ARMY MEDICAL COLLEGE, CHITTAGONG

SUBMITTED BY

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1 0 2 0 8 0 1 3

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"দিয়া সবে চায়
কঠিন হিয়ায়
আগায়িত বীর
দূর নিরাকায়"

- সামি ভূঞা // ভাদ্র ১৪২২

Abstract

Time is changing fast, architectural practice of Bangladesh is also changing with it. This paper portrays the whole process of how Army Medical College, Chittagong has been designed on an extremely unique site. The process involves project rationality, fixation of design objectives, program generation, case studies, zoning of site, master-plan preparation to detailing out of academic zone having a basic concept of retaining the topographic uniqueness, natural characteristics and serenity of the proposed site. To many people, architecture is a crime to nature, and, having that as a thought-provoking point, importance was given on optimum intervention of nature. The project is highly functional by its nature, and thus, it has been tried to generate an equilibrium between sound functional flow and enhanced natural surroundings. Zipping the various landscapes, generating and enhancing niches, creating visual connections, distributing functions at various experiential levels, proper climatic considerations have been used as the primary design factors to detail out the architecture portion. To sum up, it can be said that, the design of Army Medical College, Chittagong on the Chittagonian topographies will show a way to handle projects on similar undulated topographies without diminishing the natural characteristics.

ACKNOWLEDGEMENT

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CHAPTER 1 Introduction

1.1 Background of the Project

A medical school/college is a tertiary educational institution—or part of such an institution—that teaches medicine, and awards a professional degree for physicians and surgeons. Such degrees include the Doctor of Medicine (MD), Bachelor of Medicine, Bachelor of Surgery (BMBS, MBBS, MBChB) or Doctor of Osteopathic Medicine (DO). Many medical schools offer additional degrees, such as a Doctor of Philosophy, Master's degree, a physician assistant program, or other post-secondary education.

Medical schools can also employ medical researchers and operate hospitals. Around the world, criteria, structure, teaching methodology, and nature of medical programs offered at medical schools vary considerably. Medical schools are often highly competitive, using standardized entrance examinations, as well as grade point average and leadership roles, to narrow the selection criteria for candidates. In most countries, the study of medicine is completed as an undergraduate degree not requiring prerequisite undergraduate coursework. However, an increasing number of places are emerging for graduate entrants who have completed an undergraduate degree including some required courses. In the United States and Canada, almost all medical degrees are second entry degrees, and require several years of previous study at the university level.

Medical degrees are awarded to medical students after the completion of their degree program, which typically lasts five or more years for the undergraduate model and four years for the graduate model. Curricula are usually divided into preclinical sciences, where students study subjects such as biochemistry, genetics, pharmacology, pathology, anatomy and physiology, among others, and clinical rotations, which usually include internal medicine, general surgery, pediatrics, psychiatry, and obstetrics and gynecology, among others.

Although medical schools confer upon graduates a medical degree, a physician typically may not legally practice medicine until licensed by the local government authority. Licensing may also require passing a test, undergoing a criminal background check, checking references, paying a fee, and undergoing several years of postgraduate training. Medical schools are regulated by each country and appear in the World Directory of Medical Schools which was

formed by the merger of the AVICENNA Directory for medicine and the FAIMER International Medical Education Directory.

Bangladesh Army always had huge contribution in the education sector of Bangladesh. With around 20 cantonment public colleges, many cantonment board schools, 12 cadet colleges, one military collegiate school, one science and technology institute, one medical college, one nursing institute, one full fledged university with many institutes and academies, Bangladesh Army is the current giant of education sector. Bangladesh Army has already got permission for starting five (05) new medical colleges and five (05) new science and technology institutes, and they have already started the academic sessions of the newly granted five medical colleges in temporary establishments. All these medical colleges are under Bangladesh University of Professionals (BUP) and are attached to Combined Military Hospitals of respective cantonments.

Army Medical College, Chittagong is one of these five medical colleges. Bangladesh Army has already allocated area for the permanent campus of institution on the northern end of Chittagong cantonment, in a very scenic area.

1.2 Project Introduction & Brief

Army Medical College, Chittagong is a army-run medical college that is at present conducting its academic affairs in its temporary campus inside Chittagong cantonment. It is affiliated with Combined Military Hospital, Chittagong, and it is one of the five newly granted medical colleges. It has a proposal for establishing its permanent campus on the northern side of Chittagong cantonment. GOC of 24th Infantry Division of Bangladesh Army is the chief-patron of this medical college. Bangladesh Army has an ambitious plan to build a state-of-art campus with all facilities. The project is a bit different from typical medical colleges. It is attached to Combined Military Hospital, but the future campus is at a notable distance from CMH. Thus, the campus will only have educational facilities and no health care services or hospitals inside its premise. Departments, that are related to hospital functions will be established inside CMH, only tutorial classes for such departments will be inside the campus.

The institute will also have auxiliary facilities which are present in all other military-run institutions. Example: football fields, running track, basketball court, tennis court, sports centre etc.

1.3 Aims and Objectives of the Project

Main objective of the institute is to provide world-class medical science education to the students and to produce good doctors. And thus, aims and objectives of the project is to design an state-of-the-art college, that will be able to accommodate all the functions of the medical college and will act as a comfortable, driving, inspiring and positive catalyst in the process of educating future doctors.

As it is an army run institute, the college will have an expression that will uphold both the standards of medical science and Bangladesh Army.

1.4 Given Programme

The institute will have a program that is similar to most of the medical colleges, but, will also have some differences and specialty as it is an army institution and is attached to Combined Military Hospital (CMH) of Chittagong Cantonment. Though there is a plan for constructing a general hospital close to the institute in future, but, at present the college is attached to 500-bed CMH, and thus is allowed to take 100 MBBS students per year.

The college will have all the facilities for the major 8 departments.

The departments for which the institute is to be designed are:

a. Department of Anatomy

b. Department of Physiology

c. Department of Biochemistry

d. Department of Pharmacology

e. Department of Pathology

f. Department of Microbiology

g. Department of Forensic Medicine

h. Department of Community Medicine.

The program will have adequate number of dissection halls, tutorial rooms, class rooms, laboratories, museums, departmental libraries, seminar rooms, research rooms, animal houses, teachers' rooms, staffs' rooms, examination halls, practical class rooms, office rooms, spaces for auxiliary functions, toilet facilities, common rooms, central computer laboratory, administrative wing, prayer spaces, indoor games rooms, canteens etc.

Total built area of the project will be around two hundred thousand square feet, but, it will vary during detailed design.

CHAPTER 2 SITE APPRAISAL

2.1 Environmental Considerations

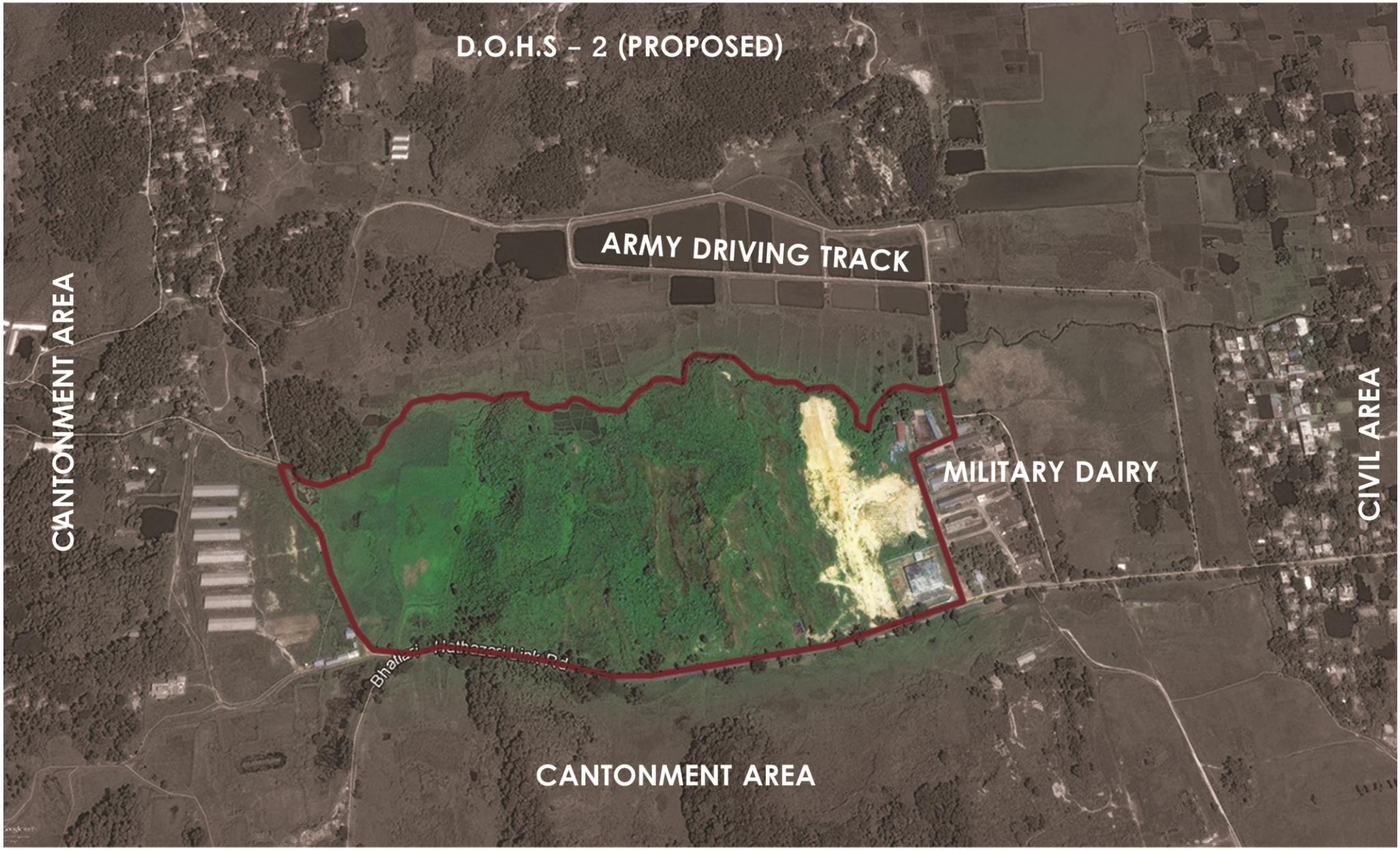
The site is allocated by Bangladesh Army for constructing the future campus of Army Medical College, Chittagong. It is situated in South Pahartali Ward-I, just on the northern edge of Chittagong cantonment. The area it is situated in, is a army-owned area, but, not inside the operational cantonment, but, under cantonment board. It has 60 feet wide road attached to it on the south side. The site has all the characteristics of Chittagong, slightly undulated topography, green surrounding, good road communication, out of the disturbance of the main city etc.

2.2 Site and Surrounding Plans, Photographs, Topography

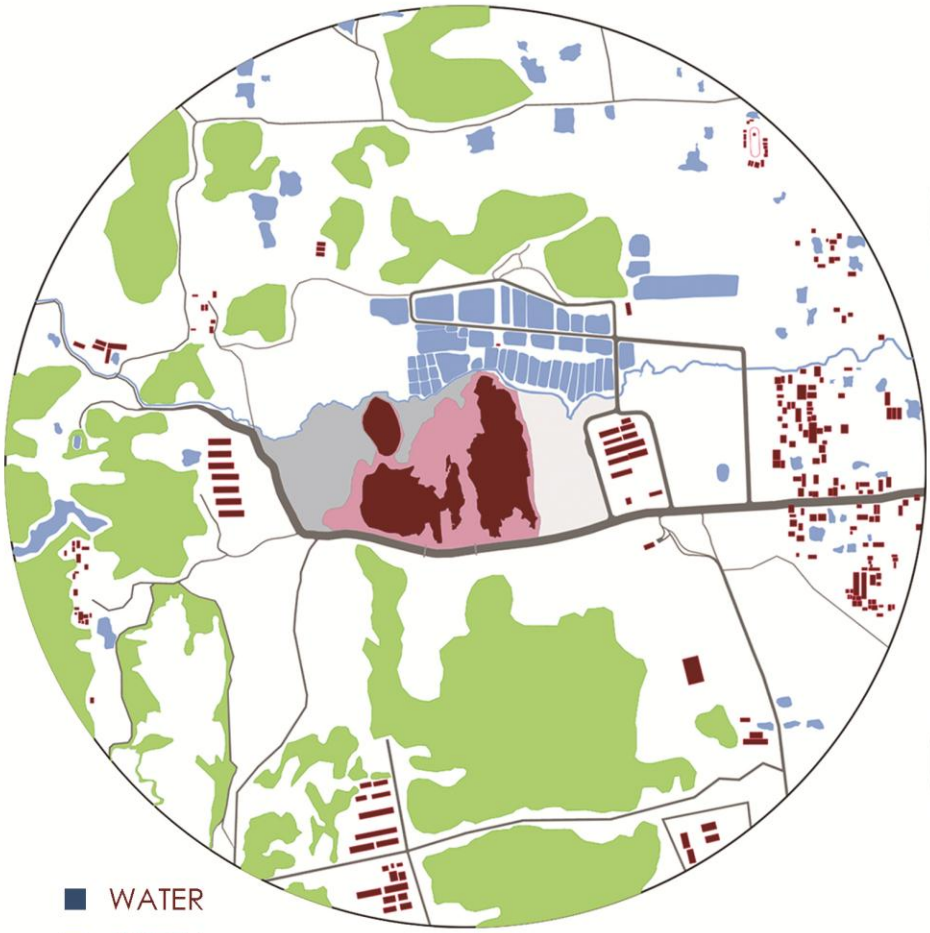
The site is about 51 acre, but, the proposal for 51 acres includes residential zone and auxiliary facilities. For this academic project, only 10-12 acre of the total site will be demarked and used. At present, on the north of the proposed site area, the driving school track of Bangladesh army is located. The northern portion is 20 feet below the road level. Military dairy plaint is located on the east side of the site. On the west side of the side, there is army owned vacant land, and army thinking about allocating that as site for future general hospital, which will then be affiliated to the medical college. And the main arterial road is situated on the southern side.

