

**SCHOOL OF FINE ARTS  
ASIAN UNIVERSITY FOR WOMEN**

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for the degree of Bachelor of Architecture**

**Department of Architecture  
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## ABSTRACT

The objective of this paper is to make the readers understand the overall process or methodology followed by the designer for the project: School of Fine Arts of Asian University for Women. It is currently an un-built project, which may be proposed to be built in the second phase of the campus master plan, in Chittagong. The master plan and the 1st phase of it is done by the renowned Architect Moshe Safdie and Associates, with Vitti Sthapati Brindo Ltd. as their country consultant. AUW is now a liberal arts university and with the expanding campus it may grow out to house other undergrad or graduate programs like that of fine arts, economics, engineering, etc. The design process started with the site analysis, followed by program analysis. The programs have been derived from the general requirements of a fine arts school housing department of architecture and department of fine arts. This may be located in the given square feet of the particular place in the master plan. Considering the site and the program, the design has been developed which incorporates basic design layouts at conceptual level, volumetric study and formal expression through study models and also the details in planning process. Finally, the report concludes with the outcome that incorporates the works during the semester of fall of 2013.

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# CHAPTER 01

## INTRODUCTION

### 1.1 Project Brief

The **Asian University for Women (AUW)**, located in Chittagong, Bangladesh, is being established as a leading institution of higher learning for women. Currently, the Asian University for Women is located on M.M. Ali Road in downtown Chittagong. However, the renowned architectural firm Moshe Safdie and Associates has developed the master plan for the future campus of the Asian University for Women. In addition, the *first phase* of the Master Plan, called the Campus Center, has begun construction.

AUW is now a liberal arts university. With the new campus on the way, it may expand into other disciplines, like as engineering and/or fine arts, in the next phases of the master plan. Such is this project, which is an academic block of the *second phase* of the master plan; housing the SCHOOL OF FINE ARTS.

### 1.2 Aims & Objectives of the Project

The aim of the university is to empower women, creating sense of self sufficiency and dignity. Though the project aims to design only one academic block, which is the School of FINE ARTS; but it has to fulfill all these criteria. Besides this, the Fine Arts department has to have the identity of these women who are here to express themselves. And undoubtedly Art is one of the best ways to express someone's thought, and her understanding of society and culture. Indeed AUW Fine Arts Dept aspires to achieve the goal of providing a healthy and comfortable environment to students, but there are also certain objectives, this project aims to fulfill. These are:

- A campus which respects the surrounding environment, local culture and heritage
- Interactive spaces of different sizes and types to enhance the creativity and communication between the students, faculty, administration and visitors.
- Creating spaces with respect to the vista of hills, which will help students to think, concentrate, and imagine innovative ways of expression.
- The campus aims to have interconnected pathways and spaces which will give the strong feeling of "community", which is very much needed in a university like AUW.
- Attaining environmental sustainability through structures.
- Merging the structures with the landscape so that the nature surrounding the masses plays an important role to groom up the students mentality.

### **1.3 Given Program**

A detailed programmatic layout shall be given in the later part of the paper. But in general the project will try to carry out all the requirements needed for the Dept. of Fine Arts. It will accommodate, in addition to the facilities for academic instruction, a wide range of social and cultural facilities that must serve the community – classrooms, lecture halls and libraries are complemented by studios for practicing art activities, studios for sculptures performing art centre, sports facilities, convenience shops and the range of places for social interaction.

### **1.4 Methodology**

The initial study has been done by reviewing relevant literature, university brochure, prospectus, videos and articles Published by renowned architect Moshe Safdie, design criteria from the concerned architectural firm.

In the design phase, relevant drawings and information were collected from internet, Google earth images, pictures were taken from the site. And for other information, interviews were taken from the vice chancellor, dean of students, faculty and students of AUW from the current campus. Apart from quantitative research, some qualitative researches have been done to establish the programs and the situation.



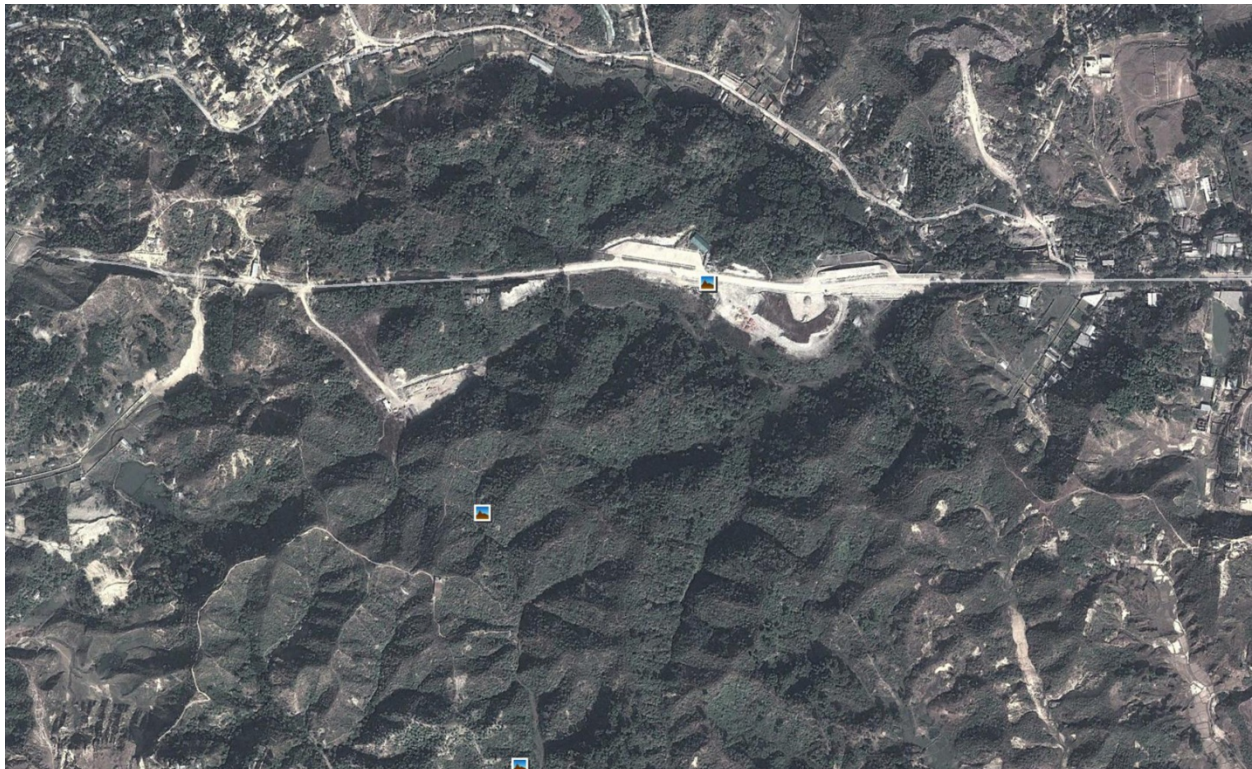
## CHAPTER 2

### SITE APPRAISAL

#### 2.1 Site for Asian University for Women

<sup>1</sup>The Asian University for Women is located on M.M. Ali Road in downtown Chittagong. The group of buildings contains classrooms, computer labs, science labs, dormitories, administrative offices, the library, and other amenities. Now the proposed master plan of AUW is located on a hilly setting on the north of Foy's Lake and south of Chittagong cantonment. <sup>2</sup>The site consists of rolling hills, deep valleys, permanent and intermittent streams, and spectacular views toward the Bay of Bengal and the city. It lies 6 km north of the commercial center, approximately 8 km from Chittagong University, 15 km from the city's international airport, and is immediately adjacent to the Foy's Lake recreational area. The land surrounding the AUW site represents one of the last undeveloped areas of Chittagong's unique hilly landscape. Locating the University campus within the city limits, but in an undeveloped area where its closest neighbors are a golf course and a military cantonment and the Foy's Lake natural area to the south, offers a degree of separation from the activities of the city center and other campuses and, in this sense, a greater degree of security and seclusion. Moreover, from this location AUW can have a strong voice in determining the character of its immediate neighborhood by acting as both a catalyst and guide for the urban growth that will eventually surround it.

<sup>3</sup>Fig: 01 Google earth image of the site of AUW



<sup>1</sup> <http://www.asian-university.org/campus.htm> 10/09/2013

<sup>2</sup> <http://www.asian-university.org/campus/hostCountry.htm> 10/09/2013

<sup>3</sup> Google Earth Image, 10/09/2013

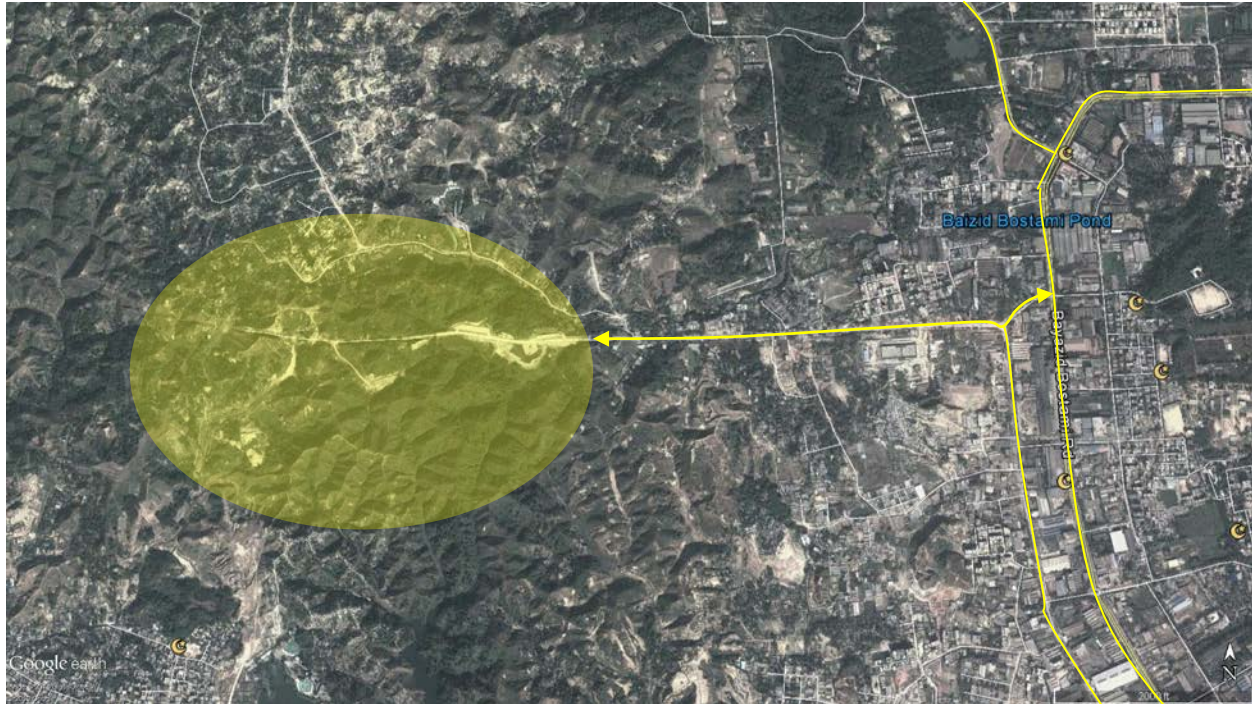
**Fig: 02 Images of the site of AUW**



As it is seen in the pictures, the site has various geological variation in accordance with site and in vegetation; giving it an natural exotic ambience on its own.

### 2.1.1 Site Surrounding (*Macro scale*)

The campus lies just 6 km north of Chittagong's commercial center and is adjacent to the Foy's Lake recreational area. On its west part, there is the Mazar of Baizid Bostami, which is a great tourist attraction. But the site is little bit isolated from the surrounding, as main and busy roads are little far from the site, but there is vehicular access to the university which is going to be built.



Though this location provides a lush, natural setting, it poses some formidable challenges: thin, fragile ridges that are susceptible to erosion, especially during heavy monsoon rains, articulate the deep, flood-prone valleys. Presented with little available land on which to build

### 2.1.2 Climate (Specific to site)

#### Soil and Storm water

The site is a complex network of deep flood-prone valleys articulated by thin, fragile ridges that are susceptible to erosion. While this makes the site a spectacular setting for a campus, it also presents some formidable challenges. The hills are formed of consolidated silt to hard shale, raised by geological fault action. Delicate flora covers the slopes, which become extremely lush following the rains of monsoon season. The root systems of these plants are important in stabilizing the topsoil from eroding. Local harvesting of vegetation, hillside bench cutting and the cutting of a city road have left the soil and the downhill slopes un-stabilized and therefore prone to continual erosion and further degradation. With no restoration, re-vegetation or protection program in place, the site will undergo massive erosion during the heavy monsoon rains. One of the goals of the AUW campus design is to re-vegetate these hills as a strategy for preventing erosion and a means to re-establish a native ecology that is under threat throughout South

Eastern Bangladesh. By locating it in one of Bangladesh's unique and endangered landscapes, and by applying local building traditions coupled with new technologies and design innovations, AUW has an opportunity to offer the country and region a new, sustainable building paradigm.

### 2.1.3 Social Background of Site

Chittagong District is a district located in the southeastern region of Bangladesh. The port city of Chittagong, second largest city in Bangladesh, is located in this district. Being a port city from early times, Chittagong attracted people from various regions of the world. These international contacts left a lasting impact on the language, religion and culture of the city. Chittagong used to be under rule of Arakan kingdom. Then the Arabs came. Al Idrisi, writing in 1154 AD, states that Arab merchants from Baghdad and Basrah frequently visited an area near the mouth of the Meghna, which is now generally believed to be Chittagong. Other travelers and historians have recorded Arab contacts with Chittagong as far back as the ninth century AD. Apart from the merchants, many sufis and saints also visited and settled in Chittagong. The conquest of Bengal by BAKHTIYAR KHALJI in 1204 led to large-scale Muslim settlement in Chittagong. Of the Europeans, the descendants of the PORTUGUESE are still to be seen in Chittagong. Most of them married local women and are known as Kala Firinghis or Matia (earth colored) Firinghis. They are mostly Roman Catholic Christians. The frequent intercourse with people of different races, religions and cultures, which trade and settlement entailed, left a permanent mark on the physical features, dialect, culture and religion of the people of Chittagong.

The vast majority of the people of Chittagong are Muslims; a small percentage of Hindus and Christians also live in the city. The people of Chittagong are very enterprising and since its history of 1400 years, they have always been found ready to leave their hearth and home in search of better opportunities.

The city has its own culture and history, which is different from the other cities, as a site the topography, is also very different and hilly. The society here is very varied and colorful but a bit conservative, which is changing and they are welcoming all the positive things in their city. And as **AUW** is a place where different students from different countries are coming to study, they will come here and experience a very wide range of cultural mixing, see and learn from the history and heritage. The site is obviously a small part of the city, but a significant part and the main center of city is little far, but a very suitable place for a university.

## 2.2 Moshe Safdie's Master plan

The plan for the future campus of the Asian University for Women has been developed by the world renowned architectural firm Moshe Safdie and Associates.



**Fig: 02 master plan model picture overlaid on the Google earth image .** Source: Author via Internet

### 2.2.1 Design Statement

<sup>4</sup>The future campus of the Asian University for Women can be likened to a microcosm of a village or a small town. Given its relative isolation from the dense urban fabric of Chittagong, it must possess a certain element of self-sufficiency. It accommodates, in addition to the facilities for academic instruction, residences for both students and faculty, together with a wide range of social and cultural facilities that must serve the community – classrooms, lecture halls and libraries are complemented by performing arts and sports facilities, convenience shops and the range of places for social interaction.

The design must emerge out of considerations of the character of the site, its particular climate, the cultural heritage of the region and the available resources and technology for construction.

<sup>4</sup>Quoted from <http://www.asian-university.org/campus/plan.htm> 10/09/2013

The unique site is shaped by a series of valleys and ridges with a fragile flora susceptible to damage by erosion. The form of the site provides a strong determinant for the design. A sequence of continuous courtyards and water basins in the valley act as the principal organizing device for academic structures. The residential facilities follow the contour lines atop the ridges, reinforcing the natural topography and creating an edge to the campus.

The design must also respond to the climate – the intense heat of certain seasons and the driving monsoons. Academic buildings should not be concentrated in singular mega-buildings, as one might consider in the west, but rather should be in clusters of limited height (four stories), woven together by a connected network of arcades – protected from the sun and the rain, but open to the elements. Water, shade, and the integration of plant life in the architecture are common themes in the architecture of the region and should form the framework for the architecture. Above all, the design must facilitate and encourage interaction between students, faculty, administration and visitors. The focal points for this interaction are the central "greenway" and the linked courtyards and terraces, urban living rooms where a variety of facilities attract everyone to a place conducive in its character to the making of "community."



