ISLAMIC INSTITUTE OF RESEARCH AND ADVANCED STUDIES

An Architectural Representation Of Islamic Values

By

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M.Sc. II (Arch)

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of master of architecture,

Ahmadu Bello University, Zaria

1988

DECLARATION

I Jamila A.R. Doi, solemnly declare:

(i) That this thesis entitled ISLAMIC INSTITUTE OF RESEARCH AND ADVANCED STUDIES: AN ARCHITECTURAL REPRESENTATION OF ISLAMIC VALUES has been prepared by me under the supervision of MR. MASUD ABDULKARIM AL-LADAN while I was enrolled as a regular student of M.Sc. Architecture at the Ahmadu Bello University , Zaria;

(ii) that all sources used in its preparation have been duly acknowledged; and

(iii) that no part of it has been presented elsewhere either for the award of a degree or for publication.

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CERTIFICATION

This thesis entitled Islamic Institute of Research and Advanced Studies: An Architectural Representation of Islamic Values by Jamila A.R. Doi meets the regulations governing the award of the degree of M.Sc. Architecture of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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Head of department

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Dean Postgraduate school

ACKNOWLEDGEMENT

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ABSTRACT

This project aims at the design of an educational institution on the basis of certain Islamic principles which have been used throughout the centuries in the design of various buildings in different Islamic regions. Although the environment and physical needs of each region are different, there are some basic Islamic principles that are always used in the planning and design.

One of the most important principles is the expression of culture of the muslim peoples being designed for Islam as a religion transcends both culture and tradition and hence allows full expression of the culture of the people as long as they do not conflict with the laws of Islam.

Hence the project will reflect in both planning and design the various Islamic principles as well as the culture of the Hausa-Fulanis who are predominantly Muslims.

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CHAPTER ONE

INTRODUCTION

1.1 Islamic Concept Of Architecture

Islamic architecture is the "architecture of the peoples who have embraced Islamic faith".[1] Therefore, it is a misnomer to use the term "Arab" in this connection because it will be completely misleading. Wherever Islam spread, it was practiced as a way of life which influenced all aspects of human life, including enviroment and habitat. The local influences penetrated and influenced the art and architecture and this gave greater beauty to the architectural manifestations.

Some eminent scholars like professor Hussain Nasr, Berque and Ardalan who studied the architectural plans of earlier cities have described the Muslim cities "as a direct manifestation of Tauhid (unity of God) in Islam".[2] Therefore, every architectural pattern will seek the design or decorative motifs centered on this very theme.Islam forbids the representation of icons any kind. Designs have been used with great intensity for the purpose of producing a pattern of intricate beauty. Beacause man is the the crown of all creation created in the image of the creator , Islam forbids images of any kind as this would imply ascribing partners or associates to God and the worship of something lower than man. Hence Islamic architecture developed the use of lustrous tiles, baked bricks and arranged them in beautiful and splendid calligraphic borders.

The most distinguishing quality of Islamic architecture is the ability to achive a unity that trancends both region and time. Within Muslim towns in Arabia, Asia and Africa, the secular and sacred co-exist harmoniously as do the great with

small, the grand with the humble. This is the reason why large areas are reserved for domestic or social space with much attention being paid to the construction of doorways, archways, gateways and domes. Quranic abstracts and arabic calligraphy are inscribed on many buildings as can be seen in Zaria and Kano city giving them a beauty which is distinctly Islamic and conveying an art form which is unique.[3]

1.2 Dominant Characteristics of Islamic Architecture

There are a number of dominant characteristics of Islamic architecture both architectural and asthetical. This is beacause variety has always been present in Islamic architecture as a result of ethnic racial or regional ideas hence this characteristics constitute the unity of Islamic architecture found throughout the world.

1.3 Design Parameters of Learning Spaces in Islam

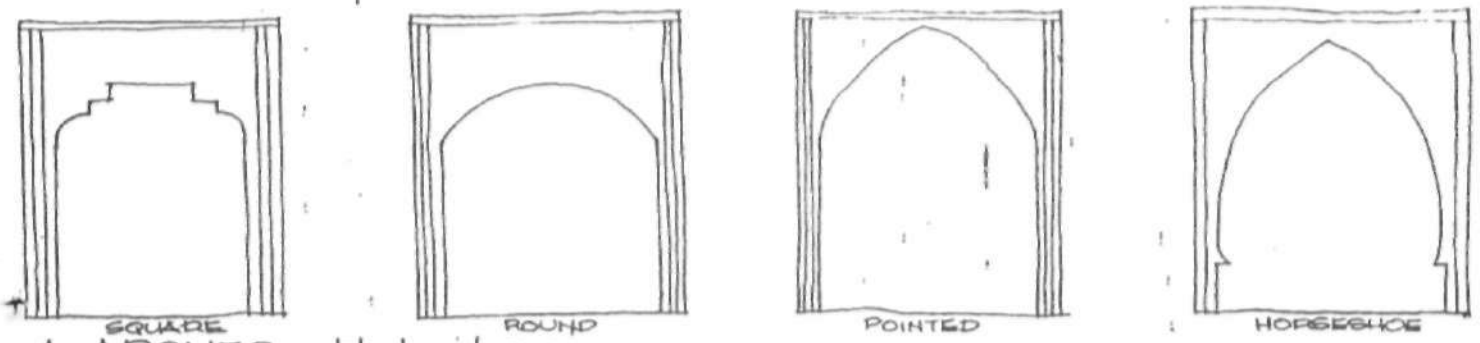
1.3.1 Privacy: (Khilwa)

All Madrasas (schools) show this concept of privacy of women by the clear demarcation between male and female areas.

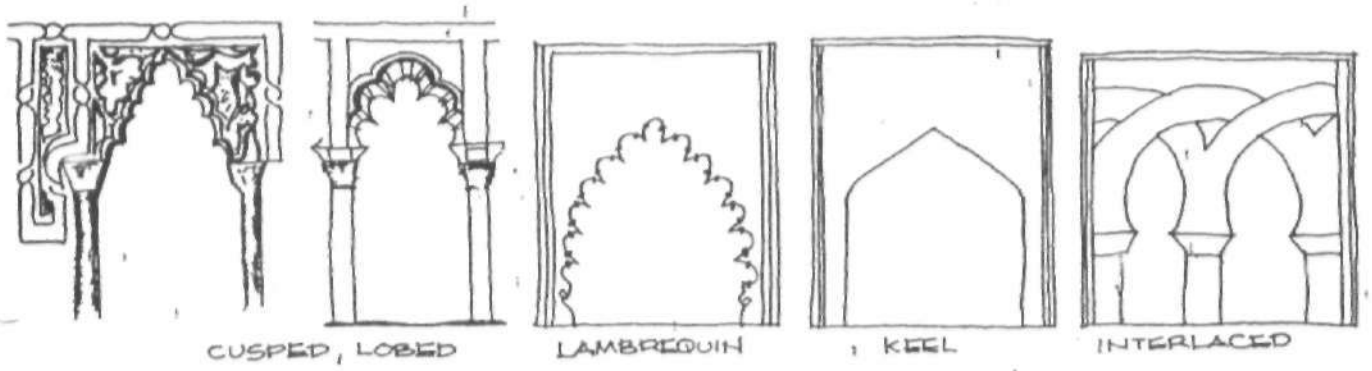
1.3.2 Simplicity of Plan

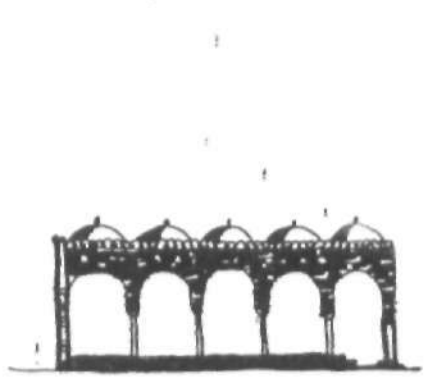
Right from the early days of Islam , education has always taken place in the Mosque or a madrassah attached to the Mosque. The plan of these buildings are very simple and are usully square or rectangular in shape.

ISLAMIC ARCHITECTURAL MOTIFS

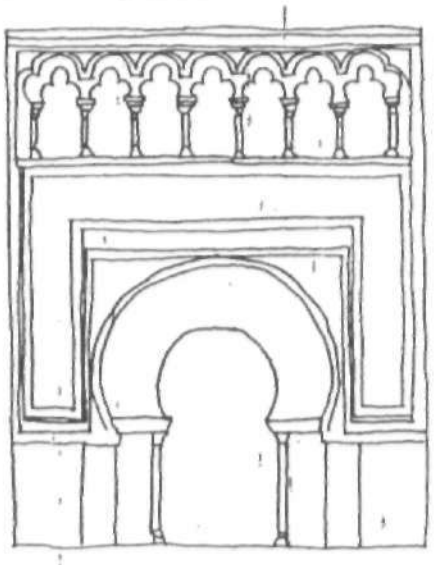


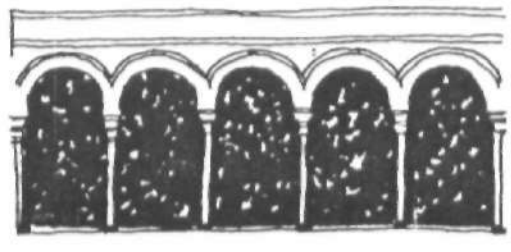
A. ARCHES – blind and open





B. ARCADES – blind and open







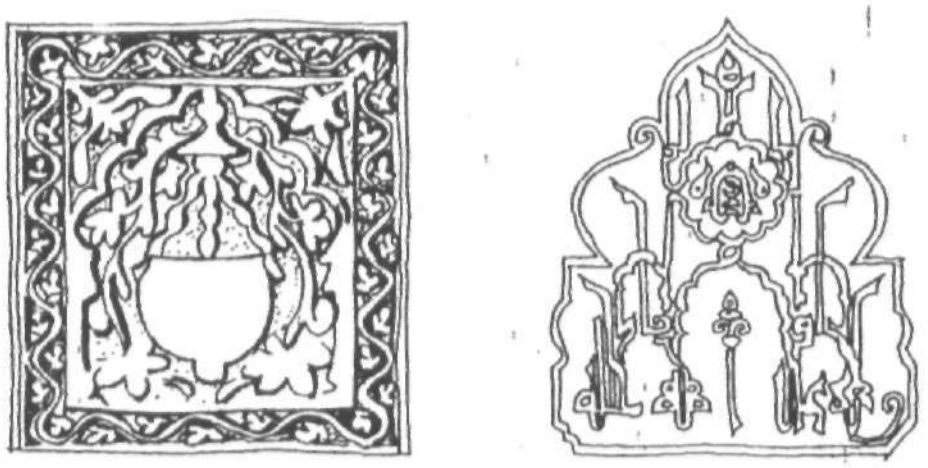
C. COLUMNS AND PILLARS – with or without structural role



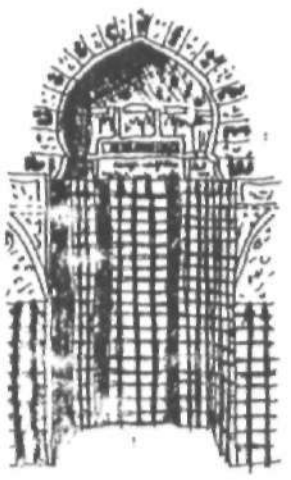
D. DOMES AND CUPOLAS

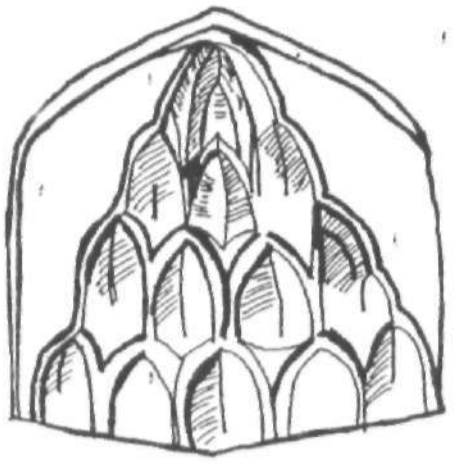


E. CRENELLATIONS/MERLONS



F. NICHES (2-dimensional) a.





3-dimensional (muqarnas) b.

SOURCE: FARUQI AND FARUQI, 1986

1.3.3 Functionality of spaces

This implies no wastage of space . There are a number of Quaranic verses and prophetic traditions which emphasise on the term La-Tusrifu which means there must be no oestentation.

1.3.4 Study Circle

Whether learning takes place in the Mosque or madrassah the students always sit in a circle around the teacher who usually sits on a raised dias.

1.3.5 Beauty

This is done in two ways:[1] Ornamentation - use of architectural and aesthetical motifs [2] Use of gardens, courtyards, flowers and pools.

1.3.6 Security

There is a prophetic tradition which says that there must be no exposure to risk. The above are various important aspects of islamic architecture which are repeated and found in all types of buildings irrespective of whether these buildings were built in the past or modern times.

CHAPTER TWO

HISTORY OF ISLAMIC EDUCATION

2.1 Early days of Islamic education

Right from the very beginning, Islam has always occupied an important place in muslim life , and the Hadith supported by the Quran has set high values on knowledge and learning. There is a prophetic tradition which says 'seek knowledge even though it be in China'. Education in the early days of Islam included the inculcation of honesty, truthfulness and moral character. Subjects taught were reading and writing, the holy Quran, prayer , some aspects of law and arithmetic for business dealings. Sometimes non-academic training too was given such as archery and swimming. Technical training was however non-existant. This was however given later in medevial Islam by guilds which were were very powerful institutions both socially and spiritually eg in Turkey. These guilds provided training in arts and crafts through the apprenticeship system. Military training too, was combined with spiritual and academic training (especially in the days of jihad)

2.2 Mosque as a center of learning

The Mosque in the dawn of Islam has not restricted to divine worship alone but was also used as a place of instruction whereby religious and secular instructions went hand in hand. The recitation and exegesis of the holy Quran and the study of Hadith (prophetic traditions) where from the very begining associated with the Mosque and the prophet (SAW) himself used to impart education there and likewise

the companions of the prophet. The Mosques were used as colleges in the early days of Islam and there was often an adjacent khan as a residence for students living outside the town. The Mosque has never lost its primacy as an institution of learning even till today. A maktab and madrassah were more often than not attached to it. Halls and annexes were built to provide accomodation for both students, teachers and travellers. Many Mosques also had a good library especially rich in its religious literature. These were collections from gifts and bequests and it was a common thing for a scholar to give his books for the use of the muslims. The Mosque was often the only place where adult education was provided. Lectures were held both in the masijid (ordinary Mosque) and the jami (congregational Mosque or friday Mosque). The jami usually has halqas (study circles) in which various Islamic sciences were taught. In Bagdad for example, and elsewhere Ulama (learned scholars) held positions in various halqas in the jamis of a city. If the size of the study circle was large, mustamlis (assistants) were usually employed to help in relaying the voice of the teacher to those who are too far to hear it. The assistants also repeated the text dictated by the teacher so that all could take it down . Most of the ancient universities in the muslim world sprang up from Mosques like:

Al Azhar in Cairo

Al Zaytoune in Tunis

Al Karawiyheen in Rabat

Al Qairawan in Tunis

2.3 Establishment of Islamic Schools (madrasahs)

Muslim education began with the holy Quran and prophetic traditions. Ilm (knowledge) meant for the muslims a knowledge of what the holy Quran and the

traditions had to say on all matters. Gradually halls and colleges grew up which catered for religious education and as early as the first century of Islam, a majlis (hall) for the teaching of Islam is mentioned.

The principal types of educational institutions in the Islamic world were maktabas and madrasahs. Learning also took place in some instances , in the houses of individual instructors who received renumeration from their pupils in the form of personal service. Maktabs may be likened to present day primary schools and madrasahs to a little short of present day colleges. Capital cities always had madrasahs while smaller towns always had Mosques with Maktabs attached to them.

Discipline was rigorously maintained in all such institutions and every teacher was bound to be careful about the morals and manners of his students. He had to make sure that his students were regular in prayer and had proper social manners such as Adab (respect for elders) and Khulq (coutesy towards others). Special importance was also given to the teaching of the holy Quran with meaning. This was a great education in itself as it made the students politically democratic, socially amiable, religiously tolerant and morally strong.[1]

These institutions were usually residential and as a result, there existed between the teachers and the taught a cordial relationship and each profited by the others company. Apart from Sanads (certificates) and scholarships, taugas (medals) were also awarded to the more brilliant students. Physical punishment was given to truants and delinquents. Girls and boys usually received education together in Maktabs but at madrasah level they became separate.

There are many examples of famous madrasahs which grew up as a result of the great demand for learning by the muslims. In 830 the caliph Mamun al-Rashid, established in Bagdad a research academy for philosophy and astronomy. The

Fatimids also established a similar institution in Cairo in the twelfth century. The most celebrated of the relatively early colleges was the Nizamiya founded in Baghdad by the famous Seljuk vizier, Nizam al Mulk in 1067 where law, theology and tradition were taught. More stately and more wealthy than the Nizamiyah was the Mustansiriyah of Bagdad, founded in 1234 with a large staff to teach four schools of law as well as other disciplines.

The Al Azhar in Cairo is the most important representative of the medieval school, and is still in existance.It was completed as a Mosque in 977 and sixteen years later, it started functioning as a seat of learning. Philosophy and medicine were part of the syllabi in addition to religious subjects, and now teaches modern subjects as well.

2.4 Islamic Education In Nigeria Today

The system of Islamic formal education started in Northern Nigeria. It began at the time of the establishment of a new capital of the Kanuri empire at Bornu. The real Islamization of Bornu took place during the reign of Mai Idris Alooma (1570-1602) during which time Mosques and madrasahs were established.

Islamic formal education in Nigeria is carried out at three levels; the Quranic schools, the Islamiyya school and the Ilmi school.

2.4.1 The Quranic School

Quranic schools are usully held in of outside Mosque buildings. They are also held in verandahs of the Mosques where benches are set up for the students during school time and piled up in a corner after school. Sometimes the students also sit in circles around the mallam (teacher).

There is no restriction on the ages of the students. The smaller childern are given wooden slates on which the mallam has inscribed the Arabic alphabets for beginners or short Suras (chapters) of the holy Quran for others which they recite in a sing song fashion. Their teacher corrects them or leads them with a note. After learning the rudiments of the Quran, the larger Suras of the holy Quran, the Hadith (prophetic traditions) or old religious texts of Fiqh (Islamic theology) are taught.

There is no fixed time of addmission into this school and students can start whenever they want. As a result, the teaching is individualised. Fees are not usually paid but recently some schools have introduced various fees; 50 to 90 kobo per month. The teacher also receives gifts from the pupils' parents at festivals.

2.4.2 The Islamiyya School

This is the second level of formal educational system. Curriculum here is more organised. Subjects taught are the holy Quran, Hadith, and Fiqh. Students may spend two to six years in this school. Learning takes place either in the Mosque or an ordinary classroom building.The students (in the Mosque) sit in halqas (study circle) and their instructor comes to them in turn. Teaching too here is individualised.

2.4.3 The Ilmi School

This is the most advanced type of school and they are mostly found in big towns. Again no specific age for addmission or financial requrements are needed. Subjects taught are Tafsir (Quranic exegesis) , Hadith and fiqh. Learning takes place either in a classroom building or in a Mosque. Recently in the Islamiyya and

Ilmi schools, various fees for admission, award of certificates and monthly or annual tution fees have been introduced.

The graduates of this school are appointed as area court judges, can lead Friday prayers and are usually called for conducting religious ceremonies.

CHAPTER THREE

CONCEPTS OF ISLAMIC CAMPUS PLANNING

3.1 Certain Islamic Principles Followed In Campus Planning.

The essence of Islamic culture is seen in its basic principles and spiritual conception more than in the application of traditional artistic forms. The surface decorations which are a characteristic of most Islamic edifices over different centuries is not a major characteristic of Islamic architecture. The holy Quran is no doubt one of the sources of Islamic principles for example:

> Quran, Al Esra 27:
>
> In the name of Allah, the beneficient and the merciful, squander not thy wealth ,the squanderers were ever the brothers of the devils.
>
> Quran, Ashura 128, 129:
>
> In the name of Allah the beneficeint and the merciful, build ye on very high place a monument for vain delight? And seek ye out strongholds, that haply ye may last forever.

The principle here is that Islamic buildings should not be luxurious, there should be no wastage of space or overabundance of rooms which are not used for any particular purpose.

Quran, Al Baqarah 143

In the name of Allah the beneficient and the merciful, Thus we have appointed you a middle nation that ye may be a witness against mankind and that the messenger may be witness against you.

Quran, Al Furqun 67

In the name of Allah the most beneficeint and the merciful, And those who when they spend are neither prodigal nor grudging and there is ever a firm station between the two.

From the above two verses we can derive the principle of modern living and moderate expenditure.

Quran, Al Nur 27

In the name of Allah the most beneficient and the merciful, O ye who belive ! enter not houses other than yours without first announcing your presence and invoking peace upon the folk thereof. That is better for you that ye may be heedful.

From thi s verse we see the importance of privacy.

Quran, Al Tawbah 109

In the name of Allah the most beneficient and the merciful, Is he who founded his building upon duty to Allah and his good pleasure better, or he who

founded his building on the brink of a crumbing precipice so that it toppled with him into the fire of hell ? Allah guideth not the wrong doing folk.

The principle extracted from this verse is that religious ceremonies should be given proper consideration when designing public buildings.

Other Islamic principles include:

Hierarchy of Spaces Succession of courtyards.

Winding footpaths This provides some degree privacy for the women and mutual shading of buildings.

Use of the natural enviroment Such as hills, trees or bodies of water. They are usually used as a visual focii.

Use of richly landscaped courtyards and open spaces.

Expression of tradition and culture The architecture of Islam encourages full expression of identity of a region or area as long as it is within the bounds of Shariah.These are all ways of recognising one region from another.

Connection to neighbourhood This has been a part of all muslim universities, whereby in one way or another the neighbourhood too could use the facilities of the universities such as the library and the Mosque.

