

design, source: www.futurerisingconsulting.com

Graphic design is one of the most increasing and significant design processing in whole design fields of modern world. It includes everything which relates to charts, graphs, logo, drawings, geometry, line art and symbols.



fig:004 graphic design

sample with tools, source: www.torishafer.wordpress.com

It is the language of professional art, text or pictures. However it includes all form of arts, painting and other noticeable aspects. It is way of communication by its own style with the audience. It is the creative process of presenting a simple art, text or picture for the audience which means a specific message according to needs.

It is true that the history of graphic design is not determined however it is determined that the system of graphic design had started from the dawn of civilization when human came to know about a cave painting. So the history of graphic design is begun with the early civilization period when human use bone to draw something on the wall of caves.



fig:005 graphic design

sample, source: www.carminebucci.it

Visual communication or graphic design is the procedure of visual correspondence, and critical thinking through the right utilization of typography, space, picture and shading.

2.6.2 Interior and furniture design

Interior design focus on systematic and effective settings according to human activities within particular limited spaces for better environment and better life style. It involves with interior space and those who design these space is called interior designer. Interior design is a multifaceted profession which includes conceptual development, dealing with client's needs and execution of the preplanned design.



fig:006 interior-designs,

source: [www. hdwallpapersrocks.com](http://www.hdwallpapersrocks.com)

The study of interior design has change through history and has a great impact on modern day interior design experiences. Interior design is different disciplines to interior architecture which makes use of more analytical and user research skills than interior decoration with the knowledge of color lighting materials and other noticeable aspects.



fig:007

Furniture design sample, source: www.rmit.edu.au

Furniture design is defines with creation of an object that is both functionally and aesthetically pleasing. It is a design process using raw material for fashioning goods for seating or storage or other purposes. The process of furniture design starts with when human had first placed a rock near the fire pit for purpose of sitting.

In modern day furniture design has becomes one of defined point of design fields though this design's issue is based on functional needs but day by day aesthetical value

of this field has increasing rapidly. Every types of furniture have its own characteristic which defined and characterize them.

2.6.3 Animation and Game design

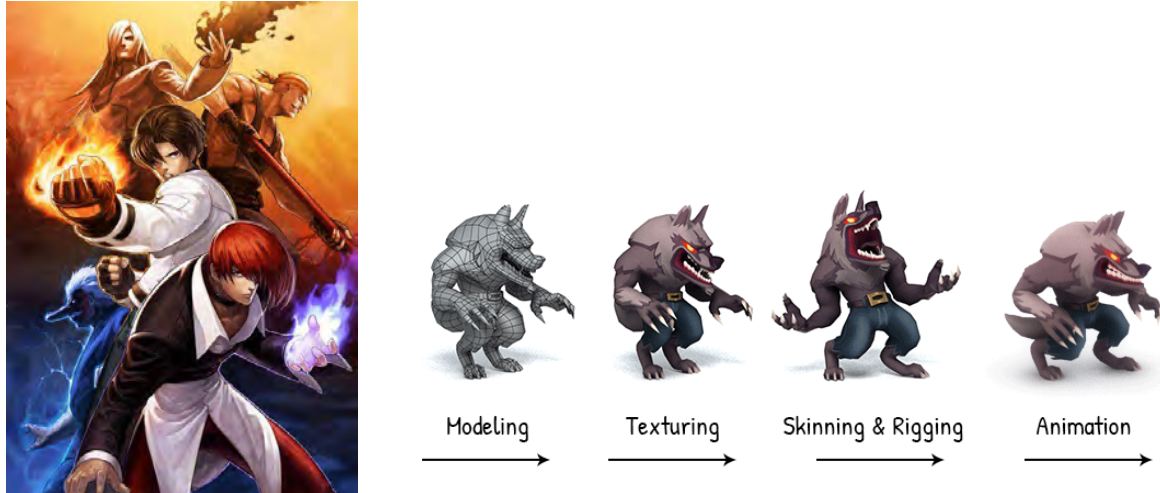


fig:008 sample game-kof 2003, source: www.bbs.a9vg.com

fig:009 Animation processing, source: www.vbstaff.com

Game design is a category of game development which includes rules and content of the game, environment, game play, characters during production stage and storyline of the game. To complete a game design an artist, technical competence is required. The design process of game design starts with an idea then a total storyline and character is created according to the storyline which define the genera of that game.



fig:010 sample pc game counter strike, source: www.plesnior.deviantart.com

The game designer initially propose a game proposal document containning game play, concept, storyline, target audience, requirments, schedule, feature list and budget of the game. For a game designer it is highly essintial to come up with a solution for desired game play experience during the designing processe many dicitions has to made by the designer consedering the game enviroment ,target group, deadlines, market values, hardware limitations and other important aspects.

2.6.4 Product design

Product design is another noticeable design process which primary objective is to sell the designed product by business to its customer. The role and objective of a product designer is to create a product considering its needs, value, user group, material, costing and budget. It should be a combination of art, science and technology to create a new product which can be used by the customers.



fig:011 sample product design, source: www.yankodesign.com

fig:012 sample product design -iron, source: www.yankodesign.com

There is a significant difference between product design and industrial design but sometimes these two become confusing. Product design is a manmade process by creating a new product considering aesthetical values and functionally needs while industrial design is the mass producing system of that simple product considering business principals.



fig:013 Industrial

design sample, source: www.pinterest.com

Products are called part of human history from the dawn civilizations. The functionally needs of any object became synonymously a design solutions which can called a product. When in the dawn of civilization human got the needs of store something they came up with a designing solution using the raw natural material. For example they use bones for painting on the wall when they face the needs of color they use natural color and put it on a bowl which is also design by them. So the concept of product design has a long history with human civilization. In modern day each day new product is created considering the modern needs of this era. In the dawn civilization human depends on the natural elements using their intelligence but by the passing of time the product industry become so numerous because of modern technology and materials.

2.6.5 Photography



fig:014 Basic photography tools, source: www.creativelive.com

Photography deals with durable images by recording light using art, science and technology. By the improvements of technology in media and photography sector the importance and needs of photography become so high in modern day life. Photography is actually a store images which indicates a moment, memory, timeline or history. Photography can be done by light- sensitive material or electronically by use of an image sensor. For defend and smooth photography a lens is used to focus the light reflected or light emerged from the objects. In modern era of technology there are vast types of material for better photography and better picture quality. Another use of photography is advertisement of any particular product or design to increase its aesthetical value.

2.6.5.1 Types of Photography

Photographic work can be divided into dozens of categories, many with lots of sub-categories. The following list describes some common types of photography.

Source: <http://www.mediacollege.com>

Aerial

This types of photography is done from a particular above place from the object can be from a plane balloon helicopter etc.

Amateur

Different types of photography practiced by non-professionals.

Animal, Pet

Pets and their relationships with humans or nature mostly focus on animal's behaviors.



fig:015 cheetah

photography, source: www.webneel.com

Artistic

Photography in which creative composition is the goal.

Astrophotography

Space photography, through a telescope.

Black & White

Not simply photography without color.



fig:016 exmple black and

white photography, source: www.webneel.com

Infrared Photography in which the recording medium is sensitive to infrared light.

Large Format For use on posters, billboards, etc.

Macro The art of photographing very small and/or close-up objects.



fig:017

Example of macro photography, source:

www.dragonsgate1.wordpress.com

Modeling Photographing objects to be converted into 3D models.

Nature Landscapes, animals, plants, sea, etc.



fig:018

Example Natural photography, source: [www. webneel.com](http://www.webneel.com)

Night

Any technique used to capture images at night.

Panoramic

Views of wide areas, up to complete 360° panoramas.



fig:019 Example panoramic photography , source: [www. webneel.com](http://www.webneel.com)

Paranormal

Ghosts, unexplained phenomena, etc.

People

Family, Fashion, Glamour, Passports & Visas, Portrait, School, Sports, Wedding.



fig:020 Example of wedding photography, source:
www.boredpanda.com

Scenic

Landscape



fig:021 Example of landscape photography, source:
www.webneel.com

Sports

The specialized art of shooting people engaged in sports, games and adventure activities.

Time-lapse

Photographs with a very long exposure.



fig:022 Time-lapse of

lunar eclipse , source: www.webneel.com

Travel

Photography to showcase locations.



fig:023 Example of

travel photography, source: www.internationalliving.com

Urban,

Industrial

Emphasizing urban environments.

2.6.6 Ceramic and Glass design



fig:024

Example of glass and ceramic design, source: www.flickrriver.com

In this sector of design a specified material is used for creating an aesthetical and functional use of any product. Glass or ceramic is both considered as a technologically developed material because of its strength and finishing. By these materials a breakthrough has made in the world of art and design. Nowadays in this modern era these two material cover up the whole world as a results those material became two widespread materials within the whole world. So the importance of glass and ceramic design is high and the study and design with this material has become so viral.



fig:025 Example of

ceramic design, source: [www. kathryntyler.tumblr.com](http://www.kathryntyler.tumblr.com)

2.6.7 Fashion design



fig:026 Fashion designing, source: www.osteencollege.com

Fashion design varies from place to time, culture to culture influenced by environment, human needs, physical structure and other noticeable aspects. It is considered as the most changing and competitive design issues. Fashion designers attempt to design cloths which are functional as well as aesthetically pleasing.



fig:027 Fashion designing sketching, source: www.pinterest.com

Fashion design is considered to have started in the 19th century with Charles Frederick Worth. However fashion design is a new issues in design field but previously it was done by various dress maker for royal people. After 19th century with the revolution in garments sector importance and needs of fashion design has increased rapidly and day

by day it attracts various artist for creating new style considering functional needs of human in clothing sector.



fig:028 Fashion design show, source: www.fortunadey0808953.wordpress.com

2.7 NID Activities

- NID gives state of art design solutions to prospective clients.
- Supported and respected mainly for the quality of research work done by the research and publication sector.
- NID interface design knowledge, education, skills and varied segments of industry, commerce and service sectors.
- NID has also has a significant role in promoting design.
- NID offers a wide range of design domains while encouraging disciplinary design projects.
- The structure of NID's programmed is a combination of skills, theory, design projects and field experience supported by design studio, skill and innovation labs and knowledge management center.
- Sponsored design projects are brought into class room to provide professional experienced.
- A unique feature of NID's design education program is the openness of its educational culture and environment.