**Fig: 03 master plan model picture overlaid on the Google earth image . Source: Author via Internet**



**Fig: 04 master plan image showing different phasing.**

### Phasing in the master plan

The 100+ acre of the master plan is to be constructed in Phases. The blocks colored in red, orange and pink(library) in the diagram above indicates the buildings of the first phase. The blocks colored in deep blue indicate the academic blocks of the second phase. The yellow blocks indicate the residential blocks of which enough information was not available. The first phase of the campus <sup>5</sup>The first phase of the Master Plan, called the Campus Center, began construction in late 2010. The Campus Center will be dedicated to learning spaces: wet and dry science laboratories; seminar rooms; computer labs; etc. The Campus Center will also have a Library and Information Commons to house book collections and journal titles, regional archives, audio-visual labs, staff offices, and a student lounge and café. The University's administrative program, the Health and Wellness Center, a 300-seat cafeteria, and, finally, a 340-seat performance auditorium will complete the building program. These spaces will be housed in three story structures that overlook the valley, and are organized around the "campus greenway," a series of formally and informally linked courtyards and gardens.

<sup>5</sup> Quoted from <http://www.asian-university.org/campus/plan.htm> 10/09/2013

## 2.2.2 Master plan Configuration

One of the main challenges for me as a student doing this academic project was to understand to the master plan designed by Moshe Safdie, to the maximum extent with the limited resources I had received. This is because the decision was to work on the existing master plan by Moshe Safdie. The decision was taken due to the vastness of the site and the programs it would incorporate. Therefore school of fine arts was chosen as the Program to be built in the second phase of the master plan, since phase I is already been designed by Moshe Safdie and Associates.

<sup>6</sup>The University's program is organized in accordance with the distinct levels/zones created within the site. Academic buildings are located along the edges of the valley. Those on the north side of the valley can be used to accommodate the public programs due to their larger footprints. The residential program (access, undergraduate, graduate, faculty, and dining) are located on the plateaus.

Academic buildings will not be concentrated in singular mega-buildings, but rather, these will be in clusters of limited height--four stories--woven together by a network of walkways protected from the rain, but open to the elements. Located on the plateaus above the academic valley are clusters of student residence halls and student common dining facilities. The faculty residences are located in two- to three-story L-shaped residences, stacked to form a hillside, located around the perimeter of the upper pond.

**Fig: 05 Images of the proposed master plan, Images from the <http://www.asian-university.org/campus/organizationplan.htm>**



A significant element of AUV's mandate is to demonstrate through its design and construction a more environmentally sustainable way of building. The AUV campus will be a model for ecologically sound building practices and sustainability throughout the region. The design

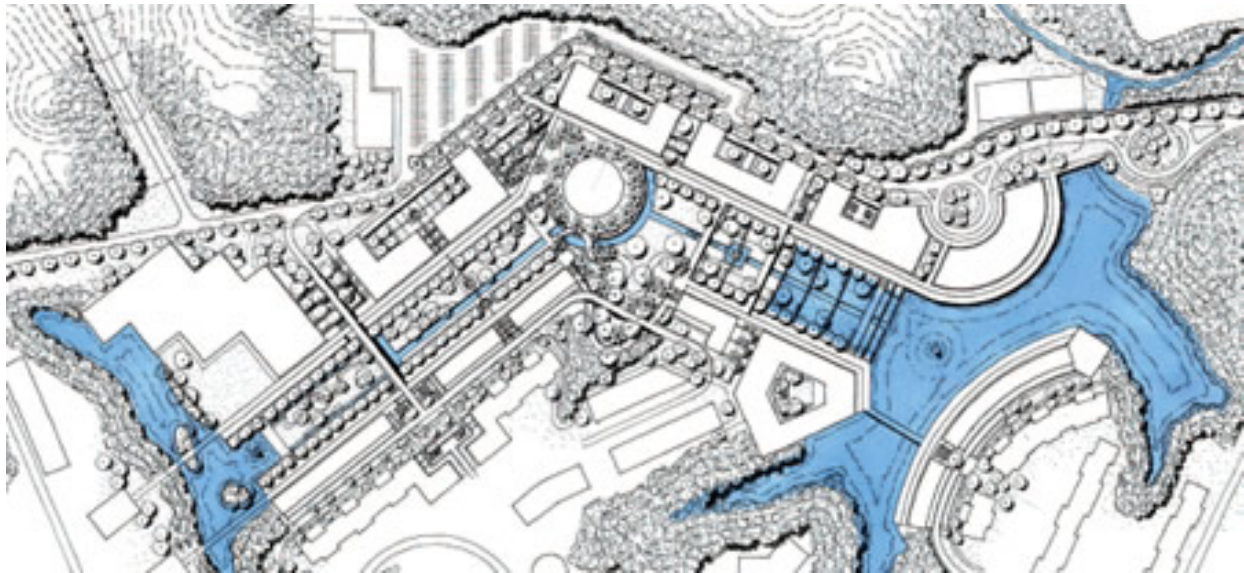
<sup>6</sup> Quoted from <http://www.asian-university.org/campus/organizationplan.htm> 10/09/2013



philosophies presented in the AUW master plan present a series of innovative design and construction practices currently undeveloped or underutilized in the region. AUW will serve as a regional catalyst for environmentally responsible design, as the need for conscious practices is ever increasing in the face of climate change, population growth, and the many resulting issues.

## <sup>7</sup>SOIL AND STORMWATER

The site is a complex network of deep flood-prone valleys articulated by thin, fragile ridges that are susceptible to erosion. While this makes the site a spectacular setting for a campus, it also presents some formidable challenges.



The hills are formed of consolidated silt to hard shale, raised by geological fault action. Delicate flora covers the slopes, which become extremely lush following the rains of monsoon season. The root systems of these plants are important in stabilizing the topsoil from eroding. Local harvesting of vegetation, hillside bench cutting and the cutting of a city road have left the soil and the downhill slopes unstabilized and therefore prone to continual erosion and further degradation. With no restoration, revegetation or protection program in place, the site will undergo massive erosion during the heavy monsoon rains.

One of the goals of the AUW campus design is to revegetate these hills as a strategy for preventing erosion and a means to re-establish a native ecology that is under threat throughout South Eastern Bangladesh. By locating it in one of Bangladesh's unique and endangered landscapes, and by applying local building traditions coupled with new technologies and design innovations, AUW has an opportunity to offer the country and region a new, sustainable building paradigm.

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<sup>7</sup> Quoted from <http://www.asian-university.org/campus/sustainability.htm> 10/09/2013

The academic buildings have been placed into the hillsides in part to act as retaining structures to support the fragile landscape. The buildings step in section to connect with the slope of the hillside. Separating the structure of the retaining walls from the structure of the buildings allows the two systems to be constructed independently (for phasing purposes). The breaks between the buildings, along the length of the valley, become a series of terraced gardens and stairs that allow the students and faculty to easily traverse the two levels. Circulation arcades, trellis systems and trees will provide natural shading, cooling and daylight filtration.

Portions of the valley would be allowed to be flooded during the monsoon seasons and therefore would contain only landscape and site elements that would not be affected by the rains. The pond at the west end of the academic valley will act as a reserve and fluctuate with the seasons, providing a constantly changing landscape feature. The primary retention pond at the east end of the campus is designed to maintain a constant elevation, with sufficient freeboard area to accommodate a rise in elevation during monsoons.

## <sup>8</sup>LANDSCAPE AND INFRASTRUCTURE

The AUW campus landscape design approach is based on observations of natural systems in the region, a cultivated ecology where energy is conserved, wastes are recycled and resources made abundant. The goal is to integrate natural and environmental systems with programmatic requirements, cultural heritage, and available construction technology. On a site such as this, it is critical that planting typologies be integral to existing and man-made landforms, site circulation, water conveyance systems, and architecture, and through this marriage create a sense of place, using regional practices as inspiration and as precedent. Native plant communities with seasonal displays of color and fragrance will be used to intensify microclimate characteristics and connect the students, faculty and visitors of the Asian University for Women to place, embodying the rich garden history, folklore and symbolic meaning that plants carry throughout South Asia.

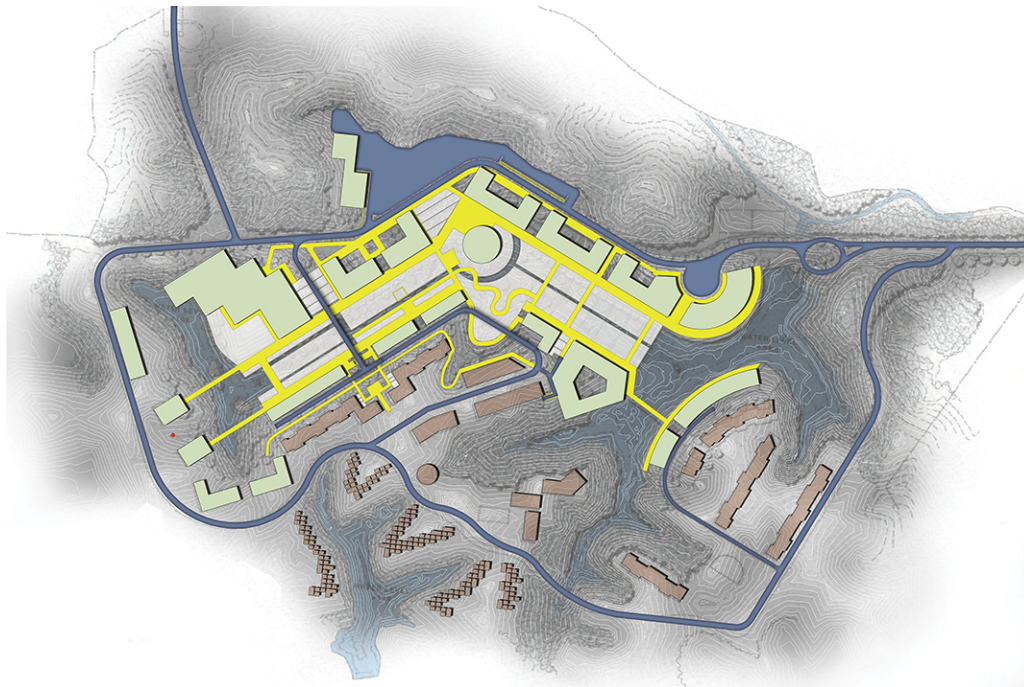
Campus infrastructure development will include independent, environmentally sound on-site systems for water supply and distribution, wastewater collection and treatment, and electrical power generation. Net peak power load for the campus is estimated as 11 MW at full build out. While it is expected that power will be available from the local utility, the history of supply variability in the area mandates that a fully redundant gas-fired generating power plant also be provided on site, to ensure the quality and reliability needed to operate a contemporary university campus in accord with international performance standards. Solar photovoltaic systems will be utilized to the fullest possible extent as a supplemental power source.

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<sup>8</sup> Quoted from <http://www.asian-university.org/campus/sustainability.htm> 11/09/2013

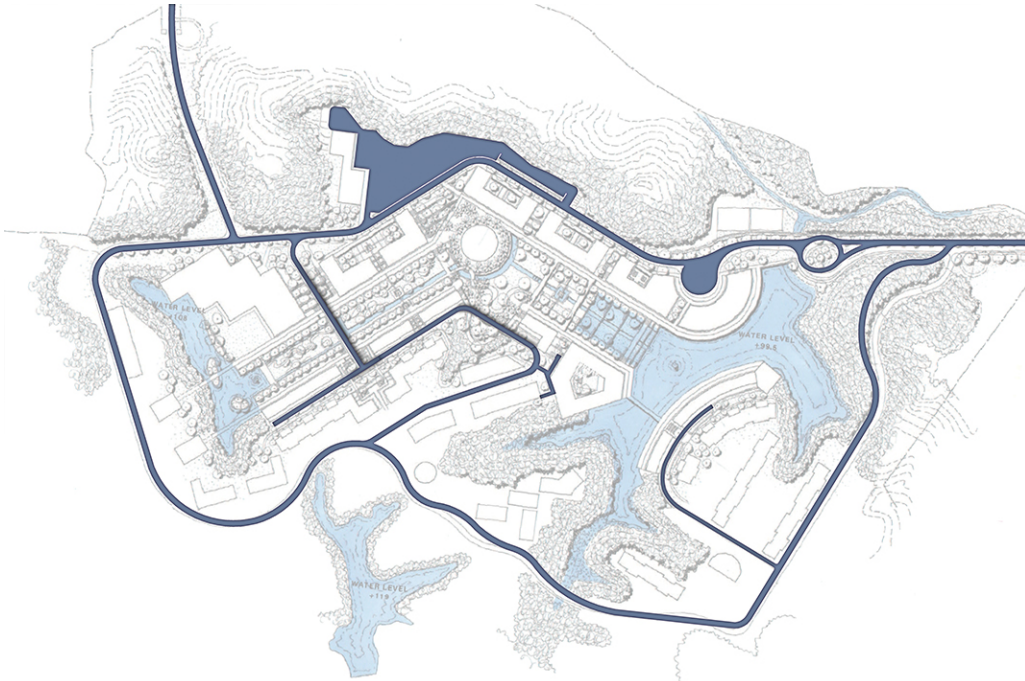
Primary site access is via the main road from the east, with a secondary access from the north. Vehicular circulation to the majority of academic and residential buildings will be via a campus loop road, including fire and emergency access, with a dedicated service road supporting the academic facilities on the south side of the main valley. Key pedestrian routes through the campus will be clearly defined, fully accessible and attractively finished, well shaded, lighted and protected from rain, and will take advantage of the rolling topography to capture views of the site and the surrounding area. The site offers a natural visual boundary of ridges which establish a secure perimeter, to be reinforced with appropriate fencing and controlled access points.

### 2.2.3 Elements of the Master plan

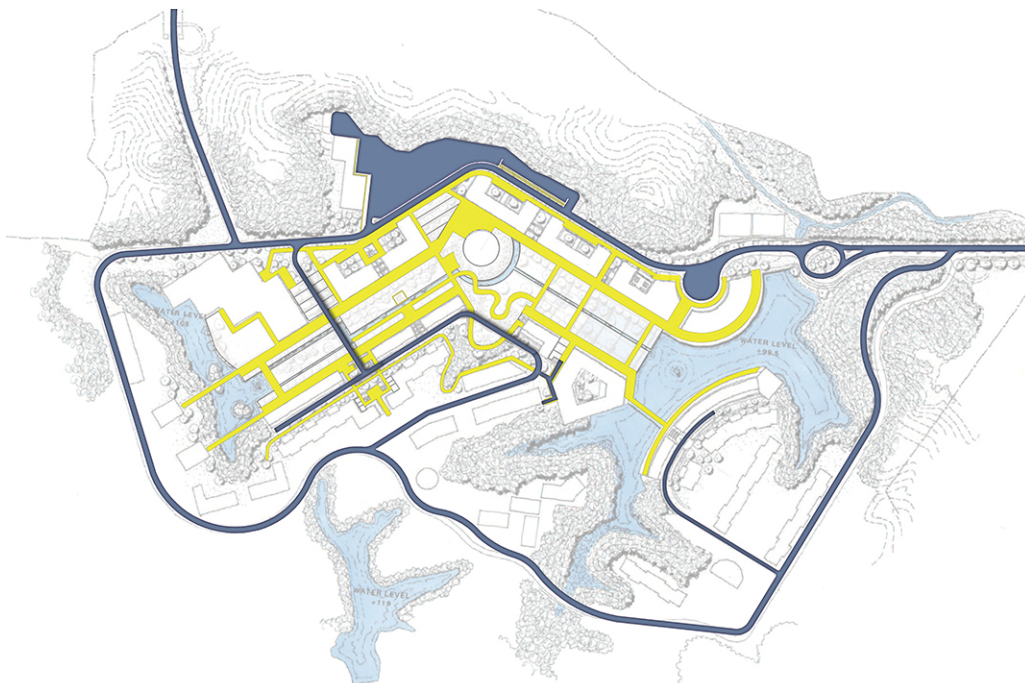


**Fig 06: AUW Master plan** source: Author derived from the internet. scale: 1/1024"= 1'-0"

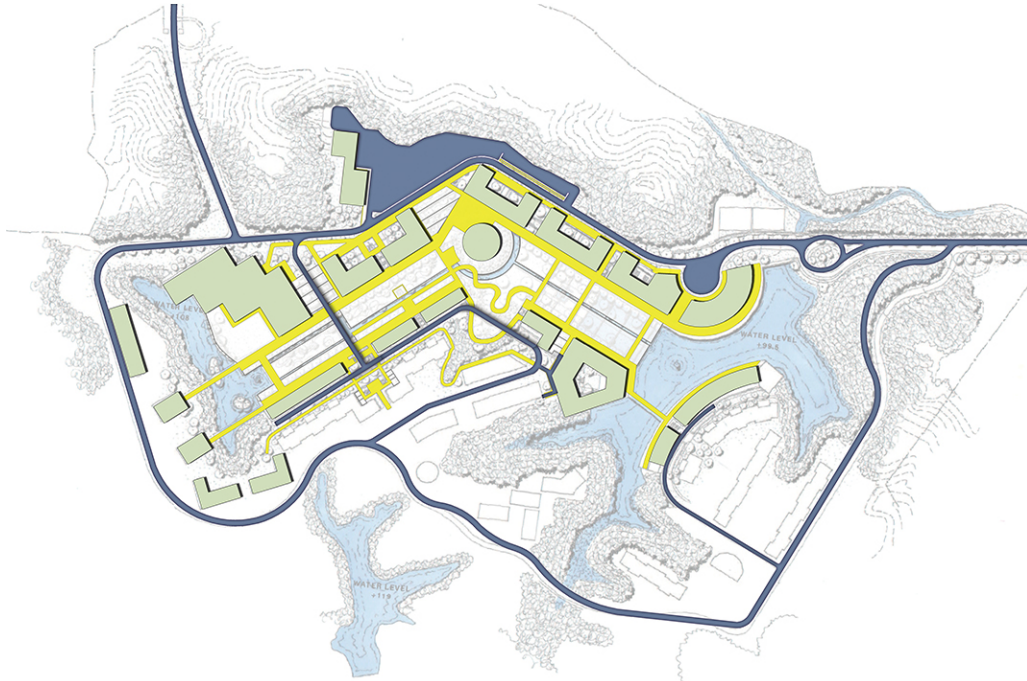
The purple lines in the diagrams on the right indicates the vehicular circulation within the campus site. These are part of the master plan design, by Moshe Safdie and Associates.