3.2 Examples Of Concepts Based On Islamic Principles

3.2.1 King Abdul Aziz University, Mecca

Concept used is based on achieving privacy of women and use of visual focii. Characteristics of concept are:

- Two separate campuses are created with full infrastructure facilities in both.
- The two campuses are linked by the main library and central administration building only.
- No link to the outside world at all. This has an adverse effect on the university as there is no contact at all unlike the old universities of the Islamic world where it was linked to the neighbourhood through the Mosque, for interaction between the university and the neighbourhood community members.
- The university is built in the hilly and desert area of Saudia Arabia and hence the hills are used as visual focii whichever way they are seen from.

3.2.2 Islamic Educational Centre, Cairo

Concept used is based on privacy and connection to the neighbourhood. Characteristics of the concept are:

- Partial segregation with common facilities such as Mosque, administrative building, conference hall, clinic and library in the center of the site dividing the site into two; one for men and the other for women.
- The site is within Cairo city itself and the Mosque is used as the connection between the center and the neighbourhood.

3.2.3 University of Blida, Algeria

Concept used is based on the sucession of courtyards (hierarchy of courtyards) and the use of focii. Characteristics of concept are:

-The central focus of the university is the library which is linked to the major social space by a covered bridge,

- The university is divided into six individual areas, each having its own individual focus.

- The architecture of the university continues the sence of small to large, like the transition from house to street to town. Each discipline has a garden oriented cluster incorporating a specialised library, faculty offices, administration, special classrooms and laboratories.These disipline clusters ring round a central cluster of shared classrooms and amphitheares. These in turn are disposed around their own gardens.

3.2.4 Yarmouk University, Jordan

Concept used is based on the sucession of courtyards and connection to the neighbourhood. Characteristics of the concept are:

- Two central pedestrian walkways with courtyards interspaced in between them. The walkways lead to the central administrative building. Each disipline has its own courtyard.

- Connection of the university to the neighbourhood community by the social spine which comprises the Islamic cultural center, Mosque, museum and civic center and also tecnical services such as the computer center. The sports city is also another aspect of integration with the community.

3.3 Infuence of Culture and Tradition

Islamic architecture differs due to tradition and culture , enviroment and physical needs of each Islamic region, but in all cases, the spirit and faith of Islam are the same.Culture and tradition have always influenced the planning of

muslim universities throught the ages.This is evident in the old muslim universities whereby the planning costruction and design methods, and the types of building materials peculiar to an area are always used in conjuction with the principles laid down by Islam.

Hence in the planning and design of the institute, the culture and tradition of the muslim people of Nigeria (Hausa culture) will be used to a plausible extent. Islam first came to Nigeria, to be precise, to Katsina in Hausa land. The first muslim chief in Katsina to accept Islam was Mohammed Korau (1830 - 1920 AD).[1] After Katsina, Islam spread to Kano in the reign of Yaji (1319 - 1385 AD). The Kano chronicle mentions that the Wangarawa or Mandingo traders from Kano, Islam spread to Zaria and other parts of Hausaland. Islam was introduced to Yorubaland through Ilorin.

The Habe muslim rulers ruled Hausaland for a very long time until the period of the jihad of Shehu Usman Dan Fodio. During this time and also after the jihad Mosque buildings and small makaranta (Quranic schools) were built with Islamic architectural patterns and embellishments (already flourishing in various capitals of Islamic empires of West Africa) throughout Hausaland. Famous scholars like Maghilli came to Kano, Katsina and established Mosques, schools and shariah courts. Similar institutions were also established in other parts of Hausaland. Besides the pilgrimage route passed through Katsina hence a large number of scholars and artisans passed through the Northern parts of Nigeria (Hausaland).

Hence Islam had a great influence not only on Hausa culture itself but also on the resultant physical environment. The factors that influenced the desigh of both public and domestic buildings and the planning of cities are:

(a) Centralisation of Administration

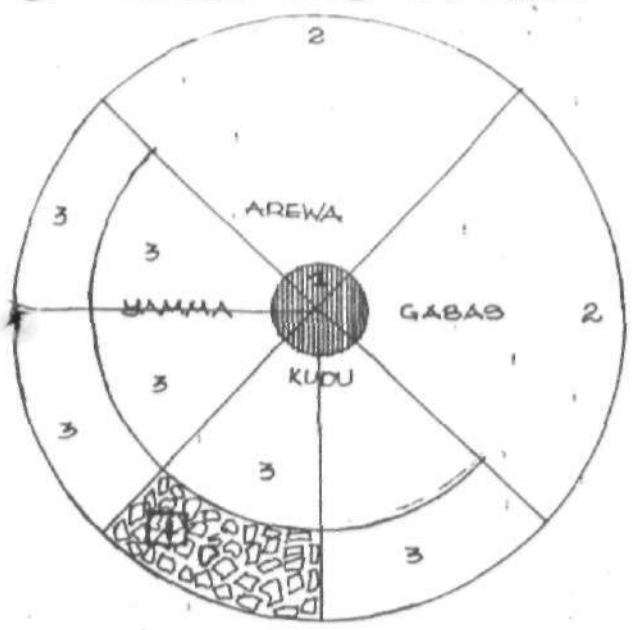
To establish an Islamic theocracy: This led to having a focal point of the city which includes the palace, friday Mosque, market and Dandali (civic open space). As Masood and Mauruf point out "with the comming of Islam came physical separation of the commercial nucleus (market) from the politico religious domain giving the Hausa city a bifocal image".[2] Hence the city had a second focus which were the palace (Fada) and friday Mosque.The relationship between the palace and friday Mosque was further strengthened after the jihad which took place in the nineteenth century, as a result of wanting to establish an Islamic theocracy. In some cities, example precolonia Damagaram the city had a monofocal nucleus whereby the market was located close to the palace and friday Mosque. The public buildings too which had not been fully developed in pre-Islamic periods recieved a boost with the construction of monumental looking Mosques and minarets which served as features of landmarks aiding imagibility of the city.[3]

(b) Privacy of Women

Islam being the way of life, it made a deep and perceptible influence on the Hausa social system and outlook. With the coming of Islam, the mixing of men and women at random was restricted according to the teachings of Quran and sunnah. The religious injunction influenced the design of residential compounds. Henceforth, the compound was surrounded by a wall and further divided into sections in order to give privacy to the women folk.The compartmentalisation as influenced by Islam gave the following outlook to muslim Hausa residential buildings. First, you have the Zaure which is the public part of the domestic compound, next comes the section were the menfolk live and other utilities such as stores animal sheds are the Shigifa (semi private area) into which only intimate male relatives of the womenfolk are allowed and the cikingida (private

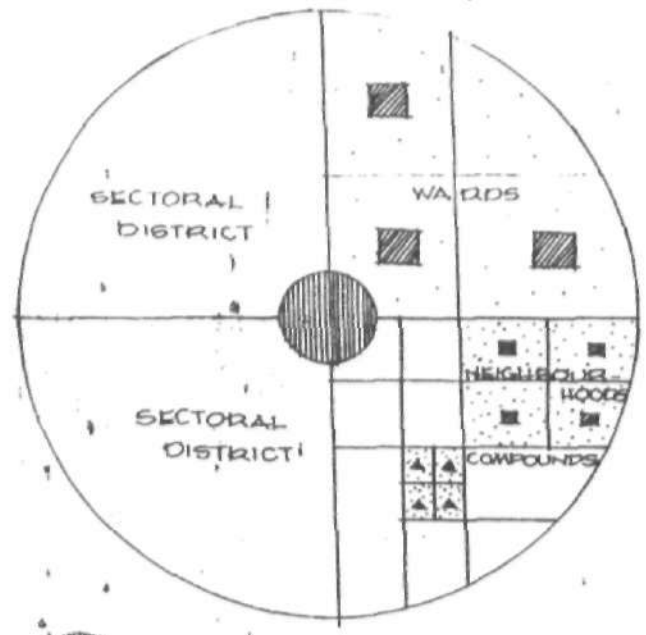
area) which is exclusively for women. A similar example of Islamic compartmentalisation exists although on a larger scale in the palaces of Sarkin's and Emir's. Inspite of the Islamic influence, the methods of building and the materials used continue in their traditional forms.

STRUCTURE AND PLANNING PRINICIPLE OF HAUSA CITY STATES.



1- CITY CENTER
2- SECTORAL DISTRICT (RESIDENTIAL)
3- WARD
4- CLUSTER (NEIGHBOURHOOD)
5- RESIDENTIAL UNIT

ACTIVITY CENTERS (CONCEPTS)



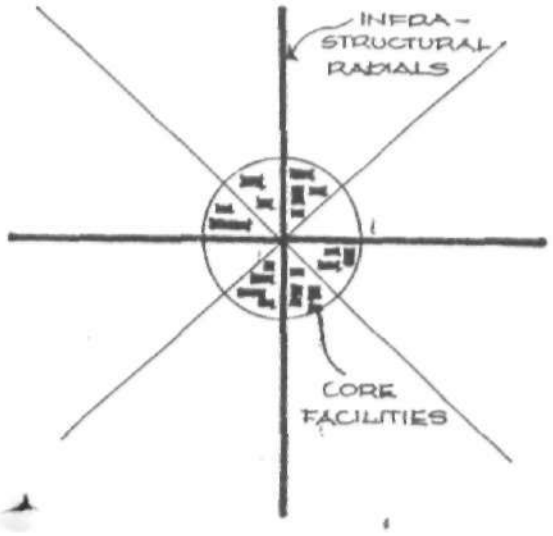
DANDALI CITY CENTER

WARD LEVEL ACTIVITY CENTER

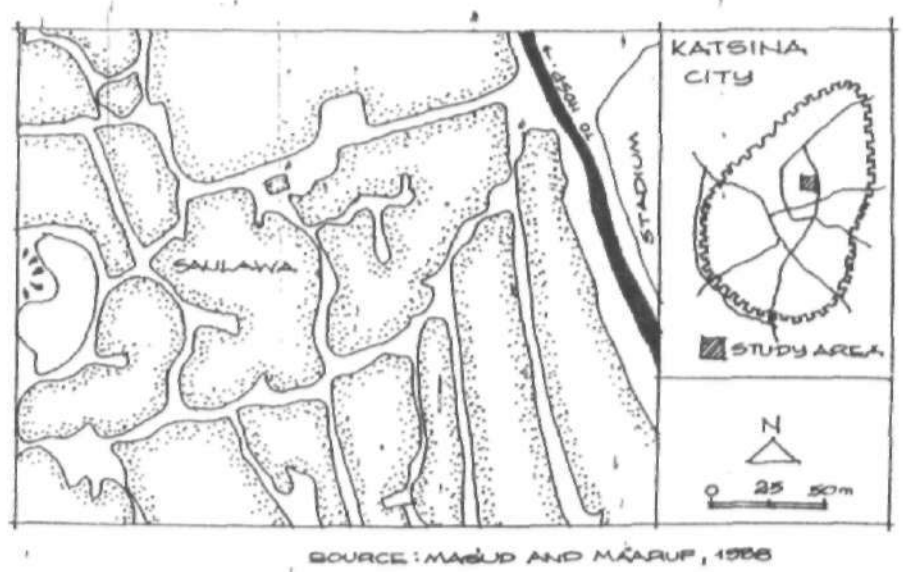
NEIGHBOURHOOD LEVEL ACTIVITY CENTER

INDIVIDUAL COURTYARDS

RADIAL DESIGN CONCEPT OF HAUSA CITY STATES

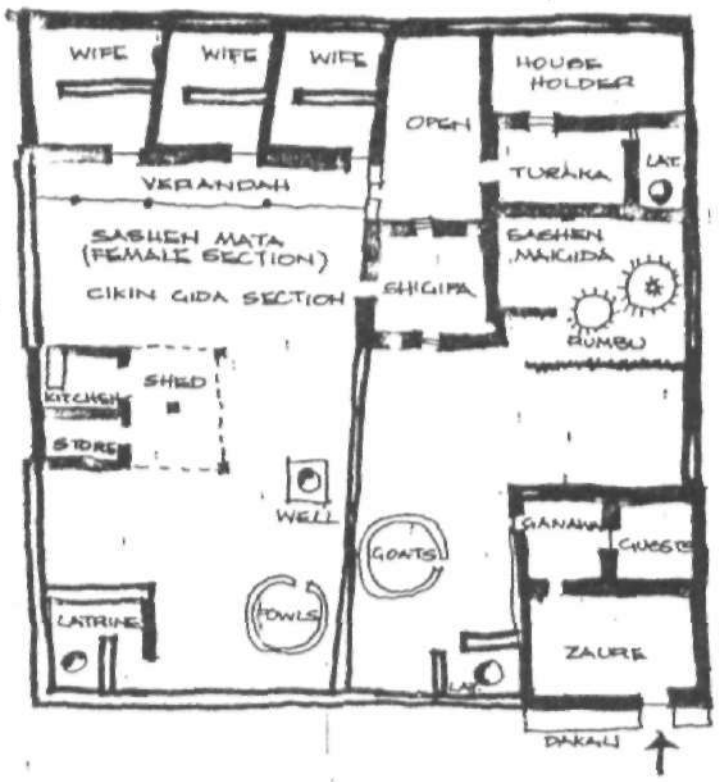


TRADITIONAL CIRCULATION PATTERN, KATSINA (ORGANIC)



SOURCE: MAGUD AND MAARUF, 1988

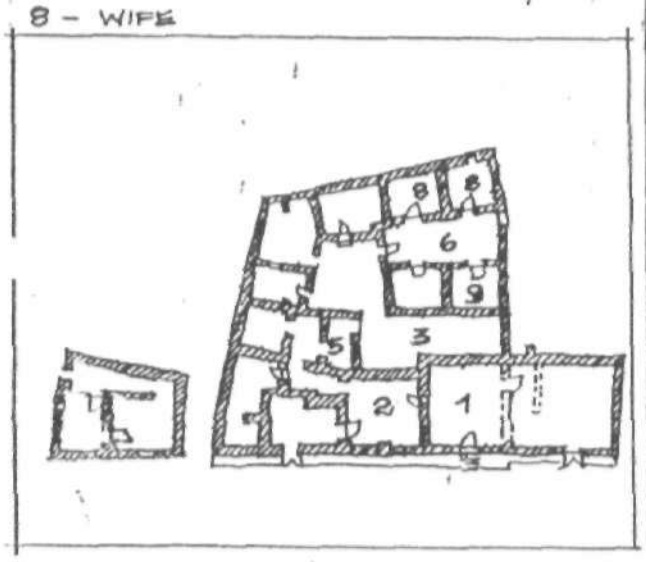
EXAMPLES OF HAUSA COMPOUNDS



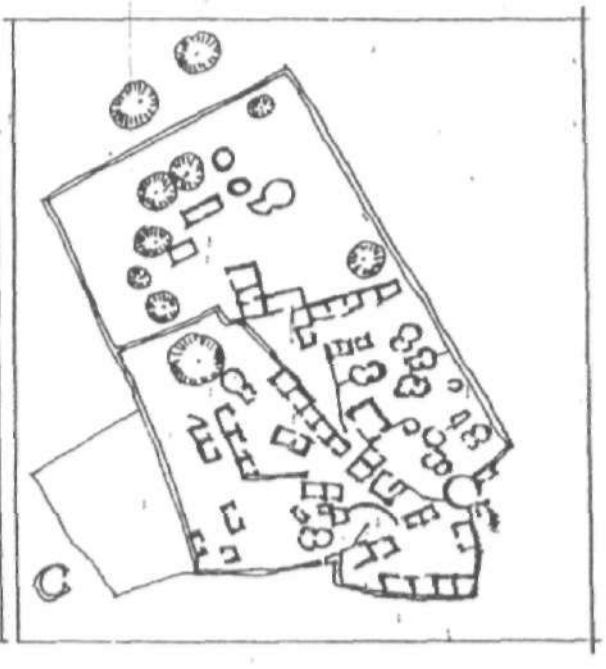
GANAWA — private meeting
RUMBU — grain store
TURAKA — private space householder

PLAN OF AN IDEAL HAUSA HOUSE AS CONCIEVED BY ALHAJI MALLAM MUSA KATSINA OF MARADI
(H. TUKUR SAAD, 1981)

1 – ZAURE
2 – GANAWA
3 – SARARIN KOFAR GIDA (entrance to semi-private courtyard)
5 – SHIGIFA
6 – TURAKA
8 – WIFE
9 – HOUSE HOLDER



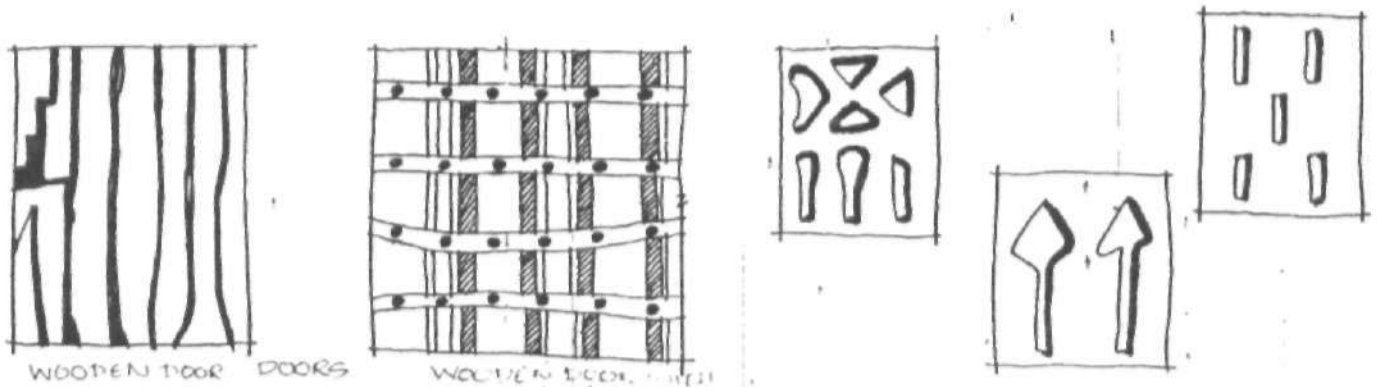
A ZARIA COMPOUND
(SCHWERT

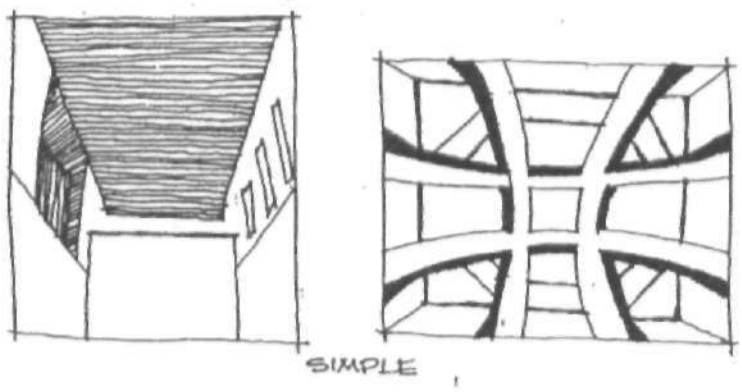


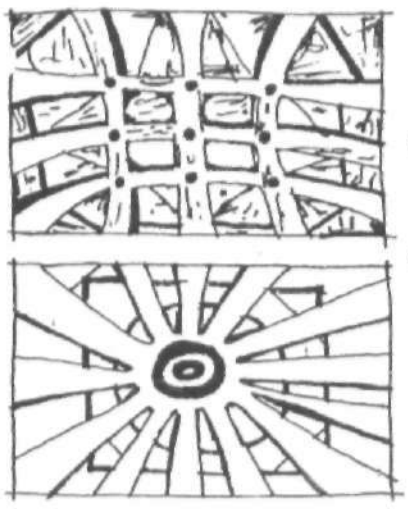
THE BABBAN GIDA OF THE MALLAWA RULING HOUSE OF ZARIA
(MOUGHTIN, 1864)

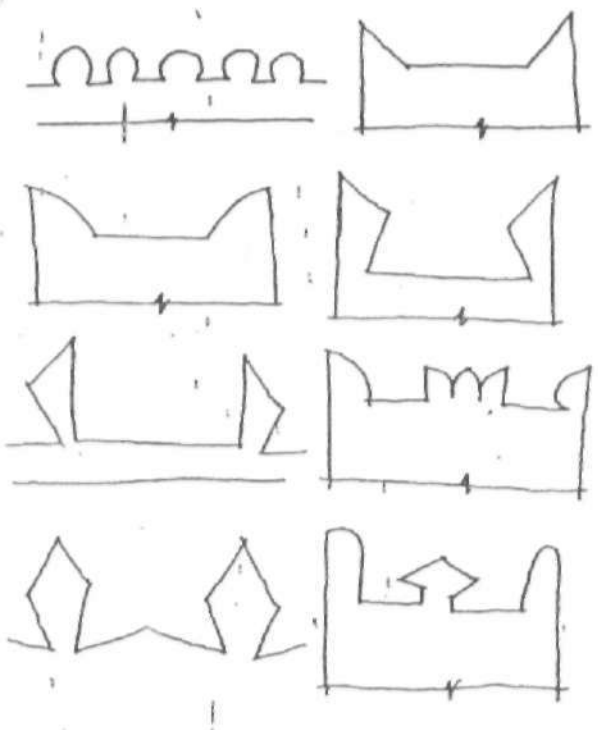
ARCHITECTURAL ELEMENTS OF HAUSA TRADITIONAL ARCHITECTURE



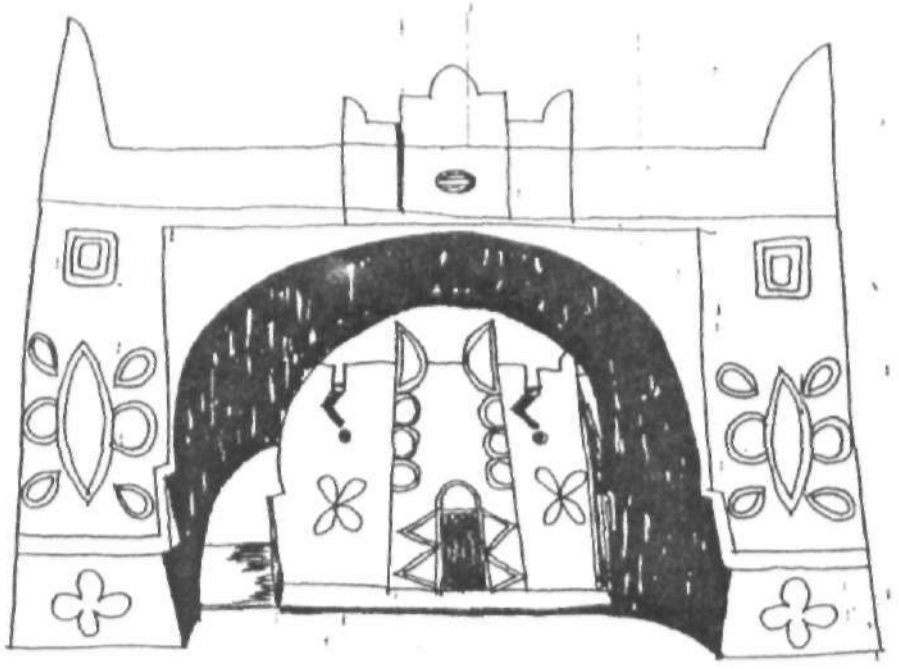




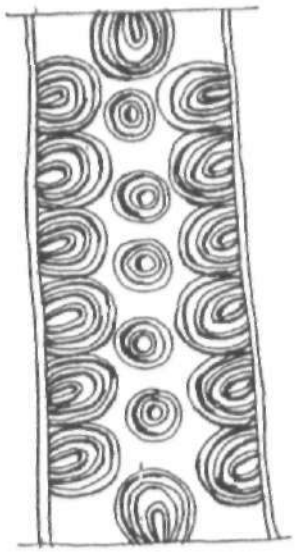




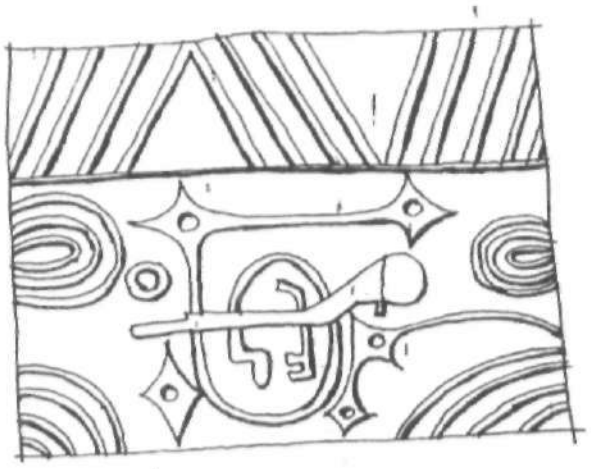
TECHNIQUES OF DECORATION AND MOTIFS USED IN HAUSA TRAD. ARCHITECTURE.