- Workshops and training program are arranged to the specific needs of particular groups, aimed at assisting to put design awareness in schools
- Clients servicing is an integral part of NID's activity
- The students of NID are encouraged to undertake independent and focused research.

Chapter 03: SITE APPRAISAL

3.1 Location

Purbachal New Town Project - situated at Rupgonj Thana of Narayangonj District and Kaligonj Thana of Gazipur District in between river balu and sitalakhya.

Distance from zero point of Dhaka- 16KM

The project implementation period is July, 1995 to June, 2012.

Total area of the Project - 6150 acres

Total sector- 30

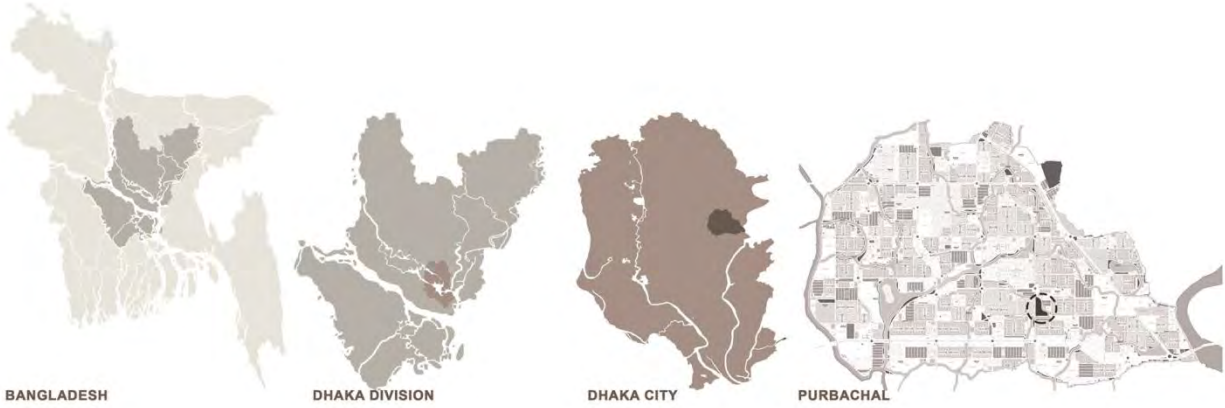


fig:029 Location of purbachal, source: (Hossen, 2016)

3.2 Site location

Total area of site is 10.8 acres



fig:030 Site location in

google map, source: (Hossen, 2016)

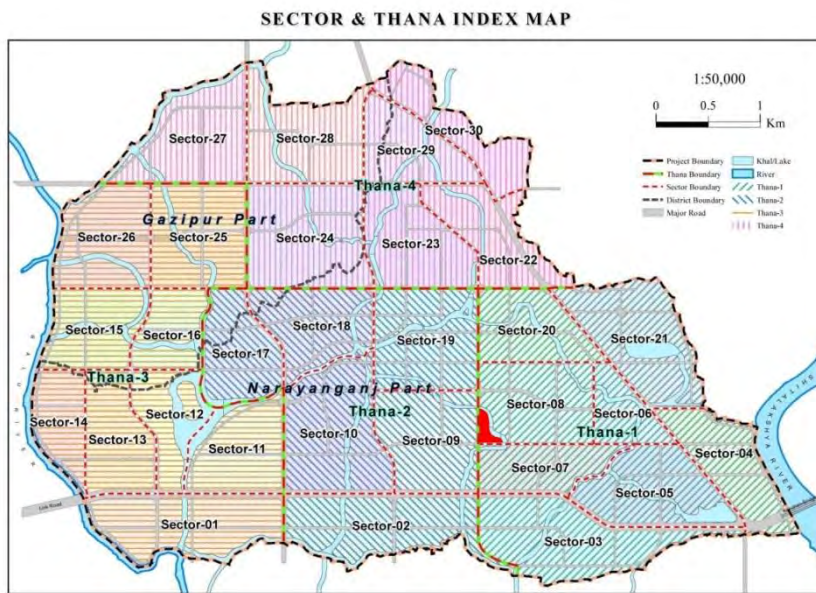


fig:031 Site location

in purbachal map, source: (Hossen, 2016)

The site is situated in sector 8 which is under thana-1 in narayanganj part.

3.3 Site Photographs



fig: fig:032 Site location,

source:(Rajuk,2014)



SITE



SITE SURROUNDING PICTURES

fig:033 Site photographs , (Hossen, 2016)

3.4 Site surroundings

Adjacent water body with whole site.

Surrounded by vehicular roads.

Landscape is flat.

3.5 Road network and water connection



fig:034 water connection with site,

source: (Hossen, 2016)



fig:035 road network in

Purbachal town, source: (Hossen, 2016)

3.7 Surrounding facilities



fig:038 surroundings facilities,

source(Hossen, 2016)

3.8 Sun and wind flow



fig:039 wind flow diagram, source: (Hossen, 2016)



SITE FEATURES

fig:040 site features, source:

(Hossen, 2016)

3.9 SWOT Analysis

Strength

- Adjacent water body with whole site.
- Surrounded by vehicular roads.
- Landscape is flat.

Weakness

- Mostly East-West oriented.
- Less vegetation
- Distance 16 km from 0 point of Dhaka.
- Site configuration is too narrow.

Opportunity

- Site is surrounded by 2 nodal points.
- Site is situated by delta of BALU and SITALAKKHA River.
- Site is connected by 300 ft road which is the longest road of Bangladesh.

Threats

Soil condition is not too good.

3.10 Climatic information

Summer -March to May

Monsoon -June to October

Winter -November to February

The entire information about earthquake had a little effect on the structures in Dhaka except the earthquake of July 1897 which was the most severe of all earthquakes.

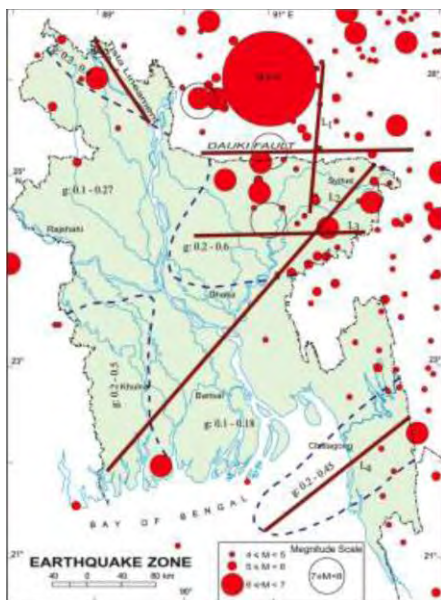


fig:041 earthquake zone , source: (Hossen, 2016)

Chapter 04: Case Study

4.1 Cases (National)

4.1.1 Charukala institute

Project brief-

Project Name – institute of fine arts

Architect: Mazharul Islam

Location: shahbagh, dhaka.

Site area: 4 acres

Project Year: 1953



fig:042 institute of fine arts,

source: [www. contextbd.com](http://www.contextbd.com)



fig:043 institute of fine arts

facade, source: [www. contextbd.com](http://www.contextbd.com)

- It was established in 1953

- Founder of the institute was Zainul Abedeen.
- Architect Mazharul Islam designed the institute on 4 acres of land.
- The departments are drawing & painting, graphics design, print making, sculpture & crafts.

Site location

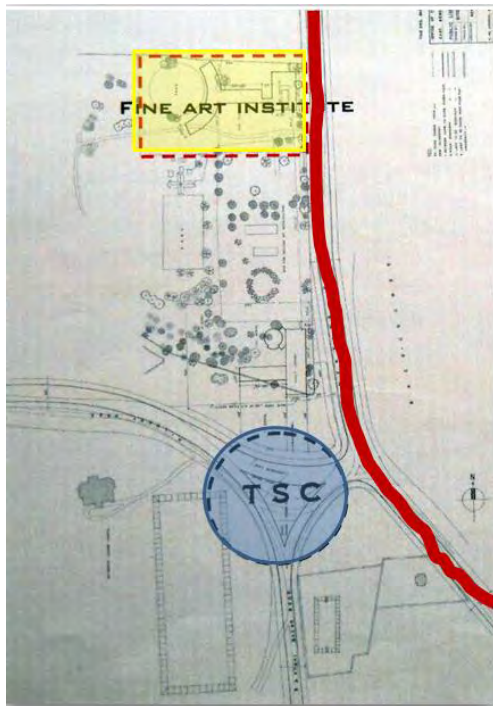


fig:044 institute of fine arts road access, source:

(Hossen, 2016)

- The institute is located at the centre of Dhaka city, shahbagh.
- Opposite to the institute, there is sohrawardi uddan.
- The road opposite to the site links up the TSC and shahbagh.
- The site was dotted with large trees.
- It also had a circular depression at the end.

- The design was established keeping all those things untouched.