**Fig 07: vehicular roads** source: Author derived from the internet. scale: 1/1024"= 1'-0"



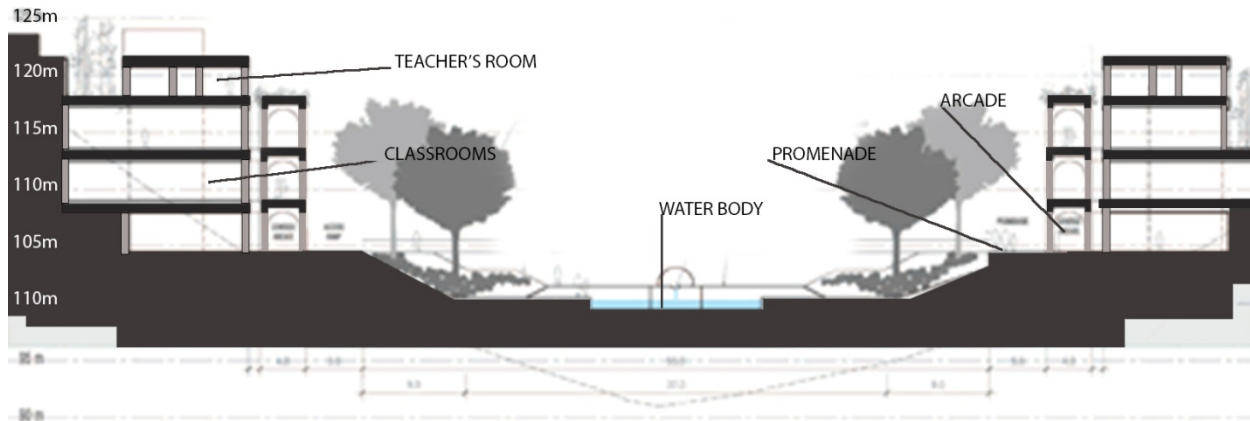
**Fig 08: Pedestrian circulation** source: Author derived from the internet. scale: 1/1024"= 1'-0"



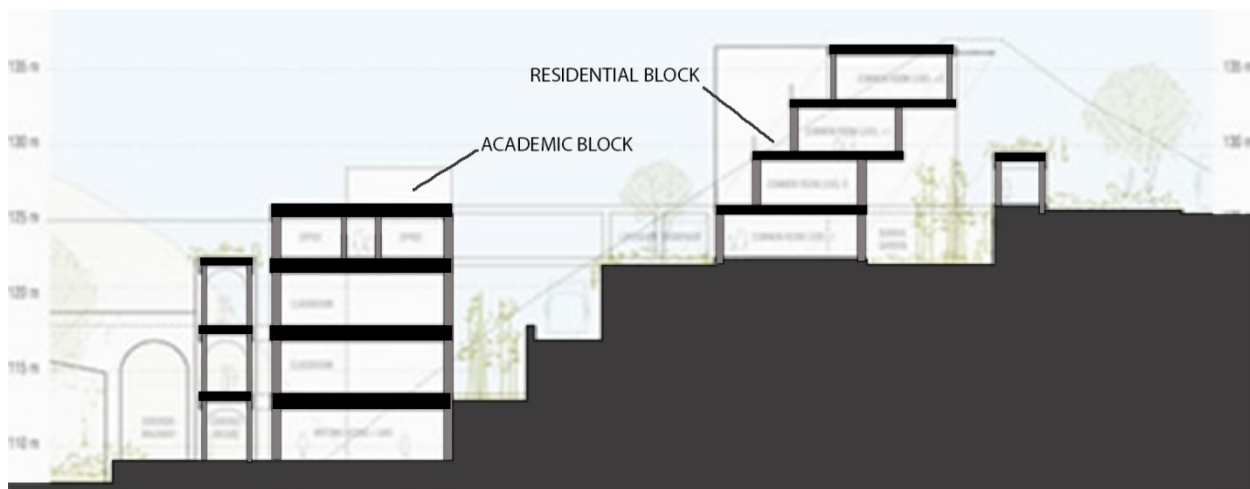
**Fig 09: Academic blocks** source: Author derived from the internet. scale: 1/1024"= 1'-0"



**Fig 10: Academic blocks with the residential blocks.** source: Author derived from the internet. scale: 1/1024"= 1'-0"

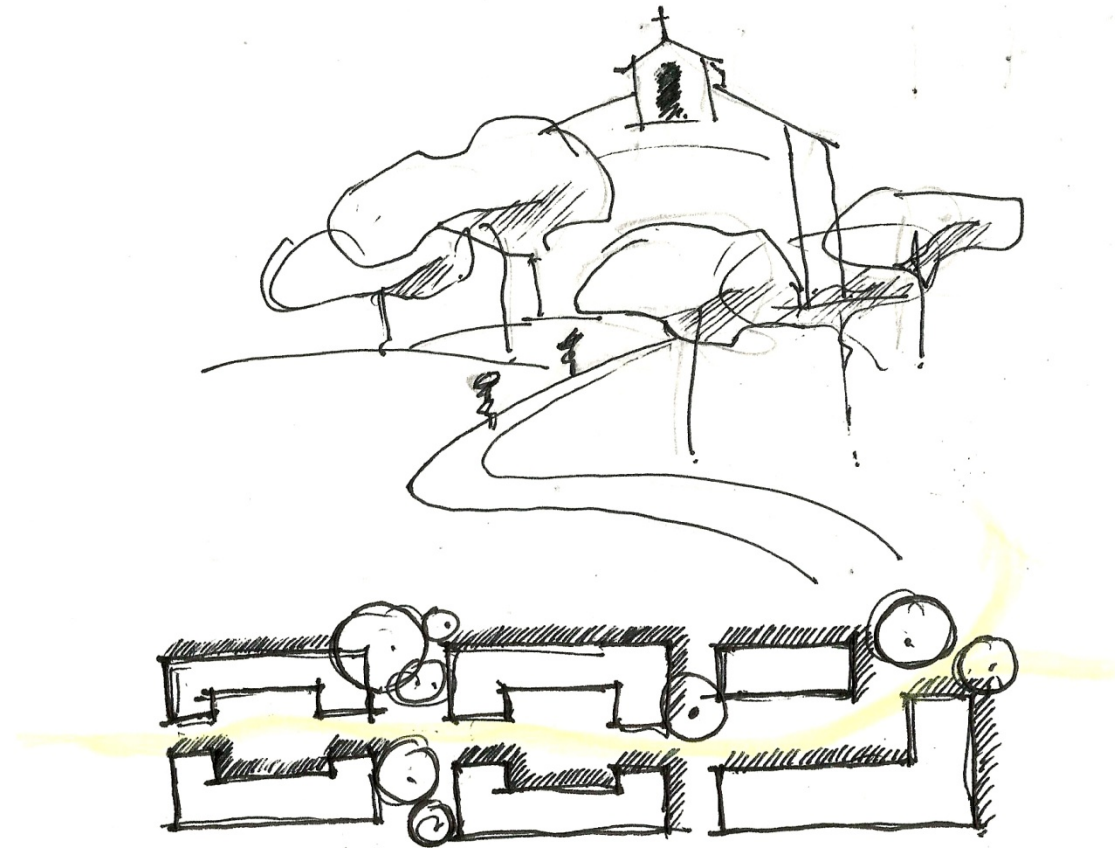


**Fig 11: section along the academic blocks, showing the general arrangement of classrooms. the relationship between the hills and the academic blocks, and also with the landscape elements like the promenade, lawns and waterbody. Source: author via internet.**



**Fig 12: section along an academic blocks, showing the intermediate zones between the academic blocks and the residential blocks.**

## 2.2.4 Summary



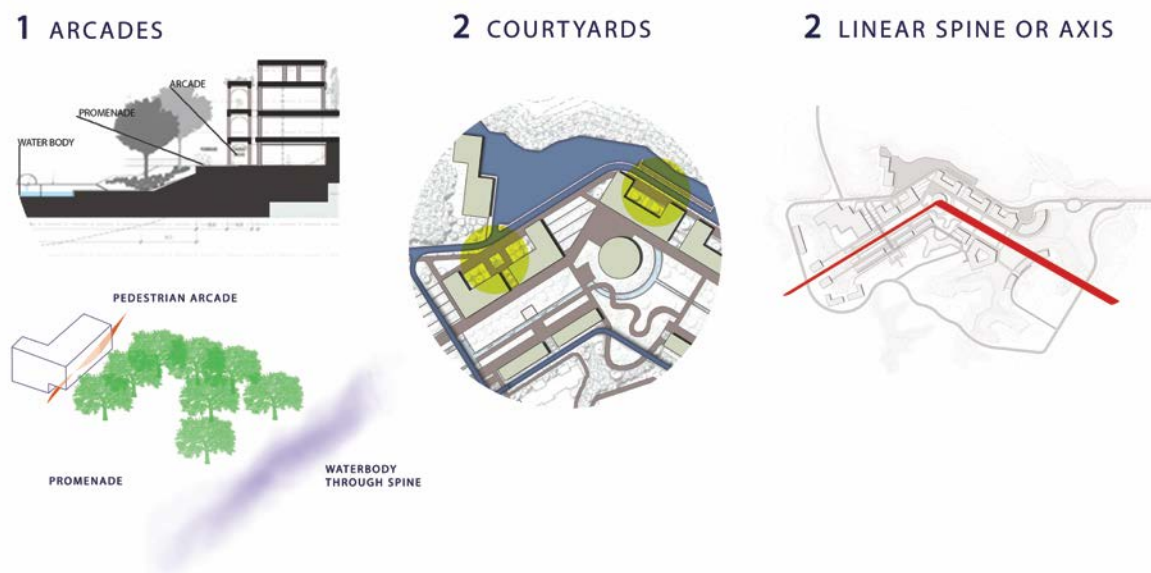
**Fig:13 Building typology of the western and the Mediterranean bazaar types. Diagram source : author.**

The building typology concept of the academic buildings according to Moshe Safdie explained, in a video<sup>9</sup>, that it was the hardest part of the design process to identify the appropriate building typology; with respect to issues such as places for interaction between/within students and students. Whether it would be like a Sook typology, like that of Harvard where there are large buildings set in green. Or Mediterranean, a series of courtyards or arcades, a bazaar concept. The question was what would be the appropriate typology for AUW in Chittagong, given the climatic and site conditions. These may be decisions in the master plan however these are

<sup>9</sup> <http://www.youtube.com/watch?v=zrsqHwy7BYo> 7/10/2014

*An integration between western, mediterranean, and asian typologies of universities, to create..." a fundamentally courtyard concept, except that it is linear and has a spine. it is sort of a connection between the sook and courtyard typology of buildings..."*  
moshe Safdie

decisions which sets the building type, built area and its density as a whole in the site. Therefore what can be derived of the Moshe Safdie's intentions in the Master plan design are:



**Fig: 14 In Master plan typology of the buildings. Source author.**

Arcades and promenades which runs along the main spine or axis of the Master plan. These are intended to be the main interaction spaces for the students where un-prescribed programs would take place. Also adding to the amount of vegetation in the built area. The arcades or promenades lead to courtyards into academic blocks. These help give rise to spaces which are introverted, yet are open to and from the vehicular circulations and the main spine or axis of the master plan.

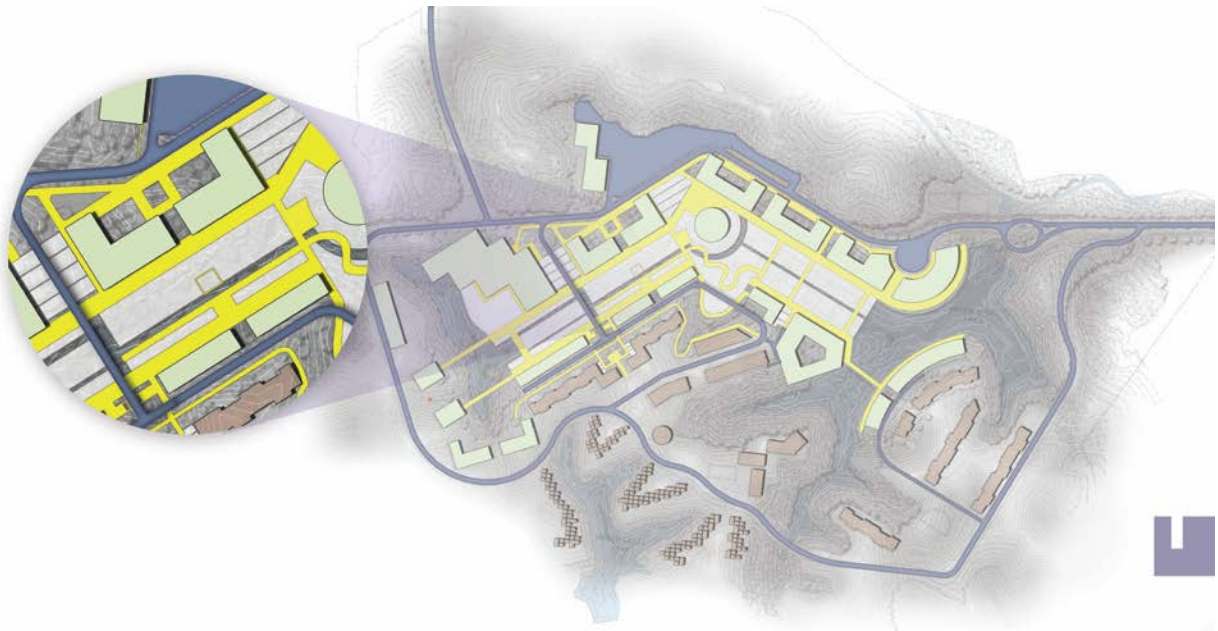
### 2.3 The site and reasons for choosing the site

The site for the school of fine arts, is part of the second phase plan of the master plan. The existing site has a hill, which is planned to be leveled before any new building is built upon it. In this design proposal, the idea from the beginning was to somewhat keep the hill intact and design accordingly. In the process creating a sense of interaction with the natural hill and the manmade. Through this it would generate spaces of interaction, which are at the same time introverted and fluid at different levels along the slope of the hills. also respecting the existing zoning of the master plan.

The site chosen for the School of fine arts is right next of the buildings of the Academic center of the phase I of construction. It is at the node of the two axis which meet at the Student governing



body building. The site has vehicular entrance from the north and pedestrian access which commence from the residential blocks on the south of the master plan.



**Fig 15: Location of the site of School of Fine Arts of AUW**

## 2.4 SWOT Analysis

### Strength:

- The campus is set in a natural terrain, with hills, vegetations and water body.
- The campus is located away from the urban setting so the design decisions can be taken independently.
- (Site specific to School of Fine Arts): A hill located at its center, could act as an interaction space, a natural retreat for students to think and interact; could serve and also give a sense of courtyard concept to the design of the school of fine arts. The hill may itself give a new **definition** to the way a courtyard is perceived.

### Weakness

- The campus is set in a natural terrain, with hills, vegetations and water body.
- The campus is a residential one and is located away from the urban setting so the design decisions are not derived from aspects such as public domain, and issues relating the broad mixture of culture and the ambience of the city.
- Fewer site forces in contrast to a urban site.
- (Site specific to School of Fine Arts): A hill located at its center, if the construction and its methods encroach *deep* into the natural hill, this may lead to land erosion during rainy season, due to its sandy clay-e soil type.
- The variation in site, if to be kept, does not enable dealing with regular forms with respect to the programs they might house.