A. PAINTED-ON GEOMETRIC PATTERNS
(FRONT GATE, EMIR OF DAURA'S PALACE)



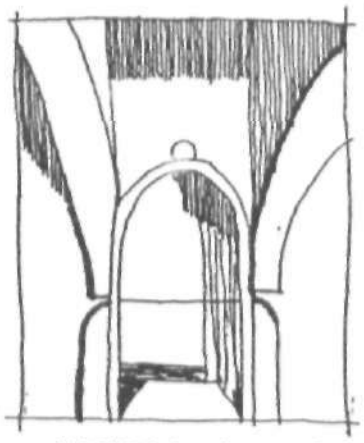
B. DECORATION MADE
: BY CEMENT & TROWEL



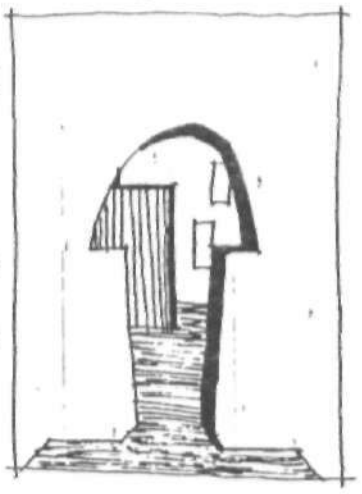
C. HAND MOULDED GEOMETRIC DESIGNS
ON CLAY PLASTER.

Md

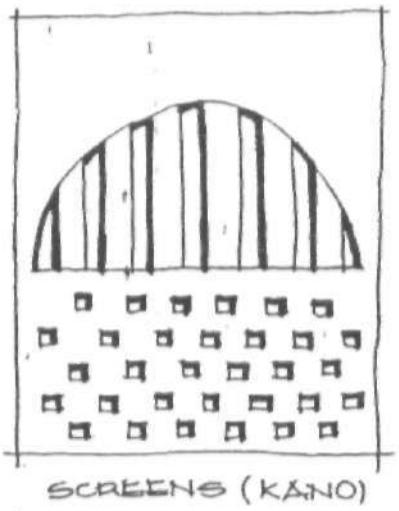
ARCHITECTURAL AGMENTS
NICHES, SLITS, SCREENS, MINARETS, HASUMIYA



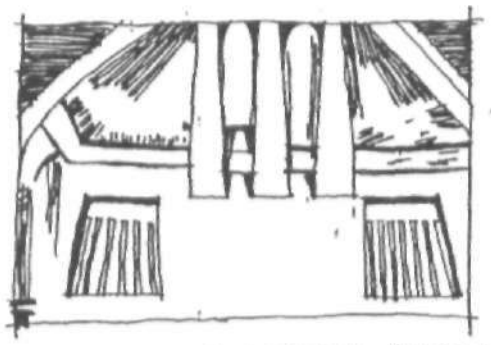
MIHRAB NICHE
(ZARIA MOSQUE)



DOORWAY (ZARIA)

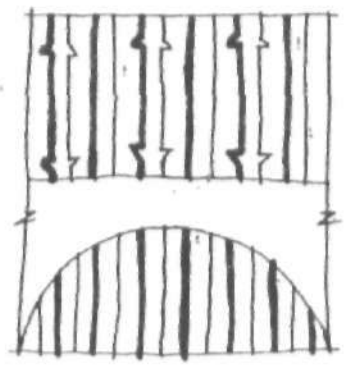


SCREENS (KANO)



LOW LEVEL VENTILATION
SLITS (BICHI)

SOURCE: H. TUKUR SAAD, 1981



SCREENS (KANO)



HASUMIYA, MAIGANA

SOURCE: MAGUD AND MAARUF, 1988



GOBARAU MINARET,
KATSINA

(c) No Figural Representation

The decoration of all types of buildings is simple but eye-catching and restrained according to the principles of Islamic fine art and avoids the use of icons. The main motifs are usually verticals, triangles and circles. The decorations are done in such a way that at a given time, one can see only one or two decorations because of the contrast of light and shadow in the total scheme of construction.[4] In Mosques, the most decorative parts are usually the Mihrab walls towards the qiblah (direction pointing towards Makkah). Building a tower in a Mosque building was also quite common in the Mosque architecture of Hausaland. Examples can be seen at Katsina and Bauchi. The hasumiya (tower) was meant to be a decoration and also at times used to give calls for prayers. The towers seem to be the direct influence from the Maghribi architecture which was brought by Arabs merchants from the Maghreb.

3.4 Comparison Between The Islamic and Western Concepts of Campus Planning

Table 3.1

STUDENT LIFE

ASPECT: Commitment to university

TRADITIONAL MUSLIM: Very strong

WESTERN: Weak

ASPECT: **Residence**

TRADITIONAL MUSLIM: On campus

WESTERN: On and off campus

ASPECT: **Size of group**

TRADITIONAL MUSLIM: Small

WESTERN: Very large

ASPECT: **Student-student interaction**

TRADITIONAL MUSLIM: Very strong

WESTERN: Weak

ASPECT: **Student organizations**

TRADITIONAL MUSLIM: All inclusive, affiliative, few layers

WESTERN: Exclusive, independant, many layers

<u>TEACHER LIFE</u>

ASPECT: **Comitment to university**

TRADITIONAL MUSLIM: Complete

WESTERN: Partial

ASPECT: **Residence**

TRADITIONAL MUSLIM: On campus

WESTERN: Off campus

ASPECT: **Numbers**

TRADITIONAL MUSLIM: Few

WESTERN: Many

ASPECT: Teacher-teacher interaction

TRADITIONAL MUSLIM: Rigid/structured

WESTERN: Fluid or absent

ASPECT: Teacher organization

TRADITIONAL MUSLIM: Tight within schools

WESTERN: Loose

ASPECT: Exposure to other disciplines

TRADITIONAL MUSLIM: Minimal/not applicable

WESTERN: Minimal except in notable centers of excellence

STUDENT-TEACHER INTERACTION

ASPECT: On macro-teaching level

TRADITIONAL MUSLIM: Customising

WESTERN: Assembly line

ASPECT: On micro-teaching level

TRADITIONAL MUSLIM: Hierarchial

WESTERN: Presumed looser

ASPECT: Pedagogic style

TRADITIONAL MUSLIM: Apprentice/master

WESTERN: Formal norms/student

ASPECT: Purpose of teaching

TRADITIONAL MUSLIM: Learning

WESTERN: Certification

ASPECT: Scope

TRADITIONAL MUSLIM: Personal included

WESTERN: Seldom personal

ASPECT: Specificity

TRADITIONAL MUSLIM: Specific pairing

WESTERN: Fragmental

ASPECT: Frequency of contact

TRADITIONAL MUSLIM: Frequent

WESTERN: Infrequent

ASPECT: Articulation in space

TRADITIONAL MUSLIM: Continuous, common spaces, multiple scale

WESTERN: Organised affiliation with space is lost

UNIVERSITY-COMMUNITY RELATIONS

ASPECT: Proximity

TRADITIONAL MUSLIM: Often close

WESTERN: Frequently out of town

CHAPTER FOUR

CASE STUDIES

4.1 King Abdul Aziz University, Mecca.

There are two adjacent sites, one on each side of the Mecca - Jeddah road, along which thousands of Hajj pilgrims enter the holy city. The two sites make use of the same flat wadi bed which runs between low granite mountains and provides some 330 hectares of building land out of a total of 900 hectares. The site of the university is within the protected zone around Mecca which only Muslims can enter.

The university is an Islamic university open to Muslim students only. The whole of the academic complex and some depndent housing will occupy the north site and the rest of the dependent housing occuping some 2400 units will occupy the south site. Further to the south, a new motorway is planned and Mecca (with a population of 30,000) is expected to expand westwards along this artery, engulfing the south site.

Details

Client: Saudi Arabian Government.

Sponser: Saudi Arabian Government

Users: Muslim students only

Site: 7.5 KM west of Mecca in the virgin desert.

Climate: Hot days and cool nights, little rainfall and sand carrying winds of 23km/hr.

Total number of Students: 15,000. (10,000 male , 5,000 female and 3,000 staff.).

Subjects taught: Islamic studies, Economics, Engineering and

Applied Sciences.

4.1.1 Planning Features

Two campuses are created one for men and another for women. Both campuses are close to one another but walled all round. Only the library and administrative buildings are shared by both campuses. Campuses are scaled for pedestrian use only, vehicular access and circulation are limited to the periphery.

4.1.2 Islamic Principles Used In Planning

-Clear distinction between male and female areas hence privacy of women achieved.

-Incorporates characteristics of an Islamic enviroment such as use of natural topography (granite hills) to create visual focii, richly landscaped courtyards and open spaces, pedestrian oriented areas.

4.1.3 Positive points

Uses many characteristics of an Islamic environment in planning. Organic planning follows the nature of old Islamic environments whereby arteries of movements were defined by shape and layout of buildings and access needs.

The architects and planners have taken inte account the tradition and culture of the people of Saudi Arabia- the Muslim culture- to create an indigenous university.

4.1.4 Negative Points

Creation of two separate campuses is very expensive as complete infrastructural facilities have to be provided for both sides.

The campuses are completely walled up thereby having no contact with the outside world. This deprives the university of the validity of the connection with

world

cca academe





1

Key
1, new site of King Abdul Aziz University
2, existing women's campus
3, existing men's campus
4, Mecca

Universities traditionally grew up in cities where they were subjected to the pressures of the outside world. This is true not only of Paris and Bologna the first universities of Europe but also of Cairo where a university was established in the Azhar mosque as early as the tenth century. Nor has the Modern world ever isolated its many

madrassas or religious schools, which often form an integral part of the *souk* or bazaar. Our own age, under the pressure of numbers, has had recourse to the campus outside the city, thereby impoverishing both the university and the city. The campus is an American import, so it is not surprising to find SOM's Chicago office, master planners of Mecca's King Abdul Aziz University, claiming that the site of the new campus, in virgin desert 71 kilometres west of the city, 'will provide "an academic atmosphere . . . free of adverse external



2Aa



…e (right). The dependent …using development adjacent … the women's campus (seen in … incorporates many character- …ics of established Islamic ur- …n settlements. A *cluster* of …ivate houses creates the lowest …der of public space—the com- …on courtyard. A number of …ch clusters constitute a *…recinct*, which may define a …cond order of public pathway. …veral precincts constitute a *…arter*, which is large enough to …pport a limited range of public …rvices, a mosque and *souk*. 6, …anged about a still higher …der of public space. The *souk* …ich is intended to serve …ident wives and single women …dents, is directly accessible …m the women's campus.

… south site, 7, consists of four …dential quarters around a …n centre containing a broader …ge of services, which include …riday mosque and adjoining …k, 8, a multi-purpose public …ding, small shops, apart- …nts, open space for public …erings and adjacent parking. …h quarter has its own …que, sch… shops and park- Separat… …imary schools are …ided for boys and girls, and a …ergarten is planned for each …net. Secondary education …be furnished by a school for … on the west side of the …lopment and another for … on the east.

… master plan recognises the …anent influence of natural …nes and the uncertain …e of external factors such …d supply. So the campus is …l for the pedestrian, with …ular access and circulation …cted to its periphery. The …al campus environment …e a combination of richly …aped open spaces, 9, and …ous low-rise courtyard …gs, 10, to create an oasis …orating traditional ele- … of Islamic townscape. …istant image, 11; the con- … wall, … the building …ons, 13; … pathways, 14; …urtyards, 15 and 18; the …r spaces, 16 and 17; all …sketch form suggest that …hitects, who are now pre- …detailed designs for the …nstruction phase of one …square feet (to begin mid-

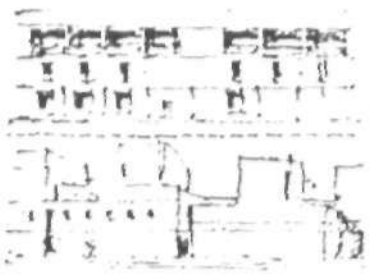
1979), are working on the right lines. This is about one-tenth the total development which, when completed in 1995, will accommodate 10 000 men and 5000 women students, supported by a faculty of 1350 and staff of 3000. Together with a number of other new universities, it will help absorb the capacity in the enormous educational growth of South Arabia.



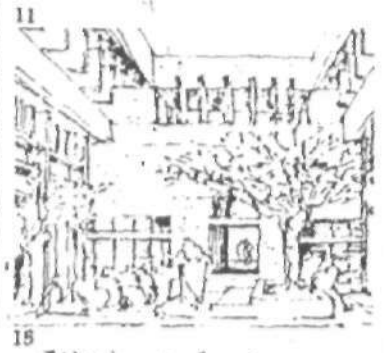
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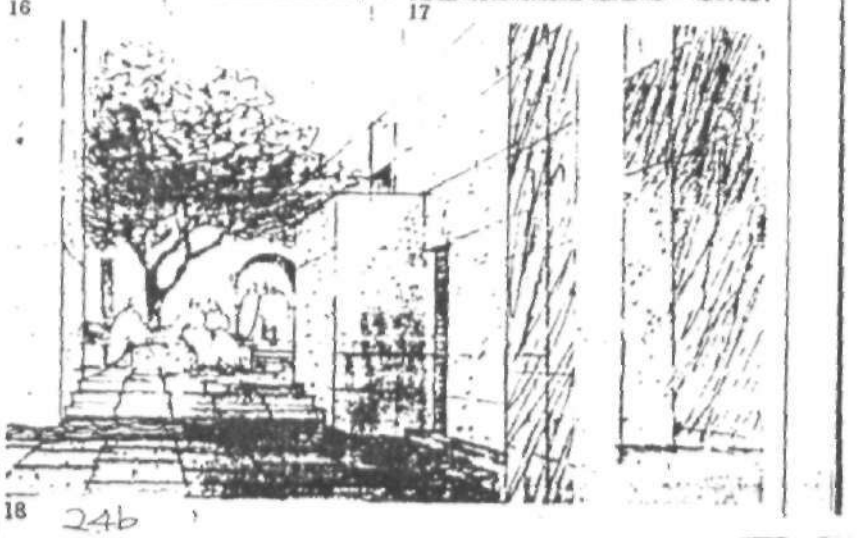


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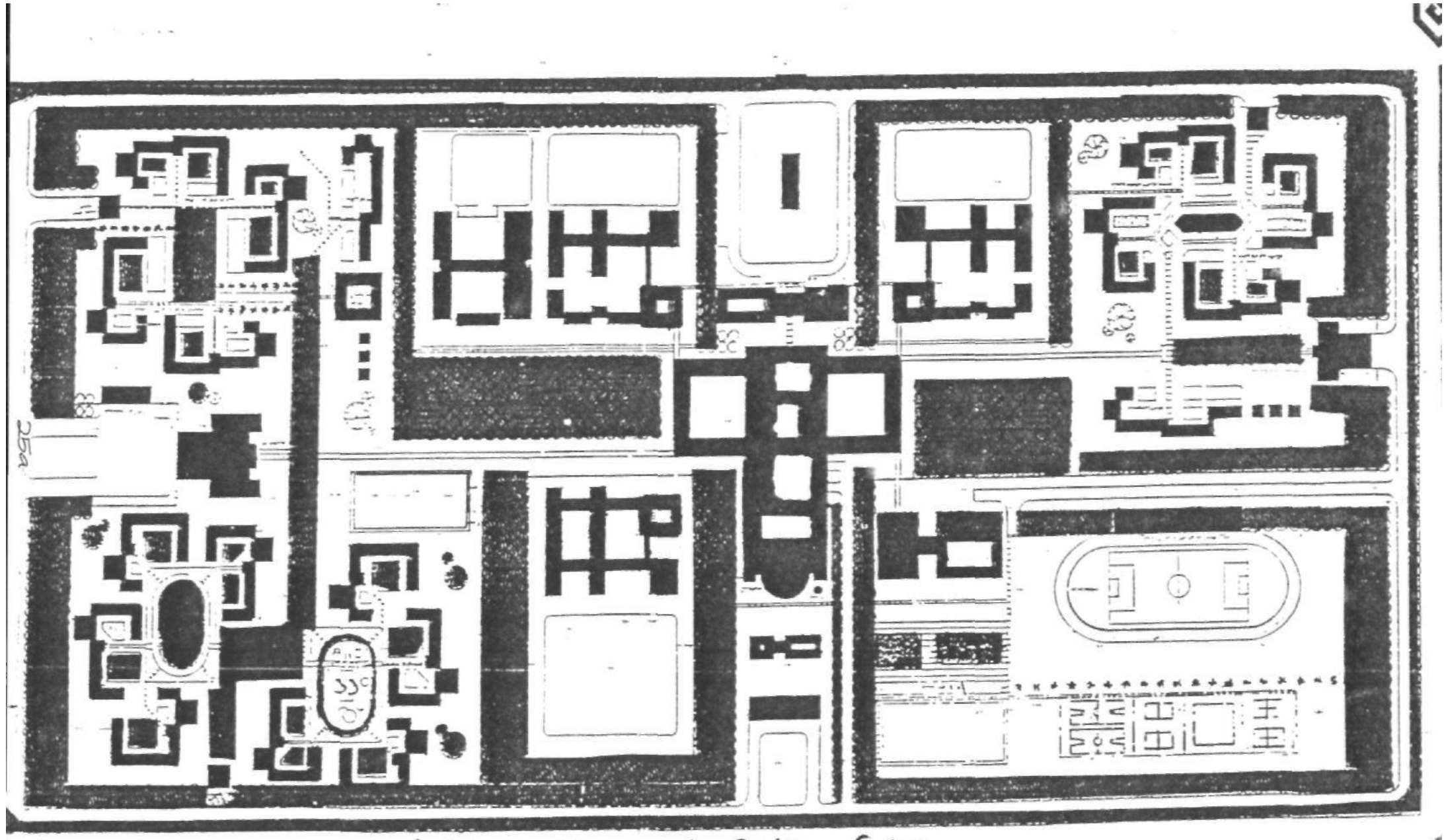
17





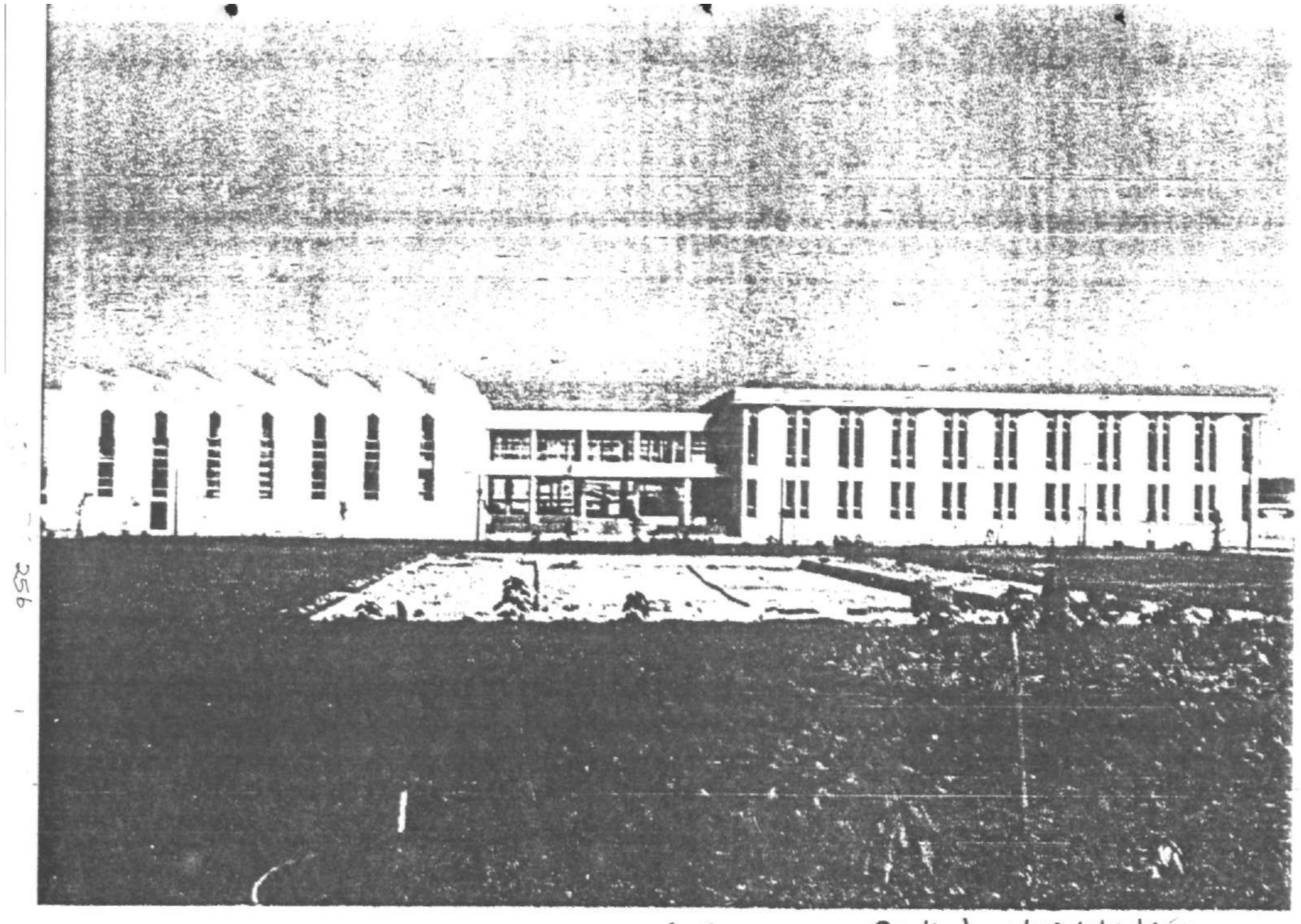
18

24b



Islamic Educational Center, Cairo

Site plan



مبنى الإدارة الرئيسى والمسرح Central administration building

Incorporates characteristics of an Islamic enviroment such as richly landscaped courtyard and open spaces, use of geometric patterns and other Islamic architectural elements on buildings eg. arches and screens.