Form and geometry

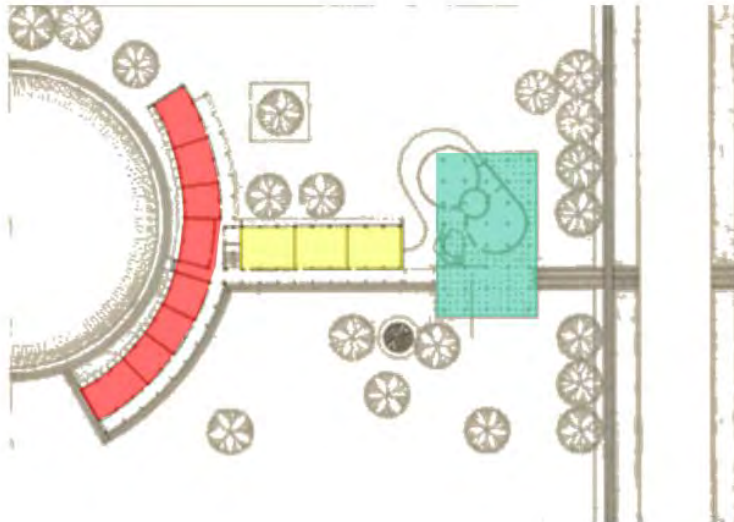


fig:045 basic geometry,

source: (Hossen, 2016)

- Pure geometry has been used.
- The form has derived from rectangular and circular shape.
- The circular pond dominated the shape of the printing studio.
- The free flowing gallery is also derived from circle.
- Those forms are placed keeping the spaces in mind.

Special feature of the project



fig:046 see through partition, source: www.contextbd.com

www.contextbd.com

See through partition

- Architect Majharul Islam used partitions which separates administrative functions and gallery from the rest.

.These partitions create great indoor outdoor relation

Majharul Islam used partitions which separates administrative functions and gallery from the rest.

These partitions create great indoor outdoor relation

Stair



fig:047 the main stair, source:

www.muzharulislam.com

- Project The main stair of the building stands with it's own identity.
- Its shape is very unique
- Most importantly, it is very much inviting.
- The architect himself solved the structure.

Concept and design idea



fig:048 Design idea, source: www.muzharulislam.com

- The design starts with a very inviting entry.
- The plinth level is kept low intentionally to merge with the landscape.

- A grand sculptural stair stands with its own identity.
- The curved gallery shows its functional uniqueness.
- A journey through the corridor gives an experience of indoor outdoor relation
- Openness is a major feature of the design.
- Spaces are created wonderfully.

Basic program

Lobby

Exhibition gallery

Classrooms

Printing studios

Library

Faculty room

Circulation pattern

- A very clear circulation is experienced.
- A beautiful free flowing space continuously run corresponding with the outside.
- The width of the corridor is 10' and its height is 12'.
- The corridor is supported by columns at a distance of 13'.

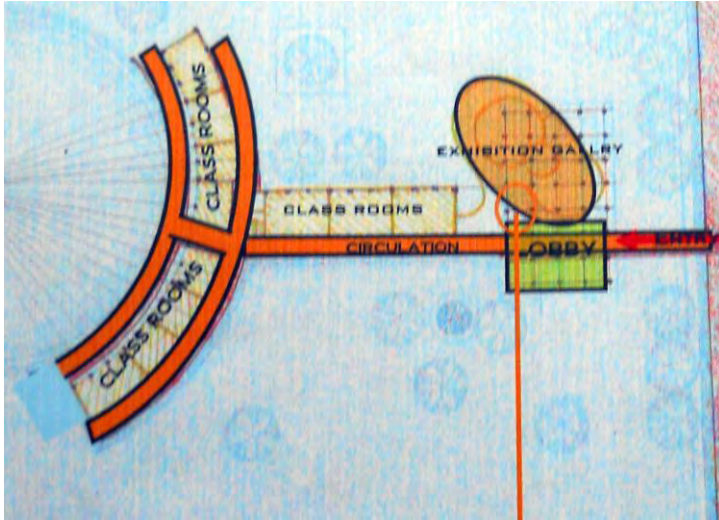


fig:049 circulation pattern, source:

www.muzharulislam.com

Use of space

- The institute is not an ordinary place for education.
- It provides a creative environment for the students.
- Moreover, It is also a place for celebration.
- A community space for the people of the city.



fig:050 use of space , source:

www.muzharulislam.com

Climatic consideration

Orientation

- The design is extremely climate responsive.
- Most of the classrooms are north south oriented.
- The spaces are designed keeping all the seasons of our country.



fig:051 shedding device and railing , source:

[www. contextbd.com](http://www.contextbd.com)



fig:052 extended roof, source: [www.](http://www.contextbd.com)

[contextbd.com](http://www.contextbd.com)

Shading device

- A variety of shading devices have been used.
- The shading device of south corridor cuts off the sun ray and protect from glare.
- The west façade has extended roof and triangular elements.

Lighting and ventilation



fig:053

lighting and ventilation, source: [www. contextbd.com](http://www.contextbd.com)

- The north facade has large openings.
- Those are a little higher.
- South façade has two types of openings.
- The lower ones promote air ventilation and the upper ones promote diffused light.
- The vertical louvers at the open hall create a dramatic environment.

Structure and material



fig:054 structure and material, source: www.contextbd.com

www.contextbd.com

- In the project, column and wall structure has been used.
- Many columns are been replaced by walls.
- Whatever the structure, it is exposed.
- Modified brick has been used for the whole project.
- These bricks are 5% less absorbent to water.
- Another important material used is wood.

Findings

- The project has great indoor outdoor relation considering surroundings blocks.
- Circulation is very clear and open to nature.
- Classrooms are properly arranged and also well ventilated.
- Proper ventilation system with the use of corridor and openings.
- The feelings of green and nature through the whole institute.
- Varieties of spaces are available for different types of activity.
- Creative environment is created by providing more natural and open environment.
- Structural expression is properly provided and exposed structure is created considering design needs.

4.2 Cases (international)

4.2.1 Hong Kong institute of design



fig 055: Hong kong institute of design source: www.sergiopirrone.com

Project Name – Hong Kong institute of design

Architects: CAAU

Location: 3 King Ling Road, Tseung Kwan o, Hong Kong

Built Area: 42000 sqm

Project Year: 2010

Client: Vocational Training Council Hong Kong

The urban context



fig 056: Urban context ,source:

www.sergiopirrone.com

The building is located in the Tiu Keng Leng area, to the north east of Hong Kong Island. The area is served by the metro, on the Tseung Kwan O line, 20 minutes from HK Central, and also has a bus station. Although activity there is mainly residential and commercial, nature is also very much present for the site is surrounded by green hills and the view over Junk Bay is everywhere.

Form analysis

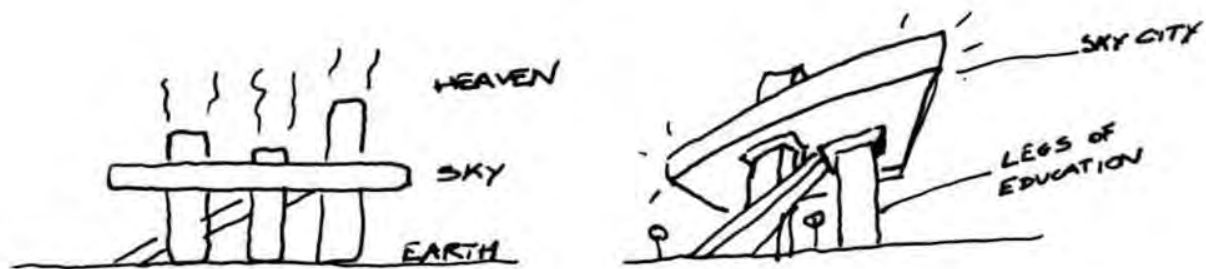


fig 057: form analysis ,source: www.sergiopirrone.com

- The form is composed with four vertical towers.
- These four towers represent four departments of the institution.
- These towers are linked in the 7th floor level by an aerial platform.
- The platform represents the scale of education.

Design feature



fig 058:design feature, source:

www.sergiopirrone.com

- The base of the building is a giant urban lounge.
- It favours meetings and exchanges.
- It gives advantage of internal and external green spaces and views of the countryside.
- The podium can be used as a common space as well as an external gallery.
- A specially designed escalator in the central space gives a unique look.
- The escalator is directly linked to the platform at 7th floor.
- It is covered in glass which is screen printed white.
- the platform floats above the towers like an aerial city.



fig 059:design feature, source: www.sergiopirrone.com

Program

Academic Programme: 4 departments for the four major disciplines taught.

- Department of Design,
- Department of Fashion and Textile,
- Department of Printing and Digital Media,
- Department of Multimedia and Internet Technology.

Other Programme

Auditoriums

Library

Cafeteria

Sports hall

Basketball ground

Exhibition space

Administration etc.

Elevation and section

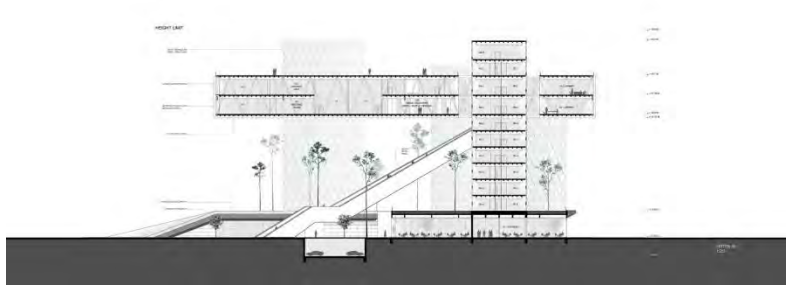


fig 060: section ,source:

www.sergiopirrone.com

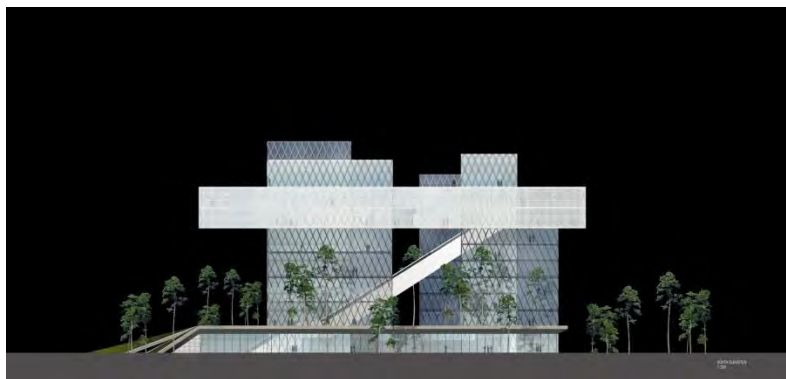


fig 061: elevation ,source:

www.sergiopirrone.com

Findings

- The project becomes unique and identical with the presence of special architectural features.
- Functions can be identified by the form.
- Relation between internal and external spaces is created wonderfully.
- The institute becomes a community gathering space of the city.
- It will bring energy to the social life of the area by the presence of 4, 000 students within the campus.