### Opportunity

- The campus is set in a natural terrain, with hills, vegetations and water body.
- The campus is located away from the urban setting may enable design decisions relating fewer problem and emphasis on opportunities like natural terrain, vegetation; it may also encompass issues which enable the master plan to target introverted attribute within itself.
- (Site specific to School of Fine Arts): Due the variation in the height of the terrain the designed building may reflect this through its spaces and volumes. Creating or recreating a natural ambience which is proper and soothing to the learning environment for fine arts students of AUW.

- The variation in height provides opportunity to segregate the various programs into creative zoning typologies, which may not be achievable in a flat urban setting.

**Threat:**

- The campus is set in a natural terrain, with hills, vegetations and water body, if not taken proper care of the building density, may inturn harm the natural habitat it is supposed to be in.
- The campus is located away from the urban setting, may influence, unrestrained urban growth density in this part of the city.

## CHAPTER 3

### LITERATURE REVIEWS

#### 3.1 Women in the world<sup>10</sup>

For women, there are no developed countries. Although some places are clearly better for them to live in than others, it is not always true that the relatively rich countries of the world provide better circumstances for them as women than do poorer countries.

While many countries provide formally for sexual equality in law, very few governments have legislated to protect specific job and marriage rights; and such law as exists is nullified or blunted in its effect by social and administrative practice. Nowhere do women have full equal rights with men. Yet women are biologically stronger, live longer than men, and naturally outnumber them. Where they do not, it is only because of the effects of war, or because they have been forced to migrate in search of work, or because they have suffered severe and systematic discrimination. There are many ways of summarizing women's status relative to men's. One is economic, and here the well-known United Nations quote from 1980 is still relevant: 'Women constitute half the world's population, perform nearly two-thirds of its work hours, receive one-tenth of the world's income, and own less than one-hundredth of the world's property.' Another indicator is women's legal status: nowhere in the world do women have the same legal or constitutional rights as men. The legal provision of rights does not guarantee 'equality', but it is an essential prerequisite for women's full participation in political, economic, social and cultural development-from which equality can follow.

Women are ghettoized in low-paying jobs, are often denied promotions, and commonly face outright wage discrimination. They have little job protection, and form the bulk of part-time workers. As a result, women everywhere earn less than men. This is true even when they do the same work as men, and true even in occupations where women form the majority of workers (such as clerical work).The earnings gap is universal and growing-in spite of equal pay laws which exist in a great number of countries. Such laws are not often enforced, nor do they generally apply to part-time workers or workers in the informal sector, where women predominate. Wage legislation by itself does not remove the inequalities that create the gap in the first place. Women's relative underpayment in work is a major factor in the growing feminization of poverty.

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<sup>10</sup> <http://www.utc.edu> author [Sarla R. Murgai](#) 7/10/2014

## Education Giving The Power To Women

**Education is one of the greatest forces for change for women. A woman who can read, write and add numbers has a better chance in life.**

In the past twenty-five years, tremendous strides have been made in primary school enrollment; in many countries formal education is no longer seen as wasted on girls.

But the female-male gap still exists at secondary level: in 76 poor countries-mostly in Asia and Africa, less than half of eligible girls are enrolled in secondary school. Where school slots are scarce, boys must complete-but girls are not even expected to try. Where girls do go to school, they drop out more than boys do. Especially in poor, rural settings, girls are needed at home for chores, or parents do not want their adolescent daughters to mingle with boys. The educational investment is thought to be better spent on sons.

Girls' access to basic education has improved greatly over the past two decades. There was an 'enrollment boom' in the 1960s and 1970s that pushed girls into the classroom as never before. But inequities still exist: boys are more educated than girls, and girls in rich countries and in cities are more educated than those in poor countries or rural settings.

In Bhutan, Afghanistan and Papua New Guinea, among others, fewer than 10 per cent of primary age girls were in school in 1960. In 1980 percentages ranged from a virtually unchanged 11 per cent in Afghanistan to an impressive 54 per cent in Papua New Guinea. So the rate of education is in a slower process in Asia, and it needs to be changed.

### Higher Education

For women to perform effectively in a world of professionals, they need access to higher education. While girls have made great progress in school enrollment, almost nowhere do women match men on the university campus. This is true despite dramatic enrollment increase in some countries. Often, women cannot afford to go to university, do not believe in their own abilities, and are not encouraged to succeed academically. Where women do attend, they are often encouraged into female disciplinary ghettos such as social work, education and library science. This is now beginning to change, however, as more and more women turn to the sciences and enter the professions.

So the change has to come through women empowerment. And this work has to be done by the women, but mostly focusing on the neglected parts of the world. These women needs to be provided with opportunities so that they come forward and work for themselves and other neglected women worldwide.

## 3.2 Women & Work in South Asia<sup>11</sup>

A common but erroneous perception outside the Third World is that "the women's movement"-both historically and in contemporary times-originated in Europe and North America. In recent years, media pundits have frequently discussed what they see as the end or diminution of the militancy of the women's movement. These observations may or may not be true of the United States, but they ignore the long history and current militancy and vitality of reform movements for women in many world areas. The following reading focuses primarily on the history of women's movements in the South Asian countries.

### BANGLADESH

Bangladesh gained nationhood as a separate Muslim country in 1971 in a civil war with Pakistan with the intervention of India. For Bangladesh it has often been difficult to separate out problems caused by political disruption, poverty, natural disasters, religious conservatism, and the dependent and subservient condition of most women to determine the causes of women's generally low status. A recent survey by the Population Crisis Committee ranking 99 countries on the status of women, considering five criteria: health, marriage, and children, education, employment, and social equality. Bangladesh was ranked at the bottom of the 99 countries judged.<sup>16</sup> Pate IV-B discusses a male feminist, Mohammed Yunus, who originated the successful Grameen Bank program in Bangladesh which primarily makes loans to women and is revolutionizing Bangladeshi women's lives at the grass-roots level.

### INDIA

There were a number of influential women reformers in the late 19th and early 20th centuries in India. One of the most notable was Pandita Ramabai who founded girls' schools and homes for widows. She was a noted Sanskrit scholar-knowledge which gave her an advantage in arguing the case for reforms for women in a society where customs for women were justified on religious grounds. As a Christian convert, she was helped in her work with widows by funds from American missionaries. Nationalist leaders such as Balwantrao Tilak criticized homes for widows for having as their major goal the conversion of women to Christianity rather than helping the women. The dilemma for Hindu Indians was how to be loyal to their own traditions while working for reforms they saw as necessary.

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<sup>11</sup> <http://www.utc.edu> author [Sarla R. Murgai](#) 7/10/2014

The political agitation against British imperialism brought many Indian women into public roles which included advocacy of reforms for women. One example among many is writer Swarnakumari Devi (the sister of poet Rabindranath Tagore) who started a women's association called Sakhi Smiti in 1886 to promote local handicrafts made by women. She was one of the first women to attend the Indian National Congress in 1889. Two women's organizations were founded in the early 20th century which aimed at advancing the status of Indian women and assuring women a larger role in the independence movement against the British. The Women's Indian Association (WIA) was formed in 1917 and the All-India Women's Conference (AIWC) in 1927. Both organizations worked against child marriage and purdah restrictions and for education and legal reforms for women.

If Indians were asked to name a woman who has been most effective in working with the poor in India, they might mention Ela Bhatt. Ela Bhatt was born and raised in Gujarat and later continued her studies in the United States and Great Britain. Ela Bhatt founded the Self-employed Women's Association (S.E.W.A) of Ahmedabad, India, in 1972. S.E.W.A. is considered by many to be the most successful grassroots women's organization in the world. In 1977 S.E.W.A. and its founder Ela Bhatt received the Ramon Magsaysay Foundation award (the Asian equivalent of the European Nobel Peace Prize) for "...fostering development where it matters most, among the poorest and the weakest..." .

A recent estimate indicates that there are 50,000 women's organizations in India today-including private non-governmental organizations and the government organized Mahila Mandals.

## SRI LANKA

In recent years women in Sri Lanka have formed women's organizations to promote equal work opportunities and other reforms for women. Women workers in Sri Lanka have carried out protests and can look back on a history of activism. In 1978 a Women's Bureau was set up by the government and the non-governmental organization, Kantha Handa (Voice of Women), was founded. Both organizations were initiated partly in response to the United Nations International Women's Year (1975). Hema Goonatilake of the University of Kelaniya in Sri Lanka, reports that the United Nations Decade for Women (1975-1985) brought about "a new spirit of militancy" especially among factory workers. She feels that the United Nations Decade promoted the idea of focusing on women in development projects. Women of Sri Lanka have held positions of political power, have led spiritual lives as Buddhist nuns, have been poets, teachers, doctors, and laborers on farms and in factories. Until recently they did not challenge working and family conditions that were detrimental to women-perhaps because they suffered less from oppressive

customs common to other groups of women in South Asia. The United Nations Decade for Women was an inspiration to women of Sri Lanka to organize and seek reforms that benefit women.

## PAKISTAN

India and Sri Lanka have histories of reforms for women which reflect their particular national histories. Other countries in the area also have distinctive histories of reforms for women. Pakistan, for example, became an independent Muslim nation at the time of India's independence from Great Britain in 1947. But Pakistan can look back at the Muslim kingdoms of 16th and 17th century India for early attempts at reforms for women in the region. For example, the Muslim ruler Akbar the Great attempted to stamp out sati and spoke out against child marriage. He was not successful, perhaps because Hindu Indians saw these attempts as interference in their religious practices. In their recent book, *Women of Pakistan-Two Steps Forward, One Step Back*, editors Khawar Mumtaz and Farida Shaheed explain that it has been Islam that is the recurring theme in the political development of Pakistan. "Specifically regarding women, the fifty years preceding independence, progressive Muslim groups justified women's education, emancipation, and rights from within an Islamic framework. As of 1947, having been monopolized by reactionary elements, Islam has been the medium used by those wanting to curb or deny women their rights." The formation of the Women's Action Forum (W.A.F.) came about as a way for women to counteract the increasingly conservative "Islamization" of Pakistani laws toward women after the military takeover by General Zia-ul-Haq in 1977. Specifically, the W.A.F. has worked to repeal recent oppressive laws affecting women's status, particularly those found in the Zia government's Hudood Ordinance of 1979. Just how successful W.A.F. will be in advocating women's rights in the future remains to be seen. The military government of Zia supported (some say even started) a rival, more conservative women's organization in Pakistan. After Zia's death in August 1988 democratic elections were held in Pakistan and Benazir Bhutto became prime minister of Pakistan. Bhutto was the first female leader of a modern Muslim country. One observer commented that no matter what the Women's Action Forum does in the future, the "W.A.F. has provided a name around which those concerned with women's rights can rally."

## BHUTAN

Bhutan, a small mountainous kingdom, was invaded and then dominated by Great Britain in the 19th century. Bhutan was subsidized first by the British and then by the Indian government which controls Bhutan's foreign affairs. In the 1960s Bhutan instigated a policy of modernization which included abolishing slavery and the caste system, enacting land reform, and working



toward the emancipation of women. Statistics on contemporary Bhutan reveal the general poverty of the country, with a slightly shorter life expectancy rate for women than for men.

## NEPAL

Nepal, also a small mountainous country with a history of British domination, has various cultural traditions for women, depending upon the ethnic group considered. Women of the Buddhist Tibetan groups of North Nepal generally have higher status than women of Hindu Indian groups in the south.

The first formal women's organization in Nepal—the Mahila Samite Women's Committee—was founded in the early 20th century by women who were related to prominent men in the government. One way members of Mahila Samiti focused on the plight of poor women was by sending a package of torn clothing to the prime minister's wife. One of the leaders of Mahila Samiti, Dibya Koirala, and her husband were exiled to India for their political activism and the Mahila Samiti was disbanded. Since the 1950s numerous organizations have been formed to address the economic and social needs of Nepali women. The All Nepal Women's Organization (NOW) had over 1000 groups and 60,000 members by the mid-1970s. Shilu Singh, the first practicing woman lawyer in Nepal, founded the Women's Legal Aid Services which worked to inform women of their rights. Presently this organization functions mainly as part of the government programs and clubs for women to further education for women, family planning, and health and hygiene programs.

## AFGHANISTAN

Education in Afghanistan is very low, especially for women. Approximately 15% of females can read and write but this is now increasing due to the high number of girls attending schools throughout the country. As of 2011, there are around 8 million students in Afghanistan, 37% of them are females. About 82,000 students are enrolled in different universities around the country. In the early twentieth century, education for women was extremely rare due to the lack of schools for girls. Occasionally girls were able to receive an education on the primary level but they never moved past the secondary level. During Zahir Shah's reign (1933-1973) education for women became a priority and young girls began being sent to schools. At these schools, girls were taught discipline, new technologies, ideas, and socialization in society. Kabul University was opened to girls in 1947 and by 1973 there was an estimated 150,000 girls in schools across Afghanistan. Unfortunately, marriage at a young age added to the high drop out rate but more and more girls were entering professions that were once viewed as only being for men. Women were being given new opportunities to earn better lives for both themselves and their families.

However, in the after the civil war and the takeover by the Taliban, women were stripped of these opportunities and sent back to lives where they were to stay at home and be controlled by their husbands and fathers.

As these brief overviews indicate, each of the six countries of South Asia have had unique historical and contemporary women's movements. Just as a wide variety of factors have influenced the history and culture of women in each area-the style, extent, and effectiveness of reform movements for women are similarly shaped by many cultural and economic factors. What is clear from these description, however, is that women, often facing formidable barriers, have joined together to work effectively to improve the lot of women in South Asia.

### **3.3 Understanding Asian University for Women**

<sup>12</sup>The Asian University for Women (AUW) is based on the firm belief that education—especially higher education—provides a critical pathway to leadership development, economic progress, and social and political equality. Located in Chittagong, Bangladesh, AUW provides a world-class education to promising young women from diverse cultural, religious, ethnic, and socio-economic backgrounds from across South and Southeast Asia and the Middle East. AUW currently has 535 students from 12 countries, Afghanistan, Bangladesh, Bhutan, Cambodia, Canada, China, India, Myanmar, Nepal, Pakistan, Palestine, Sri Lanka, and Vietnam. The University is international in its vision and scope, while being rooted in the unique context of the region. The Asian University for Women offers an educational paradigm that combines a competitive liberal arts education with applicable graduate and professional training. Its admissions, academics, faculty and organizational structure are predicated on American educational values and inspired by the American liberal arts model of higher education. The University provides an American-style education that is relevant to the concerns and issues of the region it serves. At the heart of the University is the civic and academic goal to cultivate successive generations of women leaders who possess the skills and resources to address the challenges of social and economic advancement of their communities. AUW adheres to the belief that no group has a monopoly on talent and is committed to providing a superior quality higher education to the region's most outstanding women, regardless of background. AUW students receive scholarship support to attend the University. The Asian University for Women ultimately seeks to empower its students by opening doors to new international opportunities. It seeks to graduate students who will pursue paths as skilled and innovative individuals and professionals, service-oriented leaders, and promoters of tolerance and understanding

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<sup>12</sup> <http://www.asian-university.org/aboutAUW/missionAndVision.htm> 09/01/2013

throughout the world. Kim Young-joon, chairman of Asian University for Women Support Foundation, a HARVARD law graduate says, “They come from the places where people wouldn’t wish to be born as women. Some students come to the university at the risk of not getting married,” Kim said. The lawyer believes in the importance of education for women. “Educating women has a multiplier effect as they pass down their knowledge to children. In impoverished countries, men would spend a dollar to buy alcohol but women would spend it on their children.” The location of the institution also mattered. If Asian students study at prestigious schools on a scholarship, they will likely get absorbed into wealthy societies upon graduation and the outcome of the support may be limited to a few people’s personal success. At the AUW, living and studying together throughout four years, students will understand problems and come up with solutions that can benefit where they come from.

### **3.4 Requirements of Spaces**

During the visit of the existing urban campus of the AUW, it had been an pleasure talking to the Dean of Sciences and the VC of AUW. And in a short question answer session of how they see their future campus, they led into their imaginations:

- The existing being a liberal arts university, devoted to education and strengthening of the womanhood.
- Due to expansion of the university in size in the new campus, the university will be expanding in programme and add schools of different field of education. Like specialized science departments, fine arts departments, etc.
- Other amenities as performing arts center, gymnasium, amphitheatre.
- Moreover the VC stressed on the campus being self sufficient, like growing own vegetables and poultry.
- Special requirements was to walk hand in hand with today's new age universities, being environmentally sustainable, may be a platinum LEED certified building; however holding onto it roots as a university in Bangladesh.
- When talking about the sort of spaces or classrooms they expect, the Dean of Sciences, emphasized on the teacher student ratio being 1:10 and class rooms should be derived accordingly. A set of small class rooms, a set of middle sized and a couple of larger lecture halls, for each schools there may be. AUW doesn’t believe in traditional educational system, it looks forward to having small interactive classrooms in place of large traditional ones. This gave the idea of different typology and arrangement of the programs in the building.