4.2.3 Positive Points

-Use of Islamic principles in Planning.

-More economical division of male and female areas.

4.2.4 Negative Points

-Rigid planning of the site.

-Separate swimming pool should have been provided for the women.

4.3 University of Blida Algeria

In the development of the design for Algeria's university of Blida, three primary factors were involved. These were the reflection of the goals and aspirations of Algeria which is a new democratic socialist republic, to show the rich heritage of the Muslim ethic, use of modern facilities while recognising the limited resources in relation to the nationwide demands in housing, industry, health and education .

The programme calls for students in vocational, professional and doctoral feilds and recognises current capabilities in construction tecniques and aviliable materials. The sence of place and space that is specifically Algerian should coinside with a consideration of future expansion that will occur through academic enrichment over time.

Details

Client: Ministry of Higher Education and Scientific research.

Sponsor: Algerian Government

Users: Muslim and other students

Site: In Blida, Algeria also known as "City of Roses"

Climate: Mediterranean climate

Subjects taught: Law, economics, natural and applied sciences

4.3.1 Planning features

University divided into six individual areas, each pedestrian oriented.

The professional areas- humanities, tecnonology and science, form three radial spokes, converging on the perpendicularly radial university for professional and vocational programmes. These all ring around the library which is the main focus of the university center.

The library is linked by a covered bridge to the major social center- a covered cultural center with a centrally positioned coffee house.

Radiating from the the social center and similar to a souk (bazzar) - common to Arab countries - are six walkways incorporating specific activities : Conference and assembly ; dinning; relegious center; music; theater and dance; and services ,mail, dry cleaning and laundry, pharmacutical supplies, student academic services such as the bursar etc.

The university center which has the library as the major focus and linked to the major social centers is bisected by a bus transit route for students and public, a major part of the city's public transportation system.

4.3.2 Islamic Principles used in Planning

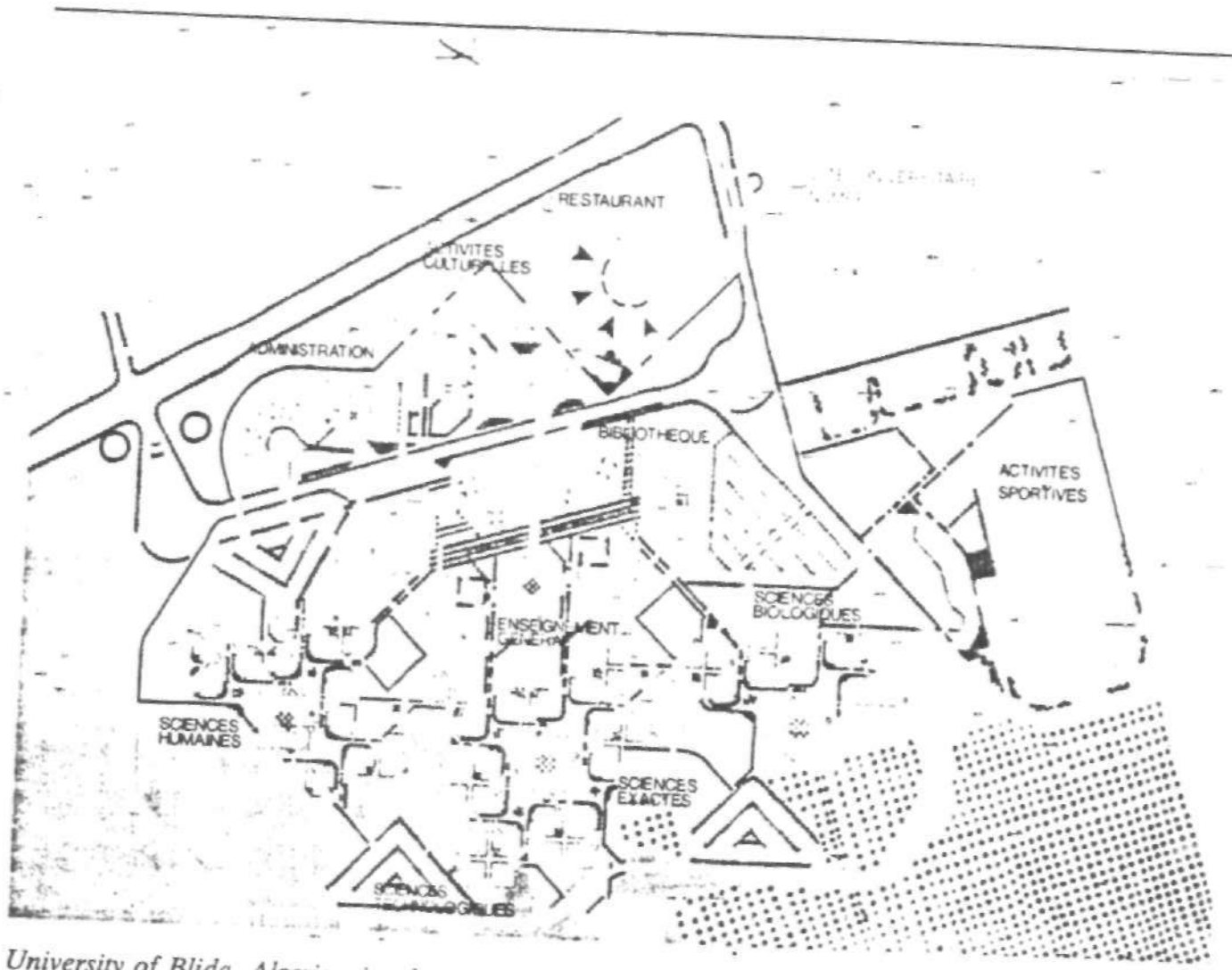
Incorporates principles of an Islamic enviroment such as:

Hierarchy of spaces: The architecture of the university continues the city's sense of small to large eg. transition from house to street to town. Each department

societies still rooted in the past provide a contemporary example of primal decisions.

For Skidmore, Owings and Merrill, Algeria provided a very special sense of place. It is a new nation, harshly conceived through "a savage war for peace," a nation with historic ties to Muslim, Berber and Western cultures. Its people and products demonstrate the entire spectrum from primitive to the most advanced scientific and technological needs and products; the national charter seeks both Algerianization and Arabization. While a nation so young and growing would hope that enduring forms would naturally arise, the gestation period of such images is long. After peace the country had only thirty architects. The government sought help worldwide, from Brazil, France, Sweden, Germany, Switzerland, Italy, Russia, the United States, Romania and Poland. The individual searches for appropriate architectural forms for this new society had many interpretive sources. It is always possible to discard some forms of the past by edict, but aesthetically these issues change and evolve slowly, never returning to their original states of conception.

I myself have searched not in technology nor in a specific culture for an organizing ...ly personal choice of aesthetic system. Field Theory, is not a rigid discipline or a formal stylistic base. Rather, it is a contemporary search for proportional patterns, scales and forms that can be logi- ... varied in different countries and different cultures. Historically in the West the university merged with the fabric of the town, coexisting in harmony with tradition, reflecting the community in its



University of Blida, Algeria: site plan

Photo: Skidmore, Owings and Merrill

has a garden oriented cluster incorporating a specialised library, offices, administration, special classrooms and laboratories. These deparment clusters ring about a central cluster of shared classrooms and amphitheatres. These in turn ring around their own gardens.

Visual Focii: The university comprises of six individual areas ie. the three professional areas- Humanities, Tecnology and Science and central administration, Agricultural college and teaching hospital. All these areas have an individual focus. The university itself is located in the foothills of the Atlas mountains at the edge of the Mitidja plains in Bilda. The mountains also act as visual focii.

Pedestrian oriented campus The six individual areas are all pdestrian oriented.

4.3.3 Positive points

-Use of principles of an Islamic enviroment in planning.

-Incorporates some aspects of Algerian culture eg. the concept of souk.

-Organic planning

4.3.4 Negative points

-No division of male and female areas.

-Joint recreational area, used by both men and women at same times. -Provision of dance area.

4.4 Yarmouk University, Jordan

Yarmouk university is Jordans second university. It is located in the governorate of Irbid in the northen part of the country.

Yarmouk was established with the following four objectives: Increasing opportunities for higher and university education for the growing number of

eligible students; providing Jordan with the specialised and well trained manpower needed for its economic and social development; creating a modern scientific, tecnological and cultural nucleus capable of conducting research and making new discoveries needed for progress and development; providing Jordan and the Arab world with technical, scientific, vocational and administrative expertise and personnel.

Details

Client: Jordanian Government.

Sponsor:Jordanian Government

Users: Students from Jordan and elsewhere

Site: Yarmouk. Size of site 7.5 KM by 1.5 KM, 2,600 acres.

Climate: Hot days, cool nights, little rainfall and sand carrying wind.

Total number of students: 20,000

Subjects taught: Engineering, applied and natural sciences.

Project to be completed in three phases:

1976-1977 -420 students distributed in six departments in the Faculty of Arts and Sciences.

1977-1984 -6,000 students distributed in 18 departments in the Faculty of Arts and Science and Faculty of Engineering.

Commencing 1984 -20,000 students distributed in all departments of all the faculties.

4.4.1 Planning Features

-The general planning and design to reflect Arabic and Islamic culture.

-Central library that serves all facilities.

-Succession of courtyards leading to the central library.

-Has a social spine that connects the university with the neighbourhood communities. This emphasises its role in community development through such facilities such as the Islamic cultural center, Mosque, museum, civic center and also through technical facilities such as the computer center. The sports center is also part of the social spine.

4.4.2 Islamic Principals Used in Planning

Incorporates characteristics of an Islamic enviroment such as:

Hierarchy of Spaces- The spatial organisation is based on a succession of courtyards in keeping with the main current of Islamic tradition.

Connection to neighbourhood - As in all earlier Muslim universities such as Al-Azhar, (Cairo) , Al Qairawan (Tunis) where the universities were situated within cities and hence the facilities utilised by all and sundry. Here, in the Yarmouk university , a social spine connects the university with its neighbourhood.

4.4.3 Positive Points

-Use of principles of an Islamic environment such as succession of courtyards and social spine connecting the university to its neighbourhood communities.

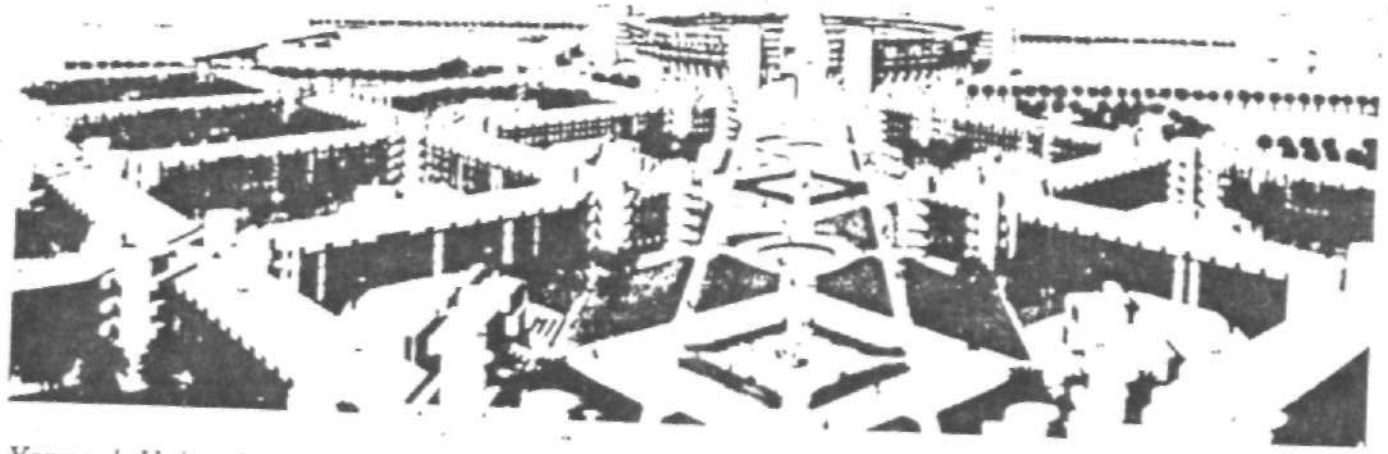
-Easy circulation in different directions.

-Easy horizontal and vertical expansion.

-Adoption of low rise buildings (three floors) to avoid utilization of electrical lifts, which create complications and difficulties of energy and maintainance.

4.4.4 Negative points

No segregation of males and females.



Yarmouk University, Jordan: the central segment of the Tange Plan

Drawing: K. Tange and Urtec; photo by R. Nijem





by the constructio
ings with a moder
and utilization of
materials

11) For conservation o
solar energy will b
most comprehensiv

12) Incorporation of Is

Islamic Principles to be
Yarmouk University Des

The Islamic environmen
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should be familiar with
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CHAPTER FIVE

KADUNA

5.1 Location

Kaduna is slightly north of the center of Northern Nigeria. It is positioned between latitude 10·27'N and longitude 7·17'E and is linked with other towns by trunk 'A' roads, 80km south of Zaria, 239km west of Jos, 176km from Kano and 160km from Abuja, the federal capital. It is also a junction between the arm of railway stretching from Lagos to Kano, linking the north with the west and the link pushing northwards from Portharcourt in the east. It is situated along the Kaduna river which divides the city into two: Kaduna-north and Kaduna-south.

5.2 Historical Background

The city of Kaduna was laid out in 1917 as the administrative and military capital of what was then the protectorate of Northern Nigeria, placed almost at the center of gravity of the area it served, an area as large as France, covering nearly three-quarters of Nigeria's land mass. Between 1956 and 1959, the still some what small garrison outpost of government and growing industry was fitted with the country's finest parliament and with much needed road improvements. Thus Kaduna was equipped to take up its position of greater responsibility as the capital of the North, within a newly created independent Federation of Nigeria.

Kaduna remained the regional headquarters of then Northen Nigeria until the creation of the twelve states in 1967 when it became the capital of the North Central state. It later became the capital of Kaduna state when further states were created in 1976. The word Kaduna, the plural of Kada (crocodile) is a Hausa word and is associated with the existence of river Kaduna itself.

Kaduna has attracted a cross section of almost every tribal and linguistic group within Nigeria. Large numbers of Hausa, Fulani, Kanuri, Ibo, Nupe, Tiv, Igala, Idoma and Youruba can be found in Kaduna. Among the Nigerian languages Hausa is the chief spoken language of the city and its immediate sphere of influence. But, in addtion to this strong ad-mixture of Nigerian peoples, Kaduna is a cosmopolitan city.

5.3 Population Growth

The National census taken in 1963 shows the population of Kaduna metropolitan area as 149,000. Since then the city has been developing very fast and is reckoned to have the fastest rate of population growth in the country. In 1978 a survey was undertaken by the U.N.D.P. It estimated the population of Kaduna at 528,000 civilians and 70,000 residents of the military population. Kaduna has a growth rate of 8.6% per annum. There are some indications that the growth rate may decrease slowly due to the fact that the new federal capital (Abuja), which is attracting many people, lies close to Kaduna . Still, Kaduna's population is expected to reach one million within a few years and about two million by the year 2,000 as the table below indicates.

TABLE 5.1

YEAR	POPUALATION
1978	528,000
1985	964,000
1995	1,400,000

2005 2,000,000

(Source: U.N.D.P from the Bestarc architect's handbook of the Kaduna city center development plan.)

5.4 Traffic and Transportation

Traffic congestion is one of the most serious problems facing Kaduna central area more especially Ahmadu Bello way. This is the main and busiest road of the town. It is Kaduna's only lifeline performing every imagineable role; for firstly it functions as the city's spine and main regional route passing through Kaduna for the most northern and western areas of the north to the south and east of the country. Secondly, it forms the middle stretch of the only artery that connects Kaduna's industrial south with its populous north and weastern communities. Thirdly, it is the main link from the army headquaters in the north and from the state house to the city's central shops, offices, banks and embassies. Recently also a new highway connecting Kaduna to Abuja has been constructed.

5.5 Climate and Regional Setting

5.5.1 Topography

Kaduna's regional topography consists of a rolling park like terrain with little relief situated about 100 feet above and below the 2000 feet countour line. The solid granite inselbergs rise sporadically and dramatically like great domes as much as a thousand feet above the general level of the plain which to the east, and south-eastwards from Kaduna abruptly ends in the escarpments to the Jos plateau.

The whole area is crossed by mature wooded streams flowing in broad shallow valleys separated by inconspicuous water sheds.

30996?

5.5.2 Geology

The basic geological structure is made up of mixed streaked rocks, granite in parts with darker softer bands and much varied. Over most of the area the surface has decomposed to laterite. Erosion is mainly by the small streams that cut deep gullies leaving behind the residual laterite caps to be gradually eaten away at the edges by natural forces of rain, wind and vegetation. The water table in Kaduna is usully quite high and wells are sunk to a comparately shallow bore depth of about 50 ft.

There is no evidence of any mineral wealth in Kaduna region. However there is laterite and granite on the hills and sand and gravel on the river bottoms in abundance for building.

5.5.3 Climate, Wind and Rainfall

There are three noticeable seasons in Kaduna:

Dry season: November to February

Hot season: March to April

Rainy season: May to October

During the dry season from November to March, the dust laden harmattan winds, dry, cold and often strong blows parching from the north east straight off the Sahara regions. On arrival of the first rains in April, the prevailing wind veers to the south-west and continues from May to October from that quarter.

But paradoxically , the rainstorms, usually violent with thunder and lighting preceeded by a driving wind, comes from the north-east, hence climatically speaking man needs the most protection from this quarter throughout the year. During the wet season, Kaduna has some 40 to 60 inches of rain which rises to a peak from late July and into September.

5.5.4 Temperature and Humidity

Highest temperatures are in April (95-105 deg. F) and lowest temperatures are in January (45-55 deg. F). The mean range is greater than that found in temperate climates and the extreme of hot and cold in a single day places a strain upon the inhabitants aggravated by considerable changes in humidity which in the dry season may well be below 10% in the afternoon and 30% at dawn.This causes the lips to crack and the fine dust blown by the harmattan aggravates the nasal passages. Paper dries and curls and even seasoned wood warps and splits. Whereas in August, a relatively cooler month because of the rain, the humidity at midday can be over 70% and 95% at dawn.

5.5.5 Vegetation

Kaduna is situated in the slightly thicker wood and vegetation of the Northern Guinea zone. Within this North Guinea zone, which takes most of the Zaria province, the vegetation when unmodified by man, consists of "orchard bush", a continuous cover of well developed trees some 30-45 feet high which is often dense enough to supress grass but as a result of much modifications over the centuries by cultivation, burning and grazing, most places became open and park like grasslands. As would be expected, around Kaduna the ever diminishing forests and savannah woodlands outside of the forest reservations are denuded at a continually increasing rate for firewood.