Chapter 05: PROGRAM DEVELOPMENT

5.1 Given Program and functions

1. Administration

Central lobby

Office area

Cafeteria

2. Academic building faculties

- Industrial design
 - Product design
 - Ceramic and glass design
 - Furniture and interior design

- Communication design
 - Animation and game design
 - Graphic design
 - Photography

- Textile design
 - Fashion design

3. Auditorium

4. Studio and workshop

5. Material gallery

6. Exhibition area

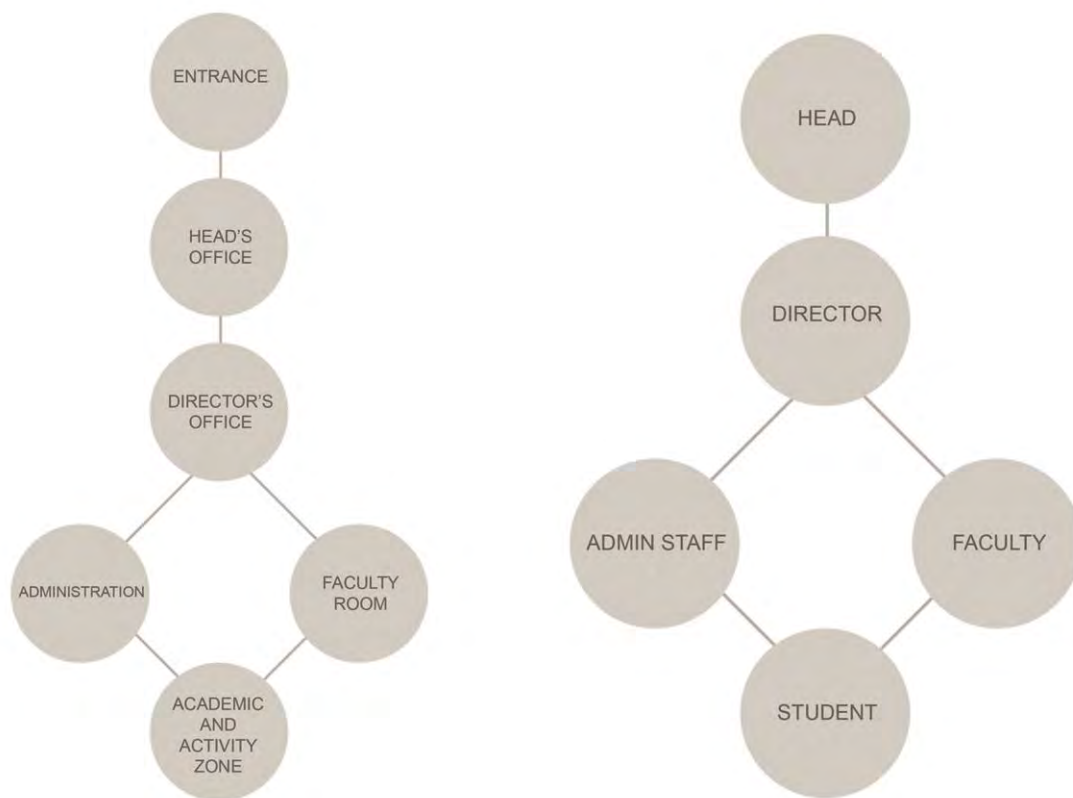
7. Sales center

8. Central library

- 9. Research and publication area
- 10. Cafeteria and dining

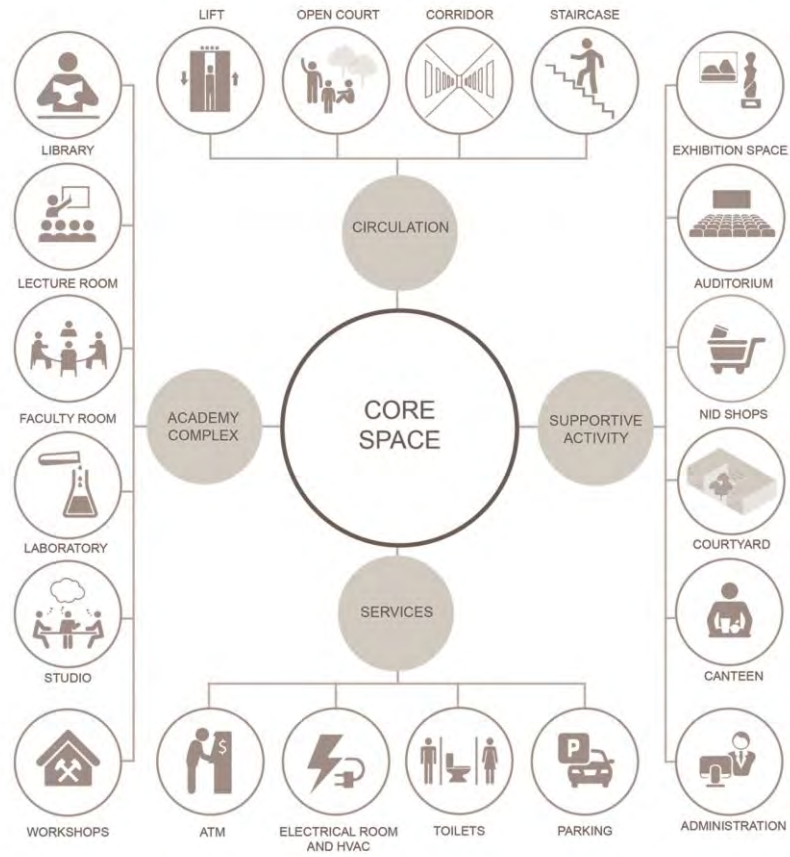
5.2 Space allocation

This segment the dissertation shows diagrams with the space allocation for the listed functional requirement. The calculation for each requirement is mostly done with count number of people, required area per unit or per person and the sum of it requires the total. Additionally, circulation is added (30% of the sub total) with the sum to determine the Total space for each zone. Unit's counts are done according to the number of people for the specific function and requirement of the basic program list.



SPACE AND HUMAN HEIRARCHY

fig 062:space and human hierarchy ,source: (Hossen, 2016)



fig

063: space analysis ,source: (Hossen, 2016)

5.3 Program analysis

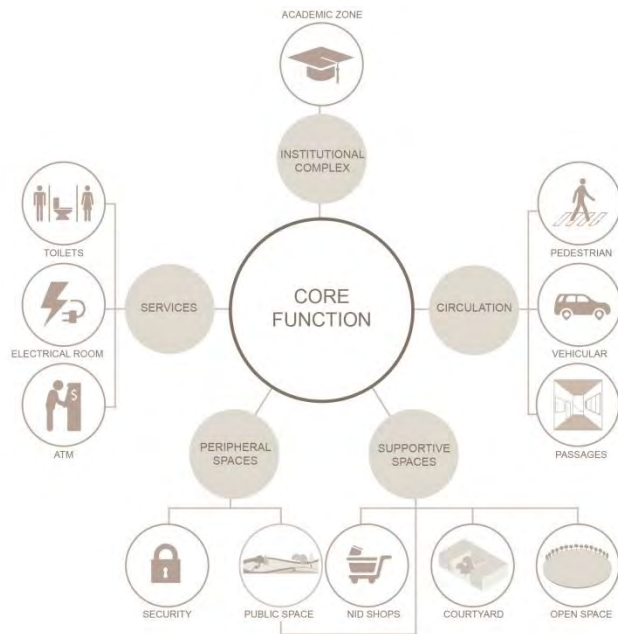


fig 064: function analysis ,source:

(Hossen, 2016)

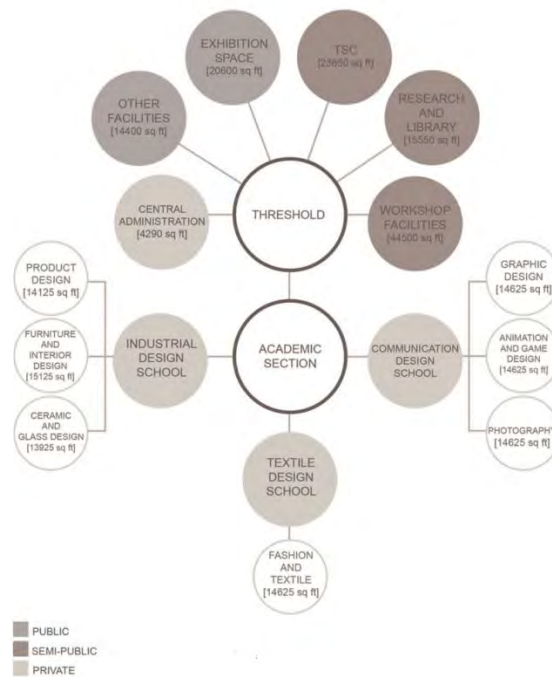


fig 065: program analysis ,source: (Hossen, 2016)

5.3 Detail programs

Central Administration

space	no	No of user	Area (sq.ft)
Reception and lobby	1		1000
waiting	1		500
Conference room	1	30	2000
Head assistant office	1	1	120
accountant	1	1	100
cashier	1	3	120
Receive and cash counter	1	2	100
store	1		150
General toilet	1		200
Total			4290