- And an exceptional need was that of a "think spot", these would be pockets of spaces dedicated to the close interaction between/within the faculty and the students.

## CHAPTER 4 CASE STUDIES

### 4.1 Center for Environmental Planning and Technology, Ahmadabad; by *BV Doshi*

Center for Environmental Planning and Technology (CEPT), Ahmadabad, by BV Doshi is university having departments of architecture and fine arts which is similar to the project that is being pursued here. Although the programs are the same the case study is considered due its built environment and the amalgamation with the ambience.

CEPT at its entrance, looked pleasant to some extent, with trees with large foliage and a lush green mound of grass. But it was quite uninviting at its entrance. However, it had the element of surprise as looking upon one wouldn't know what lies on the other side. On the diagram below the purple indicates the pedestrian circulation.

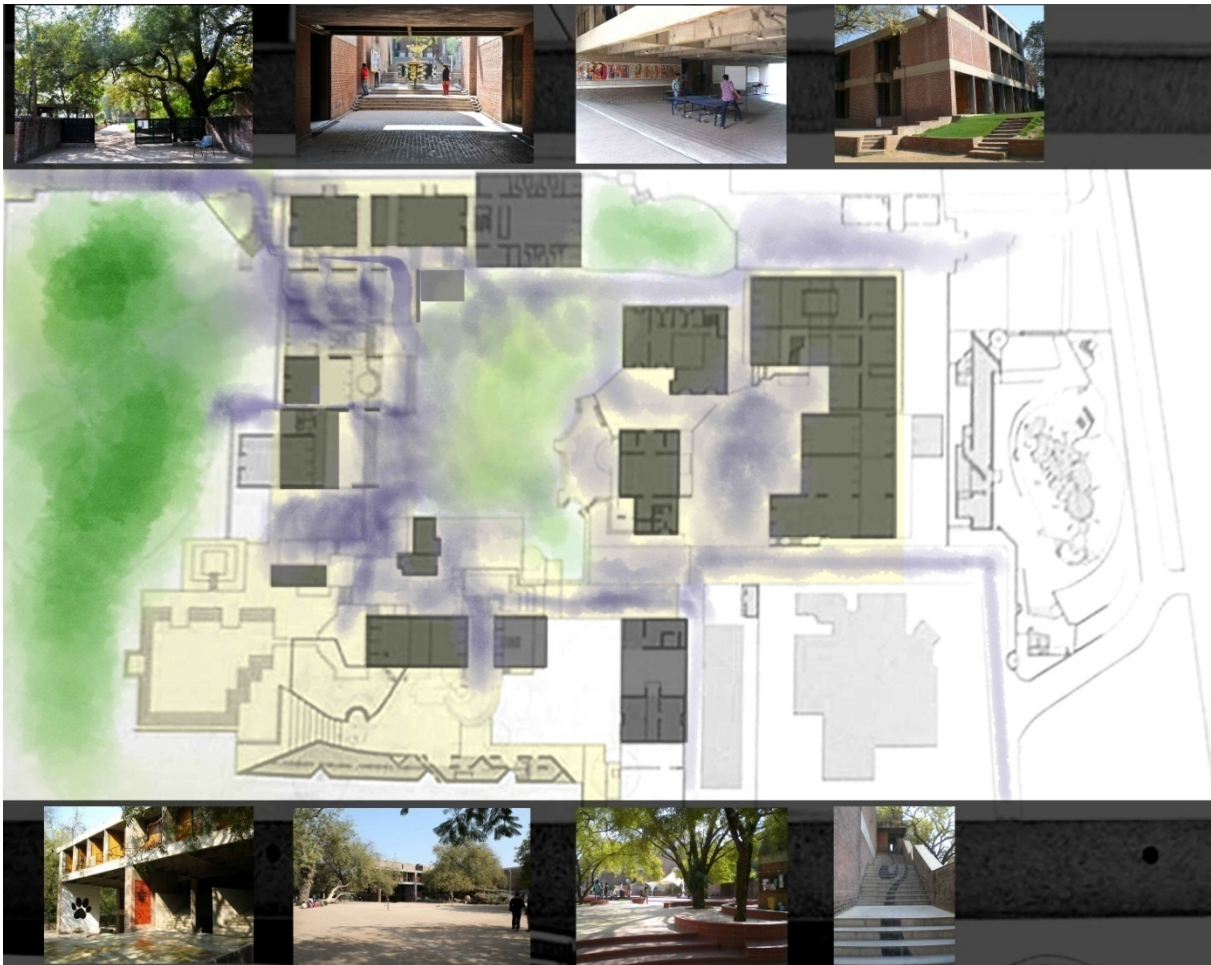


Fig: 16 Plan of CEPT, purple indicating the most used pedestrian circulation.

The after entering the campus, one is held with choices to make which hallway/pathway, he/she is to take to reach the next space. The space are narrow and giva a sense of motion and one would not wait in these hallways and pathways. But upon reaching the end of the pathway, one would would be gifted with the ambience one is suddenly exposed to. The alternation of shadows and light with people interacting, and a big lawn. That sudden release of the field of view adds that element of surprise to the already magnificent ambience of the environment which existed. Ground floor is almost left open and serves as the main interraction place for the students of architecture, but the most vibrant part is the open cafeteria, where people sit under the large foliage of two trees and enjoy their meal or refreshments.

## 4.2 Arts Building for University of Iowa, Steven Holl Architects (Un-built)<sup>13</sup>

Almost three years ago Steven Holl Architects and BNIM Architects won the commission to design a new art studio facility for the University of Iowa (UI) Arts campus. The building has officially broken ground and entered the construction phase. The new Visual Arts Building will replace the original arts building from 1936, which was heavily damaged during flooding in 2008. It will be directly adjacent to and northwest of Art Building West, an earlier, award-winning Steven Holl design.



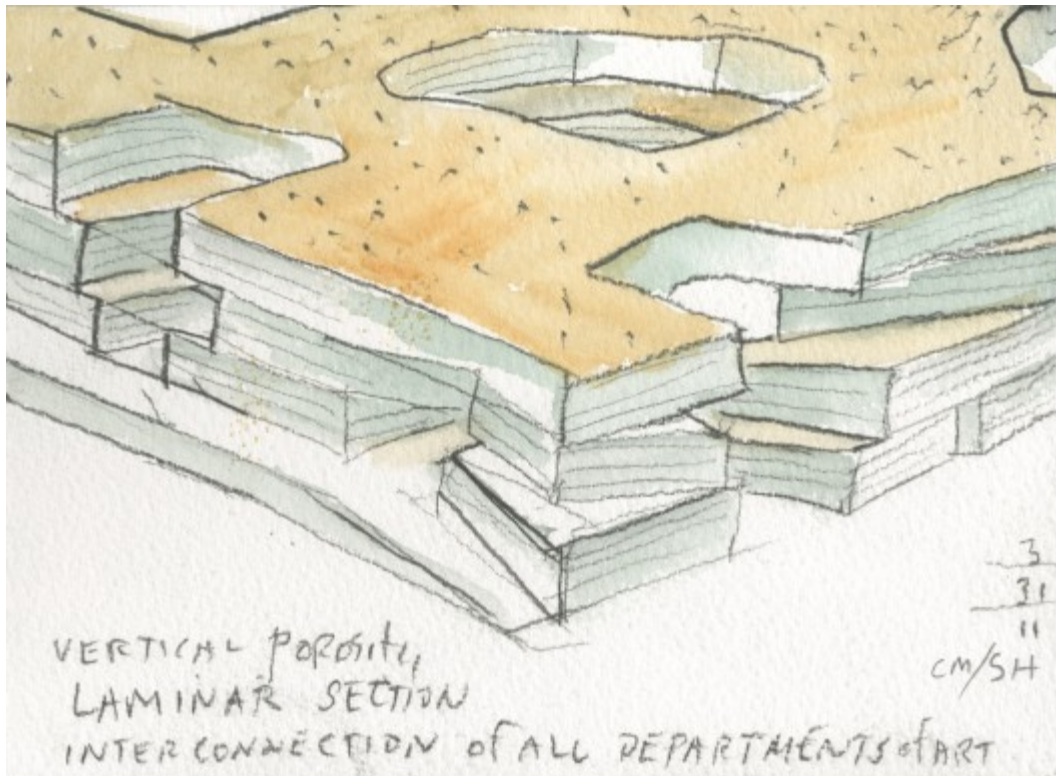
To create balance between the existing Arts Building West, which is horizontally porous and of planar composition, the new Visual Arts Building was specially designed to be vertically porous and volumetrically composed. Some key points of the design follow.



<sup>13</sup> <http://www.archdaily.com/434651/arts-building-for-university-of-iowa-steven-holl-architects/> 10/1/2013

**From the architect:****1. Interconnection: Horizontal Program .. Vertical Porosity**

In a school of the arts today, Interconnection and cmaam.er are of fundamental Importance. Today digital techniques open up increased interconnection between all the arts. Interconnection between all of the departments is facilitated in the vertical carving out of large open floor plates. Students can see activities ongoing across these openings and be encouraged to interact and meet. Further interconnection is facilitated by glass partitions along the studio walls adjacent to internal circulation.

**2. Multiple Centers of Light**

Natural light and natural ventilation are inserted into the deep floor plates via the "multiple centers of light." Seven vertical cutouts encourage Interaction between all four levels. These spaces of glass are characterized by a language of shifted layers where one floor plate slides past another. This geometry creates multiple balconies, providing outdoor meeting space and informal exterior working space.

**3. Stairs as Vertical Social Condensers: Corridors as Horizontal Meeting Spaces** Stairs are shaped to encourage meeting, interaction and discussion. Some stairs atop at generous landings with tables and chairs, others open onto lounge spaces with sofas.



[This was the initial idea of what led to the how think spot may be.]



#### 4. Campus Space Definition/Porosity

The original grid of the campus breaks up at the river, becoming organic as it hits the limestone bluff. The Arts West building reflects this irregular geometry in fuzzy edges. The new building picks up the campus grid again in its simple plan, defining the new campus space of the "arts meadow"

#### 5 Material Resonance, Ecological innovation

Natural ventilation is achieved via operable windows. A punched concrete frame structure Provides thermal mass at the exterior while "bubble" slabs provide radiant cooling and Heating. A Rheinzink skin in weathering blue-green is perforated for sun shade on the southwest and southeast.

### Summary

The ideas taken from this case studies are the arrangement of the different programs within the building. Where a great numbers of programs are arranged, and with it incorporated the usage of light wells to bring in light and natural ventilation. The design involves the contextual appropriateness of sitting in an existing university campus, where the design of School of fine arts would have the same influences being built late after the first phase of construction. Programmatically the first image of the "think spot", as required by the AUW.

## CHAPTER 5 PROGRAM

### Derivation of program

The total program of this the school of fine arts is comprised of major functions which are generally part of a school of fine arts. Again, these major functions have some group of functions under them. Namely these major functions are - administrative and faculty, academic, in house library (dedicated to that particular school). Exhibition spaces for both Department of Architecture and Department of fine arts. Recreational like cafe and the courtyard featuring the hill which would serve as a natural retreat. Since it is part of a bigger campus, the building complex of school fine arts would not feature other institutes and some ancillary facilities like Electro-mechanical services, Dorms, Guest houses & Daycare centers, Campus parking facilities etc. It is to be mentioned here that, this program was not primarily provided by the University authority, therefore it was done based on their student: teacher ratio and the number of intakes per year per school. The resulting programs are therefore based on two departments: Department of Fine arts and Department of Architecture, the detailed programs are as tabled below.

<b>School of fine arts</b>	
<b>Department of Architecture</b>	
<b>Programs</b>	<b>Area in square feet</b>
Chairman	250
secretary	100
Office Space	200
Faculty (12@ 120 sft)	1,450
TA(10f@80)	800
Meeting Room	300
<b>Common spaces</b>	
Common spaces like lift/lobby	550
Small Kitchen/Pantry	100
Lobby for Students & Visitors	300
Wash Rooms	150
Exhibition spacesx1	3500
<b>Classrooms per school</b>	
Small @25 seats: 450 sq ft x 3	450x 3 = 1350
Medium @ 35"40 seats: 750 sq ft x 5	750x5= 3750
Seminar/exam halls@ 100 seats: 1350 sq ftx 1	1350
Lecture halls@ 200 seats: 2250sq ftx 1	2250
Arc. Studios @ 30 seats 1500 sq ft x 8	1500x 8= 12000
Think spots: 1500-3000 sq ft x 1	3000
computer Labs@25 seats, 900 sq ft x 2	1800
Computer labs @50 seats , 1800 sq ft x 2	3600

<b>School of fine arts</b>	
<b>Department of Fine Arts</b>	
<b><u>Programs</u></b>	<b><u>Area in square feet</u></b>
Chairman	250
secretary	100
Office Space	200
Faculty (12@ 120 sft)	1,450
TA(10f@80)	800
Meeting Room	300
<b><u>Common spaces</u></b>	
Common spaces like lift/lobby	550
Small Kitchen/Pantry	100
Lobby for Students & Visitors	300
Wash Rooms	150
Exhibition spacesx2	2000x2= 4000
<b><u>Classrooms per school</u></b>	
Small @25 seats: 450 sq ft x 3	450x 3 = 1350
Medium @ 35"40 seats: 750 sq ft x 5	750x5= 3750
Seminar/exam halls@ 100 seats: 1350 sq ftx 1	1350
Lecture halls@ 200 seats: 2250sq ftx 1	2250
Drawing & drafting studios @ 30 seats 1500 sq ft x 2	1500x 2= 3000
Painting studios @ 30 seats 1500 sq ft x 4	6000
Sculpture studios @ 30 seats 1500 sq ft x 2	3000
General wood working area (sculpture)	5000
High power equipment area (sculpture)	2500
Glazing, kiln & Lumbers storage (sculpture)	1500
Project storage (sculpture)	200
Think spots: 1500-3000 sq ft x 1	3000
Outdoor working areas	<i>(Incorporated with circulation)</i>
computer Labs@25 seats, 900 sq ft x 2	1800
Computer labs @50 seats , 1800 sq ft x 2	3600

## CHAPTER 5

### Design development phase and Final design

#### 5.1 Introduction

After site analysis, program analysis, and master plan analysis, the design was initiated in parallel. Design being a process which requires continuous development and relating back and forth with contexts in site , program and other phenomenon to be considered, in this case the existing master plan of AUW by Moshe Safdie. Therefore, developments at various levels become an inseparable part of design. In this chapter the initiation of the design, to more concrete plans and then the final designs.

#### 5.2 Initial ideas

The main idea and at the same time the main perplexity was the terrain. The terrain with its both subtle and steep variations in height was to be questioned. Since in the master plan, the terrains over the whole of the 110 acres was to be leveled at various places, at the crowns and at the valley, this decision was taken due to the sandy clay-e soil properties, which otherwise the construction process would not be viable. At the crown of the hills this leveling made way for the residential buildings and at the valley made way for the arcade, promenade and the water body. At the hills the academic blocks are situated. The question was whether to keep the existing terrain or to design according to the master plan. And after much consideration it was decided that the part of the terrain be treated as it is designed in the first phase of construction. However, for the second phase or the school of fine arts, it would be designed as such that the *reflects* the existing terrain. Such would be the design that even the landscape would have elements or height reflecting the existing terrain. And the one of the initial idea was to generate the building complex out of the terrain.