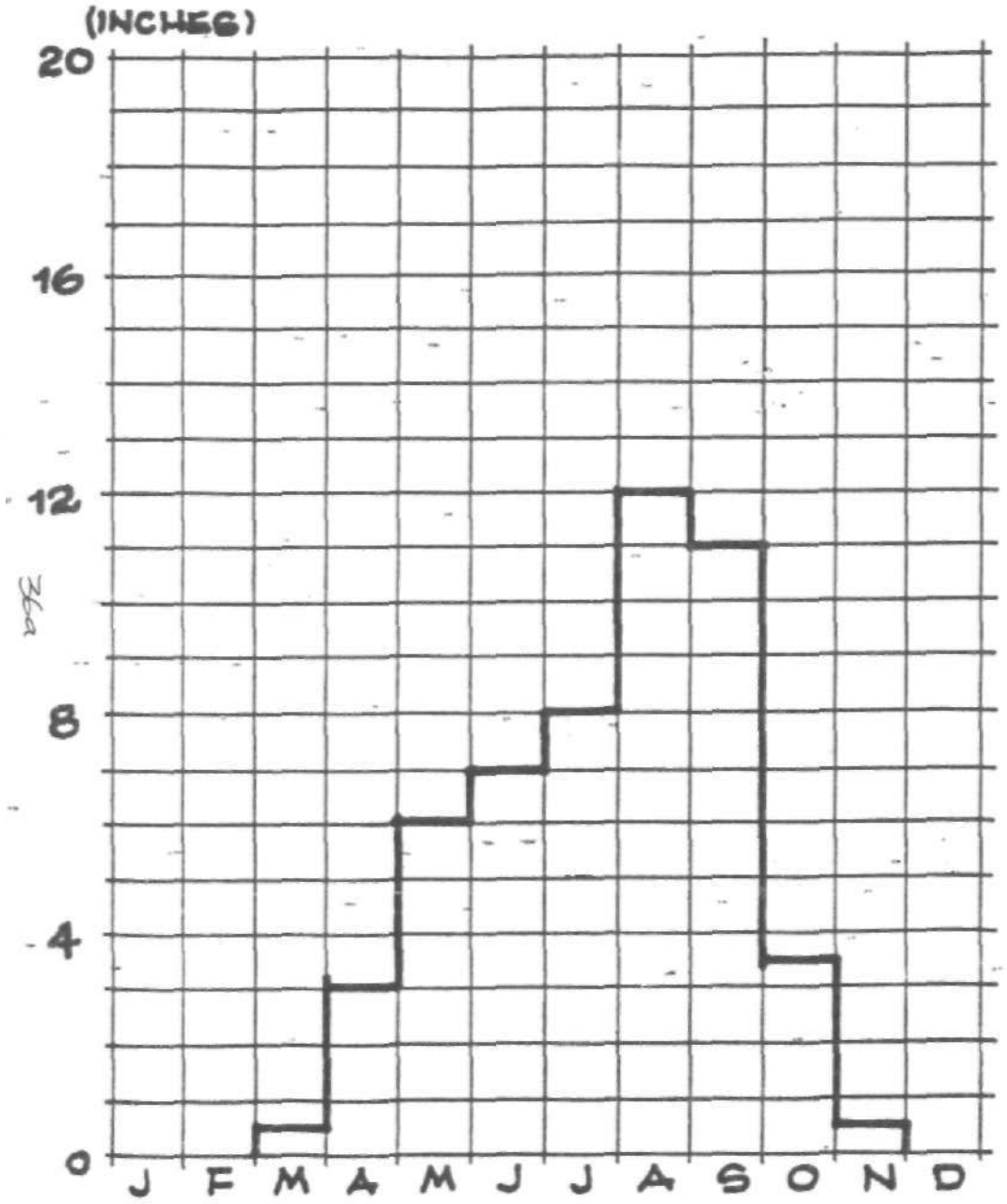
5.5.6 Soil

The soils over Kaduna area are general to the northern plains and are of laterite formed from drift deposit which mantle the solid sedimentry and precambrian basement (granite rocks). Kaduna lies within what is known as the "Zaria" soil group where the covering may be upto 14 ft. in depth. Being of fine

texture this soil is relatively difficult to work because it tends to to dry out and crack during the dry season. This has favoured the growth of cotton in the Zaria province, and cotton harnessed to the water resources of Kaduna river, has been responsible for the city's rapidly rising and flourishing textile industries.

RAINFALL

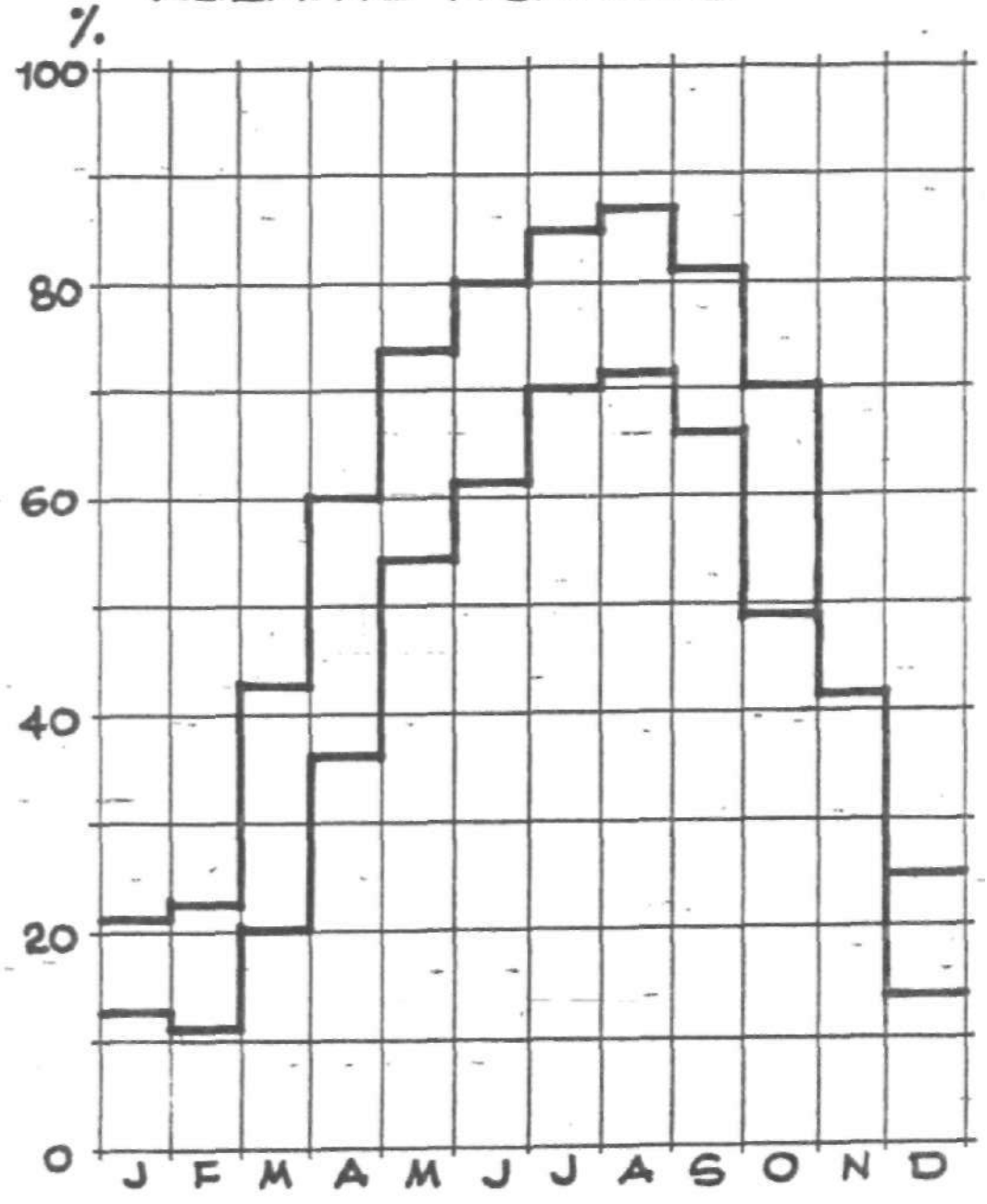
MEAN MONTHLY RAINFALL



TOTAL ANNUAL RAINFALL

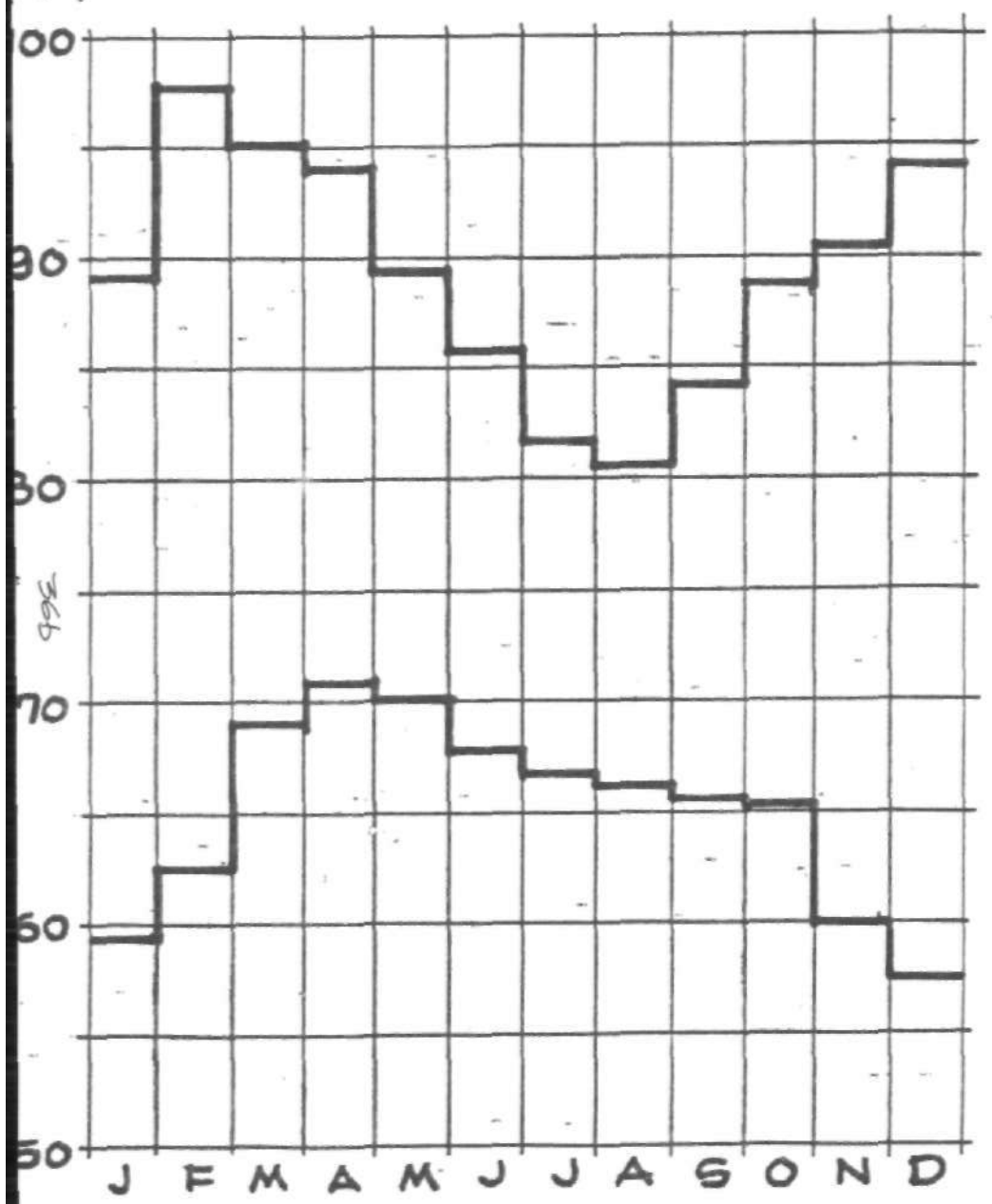
HUMIDITY

RELATIVE HUMIDITY



◀ AT 10 a.m and ▶
4 p.m.

MEAN TEMPARATURE RANGE



MEAN MIN. TEMP. = 18°C

MEAN MAX. TEMP. = 32°C

COMFORT LIMITS

MONTH	DAY		NIGHT	
	UPPER LIMIT	LOWER LIMIT	UPPER LIMIT	LOWER LIMIT
JAN	34	26	27	17
FEB	34	25	25	17
MAR	31	25	26	17
APR	29	23	23	17
MAY	27	22	21	17
JUN	27	22	21	17
JUL	27	22	21	17
AUG	27	22	21	17
SEPT	27	22	21	17
OCT	29	23	21	17
NOV	31	25	24	17
DEC	31	25	24	17

ALL TEMPARATURES IN °C

DAY - 22-34°C

CHAPTER SIX

THE SITE

The site for the institute has been got along the Kaduna-Abuja highway. There are two sites, one on each side of the highway (as the Islamic institute will be the nucleus of an Islamic university in the future.) The total area of the site is 5,335,000 m^2 or 5.335 km^2

6.1 Site Selection

Sir Ahmadu Bello was a visionary. He wanted to establish an Islamic institute in Kaduna, therefore Sir Ahmadu Bello as well as Alhaji Abubakar al-Nafati the then secretary general of Jama'atu Nasril Islam approched the ruler of Kuwait for help. Sheikh Sabah college was built with the donation from Kuwait and was named so in order to commemorate the name of the ruler of Kuwait. The parcel of land chosen for this college was not far from the Sardauna's house. A large conference hall was built for conferences and seminars of Jama'atu Nasril Islam. A beautiful Mosque, residential quarters, and lecture halls too were built. The dream of building an Islamic institute was not fulfilled and the Sardauna was assasinated in the first coup-de-etat in January 1966. Later, when Kaduna state Government took over all the schools run by private religious organisations, Sheikh Sabah college too was taken over and renamed as Sardauna Memorial college and still has a good base for Islamic religious knowledge (I.R.K) and Arabic language. It can therefore be concluded that it was the Sardauna's wish to establish an Islamic institute in Kaduna metropolis where students could easily come from all over the northen states of Nigeria. In order to fulfil the wish of the Sardauna, the

organisers- The Supreme Council for Islamic Affairs-have decided to make the institute in Kaduna.

Although Kaduna was the chosen site for the institute, three other sites too were given consideration as possible sites for the institute. These were Zaria, Kano and Sokoto.

This was because of the fact that these places were all centers of Islamic learning in the past, although now no more. After comparison of all these sites with Kaduna, it was found that Kaduna had more advantages than others.

TABLE 6.1 SITE SELECTION

	Kaduna	Zaria	Kano	Sokoto
Has headquarters of J.N.I. and supreme council for Islamic affairs.	YES	NO	NO	NO
Centrality of location both geographically and in terms of transport	YES	NO	NO	NO
Availability of infrastructural facilities	YES	YES	YES	YES


LOCATION MAP
Existing Airport
Military & Civil
port
5 MILE RADIUS FROM NEW STATION
Military Cantonment
Proposed Town Centre
Proposed Central Station
Existing Station
oads
KAD-ABUJA HIGHWAY
to KACHIA &
KAFANCHAN
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Availability of information and study materials	YES	YES	YES	YES
Most number of Islamiyyah schools and others	YES	YES	YES	YES
Qualified manpower	YES	YES	YES	YES
Suitable weather to to provide atmosphere conducive to learning	YES	YES	NO	NO

6.2 Micro-Climate

6.2.1 Rainstorms

These are usually violent with thunder and lightning, preceeded by driving winds coming from the north-east.This is the most positive and destructive factor in the climatic pitcure which cannot be disregarded.

~Design precaution: These are factors of saftey and strengthening of critical connections. The most essential precautions in structural design could be: Intelligent continuous design of the building as a unit; design for reversal of stress; avoidance of eccentricity in attachment and design of roofs for internal as well as external pressure. (more roofs are blown off and, up ,than in , and the up lifting of forces increases as flatness is approached.); adequate rainwater drainage.

6.2.2 Solar Radiation

The comfort of a building depends a great deal on the careful orientation of the building to the sun. The west wall receives intense heat from the rays of the sun striking at low angles in the afternoon. As the sun sets , the angle gets lower, hence rays penetrate any window in this wall.

Also the short wave radiation from the sun is changed to long wave radiation from the wall. This is stored during the day and given off during the night which "eat"the skin thereby making the room very hot and uncomfortable at night especially in the month of April when the temperature is the highest.

Design considerations: Use of heavy and composite walls and roofs with eight hours time lag; walls and openings in the habitable rooms should be avoided from the west; medium opening, 20-40% - they should be in the north and south walls at body height on the windward side and should exclude direct sun (shading devices) and rain; extensive paved surfaces should be avoided near pedestrian areas. The pavement reflects heat and the grass absorbs heat. In very high use areas,elevated planting areas channel pedestrian movement while reducing maintenance costs; shaded pedesrian areas modify intense heat in the sun.

6.2.3 Dust Laden Winds

"This happens during the harmattan season from November to March. The winds are dry , cold and often strong and blows parching from the north-east straight off the Sahara regions.

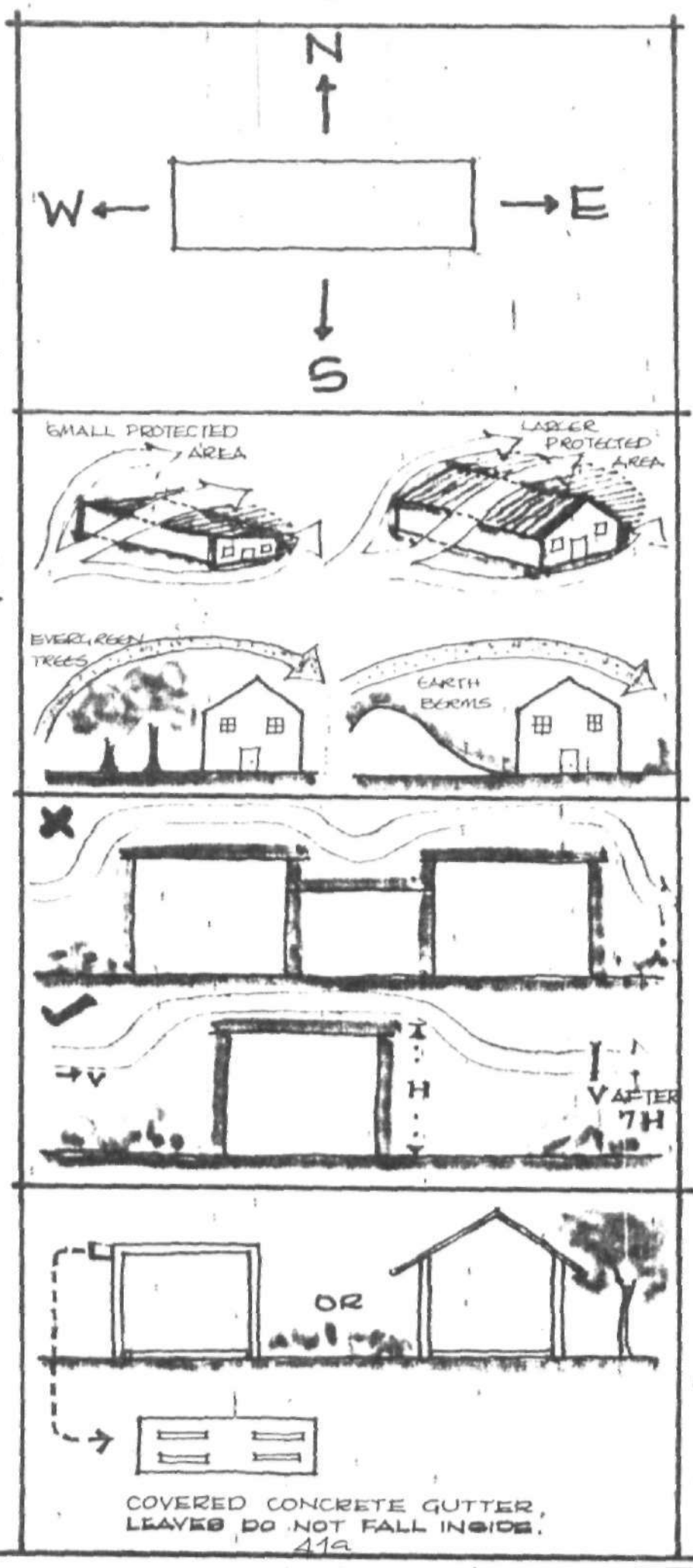
Design consideration: Use of dust barriers in the form of ever green trees and high contour levels.

6.2.4 Humidity

Reletive humidity is 43-60% . Considerable changes in humidity and in the dry season, may be well below 10% in the afternoon and 30% at dawn. In August which is a relatively cooler month, (because of the rain), the humidity can be over 70% and at dawn 95% .

Design considerations : Water bodies in the path of the north-east winds -this causes evaporation and helps in increasing humidity during the dry season, when the humidity is higher, breezes are important for cooling and air cleansing. Breeze with shade is even more effective. On streets with high pedestrian use, wind is captured by properly locating vegetation and positioning and sizing of buildings; wide pathways on the streets serve as breeze coridors with the streets actually increasing wind velocity.