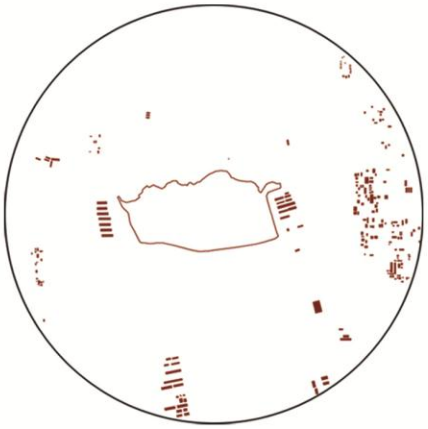
Satellite map, site surrounding diagrams, partial contour map, detail map, spot level map are attached with these paper. All these maps are prepared through survey by Military Engineering Service, Chittagong, and is collected from BINYASH Ltd (An architecture firm, which is working on this project).

Surrounding spaces are sloped, slightly hilly, but, has artificial plains at various locations. There is a depression inside the side at the lower back. The lower portion is around 20 feet depressed from the road level and there is a little canal there. In terms of scenic beauty, this site is different from most other medical colleges, as it the surroundings are green and marvellous.

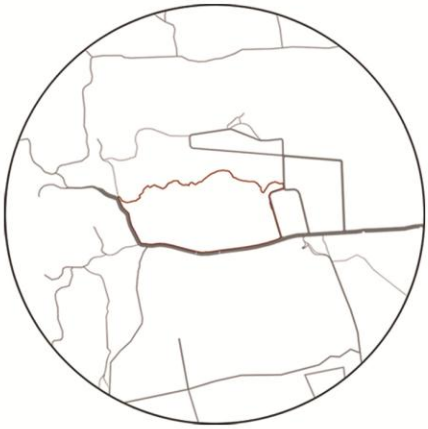


SATELLITE MAP

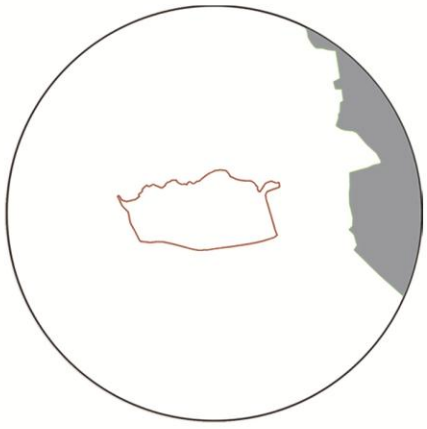




SOLID-VOID

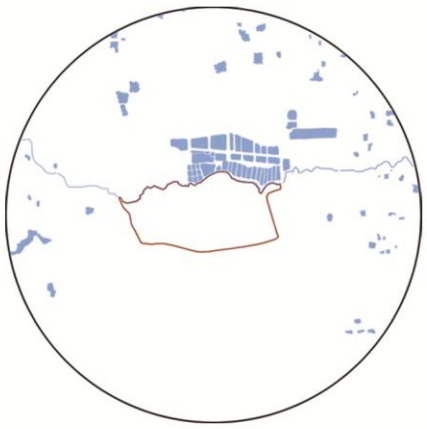


VEHICULAR ROADS



MILITARY VS CIVILIAN AREA

GREEN DIAGRAM



WATER

FIGURE: SITE SURROUNDINGS

2.3 Historical and Social Background

Bangladesh Army has a glorious past, and the "Army Medical Corps" (AMC) shares that pride. Descended from the British Army and Pakistan Army, Army and the AMC doctors have contributions in the field of health care since 1757 in peace time and in war time. Many Army doctors took part in World War II, World War II, all the bilateral wars between Pakistan and India, in the liberation war of 1971, and also in the post independence period. It can be termed as generosity of Bangladesh Army that they are providing medical science education to non-AMC cadets just because of the sake of the country. The Army medical college site is in Chittagong, which is the port-city and economic capital of Bangladesh and has a heritage that dates back to thousand years. Chittagong being the gateway to the Bengal since historic times, has rich history and historical significance that should reflect in the design of the future institution too.

As the institute's site is owned by army and is under jurisdiction area of cantonment board, it will have the social settings that will reflect the standards of a military area. Also, as it is situated near the new DOHS (under construction) of Chittagong, it will in future act as the development catalyst of the region.

Thus, the historical and social background and significance of the area and the project is very noteworthy beyond doubt.

2.4 SWOT Analysis

When it comes to the strength of the project, it has to be said that, as a military run medical college, this institution will have standards of both a medical institute and a military institute. It is situated in a strategic but very beautiful location. In future, after the construction of the general hospital (which will be affiliated to this institute), this institute will work as a key driving force for development of this area. It has adequate site area to accommodate all necessary and auxiliary facilities, and the army authority is flexible for expansion or contraction of the site area if necessary.

Weakness of this project is, it is affiliated with CMH, which is at 10 minutes distance from the campus site. Thus, the departments, that are to be attached the hospital, will be placed inside CMH. Thus the project will work as a educational facility only, but not as a health service

provider. But, in future, army has a plan to establish a general hospital near-by, then, this weakness will be overcome. Also, it can be said that, this weakness may in contrary work as a differential factor, or design force.

Opportunities for this academic complex is huge. As it will portray the standards of both a medical science institute and a military institute, a fused-contemporary design is possible and inevitable. Also, historical significance of Chittagong, Chittagong cantonment and Bangladesh army may be expressed through formal expression. And, as it will work as a development catalyst, there are many opportunities to research and enrich the project.

There is no threat, as this site is in a scenic area at the edge of Chittagong cantonment. Only threat that can be mentioned is the cutting down of hills nearby.

CHAPTER 3 LITERATURE REVIEW

3.1 REVIEW BRIEFS

Roger S. Ulrich, Ph.D has written a paper titled "Effects of Healthcare Environmental Design on Medical Outcomes" in which he focused on certain aspects of healthcare environmental design and their effects. The paper (Ulrich, 2001) has certain objectives. Against the background of the healthcare environmental developments which have made improving healthcare design a major priority, the paper has focused on the last of these, environmental design research. The discussion concisely reviewed the limited amount of scientific research linking healthcare environmental characteristics to improved health outcomes. It became evident that, although the amount of research is steadily growing, there is no sound, directly relevant research yet available for many healthcare environmental design questions. To suggest promising design approaches in situations when gaps exist in research knowledge, the discussion outlined a Theory of Supportive Healthcare Design that generates design guidelines that can be flexibly applied to a wide range of healthcare environmental questions. Finally, advantages were summarized, such as improved outcomes and cost savings, that healthcare administrators concerned with quality and costs can reasonably expect to achieve through evidence-based supportive design of a new healthcare facility.

A paper titled "Harmonious Mechanism between Urban Master Plan and Master Plan of Land Use" (Caibin, 1999) was studied to demark the relation between city and the master plan design of the institution. Considering the contradiction between urban master plan and master plan of land use, this paper studied the theoretical base for harmonizing these two plans, according to the basic principles of planning and social and economic development. Furthermore, it discussed the basic stratagems from the aspects of relationship between two plans, their working methods, urban spatial structure, classification of land use, system of spatial planning and planning management, etc..

A book titled "Planning and Designing Schools" (Brubaker, 1998), was also studied to understand the principles of designing educational institutions. This book offers and examines a number of suggestions for school architecture. The book consists of a review of 22 school projects from around the United States. The text opens with a brief history of school design in the nineteenth and twentieth centuries, but the focus throughout the book focuses on several distinct elements: designing schools with beauty and character; the planning and building

process; computers and their impact on learning and design; interior design, including color, light, space, furnishing, and equipment; how educational restructuring affects architecture; and campus planning-site analysis. The design ideas presented here apply to a broad array of school types: community schools, high schools, shared facilities, elementary schools, expansions, renovations, and new projects. Each case deals with a unique problem and shows how the architects worked with the educators to create a tailored solution. Special chapters address issues such as how to prevent obsolete schools, how to transform the learning environment, and how to design schools with character.

Also, various citations were seen to understand role of urban design in urban planning. Jianguo (2002) in his paper " THE ROLE OF URBAN DESIGN IN CAMPUS PLANNING", said that, construction of the campus is related directly with the quality of the campus planning and design. This paper discusses the campus master plan, roads framework, the genus loci of the campus physical environment etc., and analyses existing problems in recent campus planning in China and puts forward several basic urban design proposals.

Also, in the paper of Temple (2008), it was said that, the connections between the design and use of space in higher education, and the production of teaching and learning, and of research, are not well understood. This paper reported on a literature review on these topics, and showed that higher education spaces can be considered in various ways: in terms of campus design, in terms of how space can support the development of a university community, the needs of specialist spaces, and the impact of technology on space use. Space issues were central to the operation of universities, and further research is needed to illuminate the connections between space and institutional effectiveness.

Along with these, the Bangladesh National Building Code (BNBC) and the Bangladesh Medical and Dental Council Standards were studied to understand what is expected in medical colleges in Bangladesh. An honest review of BM&DC will be to change the facilities required for office blocks. Also, the prospectus. curriculum and website messages of current military-run medical colleges were studied to understand the differences of Army Medical college from typical ones.

3.2 LIMITATIONS

There are very inadequate number of articles, research papers or references which could have focused on the design of medical college. Thus, for design of this institute, more dependency will be on codes and rules instead of literature thoughts. Also, case studies will work to overcome the limitations of literature reviews.

CHAPTER 4 CONTEXTUAL ANALYSIS

4.1 Geographical Context

The site is situated in a hilly setting of the green city of Chittagong. The site is at the northern edge of Chittagong cantonment, inside jurisdiction of Cantonment Board, and very close to the main city, but still at a completely different, natural , undulated green topographic area.

The main access road on south of the site is at present around 18 feet wide, but it will be converted into a 60' wide road in future. In spot level mapping, various levels are found inside the site. The design has to address, blend and also in some cases modify these levels for making an integrated, functional and also aesthetically sound project.

In spot level mapping (using DLS & UPGIS unit), it has been found that the road level (TBM RL) is at 50m height from the sea level, whereas, inside the site, the spot level varies from 42m ad 86m. Thus there are spot level difference of about 44m (145 feet) between the highest point and the lowest point inside the site.

As, there is military dairy plant on the east of the site, proposal to build a hospital on west of the site, and a DOHS (proposed) on north of the site, zoning inside the campus must be done having these contextual influences in consideration. There will be basically three major zones inside the campus. They are:

a. Academic zone

b. Residential zone

c. Sports and others (both integrated and independent)

As the site of future hospital is at the west side of the site, it is logical to set the academic zone on the western half of the site, as it will be adjacent to the future-hospital block then. And thus, secluded residential zone can be placed at the eastern half of the site. There will be two major divisions in residential zone too. Residential facilities for students, and residential facilities for staffs.

The northern portion of the site is below the road level, and thus, while designing, the auxiliary facilities and sports facilities are to be placed in that portion. There is a driving track on the north side of the site, which is used by army to teach driving lessons to its members. There are little water-bodies and canals on this side too.

There is a major undulation in the centre of the site. The highest peak here is 86m from sea level and 36m from road level. There are few other undulated zone inside the site, especially on the south-eastern area.

The topography in the neighbouring areas is also same as the site, green and undulated.

Also, it has to be taken in consideration that, the soil condition of this area is not very good. There had been cases of landslides inside the cantonment before, which was caused by heavy rainfall. Thus, while placing building blocks, proper precautions must be taken to address this probable disasters.

4.2 Military Contextual Analysis

The site inside the cantonment, though it is at the northern edge and close to the non-militarized zone. While designing the master-plan of the campus, design is to be done according to the rules and specialized building code of cantonment board. As the site is going to hold a military-run medical college, it should have facilities for military drills, parades, physical exercises inside the campus. The roads must be wide and filleted enough to ensure free movement of military vehicles. Also, as it will be connected to the bus intra-cantonment bus service, there must be facilities like bus stops, military-police check-posts etc. In the program of the college, there is requirement of a 2000-seat state of the art auditorium. And, the military authority wants this auditorium to be accessible for other functions of the army authority too. Thus, it should be placed in a place, so, that, it stays at an optimum position to access from outside the campus, from academic zone and buffered-out from residential zone.

The height restrictions (if any) are to be maintained according to military codes, roads are to be placed in co-ordination with the existing or improvised patterns.

4.3 Cultural and Historical Contexts and influences

Chittagong has a rich historical past, also has always been the gateway to Bengal. It is the financial-capital of the country and has been the celebrated port city of Bangladesh. Chittagong has its own culture, language and ethnic diversity. Though in broader term Chittagonians are

termed as Bengali, but, they have ethnic similarities with many close and distant ethnic groups. Being the business centre of the country and main door to export and import, Chittagong is a city like no other. Its undulated roads, hilly areas, contemporary city-centres, sea-lined south-western boundary etc has made it unique. It has a great military history too. Revolt of 1857 started in Chittagong. It is the city of Masterda Surya Sen, Pritilata Waddedar. It still carries a second world war cemetery in its heart in memory of the young lost souls. In 1971, from here the Army revolted against Pakistan and one of the declarations of independence was made from this city. It is the home ground of East Bengal Regiment and also the training center of Border Guards Bangladesh. It is a conservative city in terms of social context, but vibrant never the less.

The Army medical college, as will have its campus on Chittagong, is expected to get most of its students from this region. And thus, in design of this institution, the cultural and social norms of Chittagong are to be considered. Also, as this is a military institution and the military has great history of more than 300/400 years in this city, thus, the humble weight of the military grumpiness must be reflected in the design.

And this is a port city with a combination of almost all types of topography and terrains, it must blend or complement the vibrant nature of the city. The access to Chittagong city is on the east of the site.

4.4 Analysis of Urban Context

The urban fabric of the Chittagong city is very vibrant and distinctively varying. In the urban scenario of the city, this project will play a very vital role. It will work as a catalyst of development for the northern portion of the city. As, there is a proposal for DOHS, hospital etc in this area, this project will push the development of this area, and thus if this project attains a certain value, this area will grow following that pattern, and so, it is very important for this project to be the magnum opus of this area.

And, successive completion of this project will highly influence the urban fabrics and tissue. The grain of this area will grow encircling this project in future. Thus, the design must be done addressing the urban condition and probable changes.