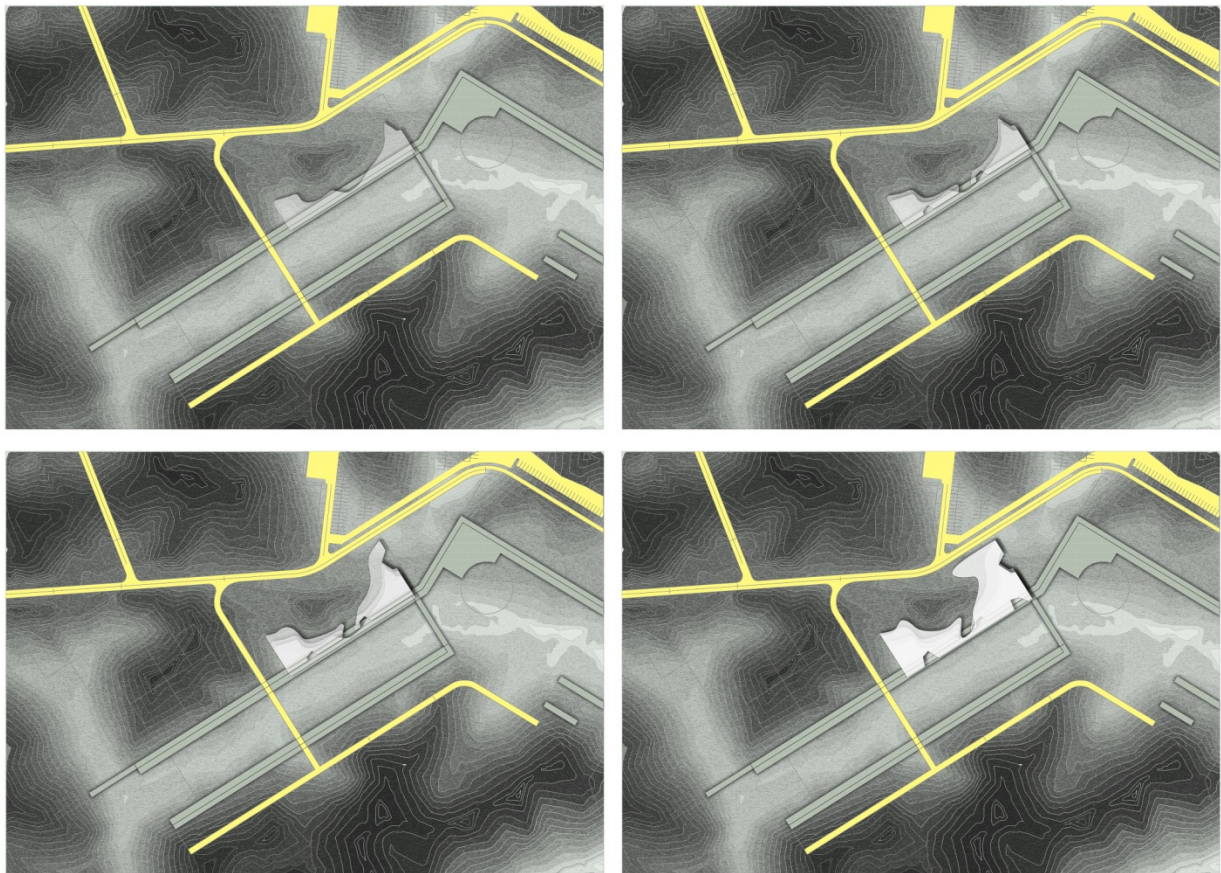


**Fig: 17 Initial ideas in sketches**

The sketches on the previous page was the first exercises of how the hill in the middle could be take in into consideration, while designing on the slope and also on the valley, showing the initial ideas of man made relation between the nature and the built form.

### 5.3 Form generation

One of the primary steps to address the contour and the shape of the academic block was finding out the usable/buildable land on the slope of the hills. Finding alcoves within the contours which would serve as vertical circulation areas. Creating those arcades and courtyards. The diagram below was the first trial of putting the existing double-L shaped blocks As shown in the proposed master plan by Moshe Safdie; and then carved out along the insied with respect to the existing hill.



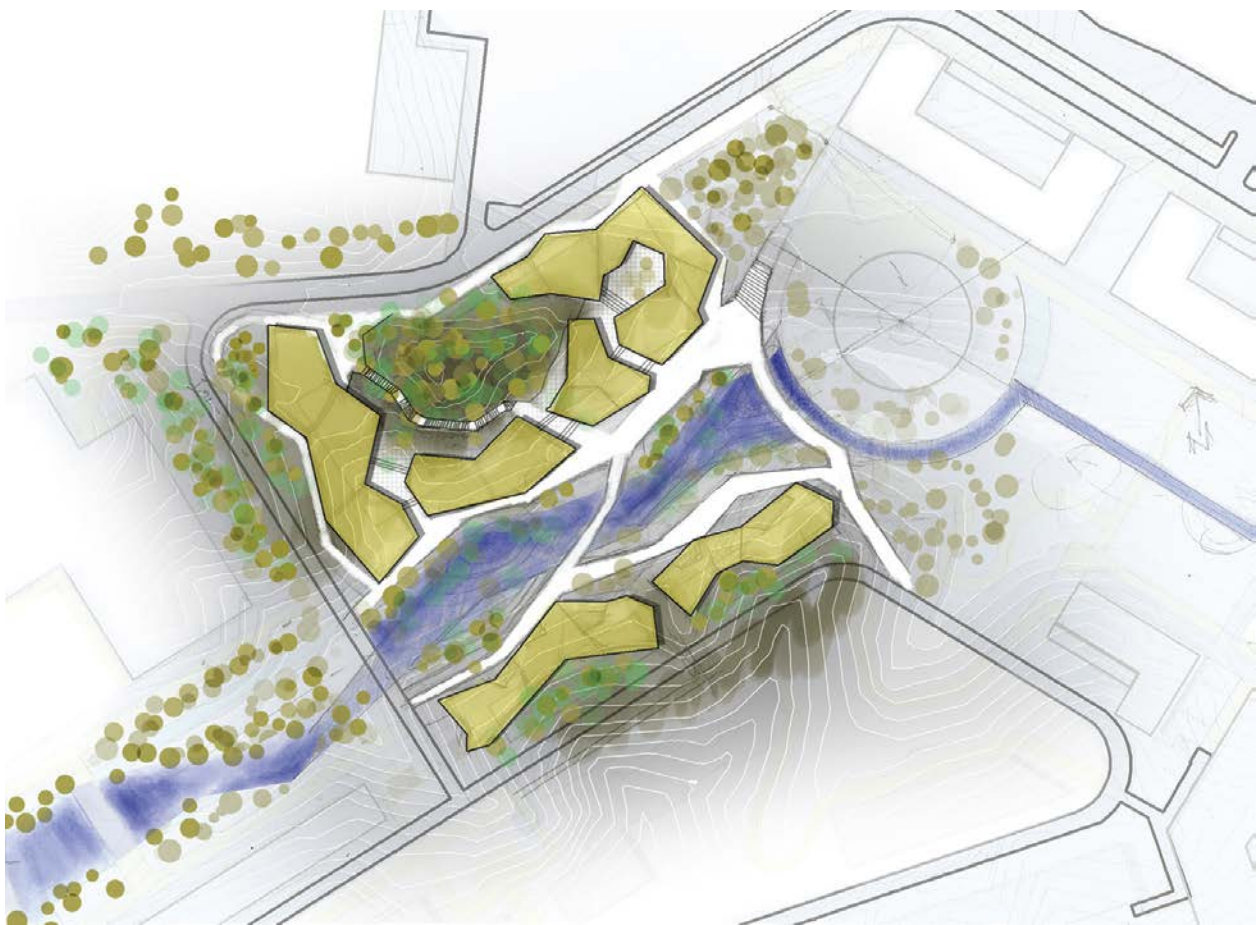
**Fig: 18 First attempt on Form generation** , source: author

If the existing hill was to be kept, it would lead to the modification to the proposed form in the master plan, therefore it was important to analyse the particular terrain and figure out he most usable areas on that particular zone. The diagram on the next page would explain futher.



**Fig: 19 Analysing the usable areas on the slope of terrain, source: author**

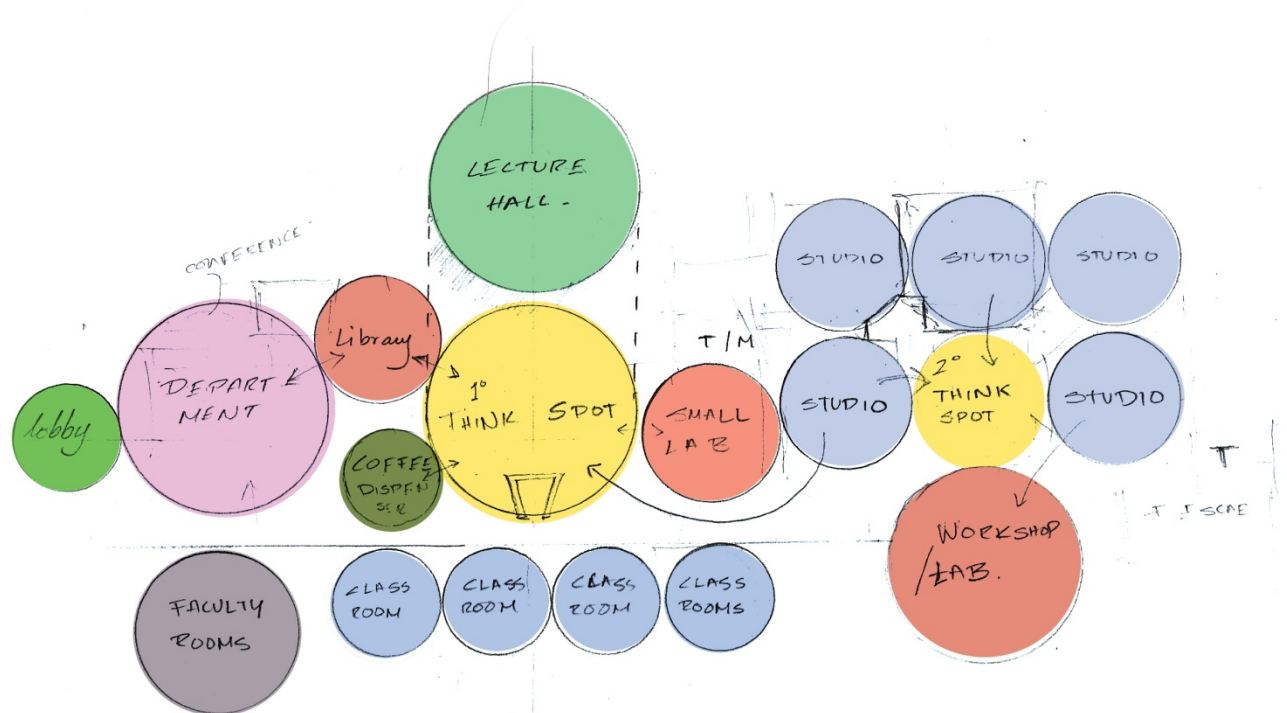
In the figure above, the first image shows the untouched contour lines of the site of the school of fine arts. In The second image, the purple colored shade indicates the usable areas on the slope of the contour. The third image, shows added pedestrian circulation, if overlaid with the proposed master plan.



**Fig: 20 Initial attempt on the master plan of School of fine arts.**

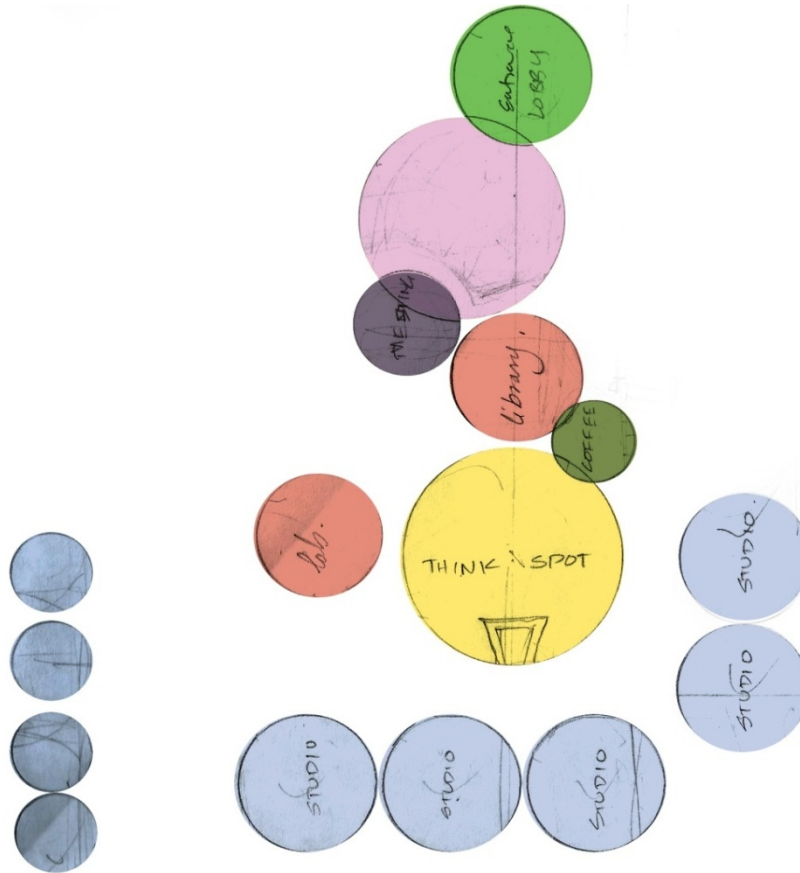
## 5.4 Organizational principle for the programs

Turning to the organizational principle of the programs that the building complex houses, most of which was derived from the initial requirements of the small classrooms, small student to teacher ratio and the thinkspots. And the bubble diagrams depict the schematic layout of the initial plans and consequently the final ones.



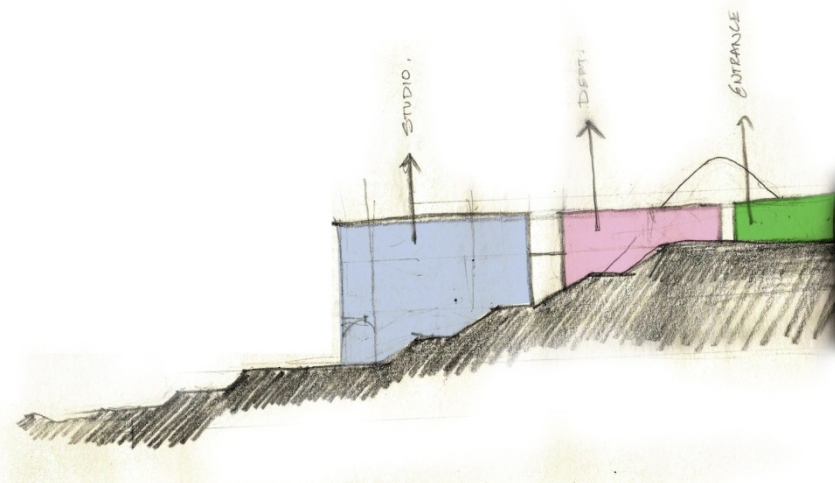
**Fig 21: the initial schemataic layout**

The think spots (yellow) are at the center of the arrangement, surrounded by classrooms or studios (Blue), and by other programs like faculty rooms (magenta), library (red), etc.. These are arranged as such that programs like library or coffee dispenser/stall falls in between programmatic zones like faculty and administrative blocks and the think spot. Or within between the workshops and the studios.



**Fig 21: the schemataic layout at the second stage of developemen.**

Here the programmes are arranged as such that there is a entrance from the vehicular circulation of the campus which is at higher ground. From the entrance leads the faculty offices and the inhouse library, then the Think spot. Which further leads to the studios on th south, underneath which would be the lower grounds and other amenities. On this south side of the building is the pedestrian access from the students residential halls. This is followed in both the department wings of architecture (on the east) and of Fine arts (on the west).



**Fig 22: schemetic section stating the flow of programs, source :author**

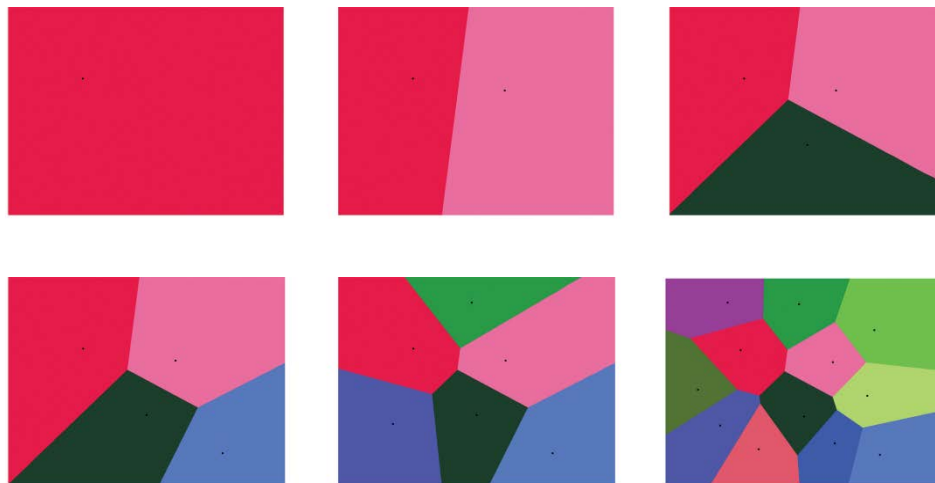


## 5.5 Generating Master plan through Voronoi

Getting back to the form and the usable land area, along with the organizational principle, these are set in a logical form of relation by laying over them a voronoi diagram derived out of the visual and physical connectivity of the masterplans layout and its elements.

In mathematics, a Voronoi diagram is a way of dividing space into a number of regions. A set of points (called seeds, sites, or generators) is specified beforehand and for each seed there will be a corresponding region consisting of all points closer to that seed than to any other. The regions are called Voronoi cells.