Academic section

Industrial Design school

Ceramic and glass design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
Printing room	1		300
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150
toilet			150
Total			13925

Product design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
Preservation room	1		500
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150

toilet			150
Total			14125

Furniture and interior Design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
Preservation room	1		500
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150
toilet			150
Total			14125

Communication Design school

Graphic design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000

Photographic lab and store	1		1000
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150
toilet			150
Total			14625

Animation and game Design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
lab and store	1		1000
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150
toilet			150
Total			14625

Photography Design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
lab and store	1		1000
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600
Department office	1	3	150
toilet			150
Total			14625

Textile Design school

Fashion and textile Design discipline

space	no	No of user	Area (sq.ft)
Hons studio	4	40	10000
Lecture room	2	40	2000
Photographic lab and store	1		1000
Teacher's room	1	5	500
Department head's room	1	1	225
Conference room	1	10	600

Department office	1	3	150
toilet			150
Total			14625

Other given functions

Workshop facilities

space	no	No of user	Area (sq.ft)
Metal workshop	1	50	6000
Wood workshop	1	50	6000
Ceramic workshop	1	50	6000
Glass workshop	1	50	6000
Textile workshop	1	50	6000
Digital workshop	1	50	6000
Material storage	1	50	6000
toilet	1		800
Seminar/conference	1		1000
Trainers space	2	4	200
Utility room and store			500
Total			44500

Exhibition section

space	no	No of user	Area (sq.ft)
Outdoor exhibition space	1		5000
Permanent	1		10000

exhibition space			
store	2		2000
workshop	1		600
toilet	2		400
Sales center			1000
Media/press room	1	50	1600
Total			20600

Research and library

space	no	No of user	Area (sq.ft)
Research lab	1	50	4000
Reception and lobby			1000
Space for books			1000
Space for readers		225	7500
toilet			500
Archive			800
Librarians room	1	1	200
Assistant librarians room	1	1	150
General office	1	4	400
Total			15550

Teacher's and student's center (TSC)

space	no	No of user	Area (sq.ft)
auditorium	1	600	15000
toilet	1		150

Dining space	1		5000
Service counter	1		400
Hand wash and toilet			650
Food storage			500
Cooking area			250
Food preparation			200
Prayer space	1		500
Medical unit	1		1000
Total			23650

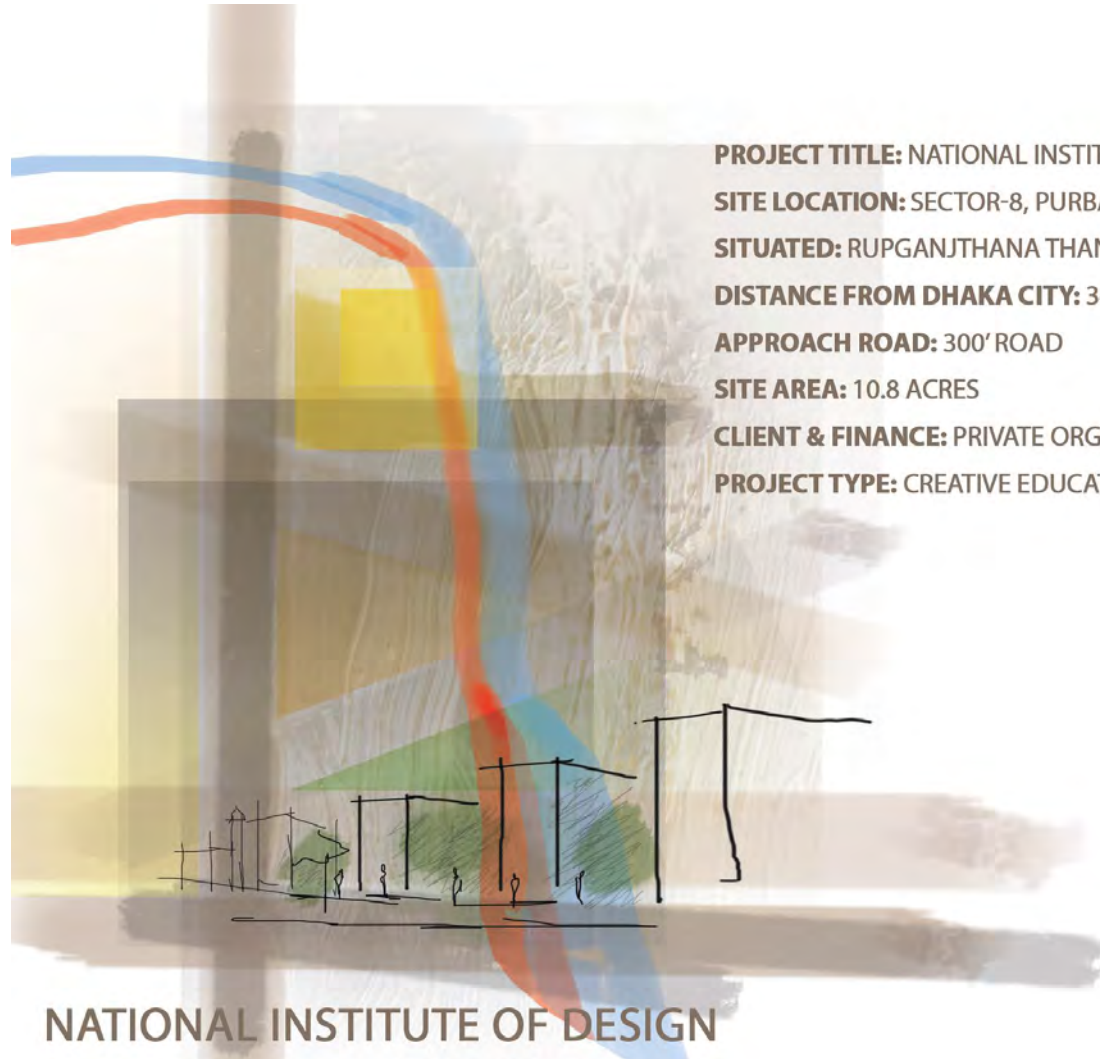
Others facilities

space	no	No of user	Area (sq.ft)
Parking	1	75	13500
Mechanical room	1		200
Substation room	1		500
Guard room	2		200
Total			14400

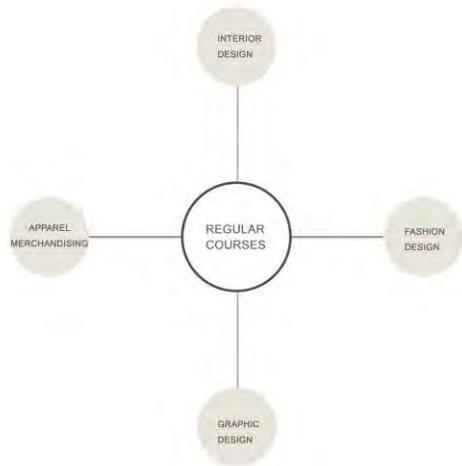
Total Built Area

space	Area (sq.ft)
Grand total	223665
Circulation (30%)	67100
Total built area	290765

Chapter 6 Conceptual stage and Design Development



6.1 Introduction



REGULAR COURSES OFFERED BY NID

(Hossen, 2016)

fig 066:offered course ,source:



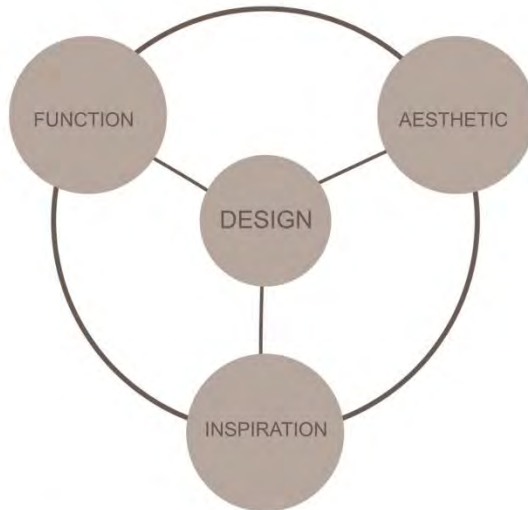
FACILITIES FOR STUDENTS

2016)

fig 067:facilities,source: (Hossen,

6.2 Concept Development

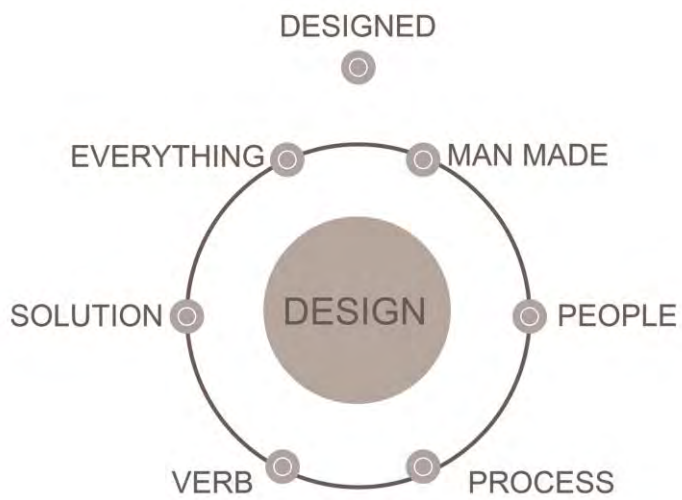
INSPIRATION IS THE SEED, DESIGN IS THE FLOWER.
-MICHEAL. L



WHAT IS DESIGN?