DESIGN Environmental Design Considerations



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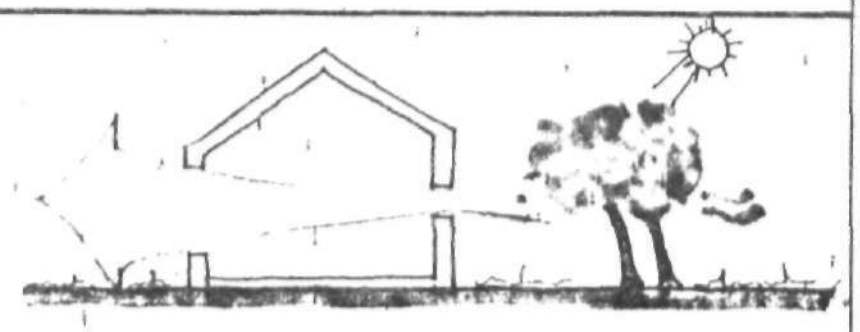
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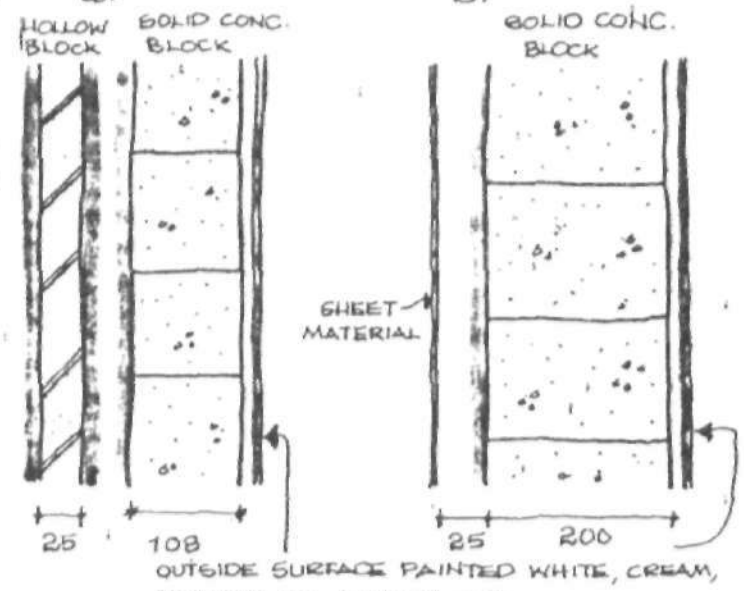
DESIGN

Environmental Design Considerations



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SUNLIGHT

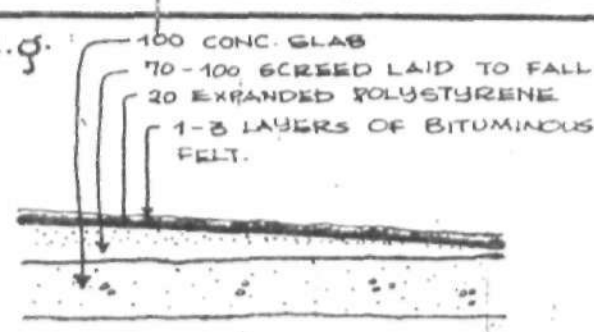
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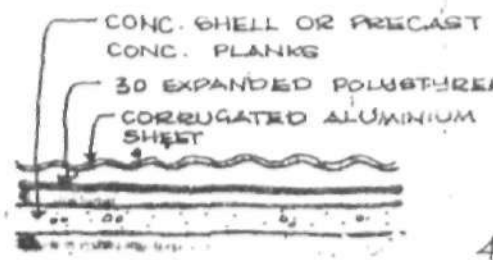
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CHAPTER SEVEN

THE DESIGN

7.1 Design criteria

The design criteria refers to the general considerations affecting the design of the campus. These are:

(1) Demand for complete infrastructural facilities as none are availiable on the site.

(2) Consideration of the micro-climate for orientation of buildings, spatial organisation and landscaping.

(3) A harmonious inter-relationship between the academic, residential and recreational areas should be achieved.

(4) Pedestrian system should be considered as one of the major factors for the location of activities. An efficient pedestrian system should also be incorporated into the design.

(5)The plan of the campus should be flexible enough to accomodate future expansion. The development of each phase should be complete in itself.

(6) Provison should be made for an efficient road network.

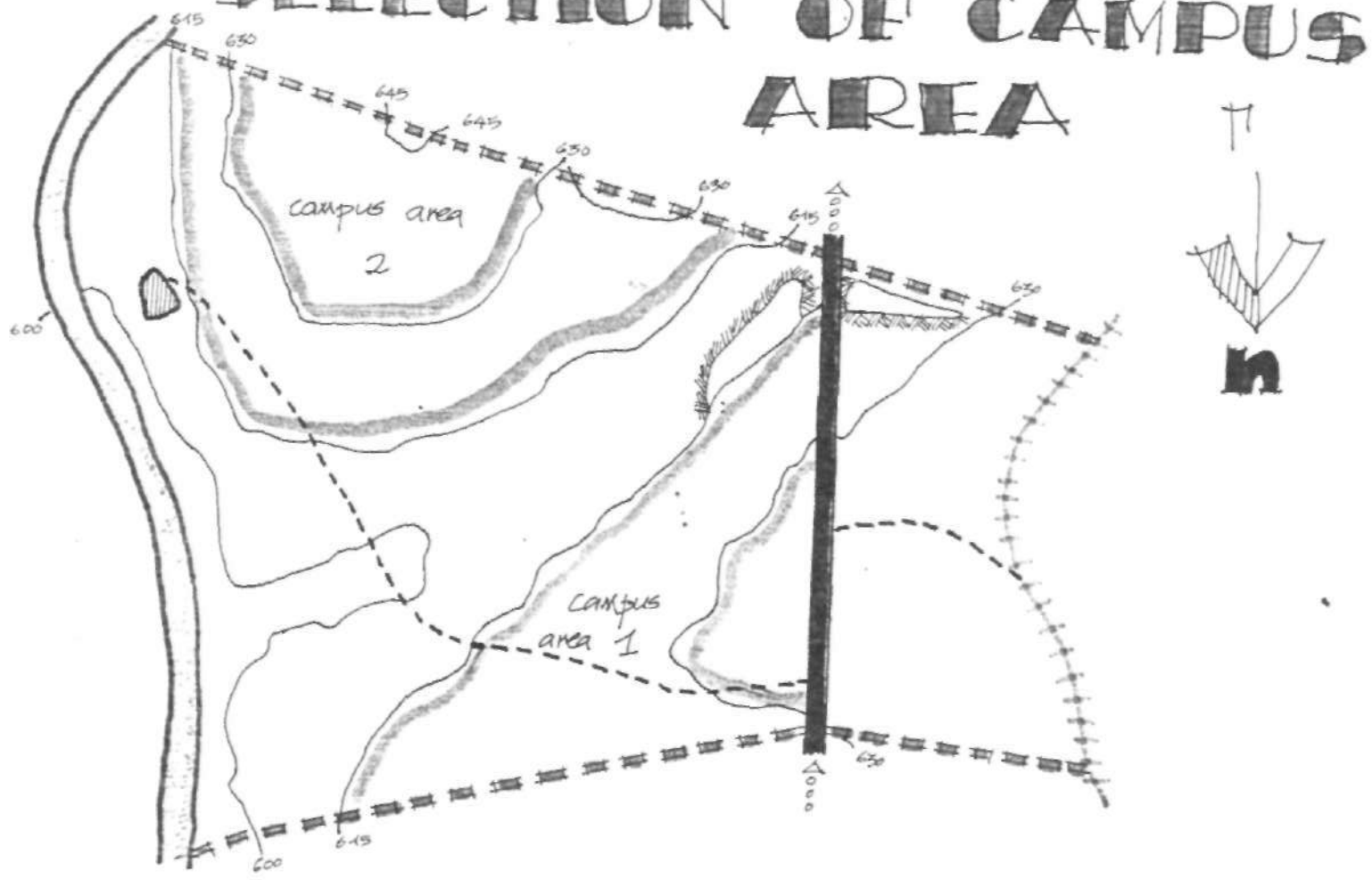
(7) The natural features of the site should be utilised to enhance the quality of the design.

(8) Suitable traditional and Islamic forms to be incorporated in the design.

7.2 Selection of Area for Location of Campus

Within the total site given, two possible land areas marked (1) and (2) on the plan were considered under the criteria of topography, accessibility, realtionship

SELECTION OF CAMPUS AREA



42a

with the urban development around the site and functionality in the accomodating the requirements of the design brief.

7.2.1 The campus area

A comparative discription of the site is given below:-

Campus Area - 1

Located in the northern part of the site. Bounded to the west by the Kaduna - Abuja highway. Accessibility into this area is good and it has a good relationship with all surrounding urban developments.

Campus Area - 2

The location of this area is in the southern part of the site and is bounded to the east by the River Rani. The campus developed here shall be away from the road, giving rise to problems of accessibility as the area too is hilly.

Selection of the campus area

From the above it can be seen that campus area - 1 is more suitable for development of the campus on account of good accessibility and topography.

7.3 Alternative Concepts of the Master Plan

This section presents two concepts of the masterplan so as to select one. The first concept is a linear concept. The second one is an orthogonal concept.

Alternative concept - (a)

This concept utilises the chosen campus area. The campus in this concept is served by an integrated hiearchy of roads. The first order road (40m right-of-way) runs east-west and serves as the main entrance into the campus and the administrative building. The second order road (30m right-of-way) serve as maine access roads to all areas, while the third order road (20m right-of-way)

serve as access to parking lots. All activity areas revolve around the academic core. All areas are pedestrian oriented.

Alternative Concept - (b)

This is also located in the chosen campus area and it is also served by a hierarchial order of roads. First order road is the main entrance into the campus, which runs north and south and serves the academic area and hostels. The second order roads provide access to residential areas and third order roads access to parking lots. Again, campus is pedestrian oriented.

Selection of concept

Concept (a) was chosen due to consideration of the following points:

-- Since the campus is pedestrian oriented, roads are limited to the periphery.

-- Easy access to all other activity areas as each area is not scattered around as in concept (b)

7.4 Scope of the Design

The scope of design has been limited to the detailed planning of the academic core. The detailed design of a department of the Faculty of Islamic Studies, the main library and the Friday mosque all of which are part of the acedemic core.

7.4.1 Space requirments

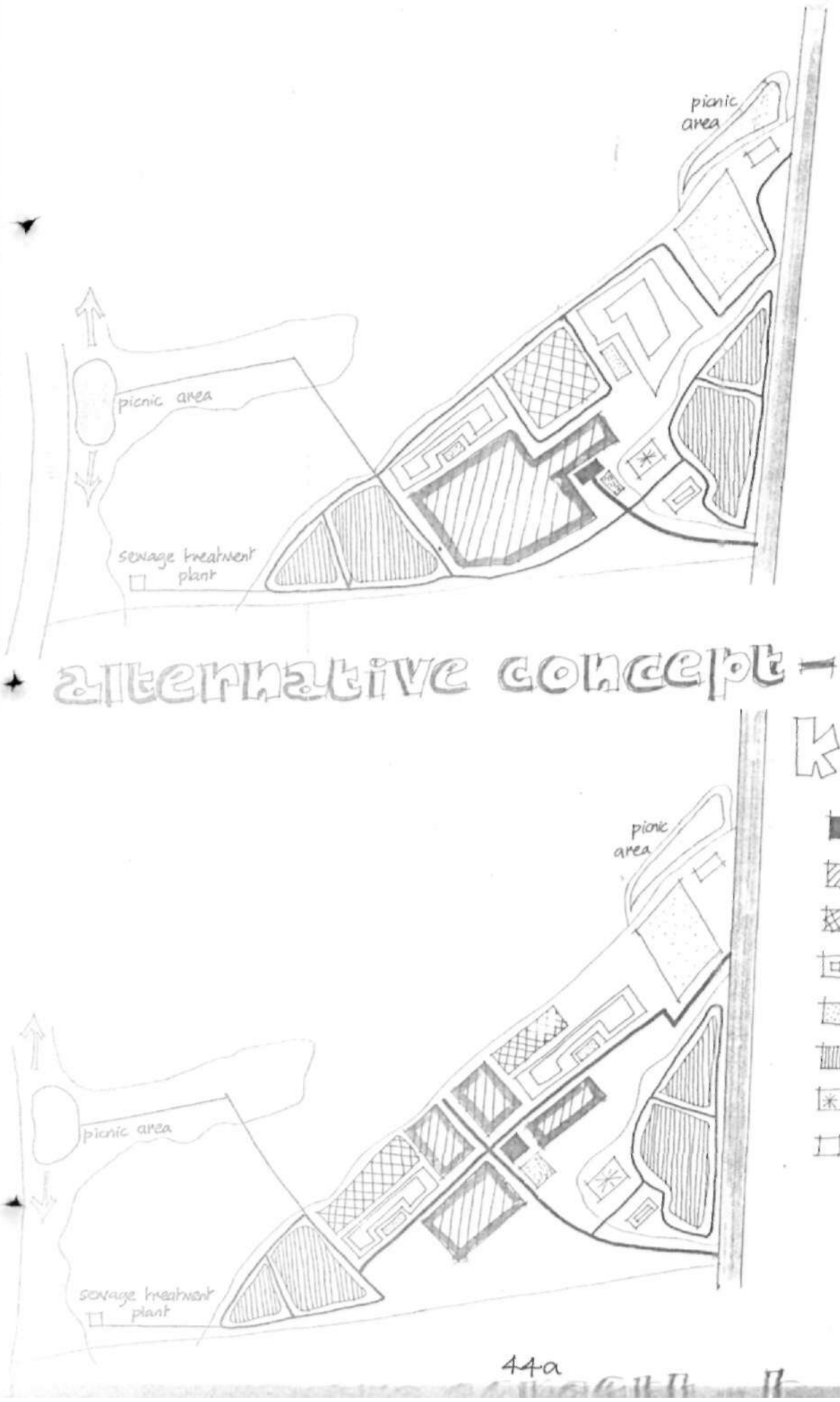
This has been depicted in the tables that follow.

KEY TO TABLES:

NUA = Net usable area (M^2/stud.)

CA = Classroom area (M^2/stud.)

B.A. = Balance area (42.8% of NUA)



alternative concept - 2

H.F. = Height factor

P.A. = Plinth area (Sq.m.)

F.A. = Floor area (Sq.m.)

S.A. = Site area

(A) = Faculty of Islamic Studies

(B) = Faculty of Arts

(C) = Faculty of Engineering

(D) = Faculty of Sciences

(note:- all other areas are in sq.m.)

TABLE 7.1: LAND REQUIRED FOR ACADEMIC DEPARTMENTS

NUA	CA	F.A.	B.A.	TA	H.F.	P.A.	Dept.
			(A)				
4.4	0.16	1382	571	1953	2	976.5	Quran
4.4	0.16	1382	571	1953	2	976.5	Hadith
4.4	0.16	1382	571	1953	2	976.5	Isl. Phil.
4.4	0.16	1382	571	1953	2	976.5	Isl. Theol.
4.4	0.16	1382	571	1953	2	976.5	Shariah
			(B)				
4.4	0.16	1382	571	1953	2	976.5	Arabic
4.4	0.16	1382	571	1953	2	976.5	Nig.Lang.
4.4	0.16	1382	571	1953	2	976.5	English
4.4	0.16	1382	571	1953	2	976.5	Isl.Socio.
4.4	0.16	1382	571	1953	2	976.5	Isl.Econs.
4.4	0.16	1382	571	1953	2	976.5	Isl.Hist.
			(C)				
18.4	0.16	2561	1087	3648	1.25	2918	Mec.Eng.
18.4	0.16	2561	1087	3648	1.25	2918	Elec.Eng.
18.4	0.16	2561	1087	3648	1.25	2918	Chem.Eng.
18.4	0.16	2561	1087	3648	1.25	2918	Metall.Eng.
18.4	0.16	2561	1087	3648	1.25	2918	Civil.Eng.

SPACE REQUIREMENTS TABLE 7.1 (contd.)

		(D)					
NUA	CA	F.A.	B.A.	TA	H.F.	P.A.	Dept.
4.4	0.16	1897	783	2680	2.0	1340	Maths.
12.2	0.16	5142	2172	7314	1.5	1448	Physics
15.4	0.16	6473	2742	9215	1.25	7300	Chem.
12.2	0.16	5142	2172	7314	1.5	1448	Geog.
15.4	0.16	6473	2742	9215	1.25	7300	Geology
15.4	0.16	6473	2742	9215	1.25	7300	Microbiol.
15.4	0.16	6473	2742	9215	1.25	7300	Biochem.
15.4	0.16	6473	2742	9215	1.25	7300	Biology.

TABLE 7.2: STUDENTS HOSTEL

NUA	B.A.	H.F.	P.A.	F.A.
BED SPACE				
10.2	4.08	3	8847	79620
DINING HALL				
0.55	0.22	1	5500	5500
KITCHEN				
0.45	0.18	1	4500	4500
LAUNDRY				
0.03	0.012	1	300	300
COMMON ROOM				
0.57	0.228	1	5700	5700

TABLE 7.3: SUPPORT SERVICES

NUA	B.A.	H.F.	P.A.	F.A.
Central Admin. Build.				
0.40	50	2.75	727	2000
convocation square				
0.2	40	1	933	2800
library				
1.65	20	2	3300	6599
amphitheatre				
0.15	40	1	9800	9800
audio-visual center				
0.06	40	1.25	1680	2100
health centre				
0.05	40	1	700	700
central store				
0.2	40	1	2800	2800
maintainance workshops				
0.43	40	1	6000	6000

Table 7.3 (contd.)

NUA	B.A.	H.F.	P.A.	F.A.
student union building				
0.76	40	1.5	7067	10600
telephone exchange				
0.01	40	1	140	140
bookshop				
0.25	40	2	1750	3500
computer centre				
0.10	40	1.5	933	1400
shopping				
0.25	40	1	3500	3500

TABLE 7.4: SPORTS AND RECREATIONAL USES

NUA	40% B.A.	F.A.	P.A.	S.A.
Sports hall				
0.22	0.088	0.308	3080	3080
Outdoor sports and stadium				
			316667	
Swimming pool				
			83330	
Other open spaces				
			166667	

TABLE 7.5: STAFF HOUSING

GROSS AREA	SITE % COVERAGE	SITE AREA
V.C.'s lodge		
400	20	2000
Guest house		
2000	25	8000
Senior staff		
185	25	82140
Junior and intermediate staff		
100	33	93300

TABLE 7.6: INFRASTRUCTURES

GROUND AREA	infrastructural facility
2300	security and fire fighting
4600	vehicle maintainance
6000	botanical garden
2300	staff school compound
3000	sewage treatment plant
200	power plant
600	petrol station
1140	mosque
6000	car park

Roads and pedestrian areas = 20% of developed area

Total developed area = 1,016,130 sq.m. which is equal to 1016.13 Ha.

7.5 Phasing

First Phase: 1989 - 1994

Intake - 500 students distributed in the five departments of the Faculty of Islamic Studies and Faculty of Arts.

Second Phase: 1994 - 2002

Capacity of 4000 students distributed in Faculties of Islamic Studies, Engineering and Applied Sciences and Arts.

Final Phase - Commencing 2002

Total capacity of 10,000 students distributed in all departments of all faculties.

7.6 Planning Concept

Planning of the acedemic core has been based on the Qibla - direction in which the Muslims pray. The axis of planning therefore becomes east-west. The problem of facing buildings east-west, that is the problem of solar radiation, was overcome by facing the main entrances of the faculties towards east-west while the buildings themselves face north-south.

7.7 Design Concept

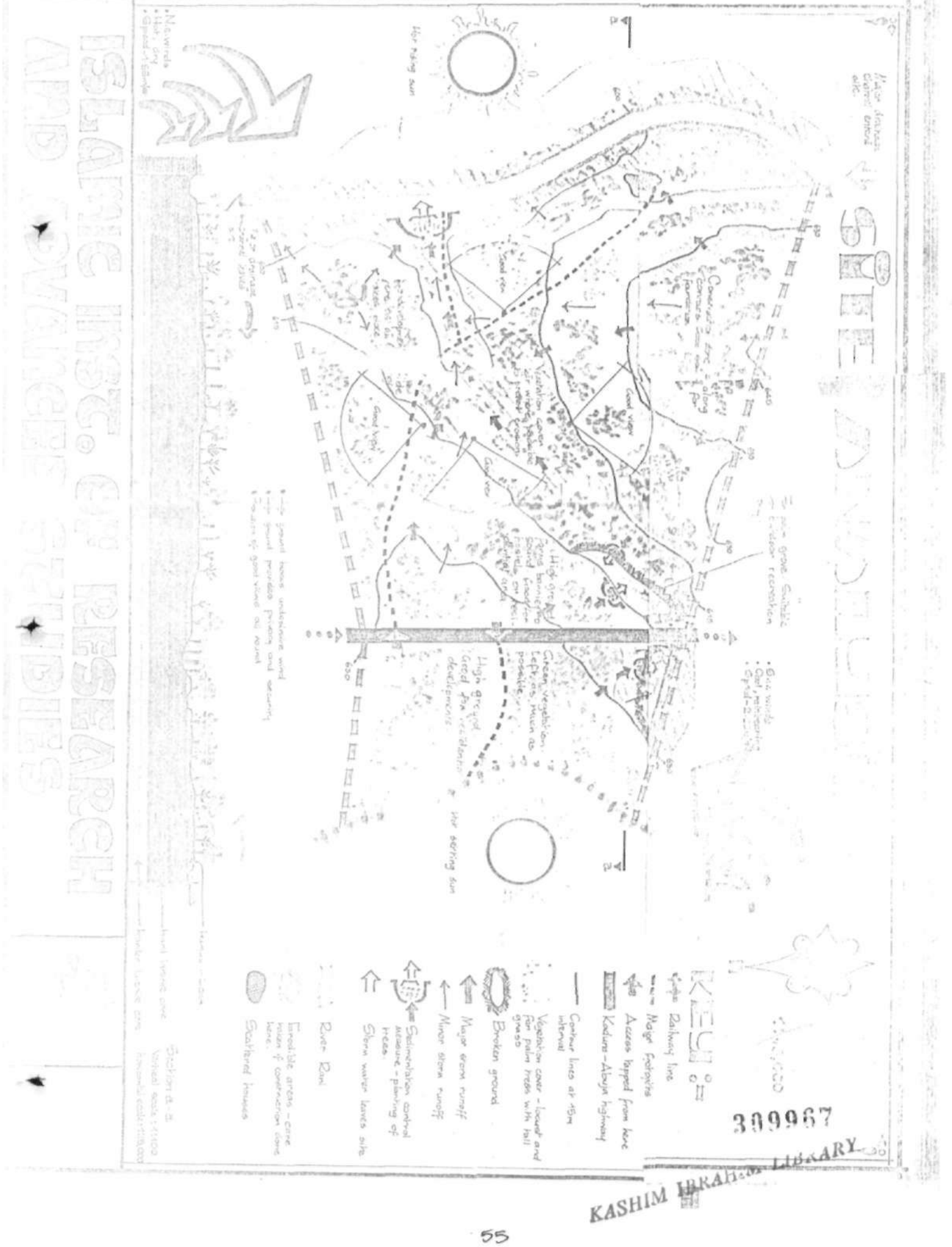
This has been based on the use of the courtyard. All the buildings are arranged around a central courtyard which provides the adequate micro-climatic conditions needed, such as increase of humidity during the dry season and provision of cool breezes during rainy season.