CHAPTER 5 CASE STUDIES

5.1 Local & International Case Studies

5.1.1 Armed Forces Medical College

5.1.1.1 History and Background

The medical education of the country has been constantly improving to keep pace with the worldwide progress of medical science. Bangladesh Armed Forces felt the necessity of possessing a group of energetic, motivated and dedicated young people to lead the health sector in the 21st century. With this view, Armed Forces Medical College (AFMC) was established to respond to global changes happening in Medical education and technology.

Army Medical Corps (AMC) performs the task of conserving the fighting strength of the Armed Forces through effective health care delivery system during both war and peace. AMC requires induction of a good number of doctors every year. It has been observed that, newly graduated doctors from the existing medical colleges can't always fulfil the peculiar requirements of the Armed Forces. Therefore, Government has decided to establish the AFMC to meet the requirement of militarily motivated and qualitatively better medical graduates for induction in the Armed Forces as well as to provide a sizable number of well disciplined and skilled doctors for the national health care service.

The academic activities of AFMC commenced through intake of 56 medical cadets on 20 June 1999. Initially the college was affiliated to Dhaka University. After the inception of Bangladesh University of Professionals (BUP), this college has been affiliated to it. So far, 15 batches of total 996 students have been inducted. The students of first 10 batches have already become doctors. The admission is based on merit keeping in conformity with the Government order.

5.1.1.2 Aim of AFMC

The aim of AFMC is to train two groups of specially selected candidates to be called AMC cadets and AFMC cadets for five academic years according to the syllabus laid down by Bangladesh Medical and Dental Council (BMDC) for MBBS degree to be awarded by the Bangladesh University of Professionals (BUP) and to produce a group of high quality career

doctors both for the Armed Forces and the nation.

5.1.1.3 Objectives of AFMC

The objectives of AFMC are:

a. To teach biomedical sciences traditionally required for medical graduates to meet the responsibilities or providing preventive as well as curative health care to the people of Bangladesh primarily.

b. To produce well disciplined, self motivated and dedicated doctors with kindness, tolerance, patience, compassion and devotion to duty.

c. To impart those aspects of basic military training as are required to turn each cadet into a highly disciplined, physically and mentally fit, morally and ethically upright and professionally dedicated medical graduates capable of providing health care services in adverse physical and psychosocial environment both in and outside the country and during war and peace.

d. To inspire development of essential character qualities, strong sense of righteousness and a basic desire to serve the suffering humanity.

5.1.1.4 Location

AFMC is located at Dhaka Cantonment, in an island of scenic tranquility blended with natural beauty and bounty. It is completely surrounded by the thriving city of Dhaka and designed by many brick buildings interspersed with flowering gardens and natural lakes. The AFMC campus is located on an area of about 13 acres at the northern side of Airport road opposite to Cantonment Railway Station and Radisson Water Garden Blue Hotel.

5.1.1.5 Hospital/Institutions

A 500-beded Kurmitola General Hospital is adjacent to the college campus, where the students and interne doctors will get the necessary clinical training. At present, following hospitals and institutions are affiliated with AFMC for purpose of clinical training.

(a) Combined Military Hospital (CMH)
Dhaka Cantonment

(b) Armed Forces Institute of Pathology (AFIP)
Dhaka Cantonment

In addition, for the purpose of understanding the suffering of humanity and their management, cadets are exposed to Government hospitals e.g Dhaka Medical College Hospital (DMCH), Shaheed Suhrawardi Medical College Hospital, Infectious Disease Hospital, Mohakhali Dhaka etc.

5.1.1.6 AFMC Activities

Along with teaching traditional biomedical science, AFMC also has provision of various other activities for its medical cadets. They are:

a. Military training
b. English Foundation Course
c. Computer training
d. Internship training
e. Games and Cultural activities

5.1.2 University at Buffalo School of Medicine and Biomedical Sciences

HOK was recently selected to design the new University at Buffalo (UB) School of Medicine and Biomedical Sciences on its downtown campus upon winning a global design ideas competition. Located at the center of the region's emerging bio-sciences corridor, this new transit-oriented medical school development will anchor a lively, urban mixed-use district on campus and bring 1,200 students, faculty and staff downtown. With the goal of fostering collaboration and interdisciplinary care, the new academic medical center will create connections that allow students, faculty, biomedical researchers and clinicians to move easily from classroom to bedside to lab.

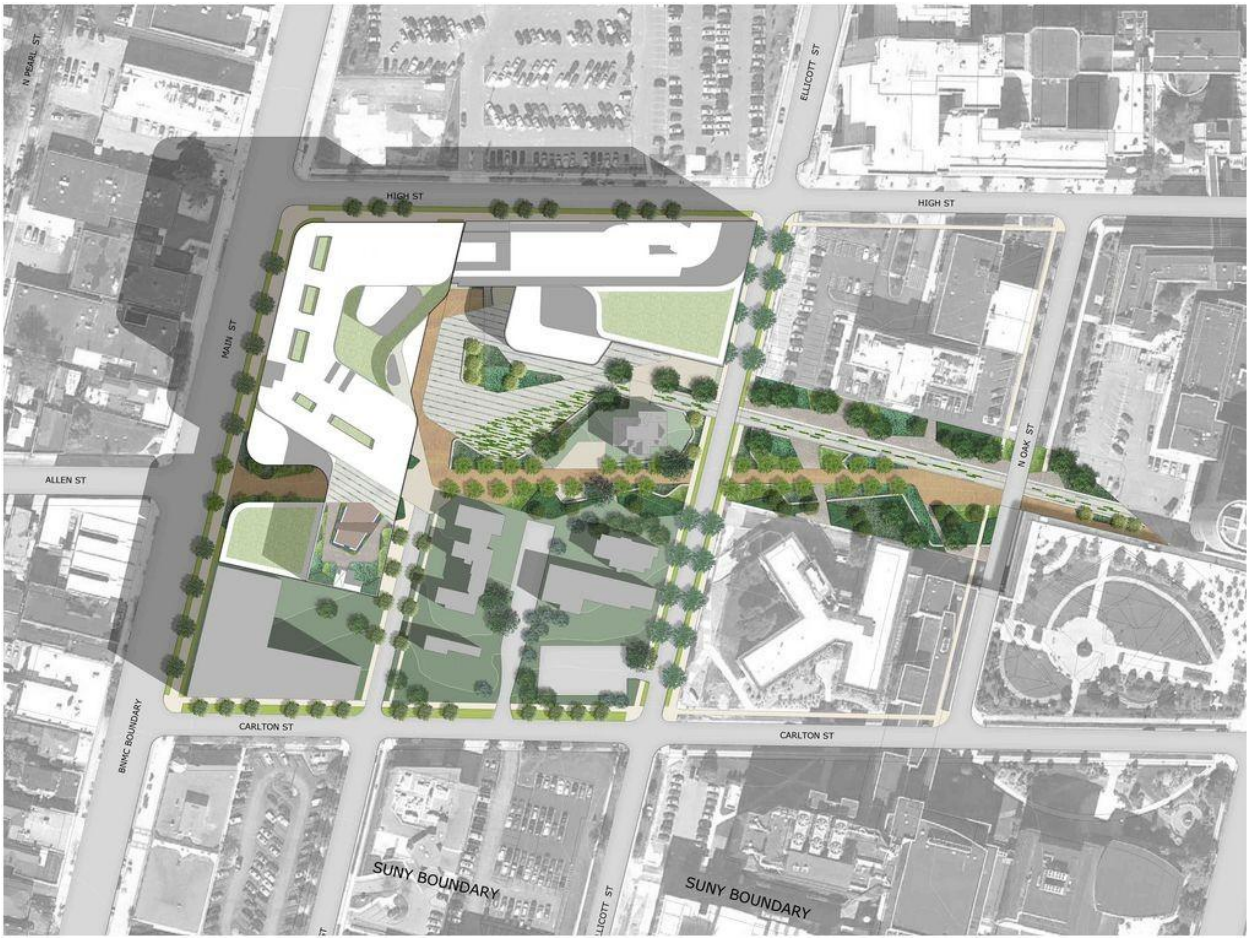


FIG 5.1.2.A - Site Plan, University at Buffalo School of Medicine and Biomedical Science
Retrieved from:
http://images.adsttc.com/media/images/557f/f645/6e53/dea0/a900/192f/large_jpg/site-plan_phase-2.jpg?1434449473

“Building a new medical school is a once-in-a-lifetime opportunity for our university and region, and a critical step in evolving the Buffalo Niagara Medical Campus into an academic health center on par with those of Pittsburgh and Cleveland,” said Michael E. Cain, vice president for health sciences and dean of the School of Medicine and Biomedical Sciences. Kenneth Drucker, FAIA, design principal for the project and design director for HOK’s New York office, said his team approached the medical school project “after a thorough analysis of the scale and texture of the city and the history, quality and craft of Buffalo architecture.”

FIG 5.1.2.B - University at Buffalo School of Medicine and Biomedical Science
Retrieved from:
http://images.adsttc.com/media/images/557f/f637/6e53/dea0/a900/192d/large_jpg/img_3-30.jpg?1434449460

FIG 5.1.2.C - University at Buffalo School of Medicine and Biomedical Science
Retrieved from:
http://images.adsttc.com/media/images/557f/f623/6e53/dea0/a900/192a/large_jpg/img_1-32.jpg?1434449440

FIG 5.1.2.D - University at Buffalo School of Medicine and Biomedical Science
Retrieved from:
http://images.adsttc.com/media/images/557f/f631/6e53/dea0/a900/192c/large_jpg/img_2-31.jpg?1434449453

5.1.3 University of Limerick Medical School

5.1.3.1 General Info

Architects	: **Grafton Architects**
Location	: **University of Limerick, Limerick, Ireland**
Architect in Charge	: **Shelley McNamara, Yvonne Farrell, Ger Carty, Philippe O'Sullivan, Matt McCullagh, Kieran O'Brien, Abi Hudson, David Healy, Simona Castelli, Kate O'Daly, Ciara Reddy, Paul O'Brien**
Project Managers	: **Kerin Contract Management**
Structural and Civil Engineers:	**PUNCH Consulting Engineers**
Area	: **4300.0 sqm**

Project Year : **2012**
Photographs : **Dennis Gilbert, Alice Clancy**

FIG 5.1.3.A - University of Limerick Medical School
Retrieved from:
http://images.adsttc.com/media/images/5154/b783/b3fc/4bdd/6d00/00af/large_jpg/Site_Plan.jpg?1364506452

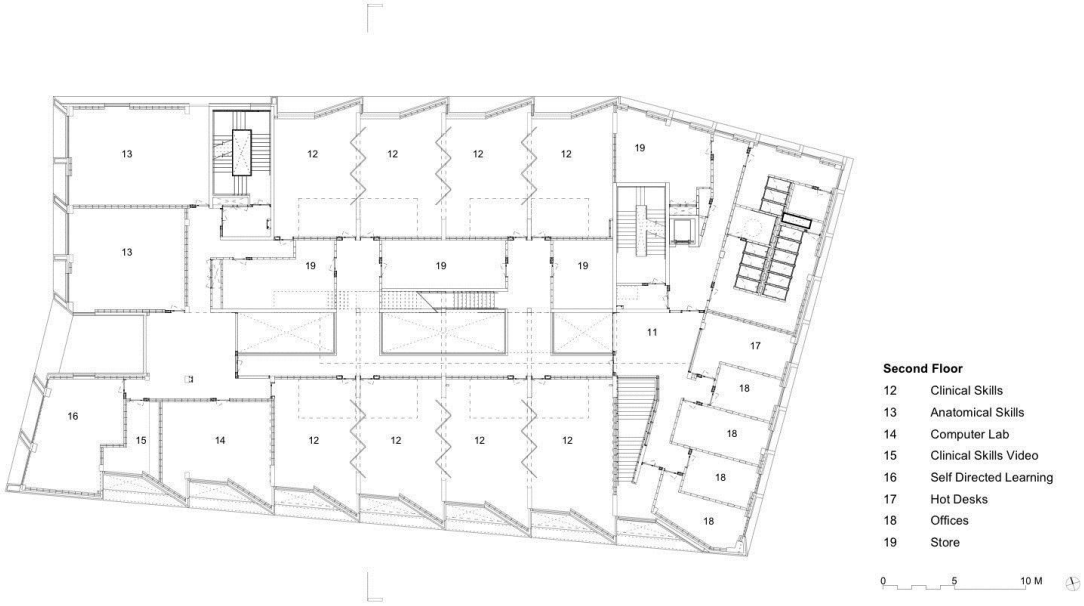


FIG 5.1.3.B - University of Limerick Medical School
Retrieved from:
http://images.adsttc.com/media/images/5165/c50b/b3fc/4b22/0100/0091/large_jpg/MEDICAL_SCHOOL_PLAN_02_SECOND_FLOOR.jpg?1365624073

FIG 5.1.3.C - University of Limerick Medical School
Retrieved from:
http://images.adsttc.com/media/images/5165/c519/b3fc/4b64/4d00/0096/large_jpg/PIAZZA_SITE_SECTION_WEB_SRGB.jpg?1365624086

5.1.3.2 From the Architect

The University of Limerick, in the South West of Ireland occupies a large territory, formerly a Demesne, and is situated on both sides of the lower reaches of the river Shannon, the longest and largest river in Ireland. Part of its most recent expansion to the north of this great river, accessible by pedestrian bridge from the existing campus, provides for the construction of a new medical school building and accommodation buildings for students attending the facility. These new buildings are also intended to address a large public open space which will ultimately become the focal point for this expansion of the campus to the North.
The aspiration is to combine faculty buildings and residences in a manner which encourages overlap and contributes to the life of the public spaces at the University.