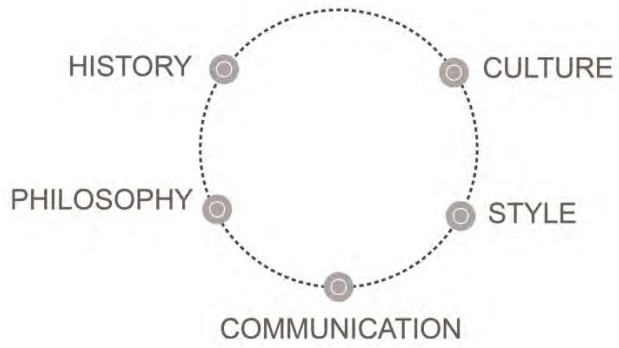
definition ,source: (Hossen, 2016)

fig 068:design



,source: (Hossen, 2016)

fig 069:design connection



5 MAIN ASPECTS OF DESIGN

fig 070:aspects of design ,source:

(Hossen, 2016)

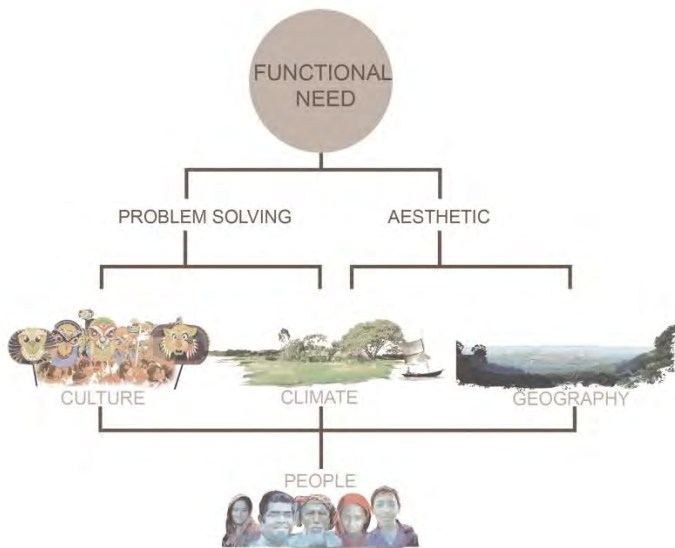


fig 071:design consideration

,source: (Hossen, 2016)

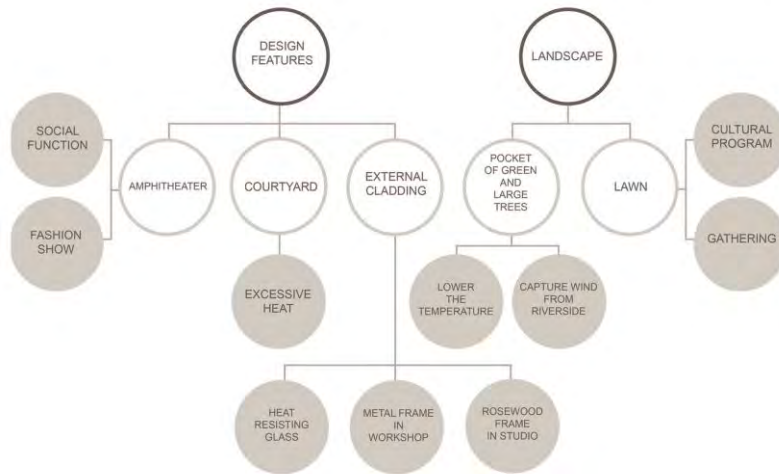


fig 072:design features

,source: (Hossen, 2016)



EXISTING NATURAL PATHWAY

fig 073:existing pathway

,source: (Hossen, 2016)



EXISTING NATURAL PEDESTRIAN PATH

site ,source: (Hossen, 2016)

fig 074:existing path through



EXISTING MAP OF EDUCATIONAL ZONES

075:educational zones ,source: (Hossen, 2016)

fig

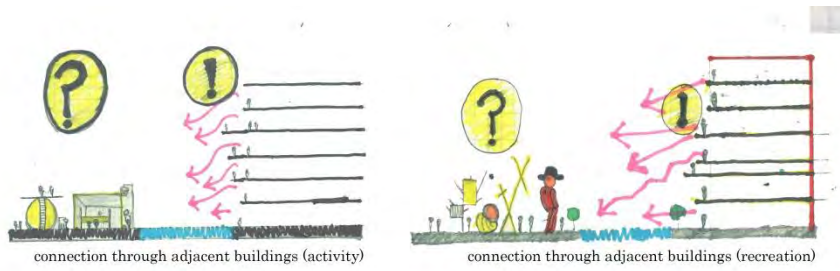
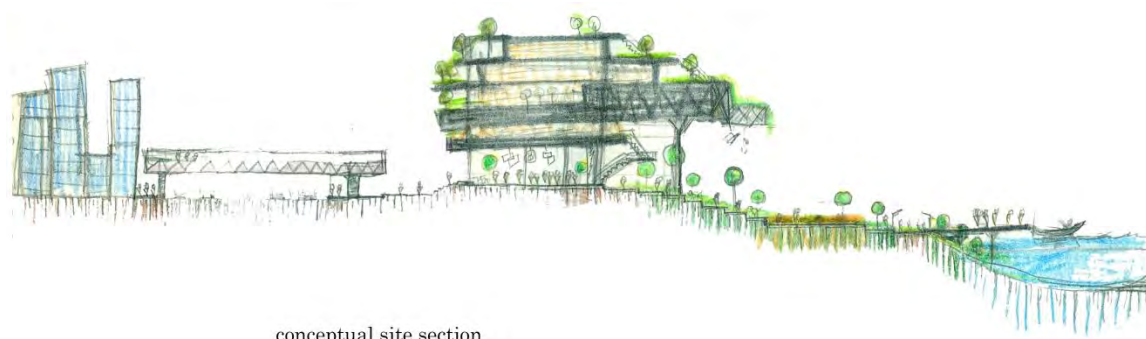


fig 076: conceptual

sketchs ,source: (Hossen, 2016)



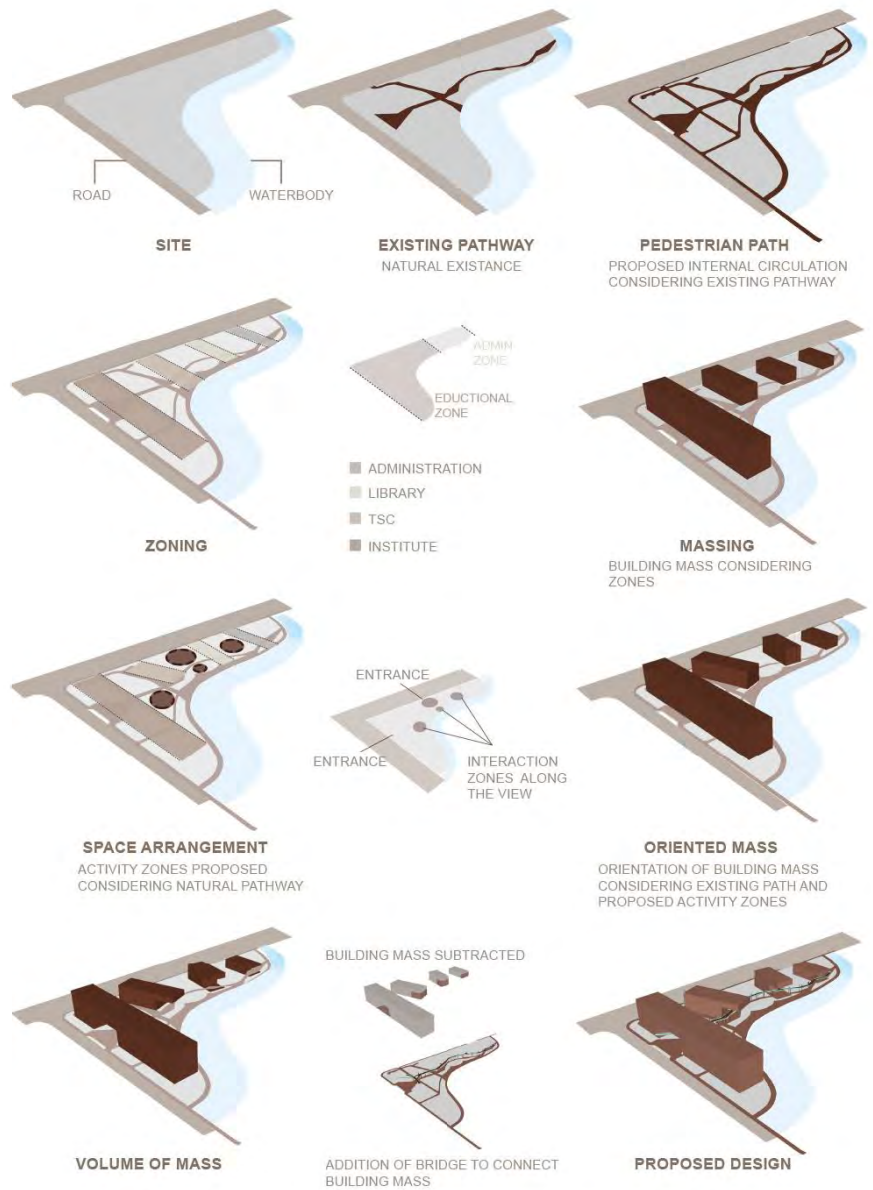
fig 077: conceptual planning ,source: (Hossen, 2016)



conceptual site section

fig 078: conceptual section ,source: (Hossen, 2016)

6.3 Form Development



FORM GENERATION

fig 079:form generation ,source: (Hossen, 2016)