Another aspect used in the formulation of the design was the separation of the men and women when grouped together formally in any place. For example, in the

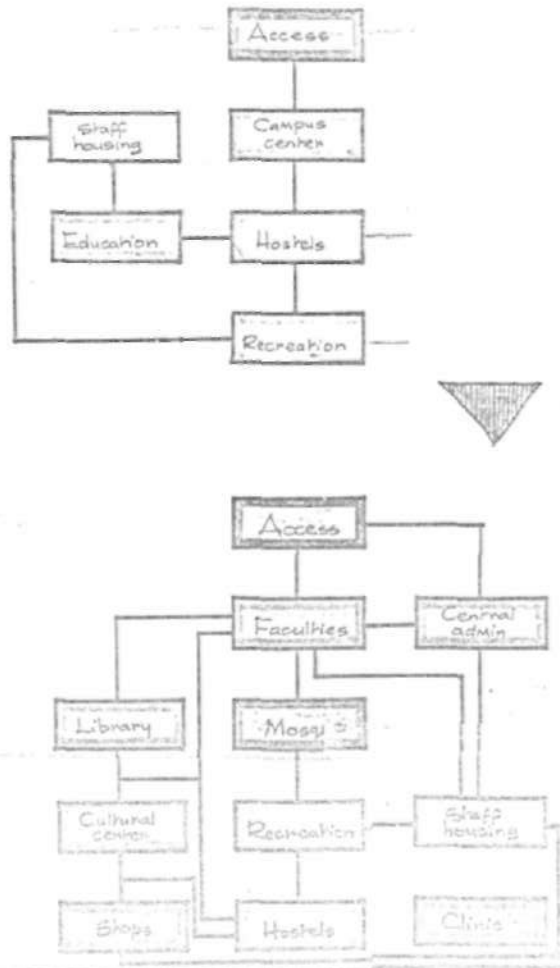
department of Quran and Hadith, this will occur in the classrooms. In the main library all reading areas are divided into two, one for men and one for women.

7.8 Aesthetics

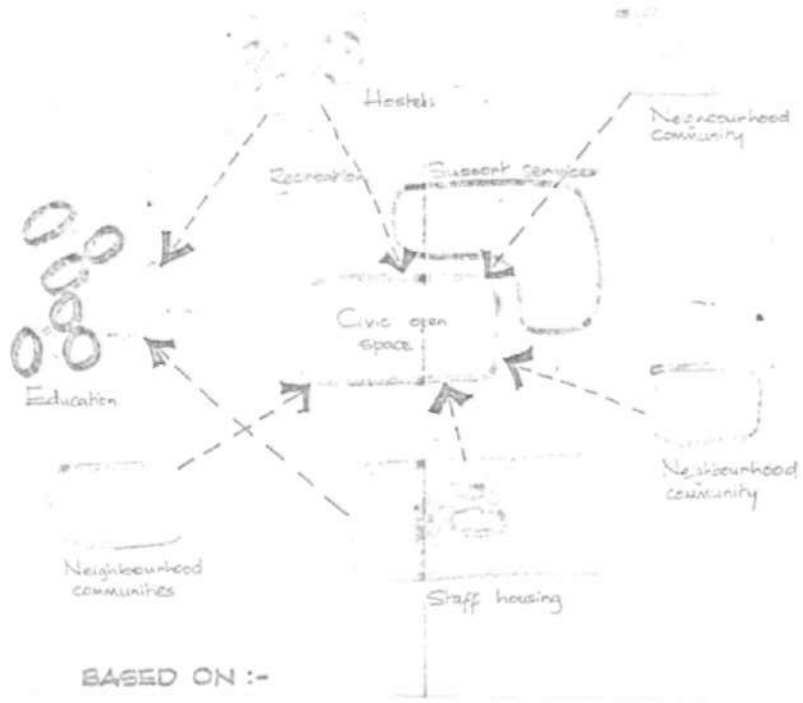
One of the provisions for the design of the Islamic institute of Research and Advanced studies was the use of both Islamic and Hausa aesthetical values. Asthetics in this case includes both aesthetical and architectural motifs. Basically, Hausa aesthetics are similar to Islamic aesthetics as they have also been influenced by Islam. Hence the in the department, library and mosque, use has been made of round arches, slit like windows, motifs both floral and abstract, round and semicircular windows.


SITE ANALYSIS
ISLAMIC INSTITUTE OF RESEARCH AND ADVANCED STUDIES
KEY
Railway line
Major footpaths
Access tapped from here
Kaduna-Abuja highway
Contour lines at 10m interval
Vegetation cover - locust and fan palm trees with tall grass
Broken ground
Major storm runoff
Minor storm runoff
Stormwater leaves site
River Rido
Scattered houses
High prevailing sun
Good view
Good view
Good view