FIG 5.1.3.D - University of Limerick Medical School (Interior Spaces)
Retrieved from:
http://images.adsttc.com/media/images/5154/b641/b3fc/4bdd/6d00/00ac/large_jpg/DG_-_Medical_School_-_View_of_Central_Space_01.jpg?1364506149

Aspects of the formal character are derived from an interpretation of the campus master plan which requires an organic approach to the making of public spaces on the north side of the river Shannon. Here the ground is sloping and remnants of the agrarian landscape pattern are still evident in the form of old field patterns and hedgerows

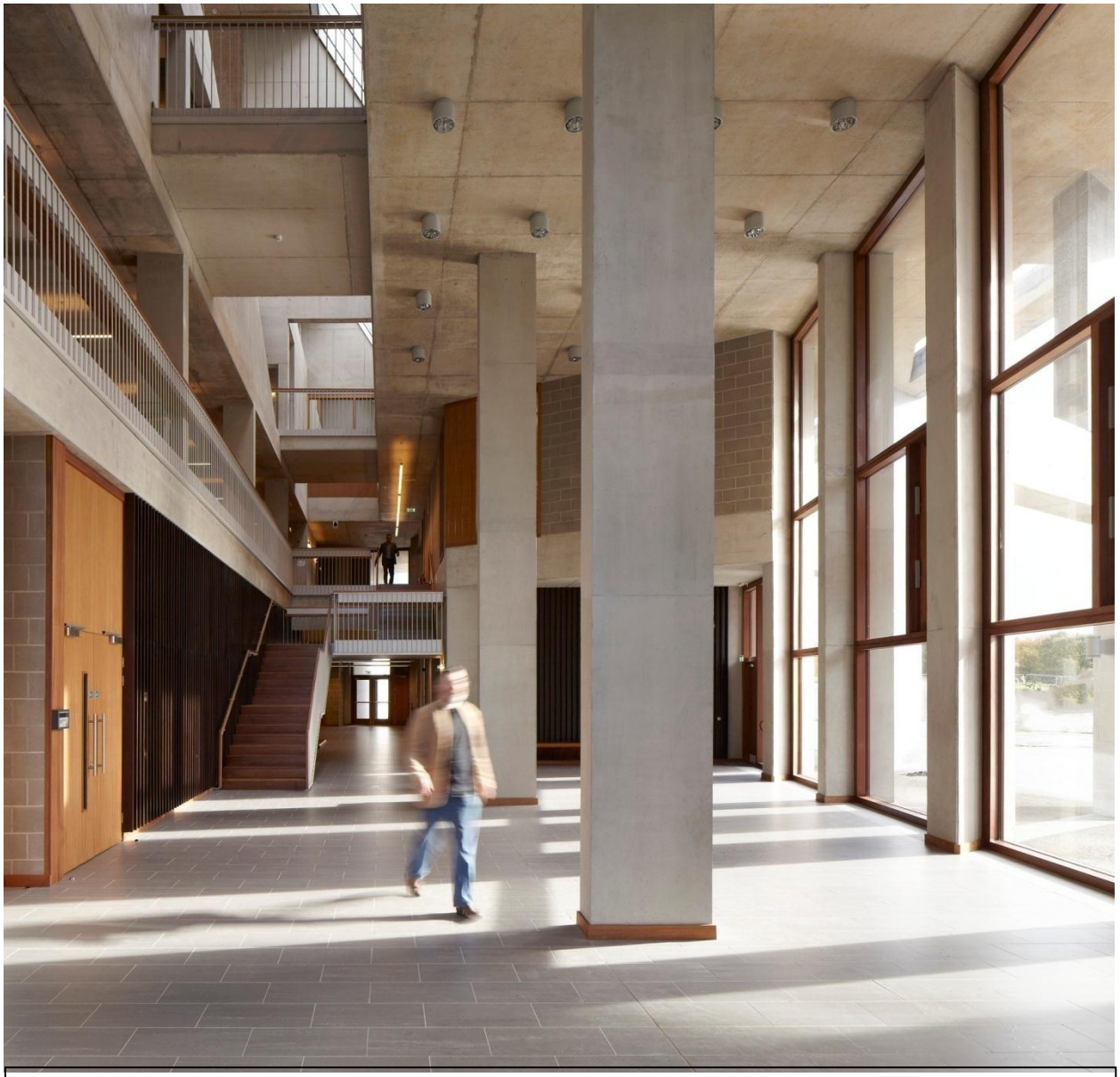


FIG 5.1.3.E - University of Limerick Medical School
Retrieved from:
http://images.adsttc.com/media/images/5154/b674/b3fc/4b02/1200/002b/large_jpg/DG_-_Medical_School_-_View_of_Foyer.jpg?1364506202

This new suite of buildings combines with three existing, neighboring institutions, the Sports Pavilion, the Irish World Academy of Music and Dance and the Health Sciences Building, in order to make a new public space.

The new buildings consist of a medical school, three blocks of student housing and a canopy / pergola forming a bus and bicycle shelter.

The Medical School, the last in a series of set pieces, acts as an anchor around which the other buildings now loosely rotate. The language of the medical school is that of an educational institution while the student residences appear like three large houses. The concrete bus shelter, together with the residences combine with the medical school to form a loose edge to the public space. The bus shelter canopy, steps and ramps negotiate the level change to the sports pavilion beyond.

The central space slopes gently to the west. Three oak trees, stone seats and steps occupy a central level platform subtly providing a focal point before the space moves out, fracturing at the edges to connect to the residences, car parking and other faculty buildings. The surfaces of the public space move from hard to soft, south sloping grassed spaces, designed with and without furniture to provide for leisure and lingering.
The buildings stand guard facing the public space, distinguished by their material.

Limestone is used to represent the 'formal' central medical school, making reference to the limestone territory of County Clare in which this side of the campus is located. The stone wall is folded, profiled and layered in response to orientation, sun , wind, rain and public activity. A colonnade to the south and west corner acts as a gathering and entrance space. In contrast the north and east walls are more mute.

In response to the deep plan, the roof-form is modulated to light multiple spaces, including the central circulation space, the clinical skills labs, the corridors, and a small roof terrace.

An open central stair connecting all of the primary spaces, threads through all levels of the interior, designed as a social space with enough room to stop and chat or lean on a balustrade / shelf and view the activity of the entrance and other spaces above and below.

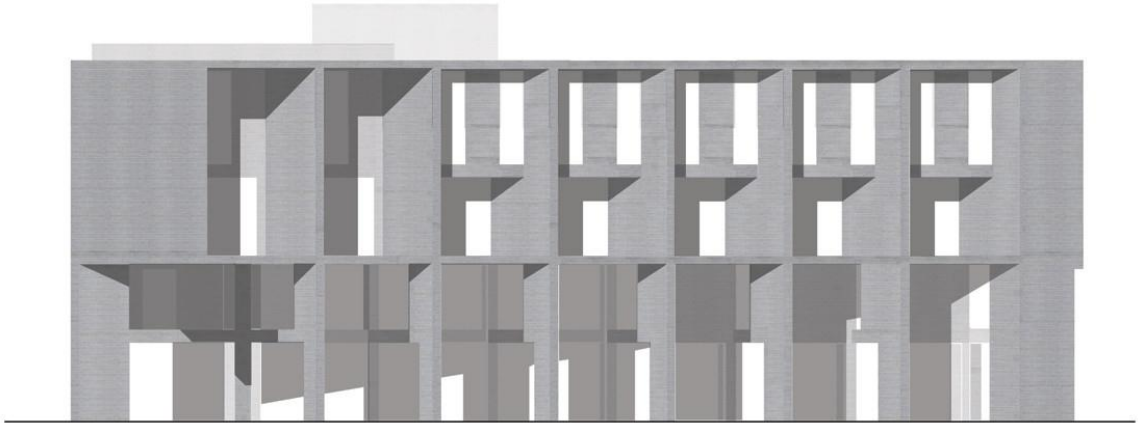


FIG 5.1.3.F - University of Limerick Medical School - Academic Building Elevation
Retrieved from:
http://images.adsttc.com/media/images/5165/c513/b3fc/4b22/0100/0092/large_jpg/FOLDED_WALL_STUDY_MEDICAL-SCHOOL_LINE_WEB_SRGB.jpg?1365624081

Brick follows through to the residences from the existing accommodation buildings behind. Here the material is given depth and the facades deeply carved providing a form of threshold between the domestic interior and the public space that they overlook. All living spaces address the public space to the south east with the more private study bedrooms facing north east or north west.

Cite:"University of Limerick Medical School / Grafton Architects" 05 Apr 2013. ArchDaily. Accessed 18 Aug 2015. <http://www.archdaily.com/352516/university-of-limerick-medical-school-grafton-architects/>

5.1.4 University of Tasmania School of Medicine

FIG 5.1.4.A - University of Tasmania School of Medicine
Retrieved from:
http://images.adsttc.com/media/images/5013/5cbf/28ba/0d0e/f000/0f9f/large_jpg/stringio.jpg?1414039680

5.1.4.1 General Information

Architects : **Lyons**
Location : **Liverpool St & Campbell St, Hobart TAS 7000, Australia**
Architects : **Lyons**
Area : **9700.0 sqm**
Project Year : **2009**
Photographs : **Dianna Snape Photography**

5.1.4.2 From the Architect

The new building for The University of Tasmania's School of Medicine and the Menzies Research Institute supports these institutions aspiration to deliver leading edge world-class clinical research and medical training.

FIG 5.1.4.A - University of Tasmania School of Medicine
Retrieved from:
http://images.adsttc.com/media/images/5013/5cdb/28ba/0d0e/f000/0fa5/large_jpg/stringio.jpg?1414039671

The conceptual basis for the project was to create a synergistic environment for these previously fragmented facets of the University. At the core of the concept is the creation of a 'new culture' reinforced through the building's image and its social and functional planning.

As a public building of the city of Hobart, it invites the participation of the street: through its corner entry; large transparent windows and its interstitial atrium space between the new building and the heritage listed Hollydene House.

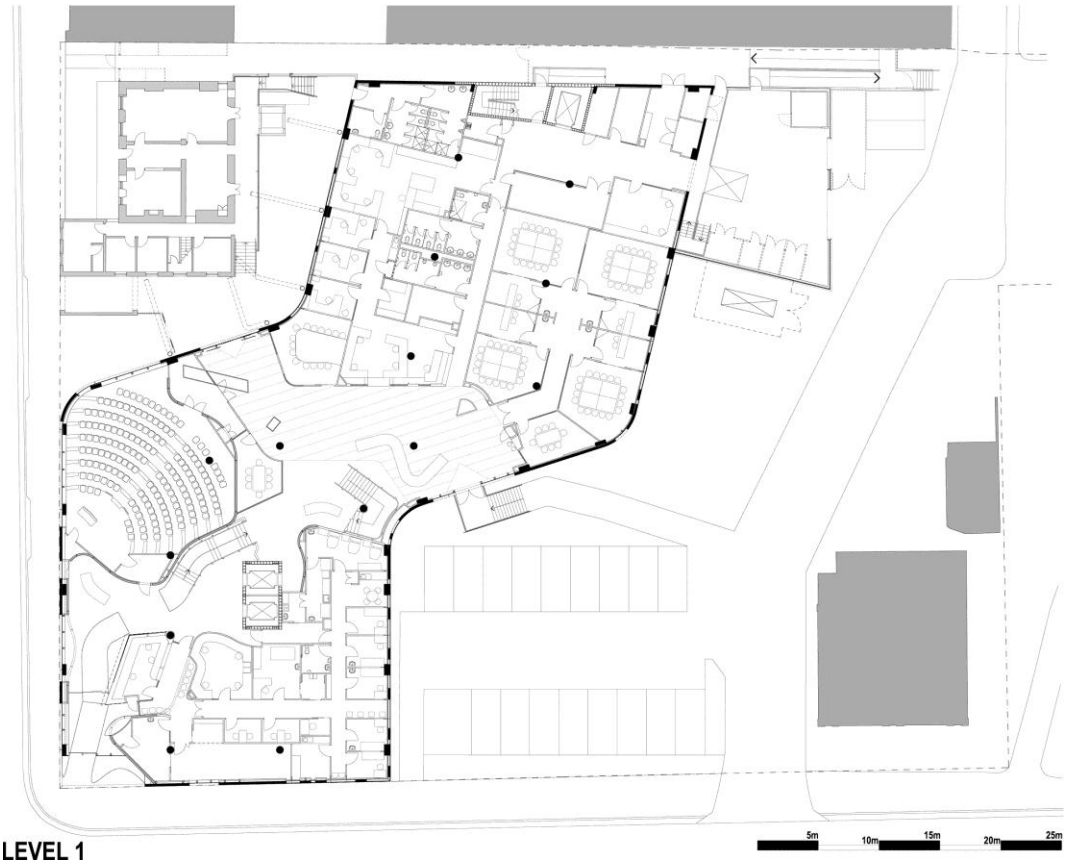
The building recognizes its role as a city landmark. One corner marks Liverpool and Campbell Street intersection, while, on the opposite side of the building, creates a dialogue with the landscape of the Domain and the vehicular movement of the Brooker Highway.

The image of the building, expressed through its fenestration is derived, abstractly, from the surrounding mountain ranges and Derwent River. The curvilinear form of the building is a reference to the nonexistent Park Rivulet which was influential in shaping the edge of the city grid, upon which the new building is tied. The shaped windows of the upper levels provide occupants with a means to see the spectacular landscape with new emphasis. On the street, the window 'arch' forms reference an already established local typology whilst abstractly symbolizing the mountain ranges which background Hobart city.

A collaborative team approach, requiring intensive co-ordination was required to achieve an outcome suitable for the varying needs of the building program. A range of other specialist allied disciplines were also required in the development of the design, including heritage, archaeology and interpretive consultants.

The Contractor collaboratively engaged the design team with all the sub-trades to optimise buildability and create lateral design solutions. This was particularly relevant in respect to the facade, where the precast subcontractor assisted in design development and documentation to achieve a highly cost effective solution whilst still meeting the design aspirations.

Green Star 5 Star was used as a reference rating tool to establish the extensive environmental strategies for the building. These included; minimized VOC's; concrete and recycled timber flooring; galvanized steel in lieu of aluminum; variable air volume systems and fume cupboards; run around coil heat recovery systems; building automation system; solar water system; extensive energy and water metering; daylight and artificial lighting control; high efficiency lighting.