6.4 Final Design Drawings



fig 080:site plan,source: (Hossen, 2016)



fig 081: ground

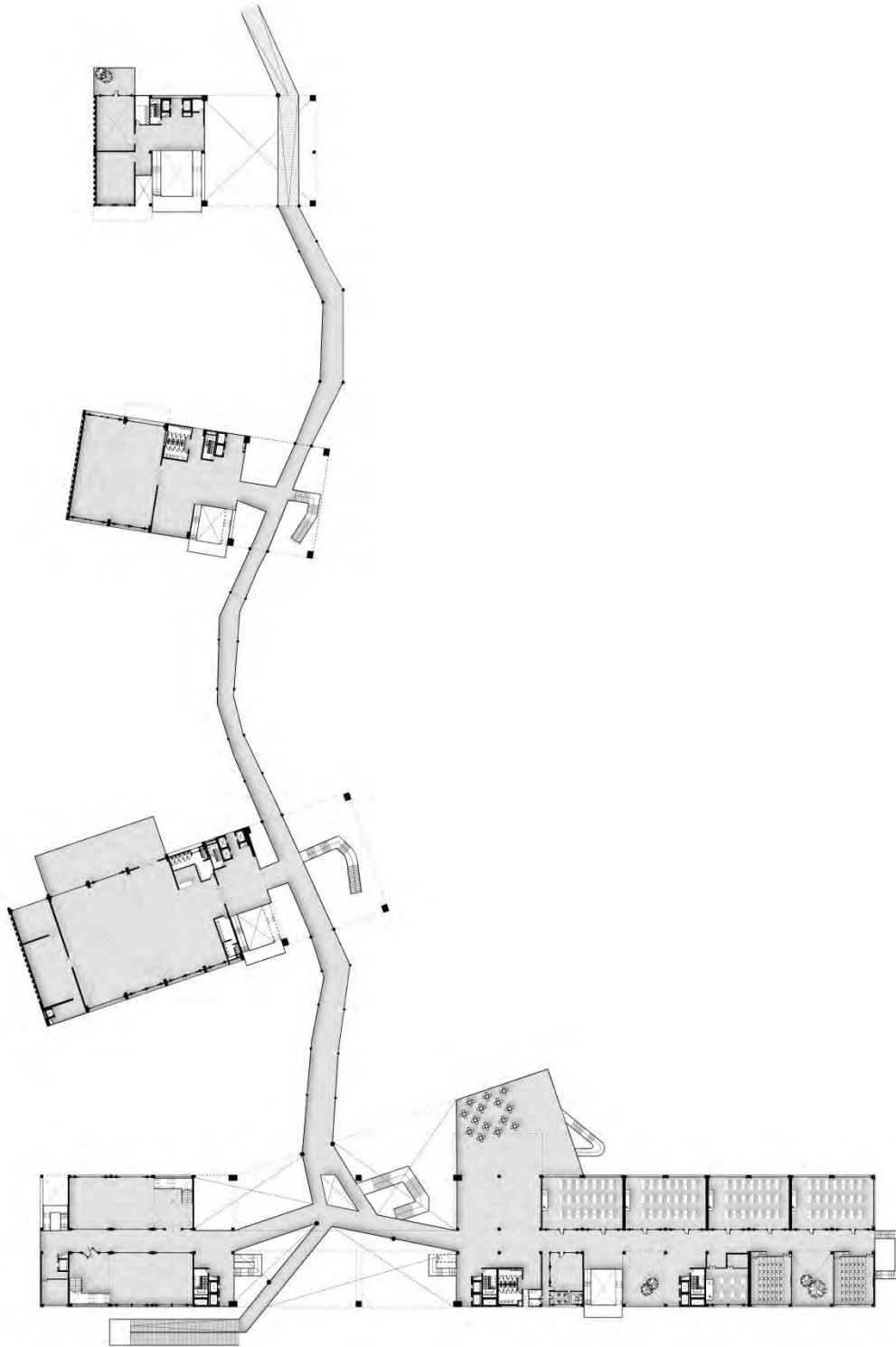
floor plan ,source: (Hossen, 2016)



◆ FIRST FLOOR PLAN

fig 082: first

floor plan ,source: (Hossen, 2016)



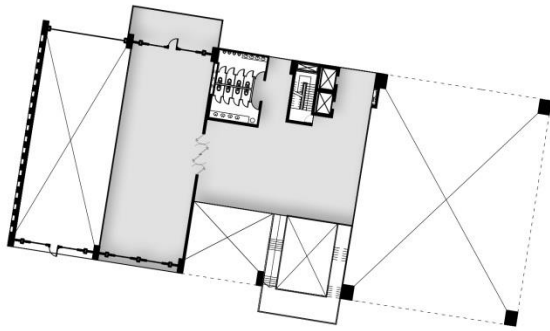
SECOND FLOOR PLAN
CERAMIC & GLASS DESIGN

fig 083:

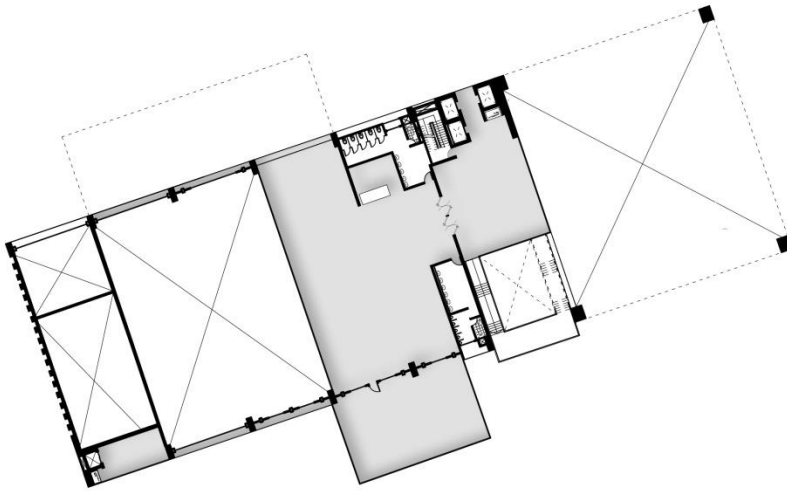
second floor plan ,source: (Hossen, 2016)



▲ **ADMINISTRATION PLAN**



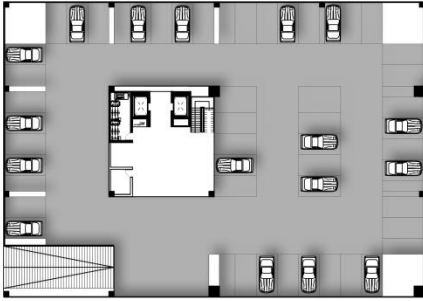
▲ **PERMANENT EXHIBITION PLAN**



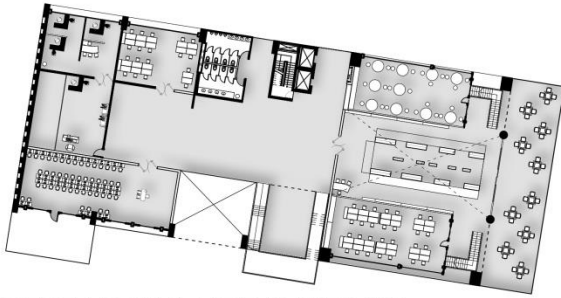
▲ **TEMPORARY EXHIBITION PLAN**

fig 084: floor plans

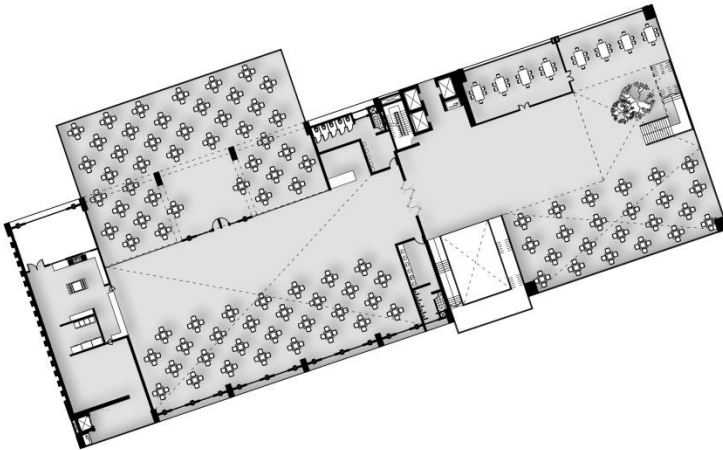
,source: (Hossen, 2016)



BASEMENT PLAN



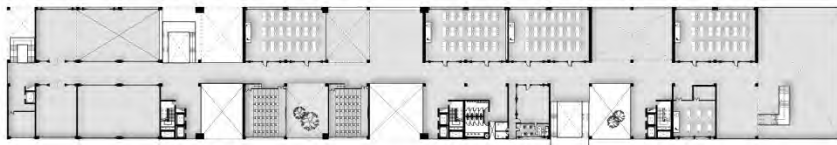
RESEARCH & LIBRARY PLAN



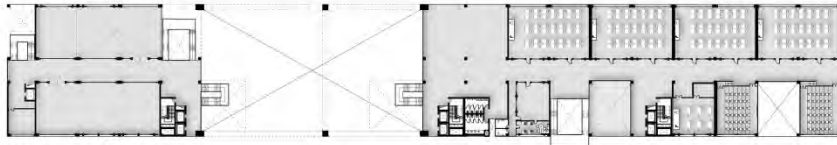
CAFETERIA PLAN

fig 085:floor plans ,source:

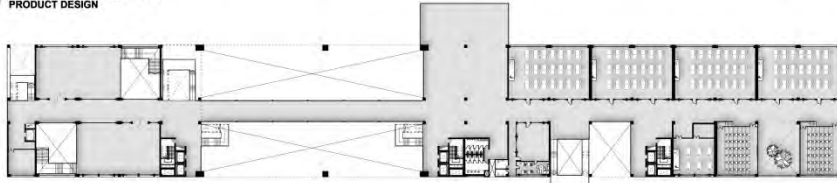
(Hossen, 2016)