**Voronoi diagram**<sup>14</sup> *def<sup>n</sup>* In mathematics, a Voronoi diagram is a way of dividing space into a number of regions. A set of points (called seeds, sites, or generators) is specified beforehand and for each seed there will be a corresponding region consisting of all points closer to that seed than to any other. The regions are called Voronoi cells. It is named after Georgy Voronoy, and is also called a **Voronoi tessellation**, a **Voronoi decomposition**, a **Voronoi partition**, or a **Dirichlet tessellation** (after Peter Gustav Lejeune Dirichlet). Voronoi diagrams can be found in a large number of fields in science and technology, even in art, and they have found numerous practical and theoretical applications



*And so on...*

**Fig 23: Simple Voronoi diagram derived from addition of random seeds or generators**<sup>15</sup>

<sup>14</sup> [http://en.wikipedia.org/wiki/Voronoi\\_diagram](http://en.wikipedia.org/wiki/Voronoi_diagram) 10/1/2014

<sup>15</sup> <http://alexbeutel.com/webgl/voronoi.html> 26/12/2013



Fig 24: Voronoi diagram lay on top of the master plan by Moshe Safdie

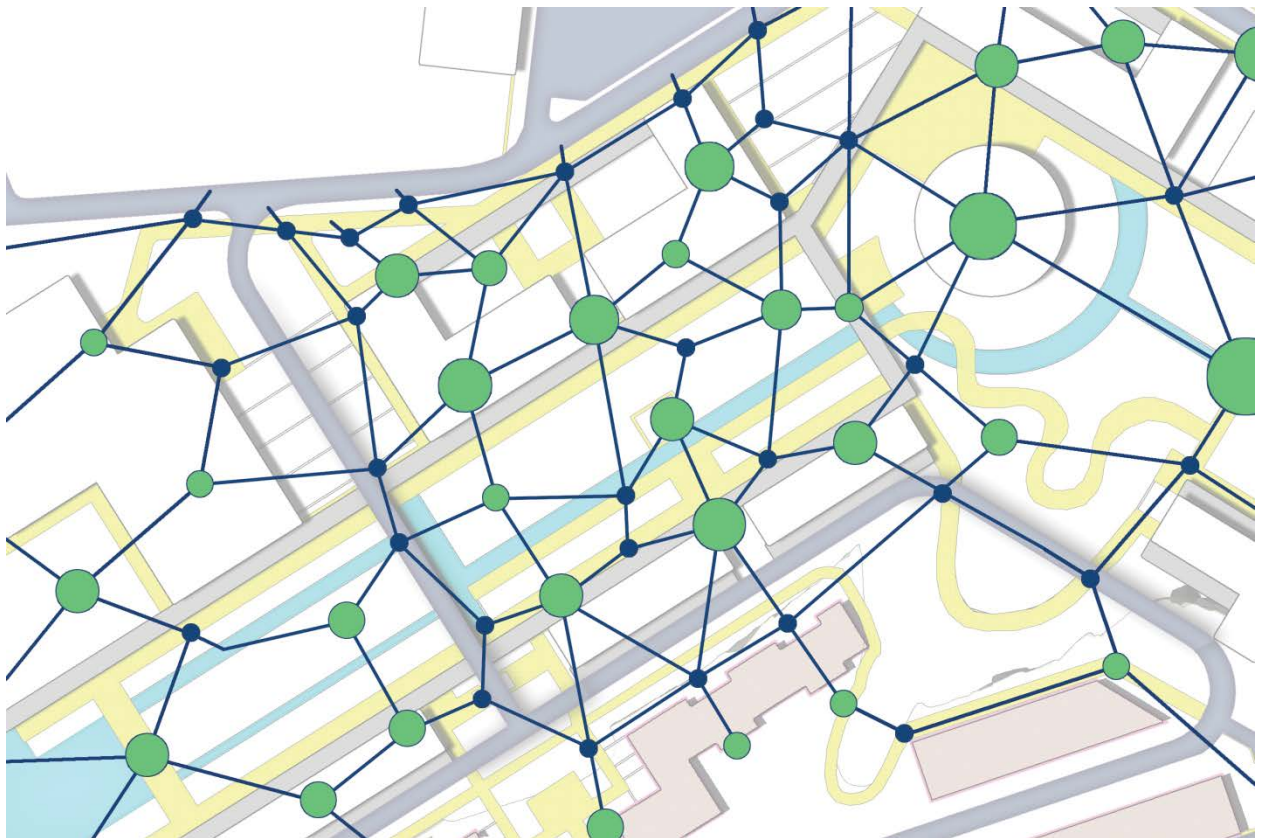
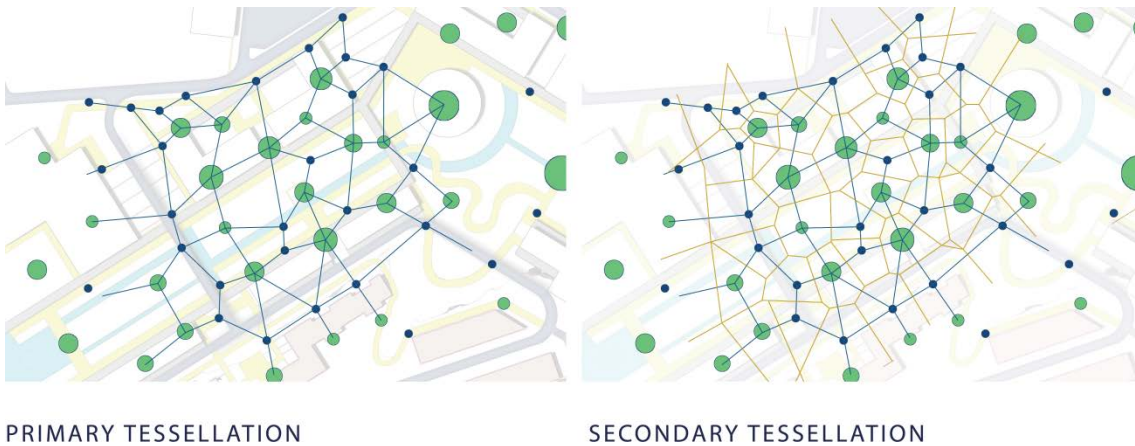


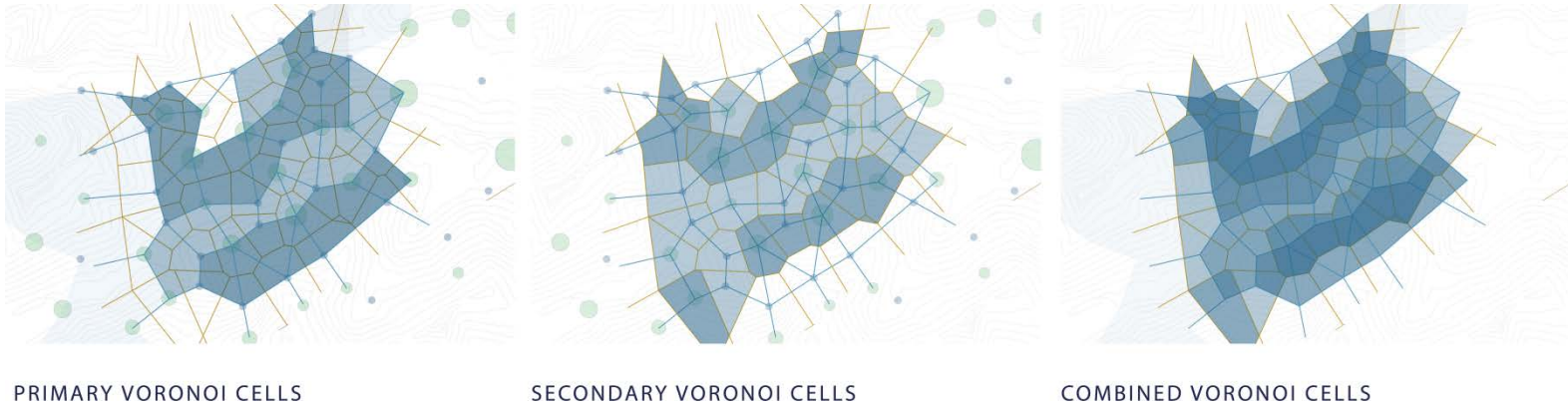
Fig 25: Voronoi diagram lay on top of the site of school of fine arts

The Voronoi seeds or generators are laid out into the master plan as elements reflecting the visual and physical connectivity. Such as: the green dots are the dots which can be connected considering the visual connectivity. The blue dots are the dots which can be connected considering the aspects of physical connectivity. These are not randomly set in the master plan, and are within the zones of academic buildings. These dots are key spaces or elements, for example an entrance, a double height space, an exhibition space, key spaces of interaction. In addition, the blue dots would be pedestrian circulation or circulation within the buildings. random dots set out according to the usable land and probable sites of interaction and circulation, physical connection (deep blue) and those of visual connectivity (green). Connecting these dots as a Voronoi diagram, closest ones connected, gives us primary Voronoi cells, differentiation of these lines provides secondary Voronoi cells. (tessellations)



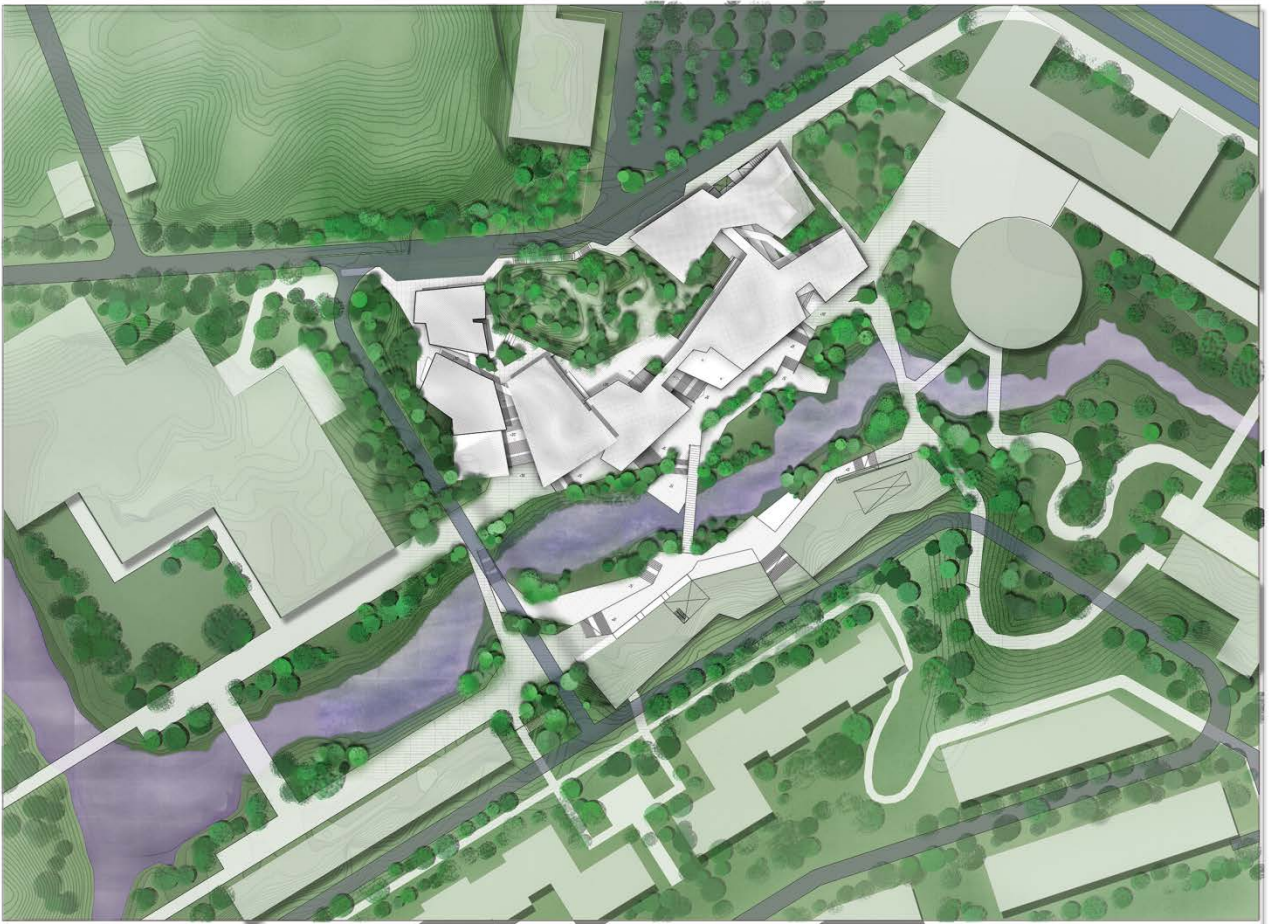
**Fig 25: Voronoi diagrams of primary tessellation and secondary tessellation, for respective primary and secondary Voronoi cells.**

The next step was to fill the cells as per the master plan's zoning and usable land on the slope of the hills. Combining these cells lead to the most probable form in the usable land on the slope. This would consequently generate cells, which will lead to the sort of shape that the form may generate, and the also form the room for housing the programs accordingly.



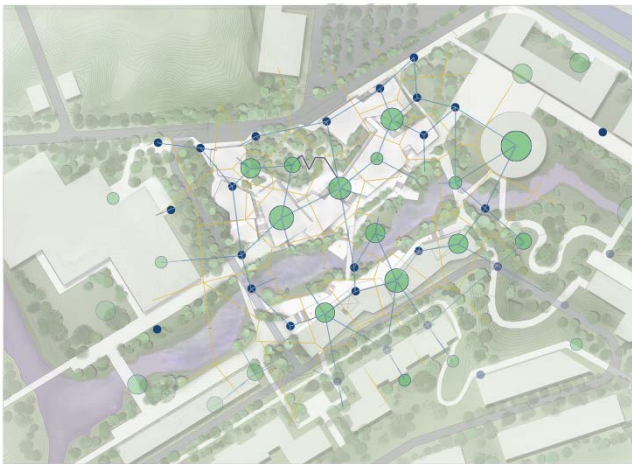
**Fig 26: Voronoi diagrams of primary tessellation ad secondary tessellation, specific cells filled with color as per the master plan's zoning and Usable land on the slope.**

## 5.6 Final design



SCHOOL OF FINE ARTS IN THE MASTER PLAN

**Fig 27: School of Fine Arts in the master plan**



The Voronoi diagram previously used is overlaid on the master plan. The voronoi seeds of connectivity and the lines joining them are them either reclaimed or ignored while developing the plans. Resulting the master plan above.