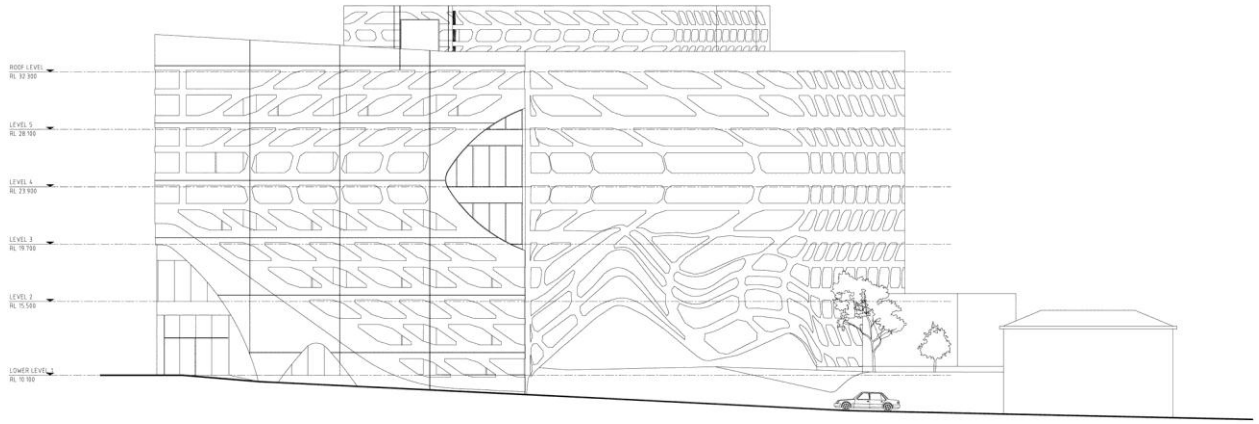
LEVEL 1

LEVEL 2

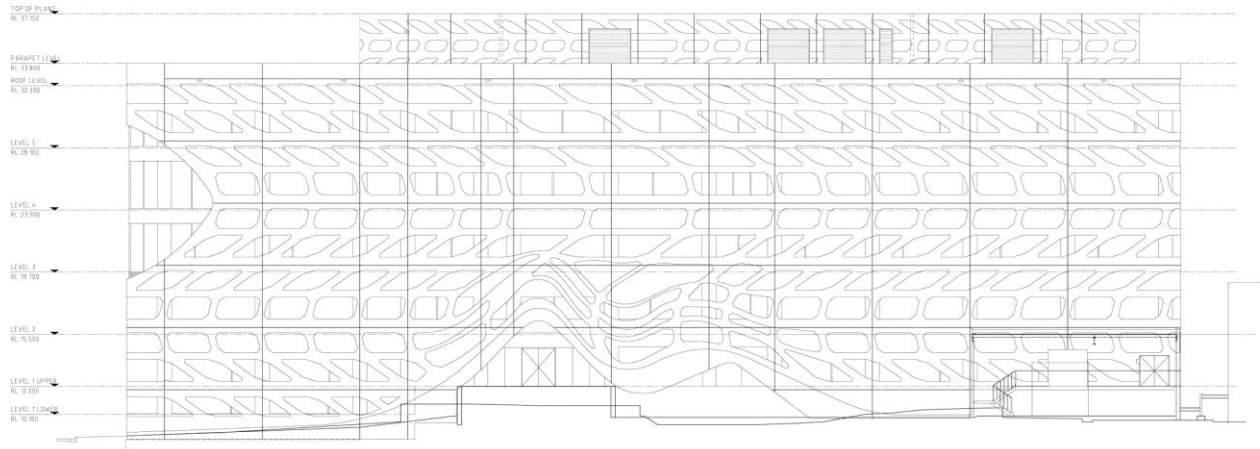
LEVEL 3

LEVEL 4

LEVEL 5



LIVERPOOL STREET ELEVATION



BROOKER AVENUE ELEVATION

5.2 Analysis and Findings

Local and international, both types of projects show various design aspects basing on which the respective designs have been finalized. Armed Forces Medical College in Dhaka is the most closest type of project with similar kinds of functions and facilities. In the design of Army Medical College Chittagong, it has to be ensured that there are facilities for similar activities like military training, sports activities, cultural activities, computer courses etc like AFMC.

On the other hand, University at Buffalo School of Medicine and Biomedical Science has shown how to treat a new institute as the king pin for the site surroundings and future developments.

University of Limerick Medical School shows how to treat the undulated landscape to blend architecture with surroundings, and how to enhance the interior spaces as well.

And, from University of Tasmania School of Medicine, we learn how to consider the city context and city perspectives while designing any academic infrastructure.

CHAPTER 6 Program and Development

6.1 Program

There are in total eleven (11) departments in a medical college, of which eight (08) departments are facilitated in the academic space, whereas, other three (03) are conducted in hospital. Here, the detailed program of the 8 major departments are tabulated. These program is generated on the basis of "Bangladesh Medical & Dental Council Standards" requirement for a medical college with 150 students intake capability.

A. Department of Anatomy

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Dissection Hall - 04 x attendants	01		4500 + 200	4700
2	Tutorial Room	04	20	400	1600
3	Histology Class room	01	50	1600	1600
4	Histology Laboratory - 01 x Lab Technician	01		400	400
5	Museum - 01 x Taxidermist	01		2500	2500
6	Library-cum-Seminar	01		1200	1200
7	Dead Body Prep	01			
8	Store room - 01 x Storekeeper	01		120	120
9	Office Room - 01 x Computer Operator - 01 x Clerk	01		240	240
10	Research Room	01		240	240
11	Animal House	01			
12	Examination Hall	01	250	5000	5000
13	Professor's room (with space for PA to Professor)	01	01	240	240
14	Associate Professor's Room - 02 x Associate Professor	02	01	120	240
15	Assistant Professor's Room - 04 x Assistant Professor	04	01	120	480
16	Curator's Room	01	01	120	480
17	Lecturers' Room - 18 x lecturer	05	04	240	1200
18	Room for MLSS - 10 x MLSS	01	10	240	240
19	Cleaners' Room with storage - 04 x Cleaner	01	04	216	216
20	Toilet blocks	As Req.	As Req.	As Req.	As Req.

B. Department of Physiology

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Laboratory - 03 x Lab. Attendants - 02 x Technician (Senior) - 03 x Technician (Junior)	01	50	1600 + 200	1800
2	Tutorial Room	04	20	400	1600
3	Library-cum-Seminar	01		1200	1200
4	Store Room	01		120	120
5	Office Room - 01 x Administration officer - 01 x Computer Operator - 01 x Record Keeper	01	04	120	120
6	Research room	01		240	240
7	Examination hall	01	250	5000	5000
8	Professor's room (with space for PA to Professor)	01	01	240	240
9	Associate Professor's Room - 02 x Assoc. Prof	02	01	120	240
10	Assistant Professor's Room - 04 x Asst. Prof.	04	01	120	480
11	Lecturers' Room - 10 x Lecturer - 02 x Lecturer in Biophysics	03	04	240	720
12	Room for MLSS (Peon/Aya) - 10 x MLSS	01	10	240	240
13	Cleaners' Room with storage - 06 x Cleaner	01	06	216	216
14	Toilet blocks	As Req.	As Req.	As Req.	As Req.

C. Department of Biochemistry

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Clinical Laboratory - Attached waiting room - Attached specimens' room - 06 x Lab. Attendants	01	50	1600 + 200 + 200 + 200	2200
2	Tutorial Room	06	20	400	2400
3	Library	01	50	1200	1200
4	Practical Class Room - Store (01 x Store keeper) - Anterooms for technologists 02 x Technologist (Senior) 04 x Technologist (Junior) - Preparation Room	01	50	2500	2500
5	Office Room - 01 x Office Clerk - 01 x Computer Operator	01	04	120	120
6	SeminarRoom	01	200	2000	2000
7	Professor's room (with space for PA to Professor)	01	01	240	240
8	Associate Professor's Room - 02 x Assoc. Prof.	02	01	120	240
9	Assistant Professor's Room - 04 x Asst. Prof	04	01	120	480
10	Lecturers' Room - 12 x Lecturer	03	04	240	720
11	Biochemist - 04 x Biochemists	01	04	240	240
12	Room for MLSS (Peon/Aya) - 08 x MLSS	01	08	240	240
13	Cleaners' Room with storage - 05 x Cleaner	01	05	216	216
14	Toilet blocks	As Req.	As Req.	As Req.	As Req.

D. Department of Pharmacology

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Lecture Theatre	01	250		
2	Demonstration Room	05	25	500	2500
3	Library& IT room	01	50	1200	1200
4	Practical Class Room - Store (02 x Store keeper) - Anterooms for technologists - 04 x Lab. Attendants - 02 x Technician - Preparation Room	01	50	2500	2500
5	Office Room - 01 x Record Clerk - 02 x Computer Operator - 04 x Office Attendants	01	08	240	240
6	AnimalHouse - 01 x Animal house - 02 x Caretaker's room	01	02	600	600
7	Museum - 01 x Taxidermist	01		2500	2500
8	Research Room	01			
9	Professor's room (with space for PA to Professor)	01	01	240	240
10	Associate Professor's Room - 02 x Assoc. Prof.	02	01	120	240
11	Assistant Professor's Room - 03 x Asst. Prof.	03	01	120	360
12	Lecturers' Room - 15 x Lecturer	04	04	240	960
13	Pharmaceutical Chemist's Room - 02 x Phar. Chemist	01	02	216	216
14	Room for MLSS (Peon/Aya) - 06 x MLSS	01	08	240	240
15	Cleaners' Room with storage - 04 x Cleaner	01	04	216	216
16	Toilet blocks	As Req.	As Req.	As Req.	As Req.

E. Department of Pathology

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Lecture Theatre	01	250		
2	Tutorial & Demonstration Room - 06 x Tutorial class room - 03 x Lecture Class room	08	25	500	4000
3	Library-cum-Seminar - 500 books (min.)	02	25	600	1200
4	Practical Class Room - Store (02 x Store keeper) - Anterooms for technologists - 06 x Med. Technologist (Senior) - 03 x Med. Technologist (Junior) - 03 x Lab. Attendants - Preparation Room	03	50	2500	7500
5	Office Room - 02 x Record Clerk - 02 x Computer Operator	01	04	120	120
6	Animal House - 02 x Animal house - 02 x Caretaker's room	01	02	600	600
7	Museum - 1000 specimens - 01 x Curator - Seats + Study	01		2500	2500
8	Research Room	01		240	240
9	Professor's room - 03 x Professors (with space for PA to Professor)	03	03	240	720
10	Associate Professor's Room - 03 x Assoc. Prof.	03	01	120	360
11	Assistant Professor's Room - 06 x Asst. Prof.	06	01	120	720
12	Lecturers' Room - 08 x Lecturer	02	04	240	480
13	Service Laboratory - 02 x Sample Collection Room - 01 x Sample Processing Room - 01 x Serology Room - 02 x Microscopy Room - 01 x Report Delivery Room - 01 x Patients' Waiting Room	01		2500	2500
14	Space for Disposal	As Req.	As Req.	As Req.	As Req.
15	Toilet blocks	As Req.	As Req.	As Req.	As Req.

F. Department of Microbiology

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Lecture Theatre	01	250		
2	Tutorial & Demonstration Room - 06 x Tutorial class room - 03 x Lecture Class room	09	25	500	4500
3	Library-cum-Seminar - 500 books (min.)	01	25	600	600
4	Practical Class Room - Store (02 x Store keeper) - Anterooms for technologists - 06 x Med. Technologist (Senior) - 03 x med. Technologist (Junior) - 03 x Lab. Attendants - 01 x technician - Preparation Room	03	50	2500	7500
5	Office Room - 02 x Record Clerk - 02 x Computer Operator	01	04	120	120
6	Animal House - 02 x Animal house - 02 x Caretaker's room	01	02	600	600
7	Museum - 1000 specimens - 01 x Curator - Seats + Study	01		2500	2500
8	Research Room	01		240	240
9	Professor's room - 03 x Professor (with space for PA to Professor)	03	01	240	720
10	Associate Professor's Room	02	01	120	240
11	Assistant Professor's Room	04	01	120	480
12	Lecturers' Room - 06 x Lecturer - 02 x Clinical Microbiologist	02	04	240	480
13	Service Laboratory - 02 x Sample Collection Room - 01 x Sample Processing Room - 01 x Serology Room - 02 x Microscopy Room - 01 x Report Delivery Room - 01 x Patients' Waiting Room	01		2500	2500

14	Space for Disposal	As Req.	As Req.	As Req.	As Req.
15	Toilet blocks	As Req.	As Req.	As Req.	As Req.

G. Department of Forensic Medicine

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Teaching Morgue (Separate building) - 01 x Autopsy room - 01 x Change room - 01 x Shower room -01 x Preparation wash room -01 x Isolation room -01 x Mortuary cooler for 12 bodies (min.) -01 x Student gallery for 50 students (min.) - 01 x Portable radiology room -01 x Dead house -01 x Reception room -01 x Specimen room -01 x Decomposed dead bodies' room -01 x Seating room for autopsy surgeons Room for: - 02 x Mortuary Technician	01		6000	6000
2	Museum - 01 x Curator	01		2500	2500
3	Forensic Science Laboratory (incl. Analytical Toxicology laboratory) (located in the Morgue Building) - 01 x Forensic DNA profiling section - 01 x Histopathology section - 01 x Toxicology section - 01 x Ballistic section - 01 x Fingerprint & document examination section - 01 x Biology & Serology section Room for: - 01 x Scientific Officer - 01 x Lab Technologist - 02 x Lab. Attendant	01		2500	2500
4	Poison Information Centre (incl. Research, Documentation & CME)	01		360	360

5	Professor's Room (with room for UDC-cum-PS)	01	01	240	240
6	Associate Professor's Room - 03 x Assoc. Prof.	03	01	120	360
7	Assistant Professor's Room - 04 x Asst. Prof.	04	01	120	480
8	Lecturers' Room - 10 x Lecturer	03	04	240	720
9	Nurses' Room - 04 x Nurse	01	04	240	240
10	Office Room - 01 x Computer Operator	01	04	120	120
11	Room for MLSS - 10 x MLSS	01	10	240	240
12	Room for Cleaners & storage - 02 x Cleaner	01	04	216	216
13	Toilet blocks	As Req.	As Req.	As Req.	As Req.