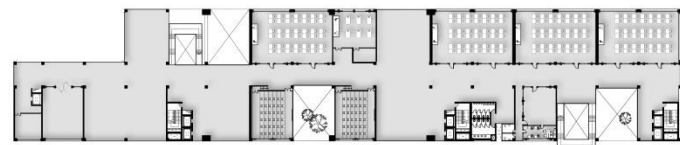
FIFTH FLOOR PLAN
FASHION & TEXTILE DESIGN



FORTH FLOOR PLAN
PRODUCT DESIGN



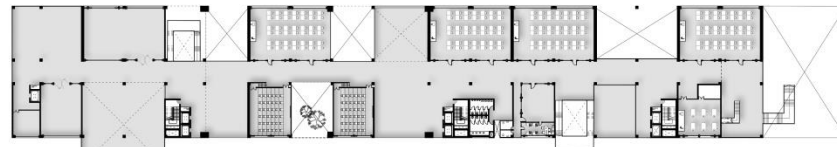
THIRD FLOOR PLAN
FURNITURE & INTERIOR DESIGN



EIGHTH FLOOR PLAN
PHOTOGRAPHY



SEVENTH FLOOR PLAN
ANIMATION & GAME DESIGN



SIXTH FLOOR PLAN
GRAPHIC DESIGN

fig 086:academy complex

plans : (Hossen, 2016)



fig 087: east elevation ,source: (Hossen, 2016)



fig 088: perspective and south elevation ,source: (Hossen, 2016)



fig 089: section AA ,source: (Hossen, 2016)

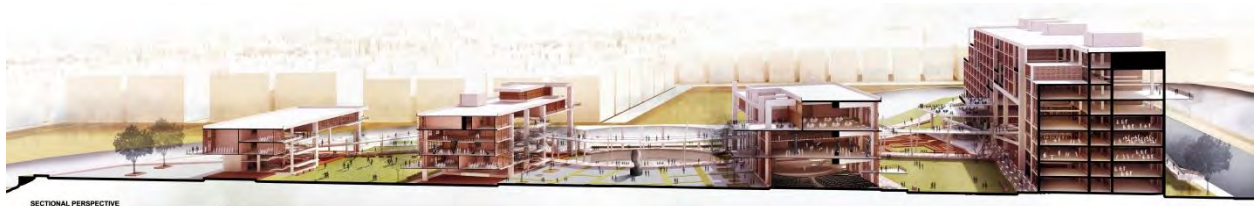


fig 090: sectional perspective ,source: (Hossen, 2016)



fig 091:render images ,source: (Hossen, 2016)



fig 092:birds eye view ,source: (Hossen, 2016)

JOURNEY



fig 093: journey through the path

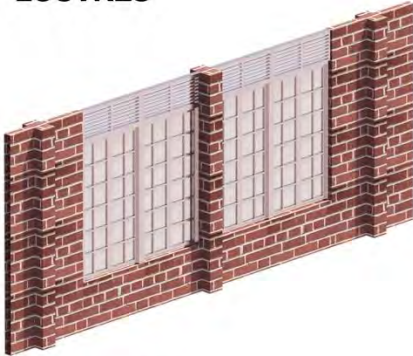
,source: (Hossen, 2016)

FACADE TREATMENT



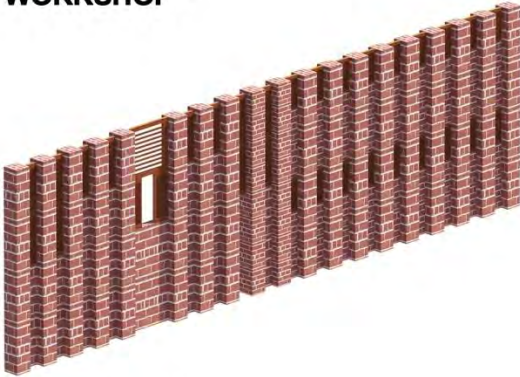
ROSE WOOD FRAMING
ROSE WOOD LOUVRES

LOUVRES



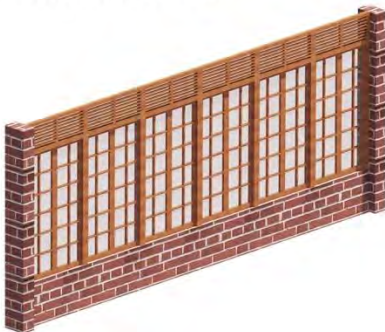
STAINLESS STEEL
RED BRICK
TEMPERED GLASS

WORKSHOP



THICK LAYER OF BRICKS
ROSE WOOD LOUVRES

WEST FACADE



RED BRICK
ROSE WOOD LOUVRES

NORTH FACADE

treatment ,source: (Hossen, 2016)

fig 094: facade



fig 095: render images ,source: (Hossen, 2016)



fig 096: render images ,source: (Hossen, 2016)

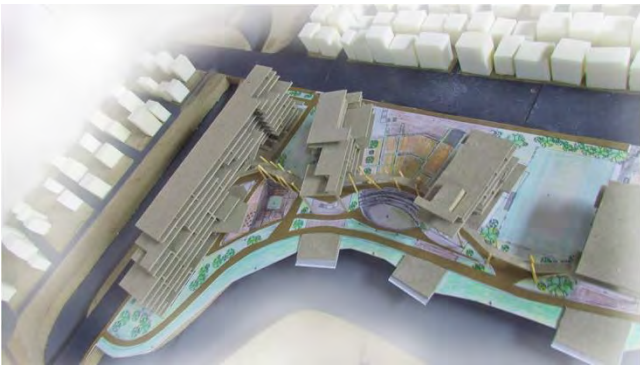
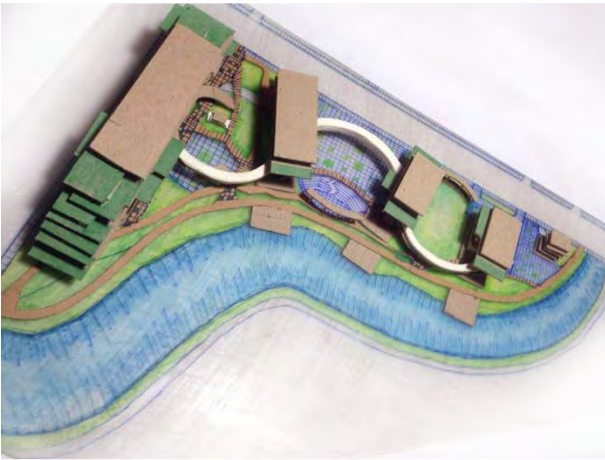


fig 097: model images by phase ,source:

(Hossen, 2016)

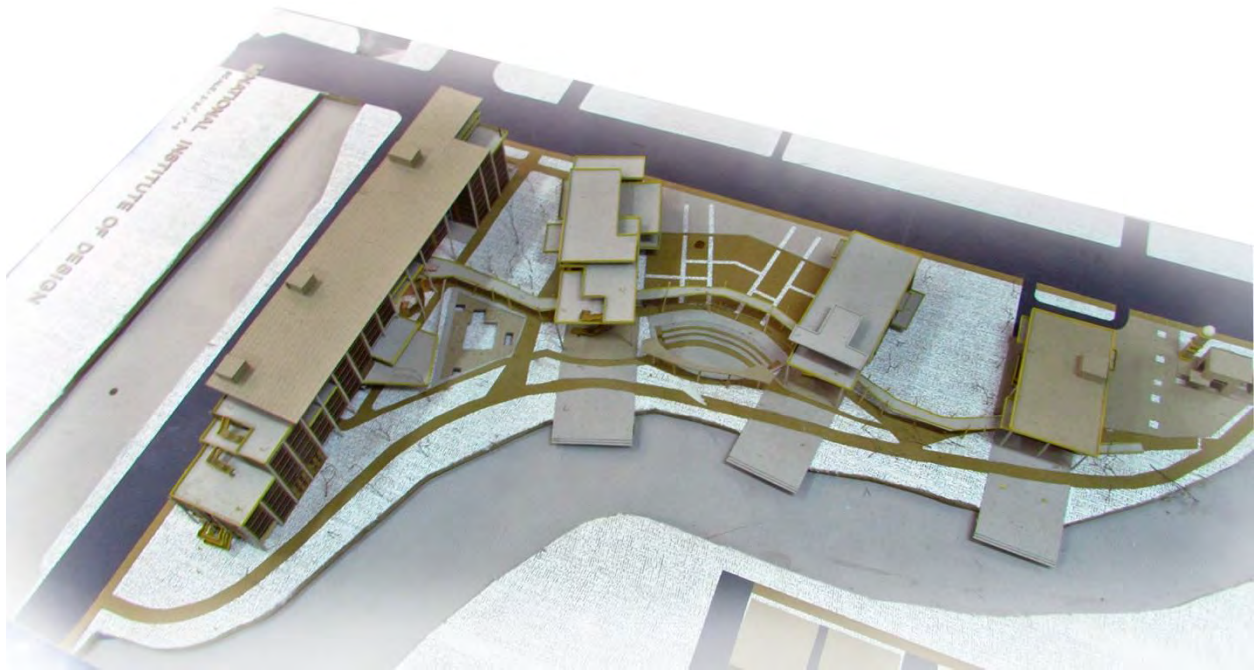


fig 098: final model image ,source: (Hossen, 2016)

CONCLUSION

Designing National institute of design, Purbachal has been an intense assignment. Most of the semester was spent for choosing the ideal orientation of the proposed building block because of the narrow east west oriented site.

The learning acquired through this journey of making this project meet its ultimate end, only hopes to make people realize the true needs and importance of a design institution in Bangladesh for the upcoming challenges of design and design related fields. Such a project only entails to bring proper attention and provide a strong platform for showcasing the delicate and glorious past and present of our design and design related industry and have a strong positive impact in its future.

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