**Fig 27: overlay of Voronoi diagram in this master plan**

5.6.1 PLANS

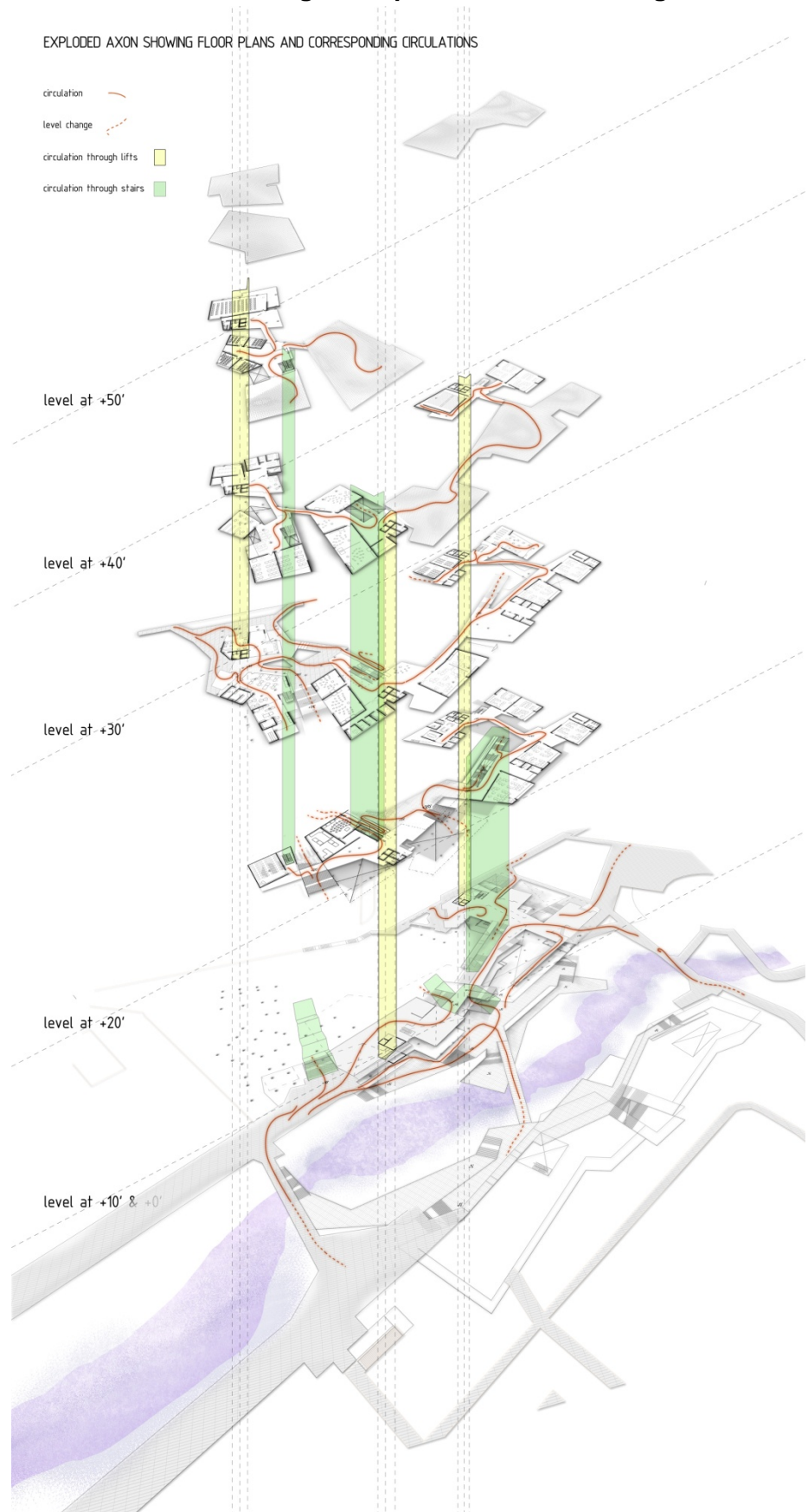




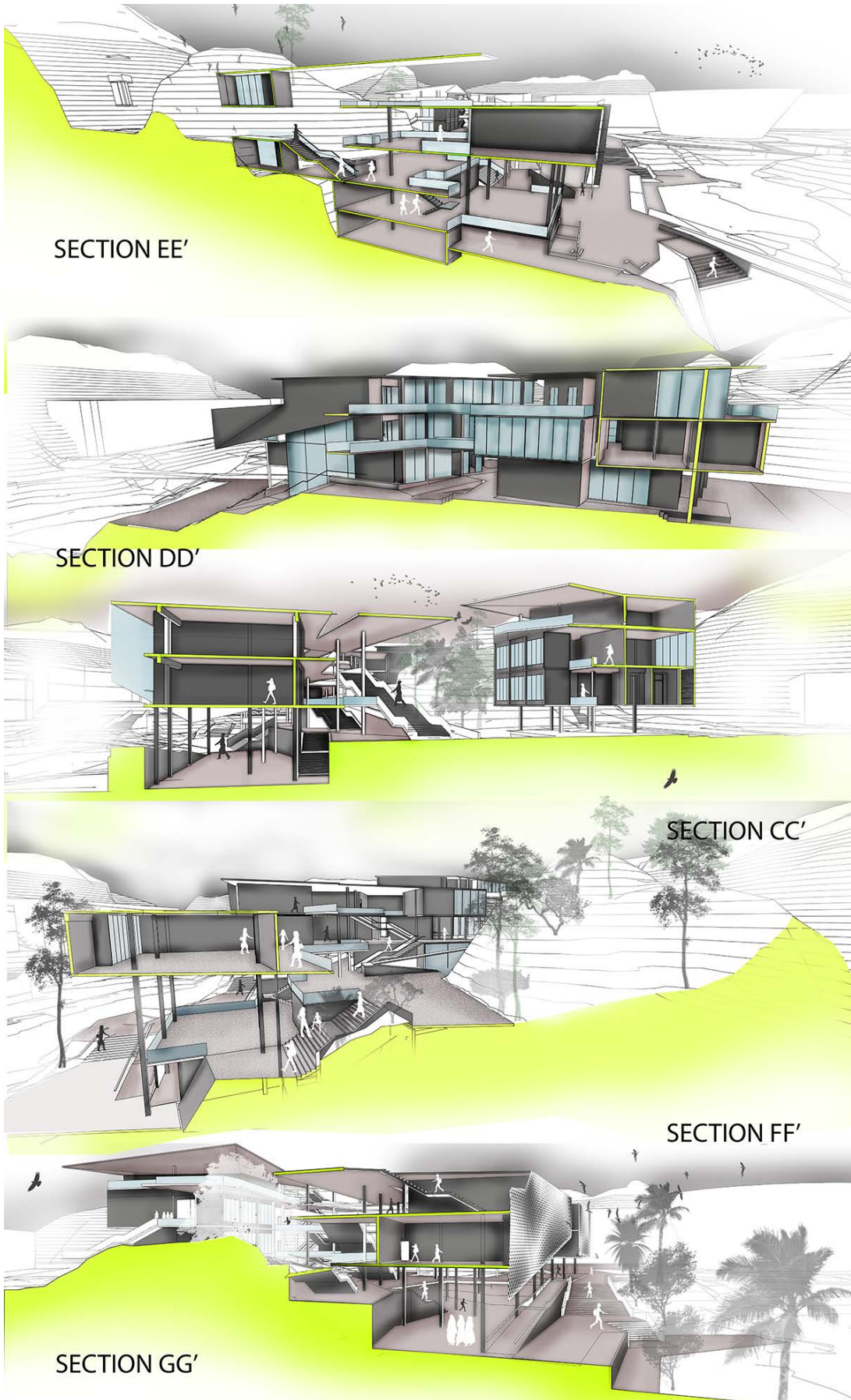




Fig 28: exploded axono showing circulation



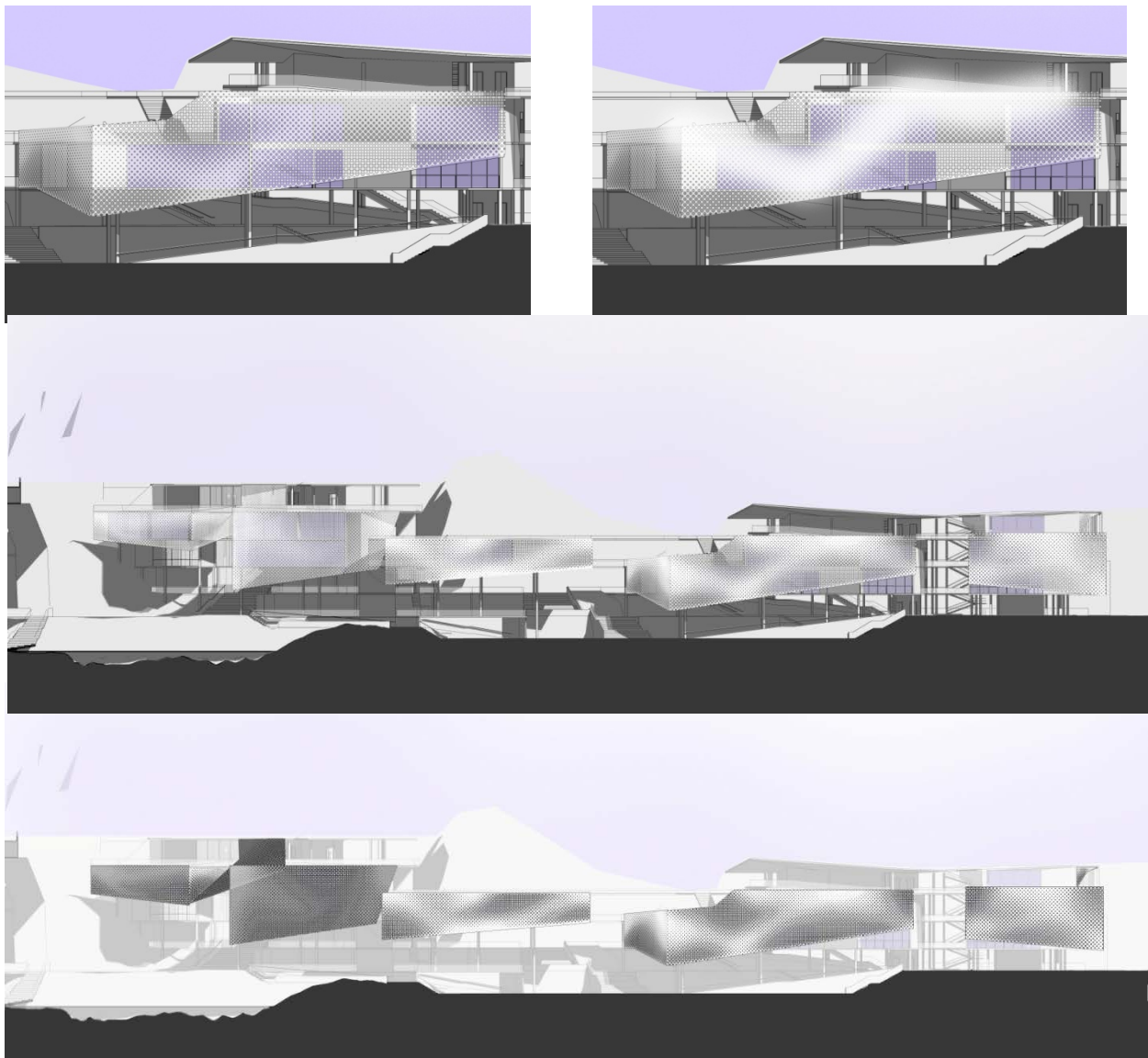
### 5.6.2 SECTIONS



### 5.6.3 Elevation

The elevation on the southern façade of the building provides a climatic protection as well as a source for energy. The southern façade has a screen of polycarbonate, and embedded within it are solar panels at specific angles for generating electricity. The pattern is devised as such that the perforations are smaller and less dense at regions where the windows meet the ceiling, this enables the screen to act as a louver and provide shading. The interior spaces therefore have variant patterns of light and shadows. The Pattern continues on the top on the roof. Here the larger perforations are zones of green on the roof and the smaller perforations or no perforations are zone of pedestrian retreat.

**Fig 29: Diagram of elevation's pattern generation**



**Fig 30: South elevation**

### 5.6.4 3D PERSPECTIVES



View from the approach from the residential zones



View of the amphitheatre on the landscape.



View of the hill through the building, from the promenade of the masterplan



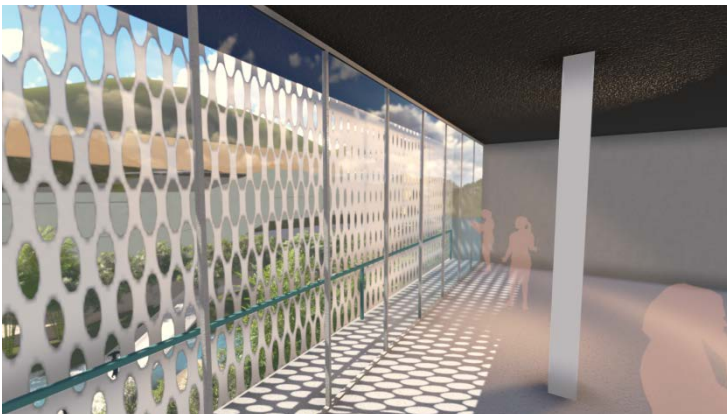
View of the foliage of the trees which are close enough for people to touch from corridors, etc.



View from the east toward the architecture studios and the thinkspot, near to which is the thick foliage of tress.

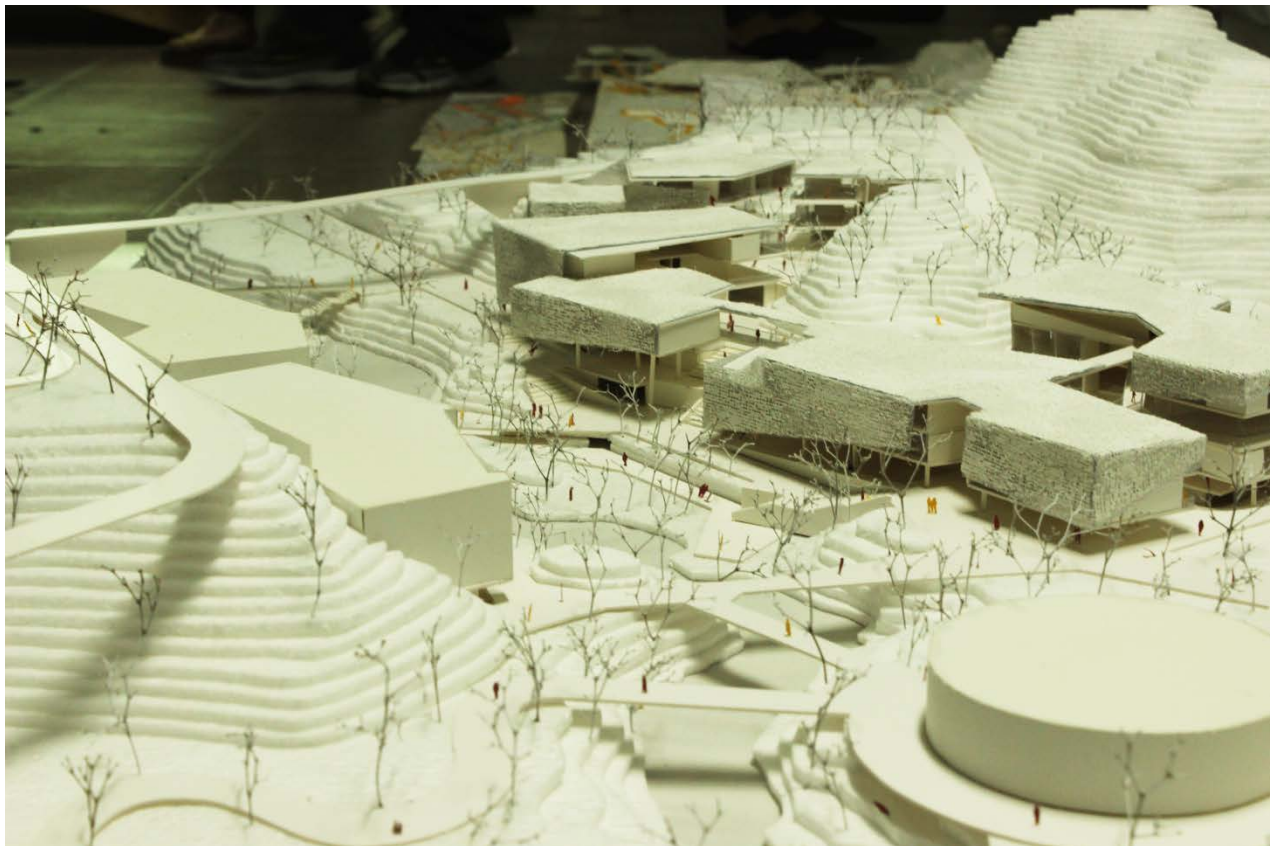


View of the bridges, towards the central hill.



Interior view of the studios, showing the variant pattern of light and shadow.

### 5.6.5 Model pictures



## **Chapter 6**

### **Conclusion**

The aim of this project was to create spaces both suitable and enjoyable to the students of the School of fine arts, at Asian university for women. This is important as much as the curriculum, since most of the interactions happen outside classrooms and hence most of the learning too. The central hill of the school of fine arts play a vital role and it gives a different definition to the courtyard concept. The hill being a natural retreat, serves more than the purpose of a courtyard. The form is generated from the terrain, with respect to the master plan of Moshe Safdie and Associates, provides a different solution than which was previously proposed. The idea from the beginning was not to make the built form an icon or something standing out, but something which blends into the exotic terrain that existed, and only to create space that would harness the creativity and imaginations of the student of School of Fine arts, AUW.

## References

1. <http://www.asian-university.org/campus.htm> 10/09/2013
2. <http://www.asian-university.org/campus/hostCountry.htm> 10/09/2013
3. Google Earth Image, 10/09/2013
4. Quoted from <http://www.asian-university.org/campus/plan.htm> 10/09/2013
5. Quoted from <http://www.asian-university.org/campus/plan.htm> 10/09/2013
6. Quoted from <http://www.asian-university.org/campus/organizationplan.htm> 10/09/2013
7. Quoted from <http://www.asian-university.org/campus/sustainability.htm> 10/09/2013
8. Quoted from <http://www.asian-university.org/campus/sustainability.htm> 11/09/2013
9. <http://www.youtube.com/watch?v=zrsqHwy7BYo> 7/10/2014
10. <http://www.utc.edu> author [Sarla R. Murgai](#) 7/10/2014
11. <http://www.utc.edu> author [Sarla R. Murgai](#) 7/10/2014
12. <http://www.asian-university.org/aboutAUW/missionAndVision.htm> 09/01/2013
13. <http://www.archdaily.com/434651/arts-building-for-university-of-iowa-steven-holl-architects/> 10/1/2013
14. [http://en.wikipedia.org/wiki/Voronoi\\_diagram](http://en.wikipedia.org/wiki/Voronoi_diagram) 10/1/2014
15. <http://alexbeutel.com/webgl/voronoi.html> 26/12/2013

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