H. Department of Community Medicine

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Laboratory - Separate Lab/Demonstration room - Room for: 02 x Demonstrators 02 x Technicians	01		2500	2500
2	Tutorial Room	06	25	500	3000
3	Library-cum-Seminar	01	25	600	600
4	Office Room - 02 x Office Assistant - 01 x Computer Operator - 01 x Record Clerk	01	04	120	120
5	Museum - 01 x Curator - Seats + Study	01		2500	2500
6	Research Cell - 01 x Room for reporting & conducting ongoing research activities - 01 x Journal-&-Record Room - 01 x Staff Room	01		360	360
7	Professor's room (with space for PA to Professor)	01	01	240	240
8	Associate Professor's Room - 06 x Assoc. Prof (C. med.) - 01 x Assoc. Prof (Epidemiology)	07	01	120	840
9	Assistant Professor's Room - 06 x Asst. Prof. (C. Med.) - 01 x Asst. Prof. (Epidemiology) - 01 x Asst. Prof. (Statistics) - 01 x Asst. Prof. (Beh. Sci.)	09	01	120	1080
10	Lecturers' Room - 12 x Lecturer - 01 x Health Educator	04	04	240	960
11	Room for: - 04 x MLSS - 03 x Aya	01	08	240	240
12	Cleaners' Room with Storage - 02 x Cleaner	01	02	216	216
13	Roof for RFST hands - 02 x Cook - 02 x Driver (RFST)	01	04	216	216
14	Toilet blocks	As Req.	As Req.	As Req.	As Req.

I. Non-Departmental Facilities within Academic Building

Sl. No	Title	No. of Units	No. of Persons/unit	Area per Unit Sq.ft	Total Area Sq.ft
1	Common Room (Male)	01	300	3000	3000
2	Common Room (Female)	01	200	2000	2000
3	Common Room (Interns)	01	100	1000	1000
4	Prayer Room (Male)	01	300	3000	3000
5	Prayer Room (Female)	01	200	2000	2000
6	Indoor Games Room (Male)	01	300	3000	3000
7	Indoor Games Room (Female)	01	200	2000	2000
8	Central Computer lab	01	50	2000	2000
9	Toilet blocks	As Req.	As Req.	As Req.	As Req.
COLLEGE ADMINISTRATION DIVISION					
9	Room of Commandant - Rank: Major General (With Attached Toilet)	01	01	240	240
10	Room of Deputy Commandant & Director Training - Rank: Brigadier General (With Attached Toilet)	01	01	240	240
11	Room of GSO-2 (Trg) - Rank: Major (With Attached Toilet)	01	01	180	180
12	Room of GSO-2 (Coord) - Rank: Major (With Attached Toilet)	01	01	180	180
13	Room of DAA & QMG - Rank: Major (With Attached Toilet)	01	01	180	180
14	Accounts/messing Officer - Rank: Captain (With Attached Toilet)	01	01	180	180
15	Room for ADC of Commandant (With Attached Toilet)	01	01	180	180
16	Meeting Room	01	30	1000	1000
17	Waiting Room	01	30	500	500
18	Record Room	01		216	216
19	Office Room - 08 x Office Staffs with Computer table	01	08	240	240
20	Pantry	01		100	100
21	Room for Runners/PA - 05 x Runner/PA	01	05	216	216
22	Office Dining (Class-1 Officers)	01	10	300	300

23	Office Dining (Other Staffs)	01	20	600	600
24	Toilet blocks	As Req.	As Req.	As Req.	As Req.

6.2 Rationalization of the Program

Program of Army Medical College Chittagong was generated on the detailed requirements of the military authorities of 24th Infantry Division, Chittagong, who are the governing body of the institution, and also the standards specified in the "Bangladesh Medical & Dental Council".

As this land is under the jurisdiction of Cantonment Board, thus, Bangladesh National Building Code (BNBC) is not applicable for this site, rather, the building code of cantonment administered zone will be applicable for this area.

Programme of college administrative division has been generated basing on the prevailing administrative body structure of Armed Forces Medical College, Dhaka.

The specified program is detailed for 150 students intake per year according to the BM&DC standards.

CHAPTER 7 Conceptual Stage and Design Development

7.1 Concept

Main idea behind designing this institute has been *the "optimum intervention in the natural characteristics"* of the site. Throughout the design process, objective was to design a low-tone architecture that will serve the required functions but will never over-power the indomitable beauty of the nature. Zipping the various existing landscapes, redefining niches, giving experiences of serenity of nature have been the key points throughout the process.

In this regard, the design was first started with a motto to establish co-existence of both architecture and landscape in the same plate. masses were plucked into hills, plucked along contour lines of hilly surfaces, set on hill-bases, connected through bridges and tunnels. Various experiments like these led to a rather lower tone low-height axially arranged forms, which tied the existing landscapes, generated feeling of natural but intimate spaces. Most focus was given to generate spaces outside the academic mass rather than inside the academic mass. Pedestrians were moves in organic lines among regular forms to create a continuous change of vistas and apertures. Visual connections between different topographies have played an important role to draw out the silent idea behind the design of this campus.

To sum up, it can be said that, serenity, human lives at different experiential altitudes and untouched natural spaces have chiselled-out the total picture of the design project. Planned introduction of indigenous beautiful trees to contain natural spaces has pushed the design product into a new level.

7.1.1 SCHEMATIC AND ZONING

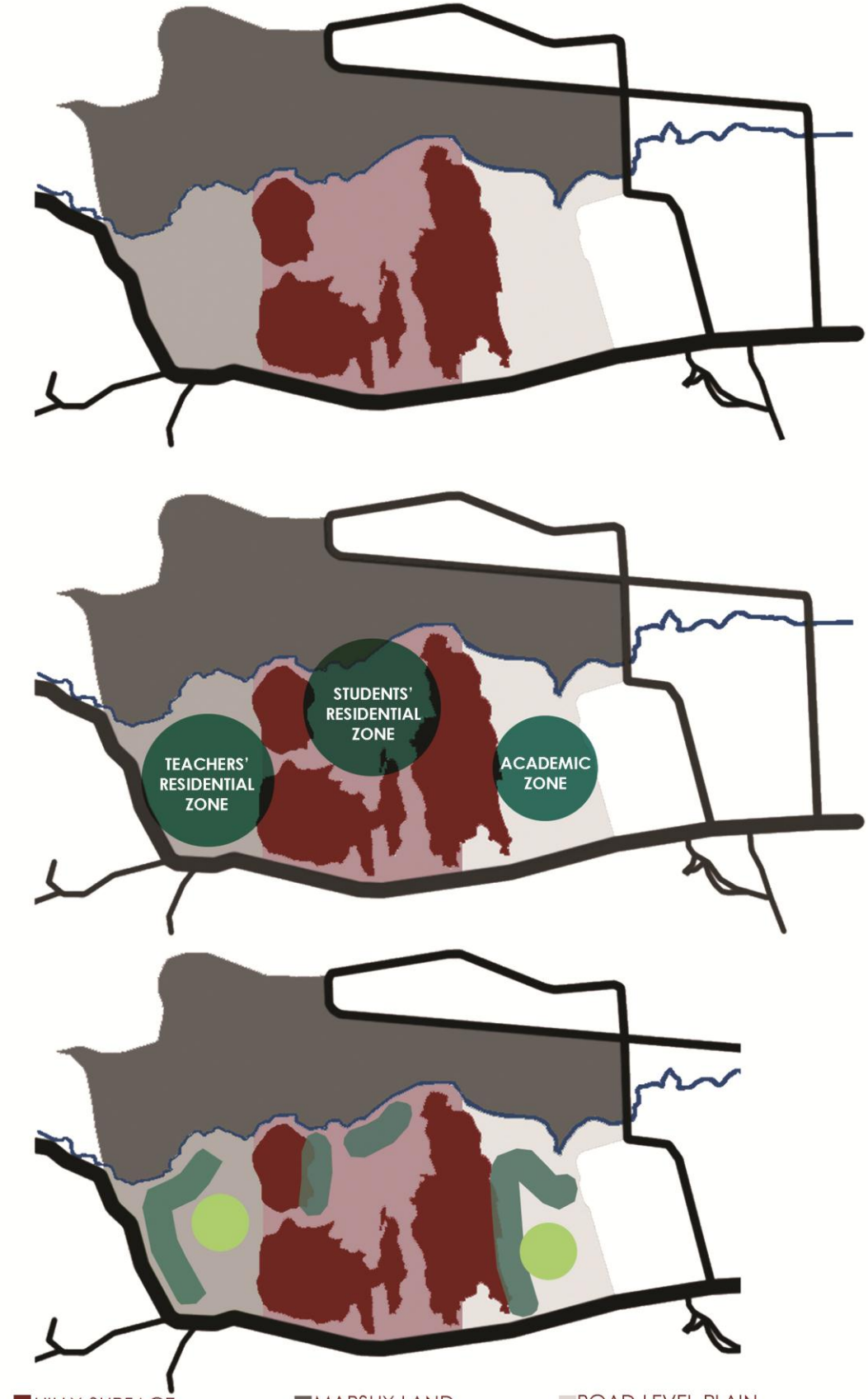


FIGURE: ZONING AND SCHEMATIC

7.1.2 VISUAL AND SPATIAL CONNECTION

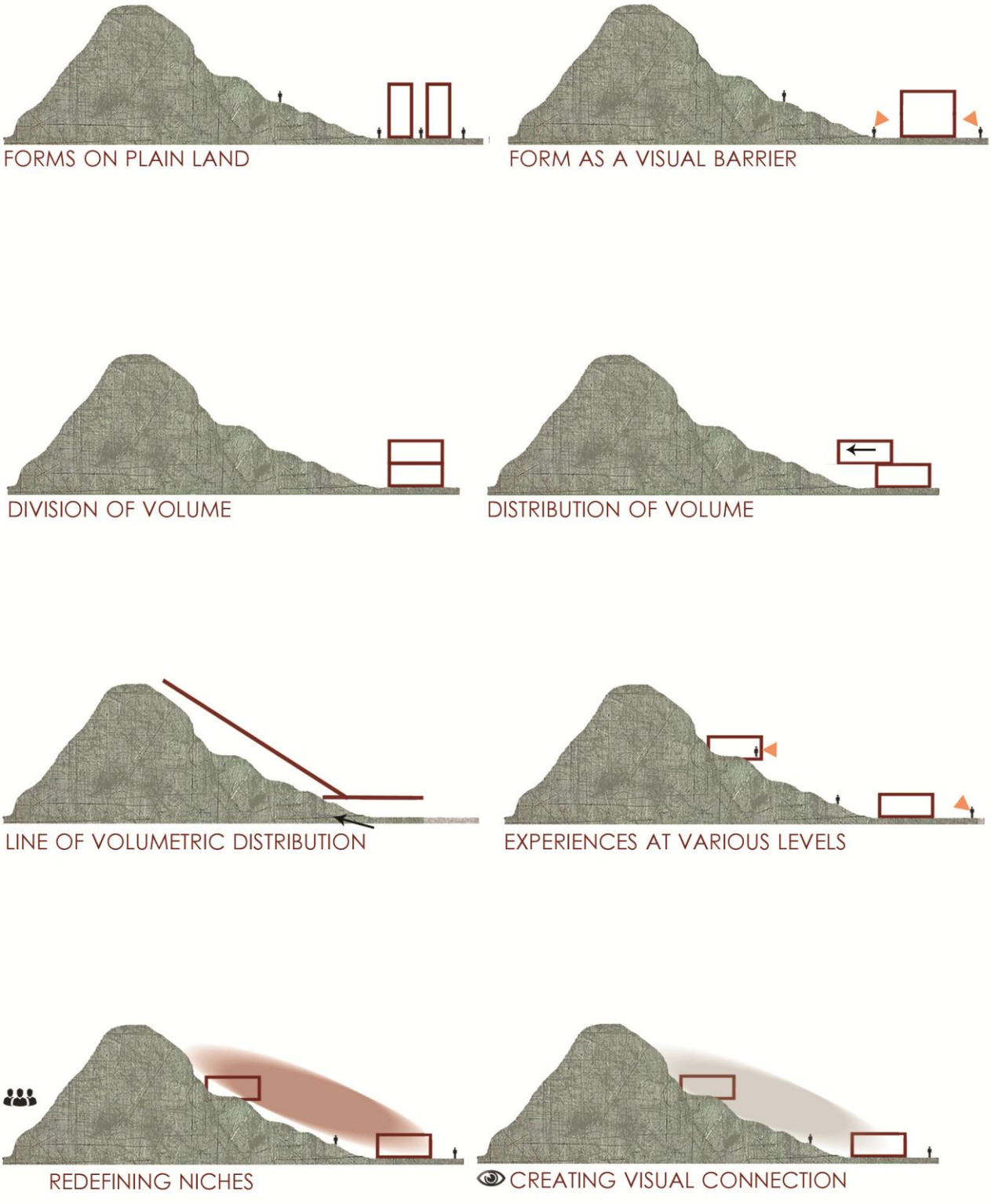


FIGURE: VISUAL AND SPATIAL CONNECTION

7.1.3 ZIPPING LANDSCAPES

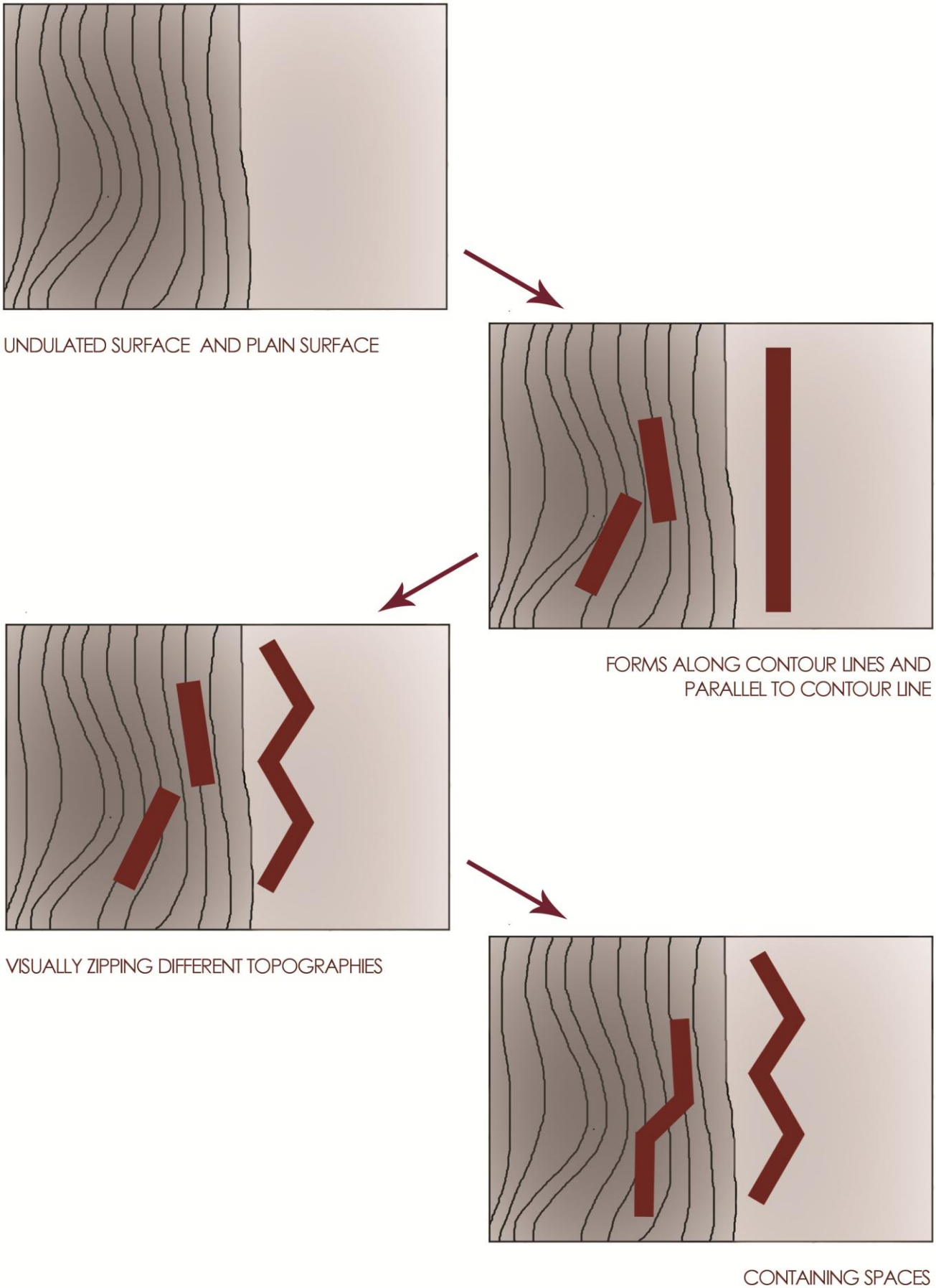


FIGURE: ZIPPING LANDSCAPES

7.1.4 AXIAL ALLOCATION

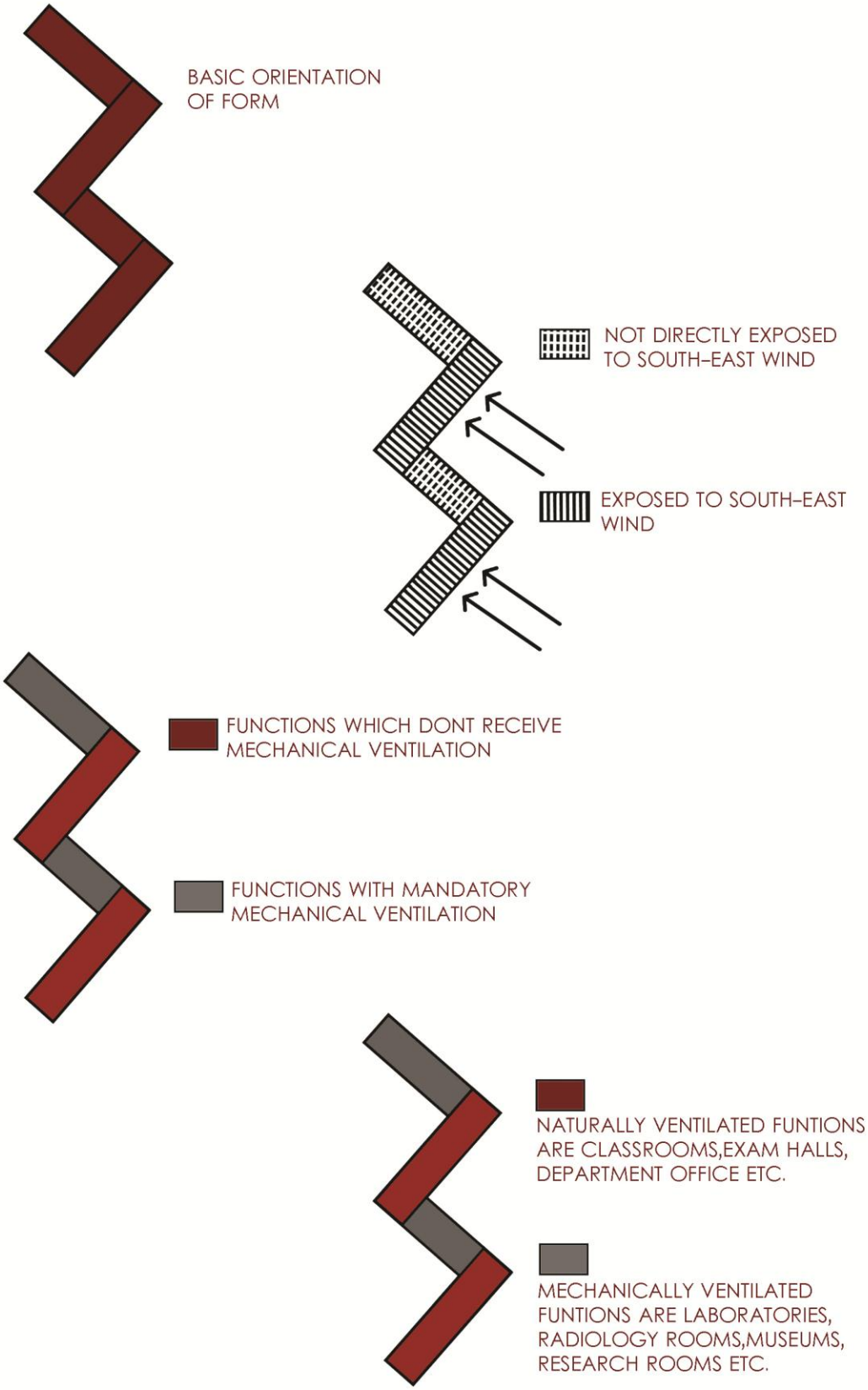


FIGURE: AXIAL ALLOCATION

7.1.5 FUNCTIONAL DISTRIBUTION

DEPARTMENT OF ANATOMY
DEPARTMENT OF PHYSIOLOGY
CLASS ROOMS
TOILETS
DEPARTMENT OF BIOCHEMISTRY
ADMINISTRATION

FUNCTIONAL DISTRIBUTION OF GROUND FLOOR

DEPARTMENT OF COMMUNITY MEDICINE
CLASS ROOMS
TOILETS
DEPARTMENT OF FORENSIC MEDICINE
CIRCULATION

FUNCTIONAL DISTRIBUTION OF FIRST FLOOR

DEPARTMENT OF PATHOLOGY
CLASSROOMS
CIRCULATION
DEPARTMENT OF MICROBIOLOGY
TOILETS

FUNCTIONAL DISTRIBUTION OF SECOND FLOOR

DEPARTMENT OF MICROBIOLOGY
DEPARTMENT OF PHARMACOLOGY
CIRCULATION
DEPARTMENT OF PATHOLOGY
TOILETS
CLASSROOMS

FUNCTIONAL DISTRIBUTION OF THIRD FLOOR

FIGURE: FUNCTIONAL DISTRIBUTION

7.1.6 WINDOW DETAILS

OPEN

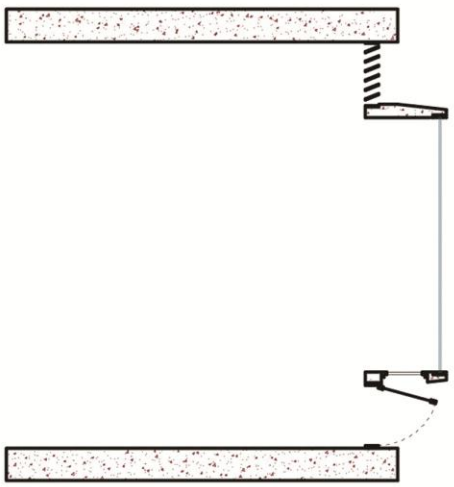
CLOSED

TYPE A : FOLDING

TYPE B : FIXED

OPEN

CLOSED

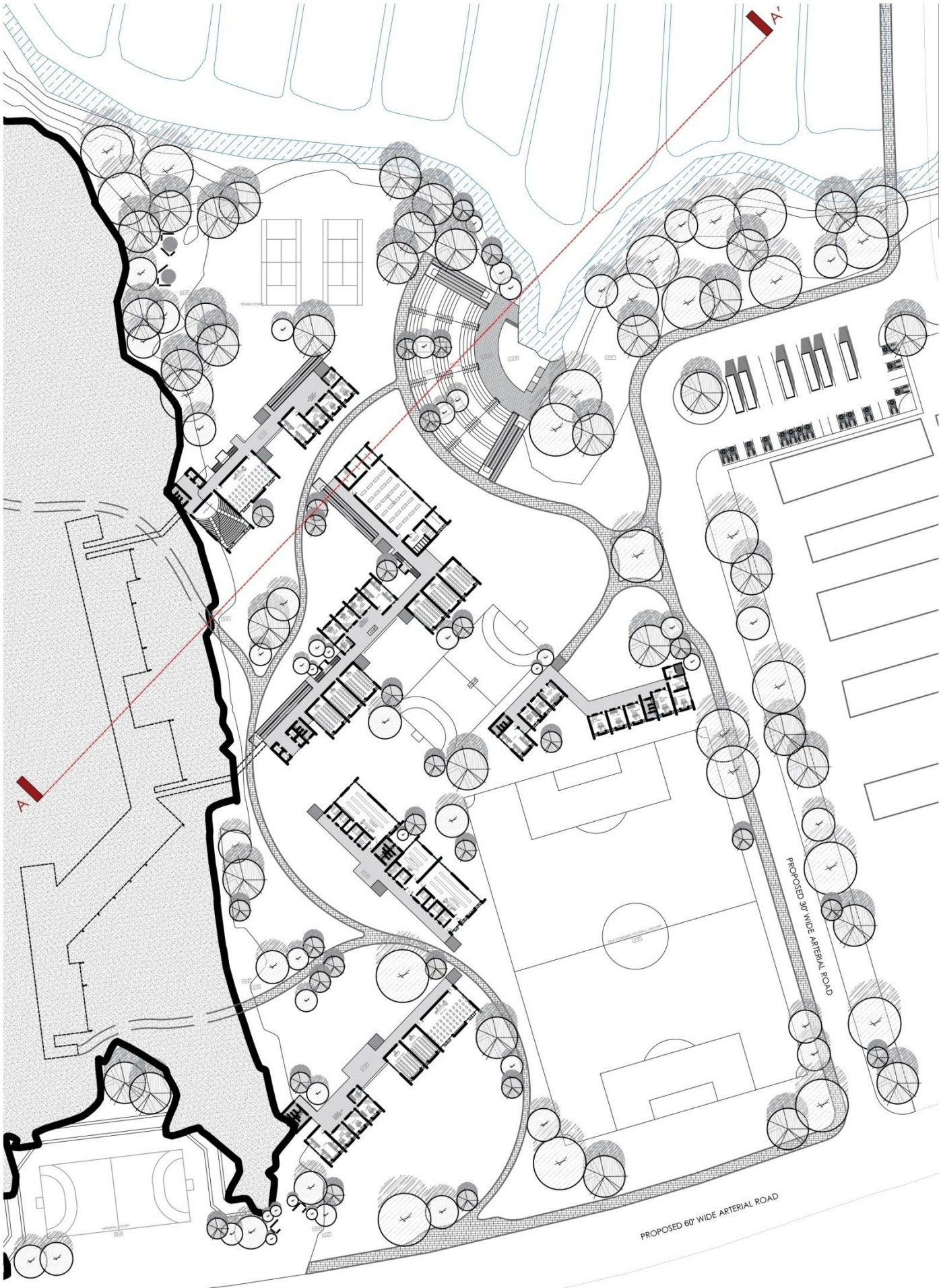


SECTION

TYPE C : MONSOON WINDOW

FIGURE: WINDOW DETAILS

7.2 DRAWINGS



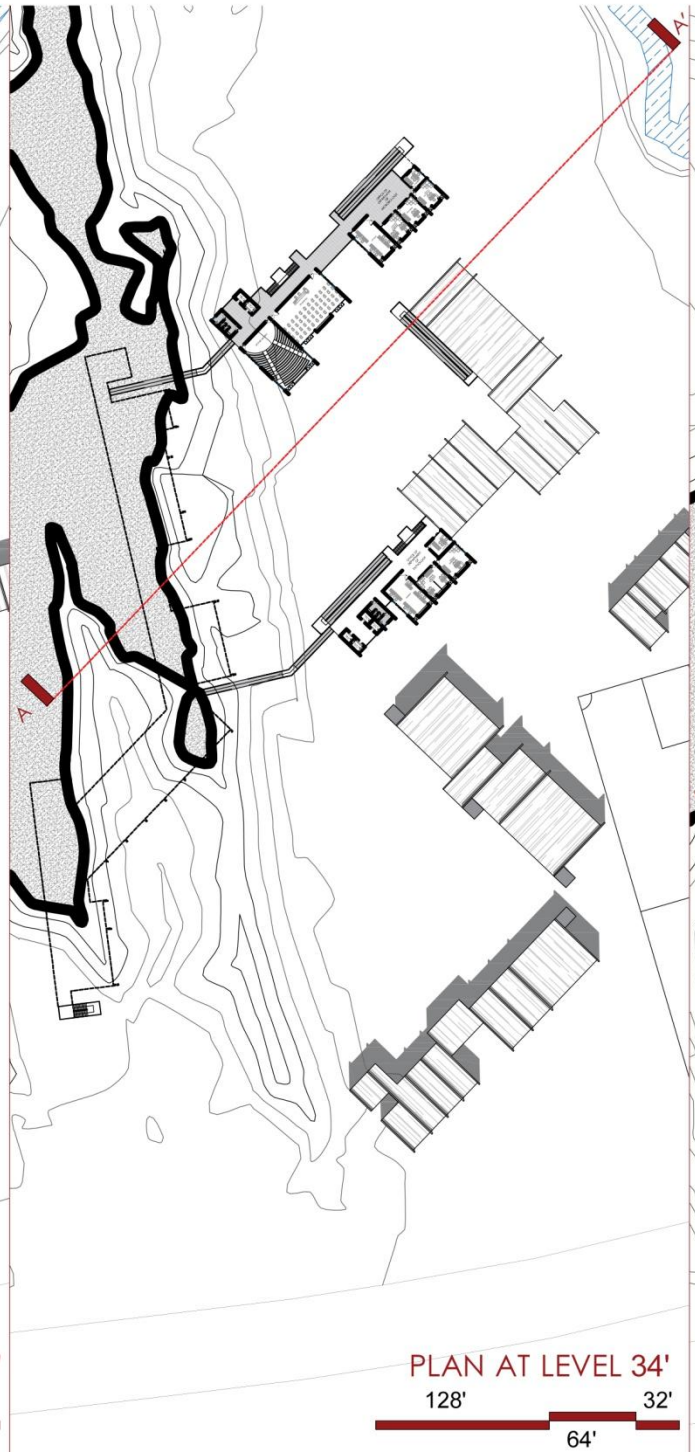
GROUND FLOOR PLAN

128' 64' 32'

PLAN AT LEVEL 21'

128' 32'

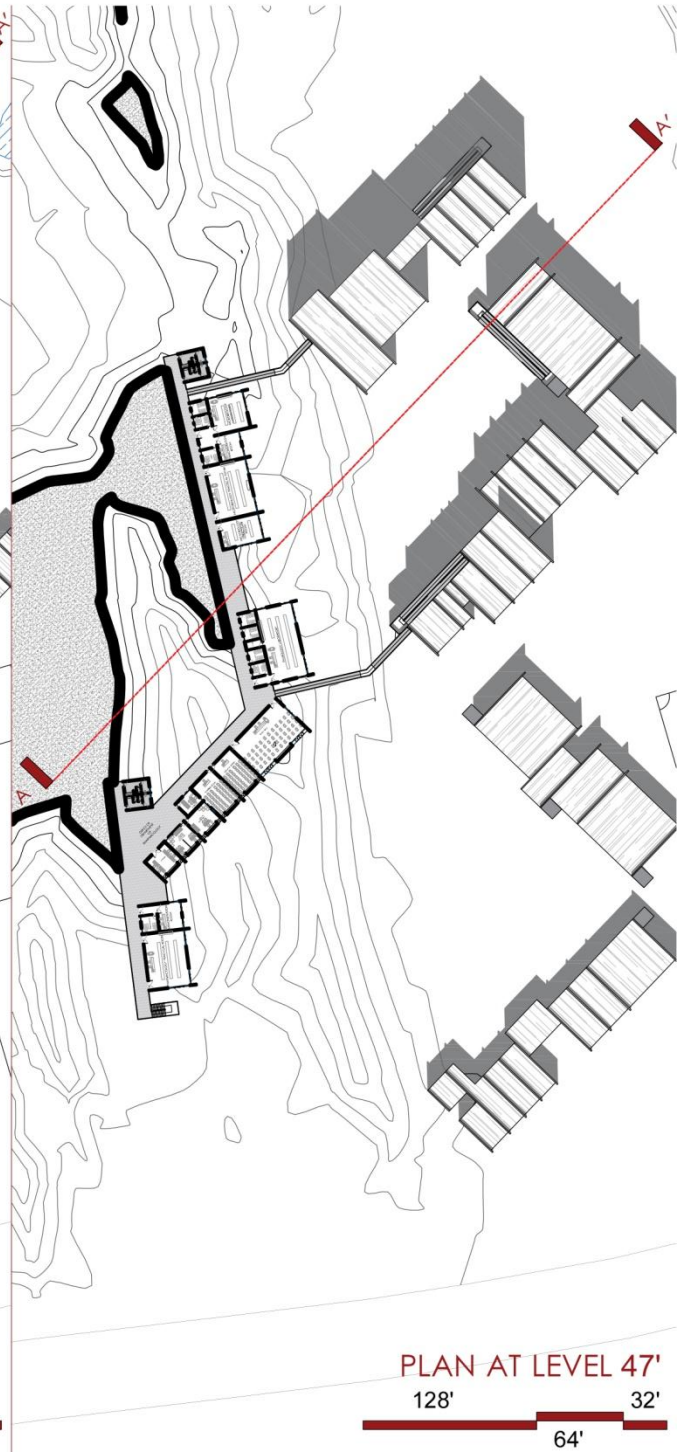
64'



PLAN AT LEVEL 34'

128' 32'

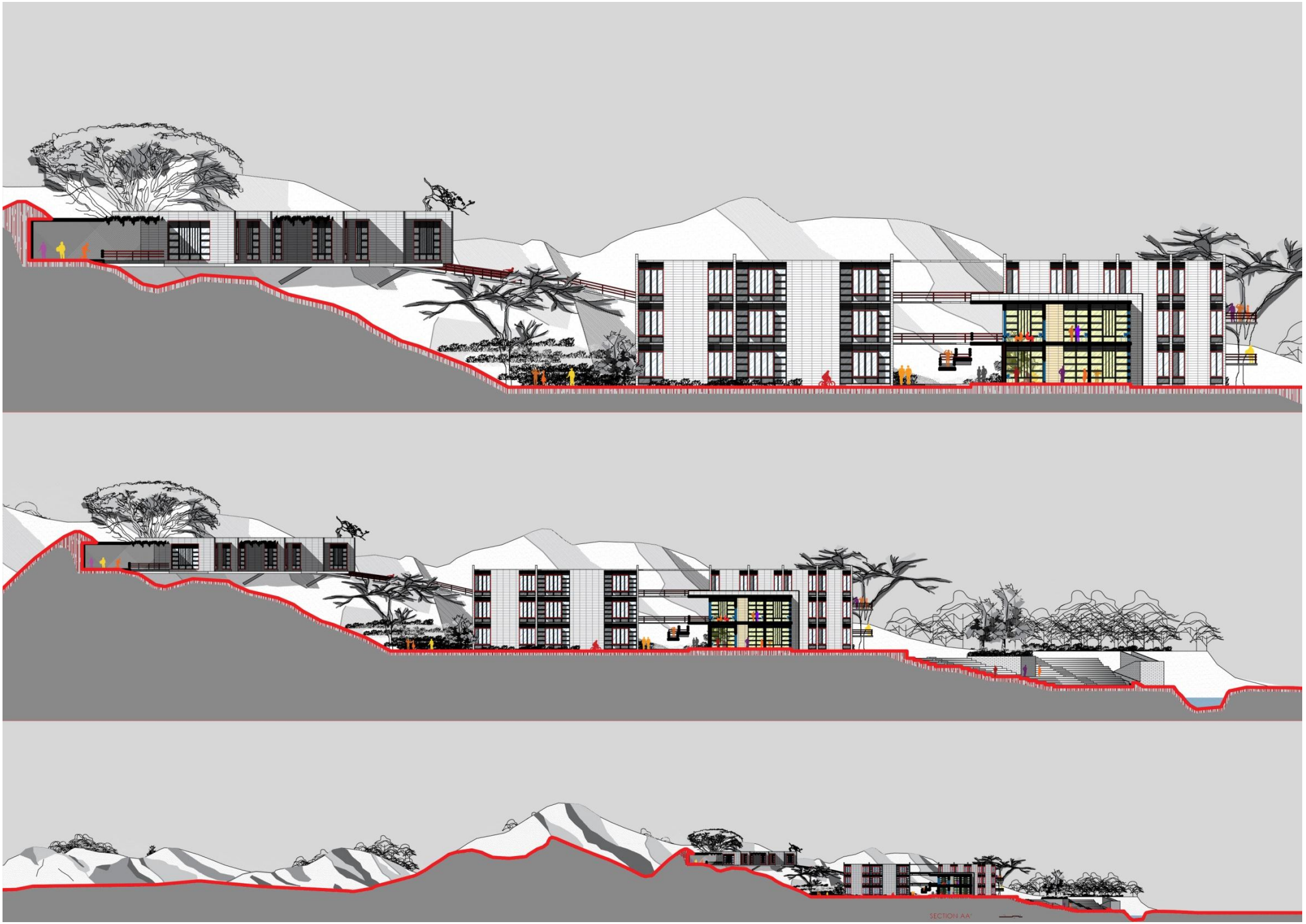
64'

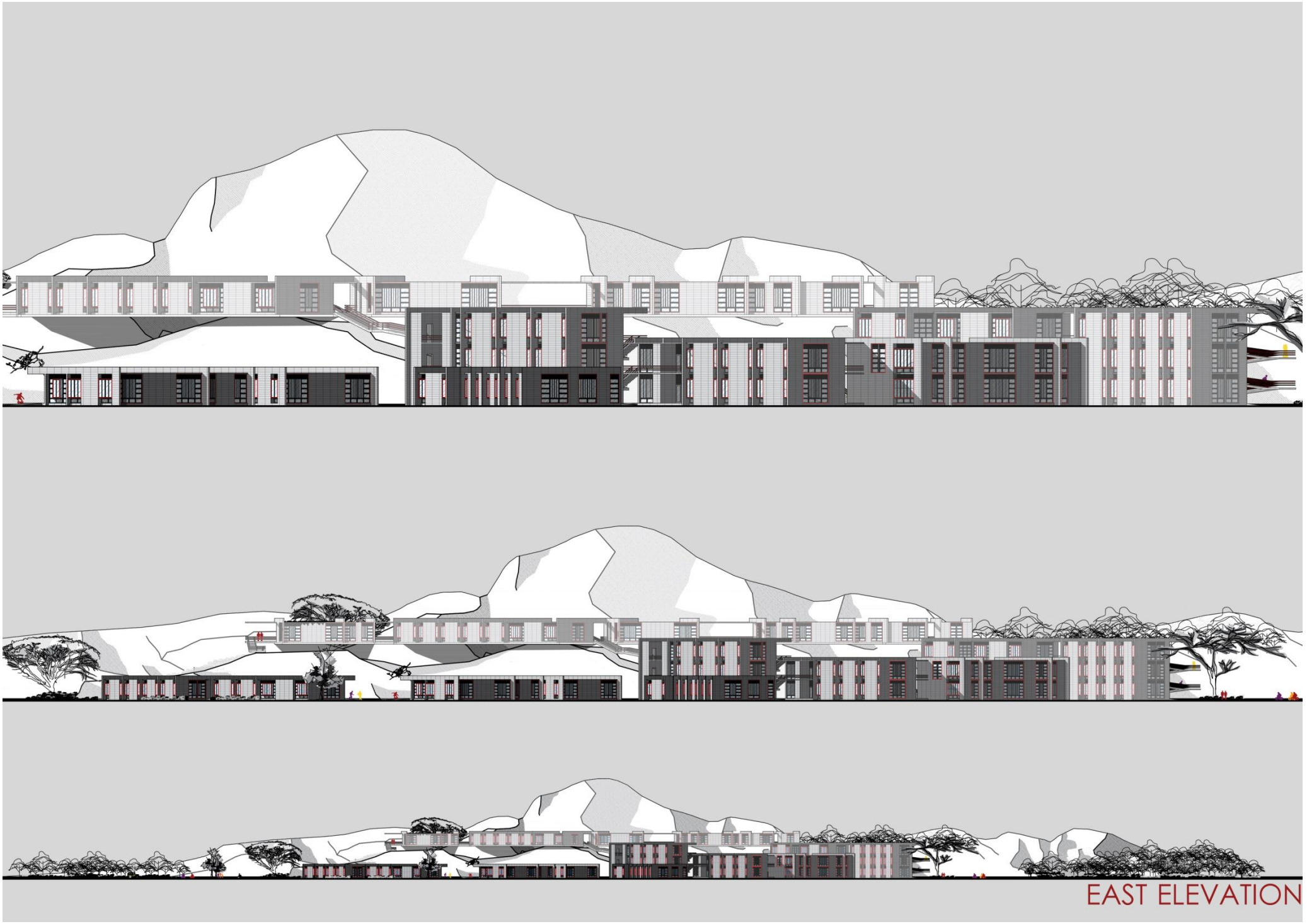


PLAN AT LEVEL 47'

128' 32'

64'


SECTION AA'



EAST ELEVATION

7.3 LANDSCAPE DETAILS

LAKESIDE PERSPECTIVE

PLAN

	COMMON NAME:ZARUL SCIENTIFIC NAME:LAGERSTROEMIA SPECIOSA HEIGTH-25FT SPREAD-20FT GIRTH-10INCH QUANTITY:05		COMMON NAME: KAMINI SCIENTIFIC NAME:MARRAYA PANICULATA HEIGHT-7FT SPREADS-6FT GIRTH-3INCH QUANTITY:10
	COMMON NAME: HIJOL SCIENTIFIC NAME:BARRINGTONIA ACUTANGULA HEIGHT-22FT SPREAD-18FT GIRTH-9INCH QUANTITY:04		COMMON NAME: ZARI FUL SCIENTIFIC NAME:OPHIORRHIZA HARRISIANA HEIGHT-2FT SPREAD-1.5FT GIRTH-.3INCH QUANTITY:20
	COMMON NAME:SONAIL SCIENTIFIC NAME:LABURNUM ANAGYROIDES HEIGHT-20FT SPREAD-15FT GIRTH-8INCH QUANTITY:02		COMMON GRASS: ULU GHASH SCIENTIFIC NAME:IMPERATA CYLINDRICA HEIGHT-2FT SPREAD-3INCH
	COMMON NAME: BORUL FUL SCIENTIFIC NAME:CRATAEVA NURVALA HEIGHT-15FT SPREAD-10FT GRITH-6INCH QUANTITY:02		COMMON NAME: DURBA GHASH SCIENTIFIC NAME:CYNODON DUCTYLON HEIGHT-2INCH

LEGEND

SPOT SECTION SHOWING LAKE SIDE PLANTATION

CONCLUSION

Designing Army Medical College, Chittagong has been a tough task. Most of the time of the semester was spent for deciding the exact location for the academic blocks and the character of the spread-architectures. The main achievement of this project has been the placement of the masses of the academic blocks which have tied landscapes, generated niches and stayed under-toned to let the nature over-power.

Designing architectures in/on/at contour sites of Bangladesh is still not very common. Most of the structures are either made by flattening the undulated contours or at the top hills/mountains. More initiatives and design exercises are to be practised to ensure the co-existence of architectures with such sites with unique characteristics.

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