FUNCTIONAL DIAGRAMS



ZONING

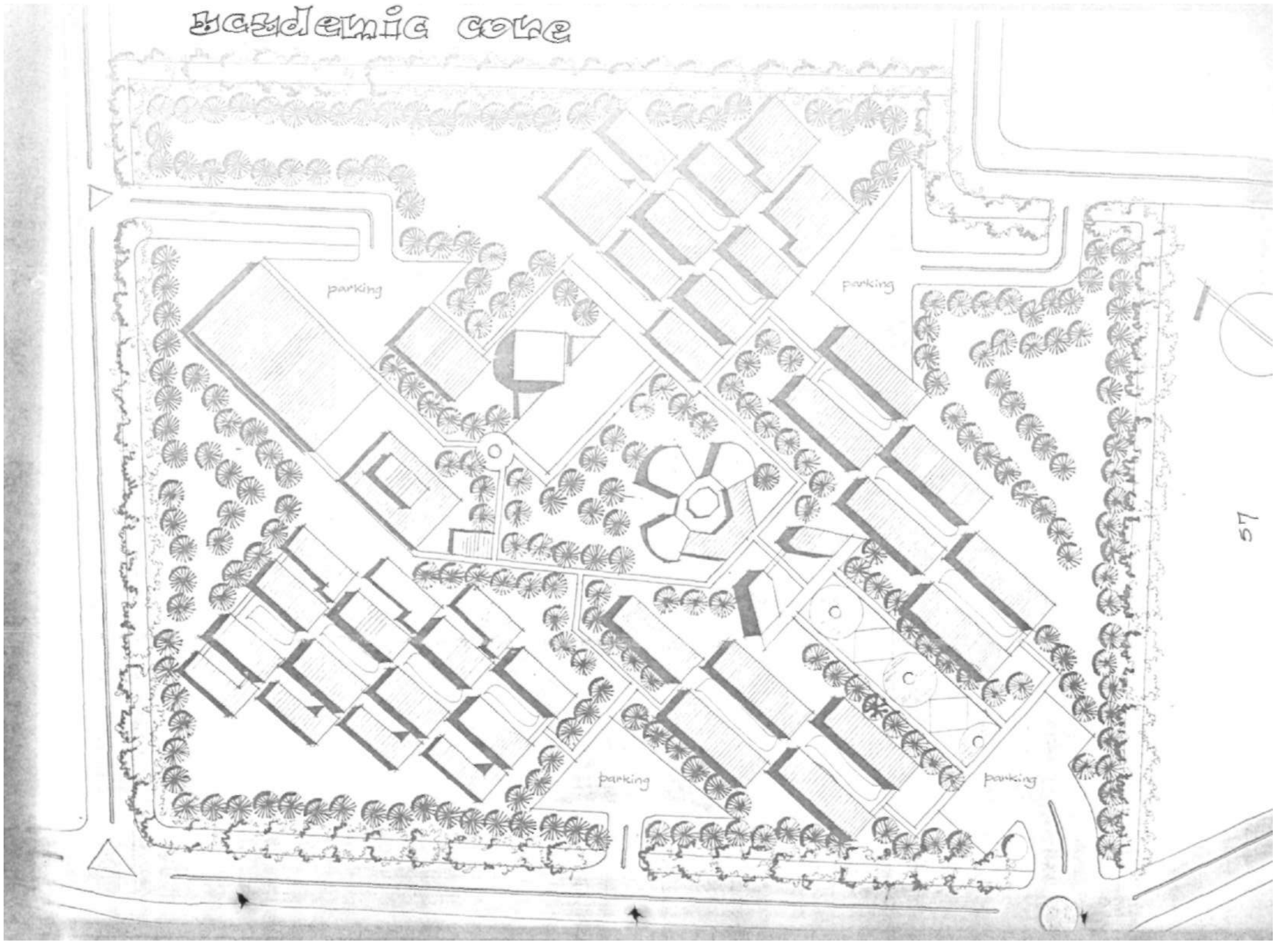


BASED ON :-

SUCCESSION OF COURTYARDS

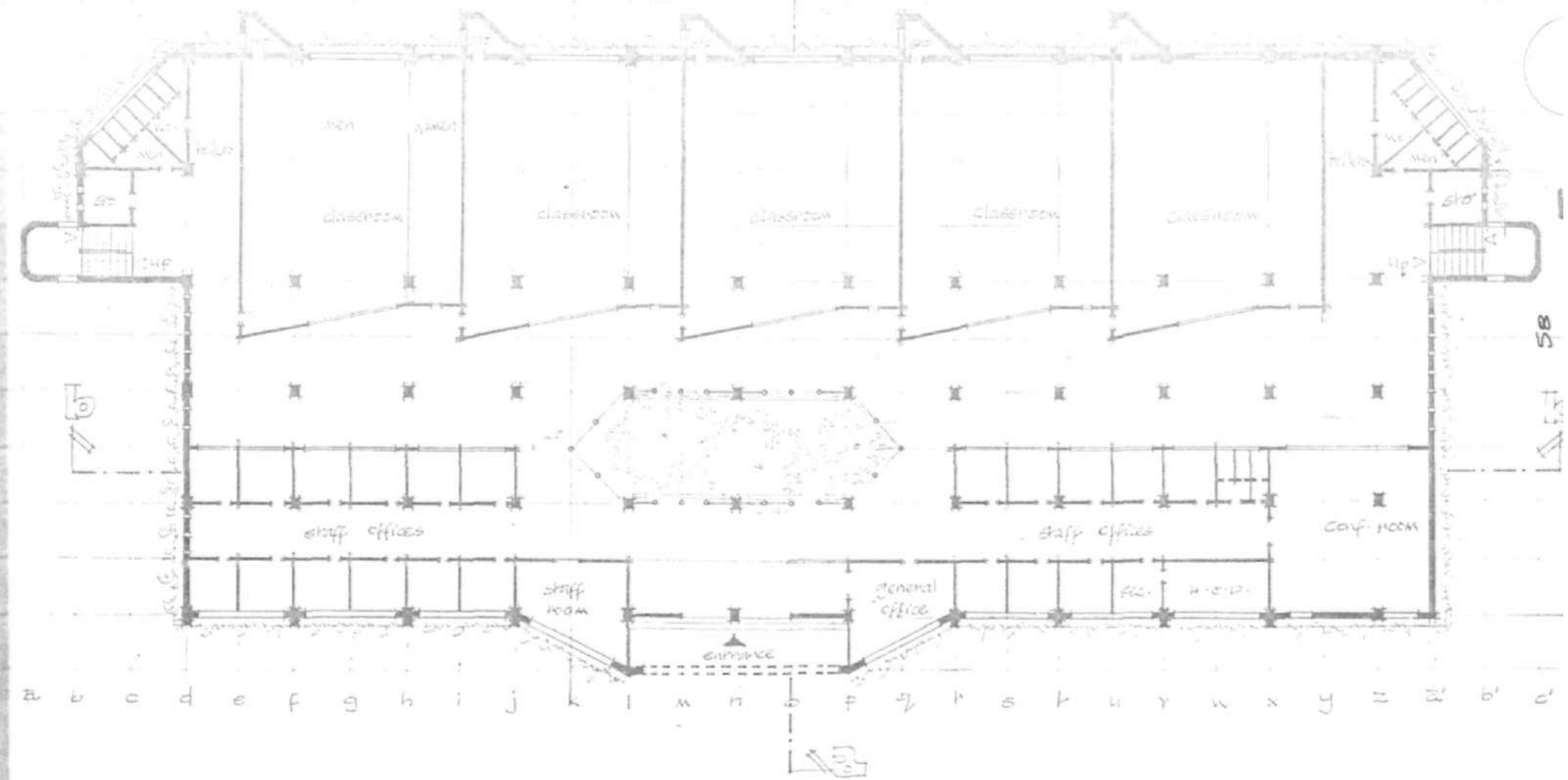
LINKING OF NEIGHBOURHOOD COMMUNITIES THROUGH CIVIC SPINE

ISLAMIC INST. OF RESEARCH AND ADVANCED STUDIES

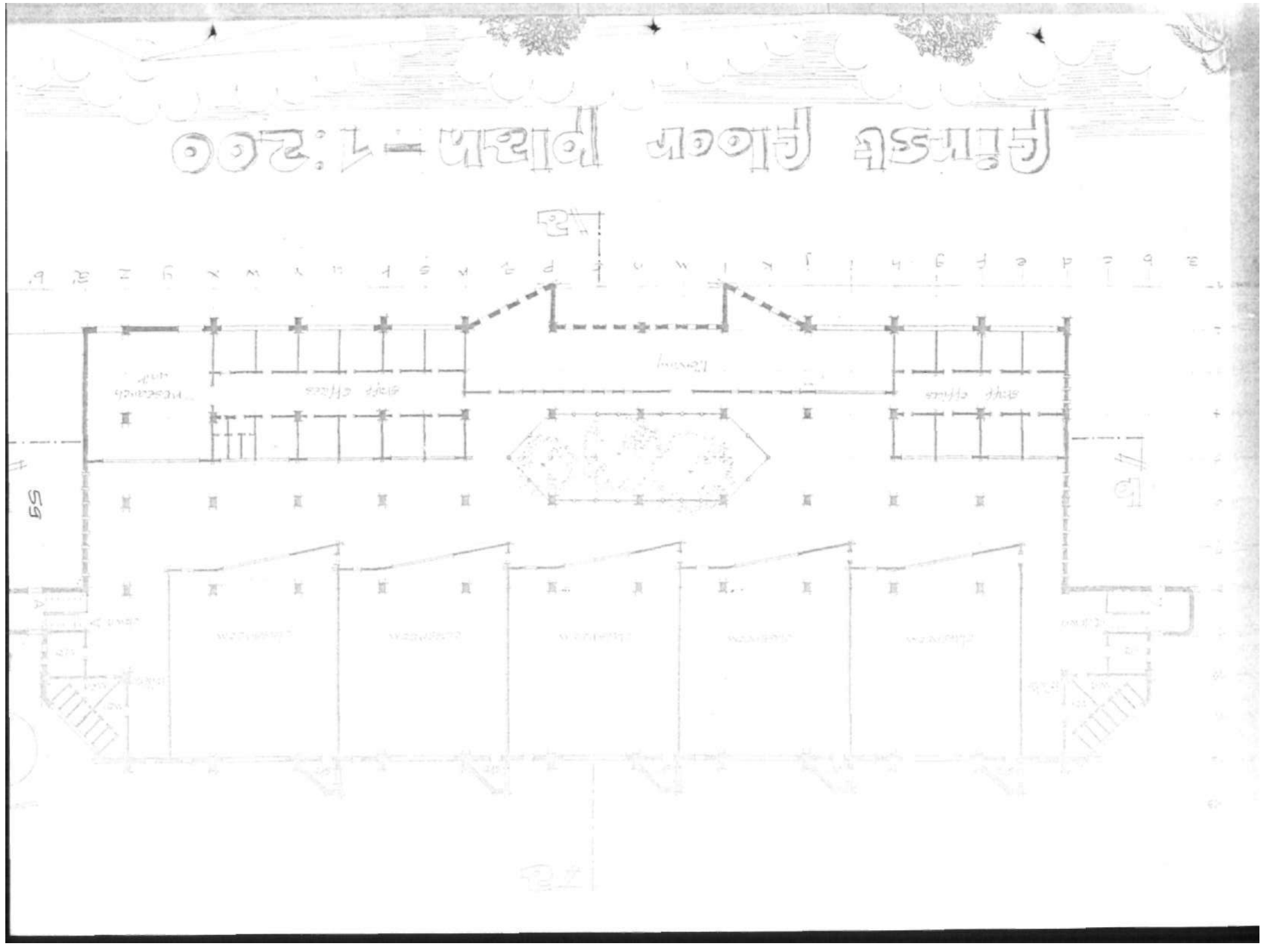

Academic core
parking
parking
parking
parking

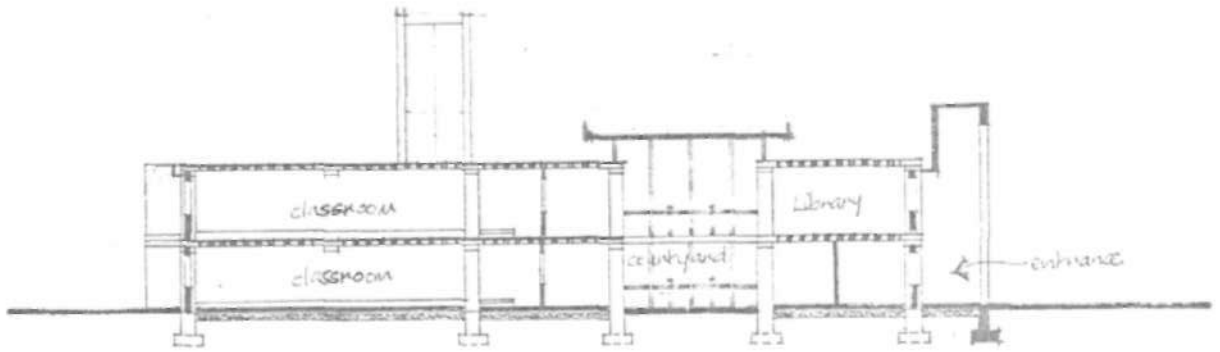
dept. of qur'an

dept. of qur'an and hadith

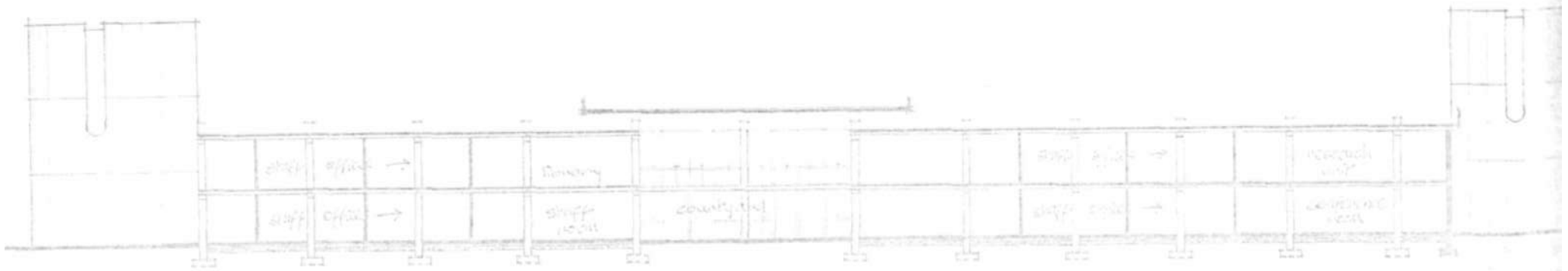


ground floor plan – 1:200


First Floor Plan - 1:200

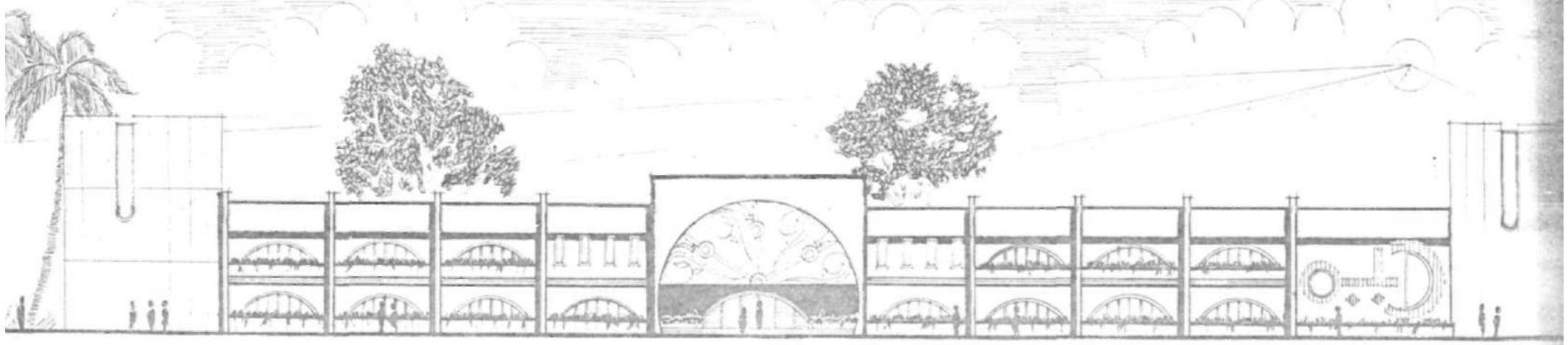


section a-a



section b-b

first floor plan - 1:200



front elevation



side elevation

front elevation



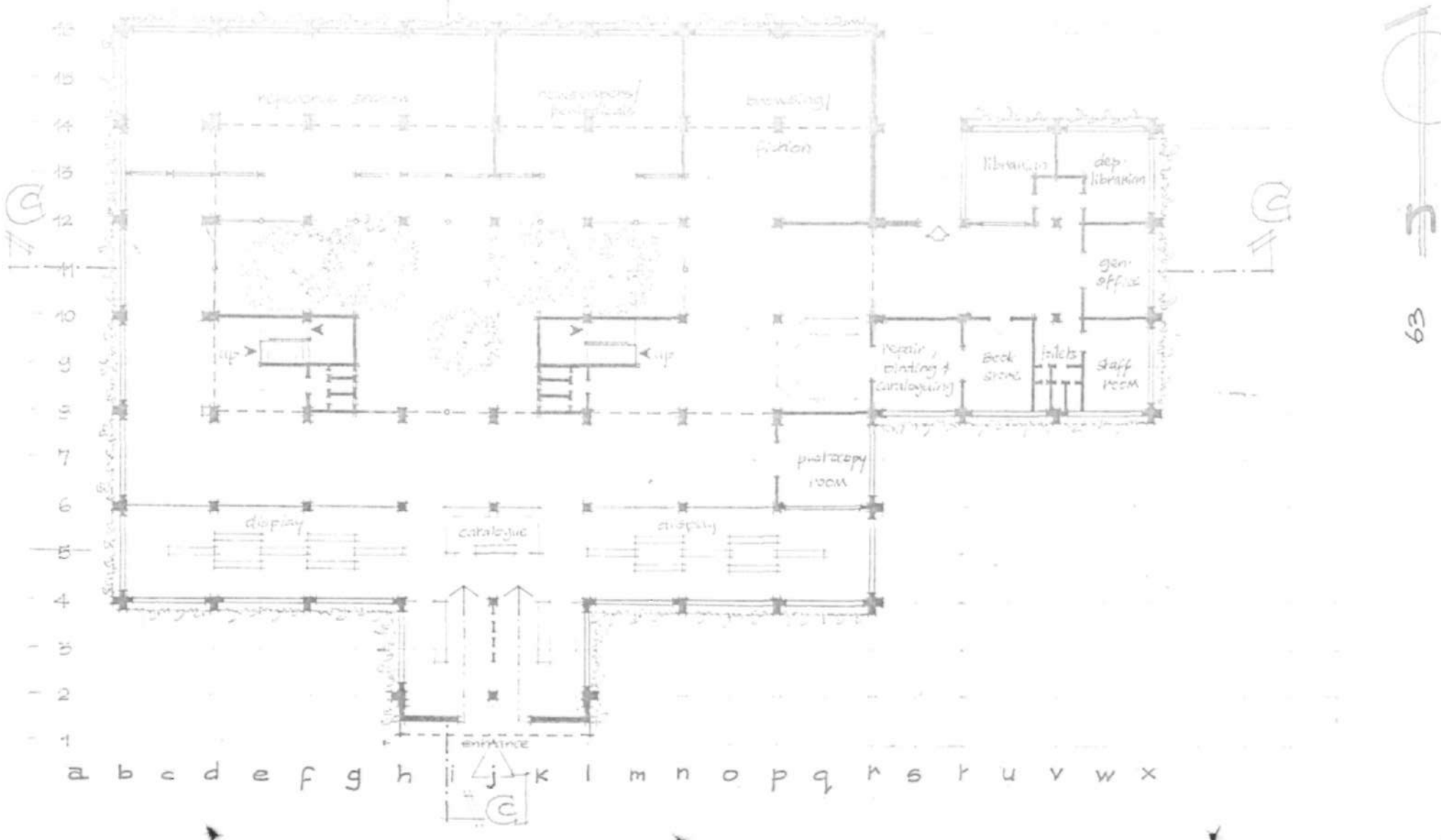
side elevation



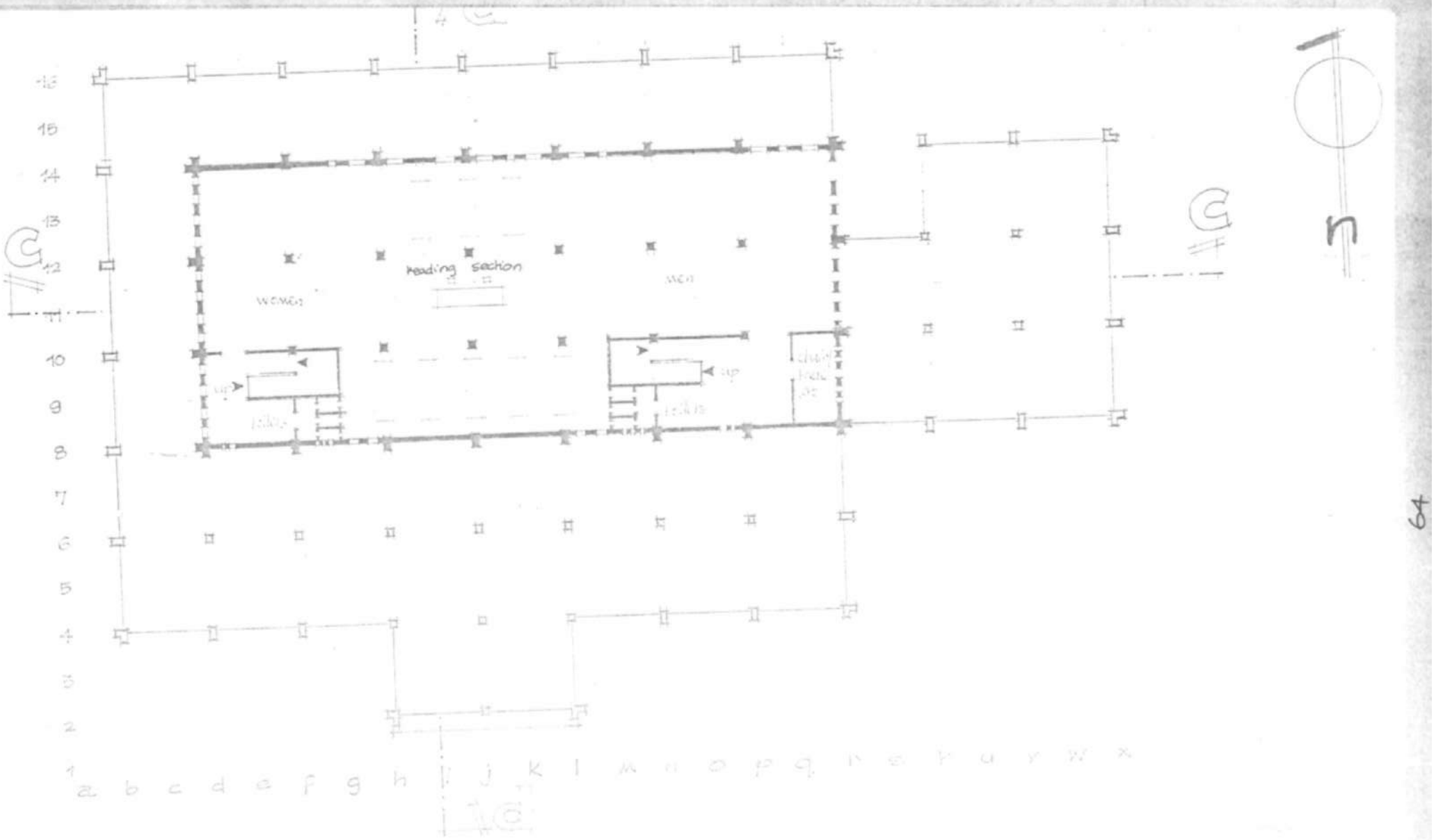
back elevation

ground floor plan
main library

main

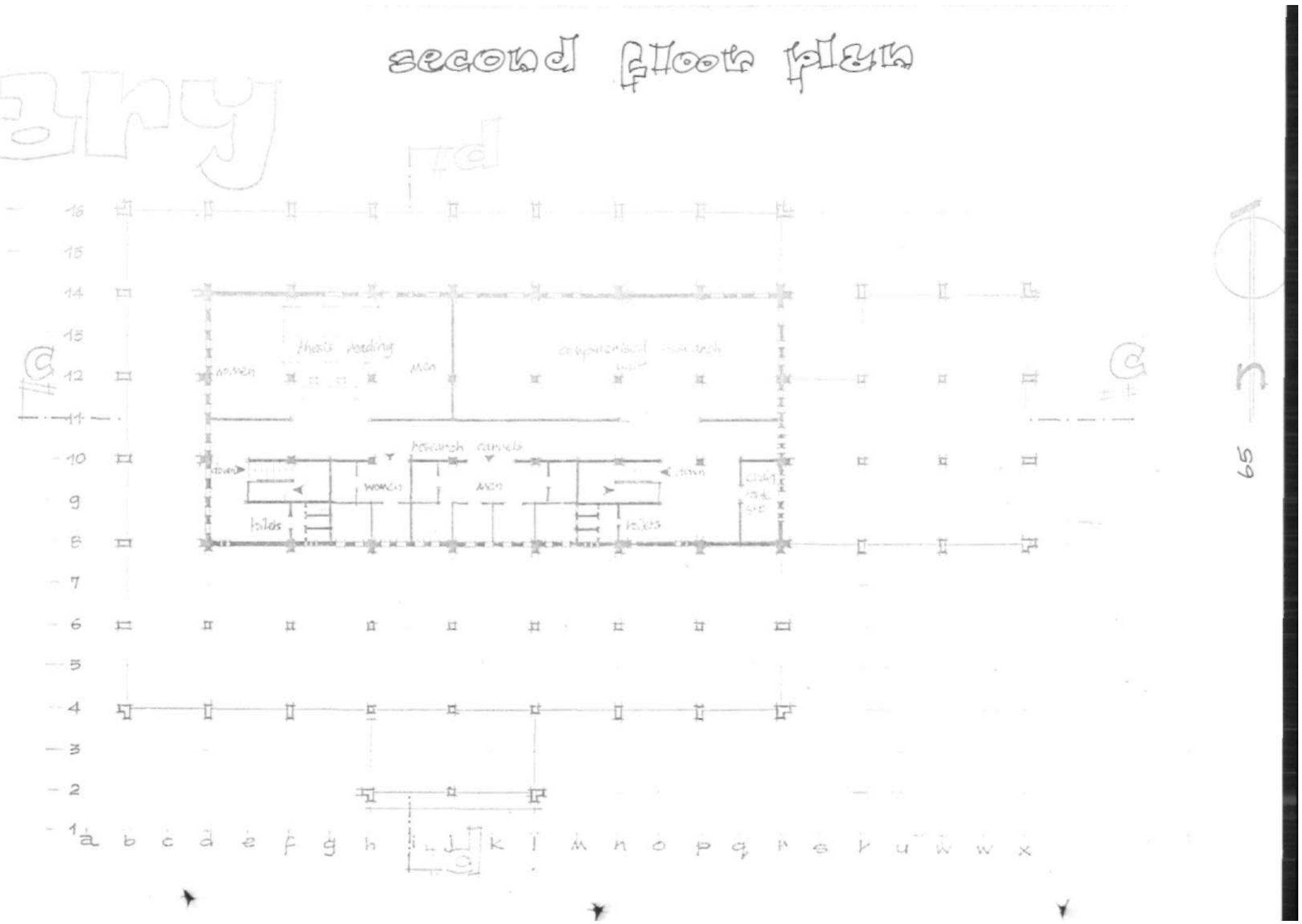


63

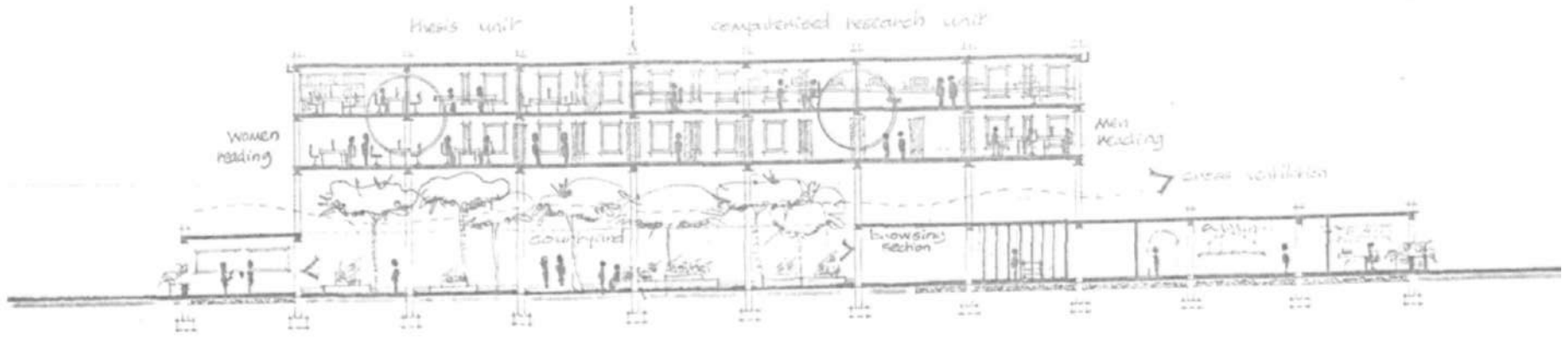


first floor plan - 1:200

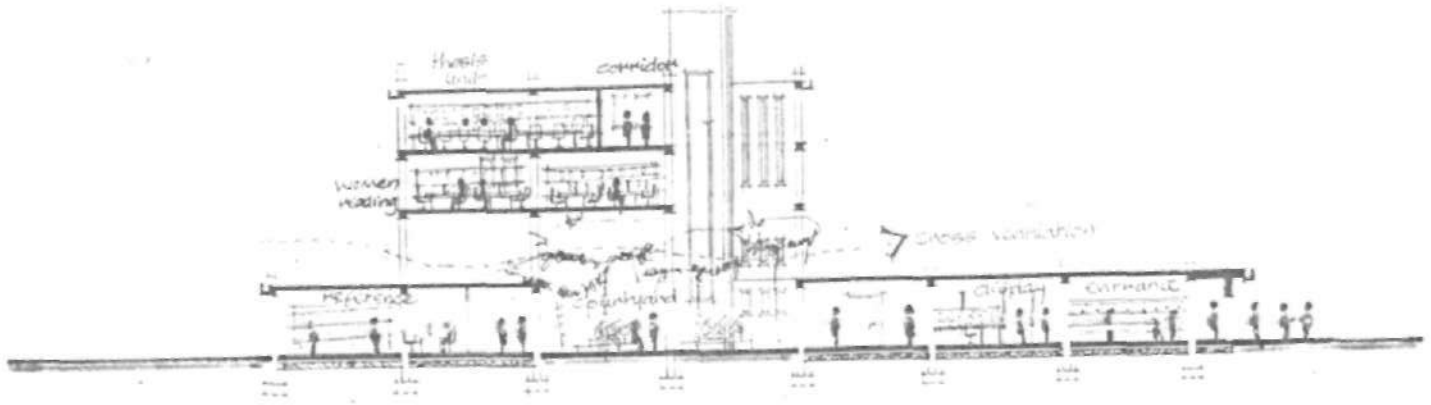
second floor plan



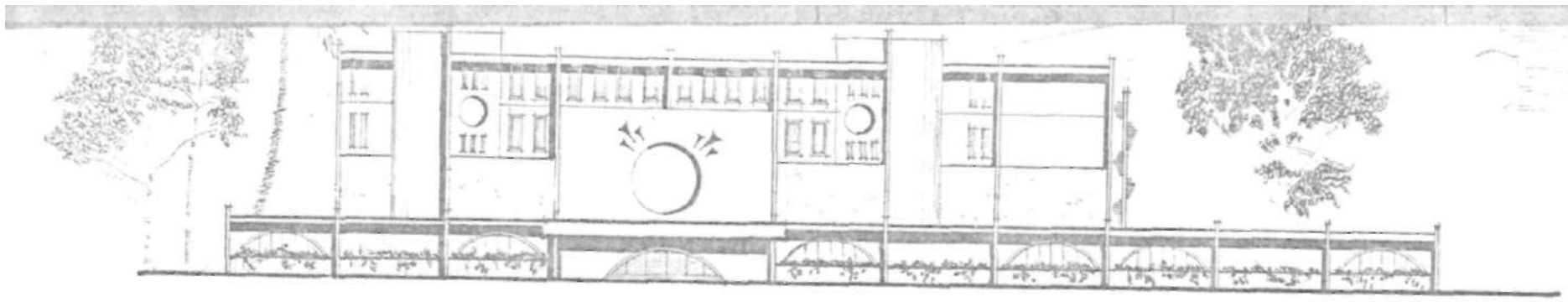
side elevation



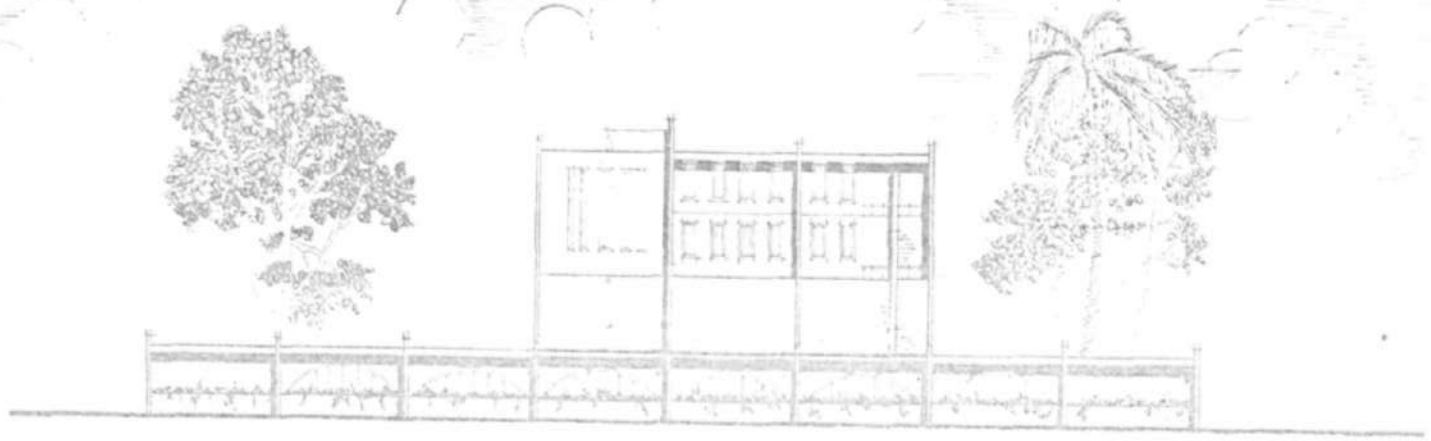
section c-c



section d-d



front elevation

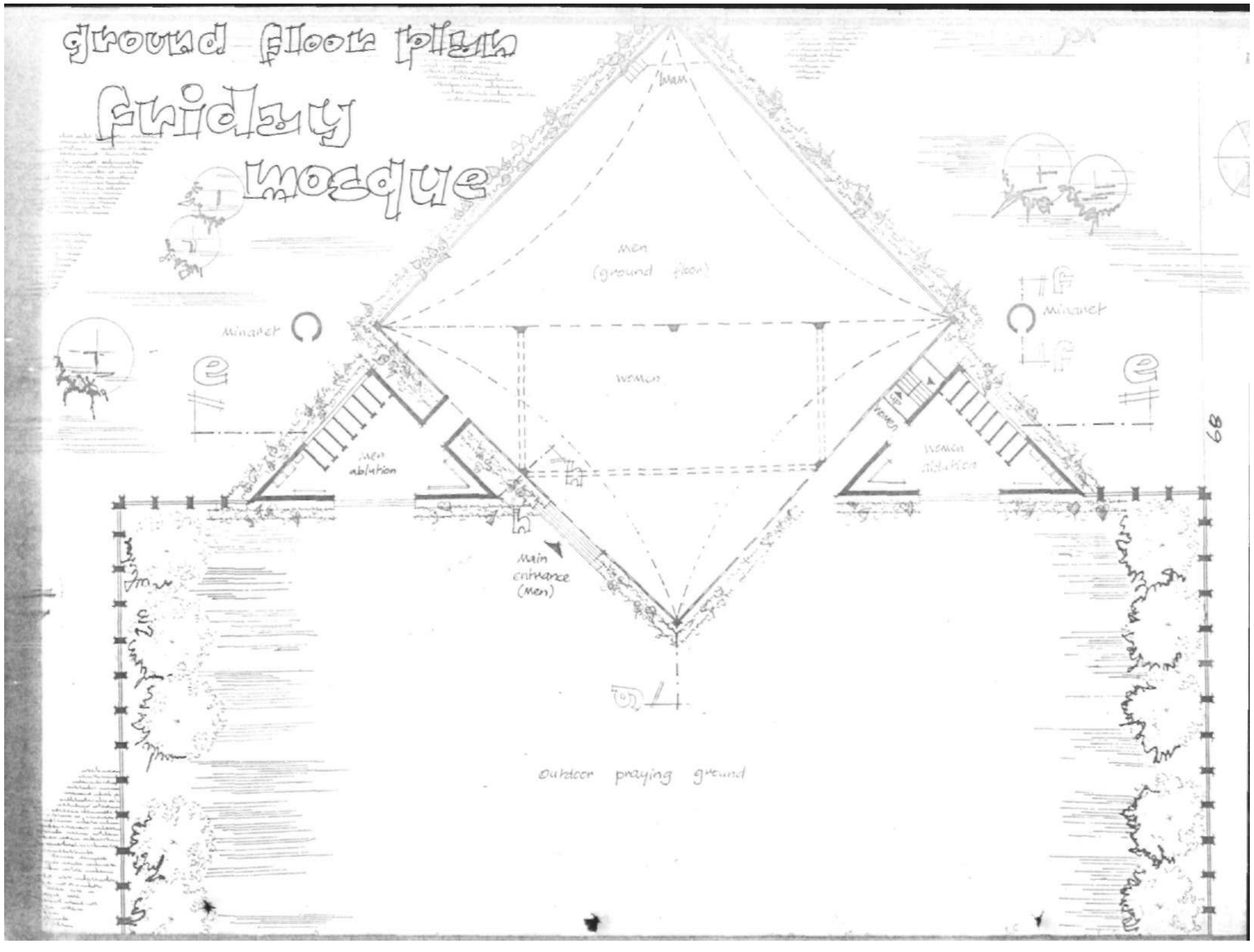


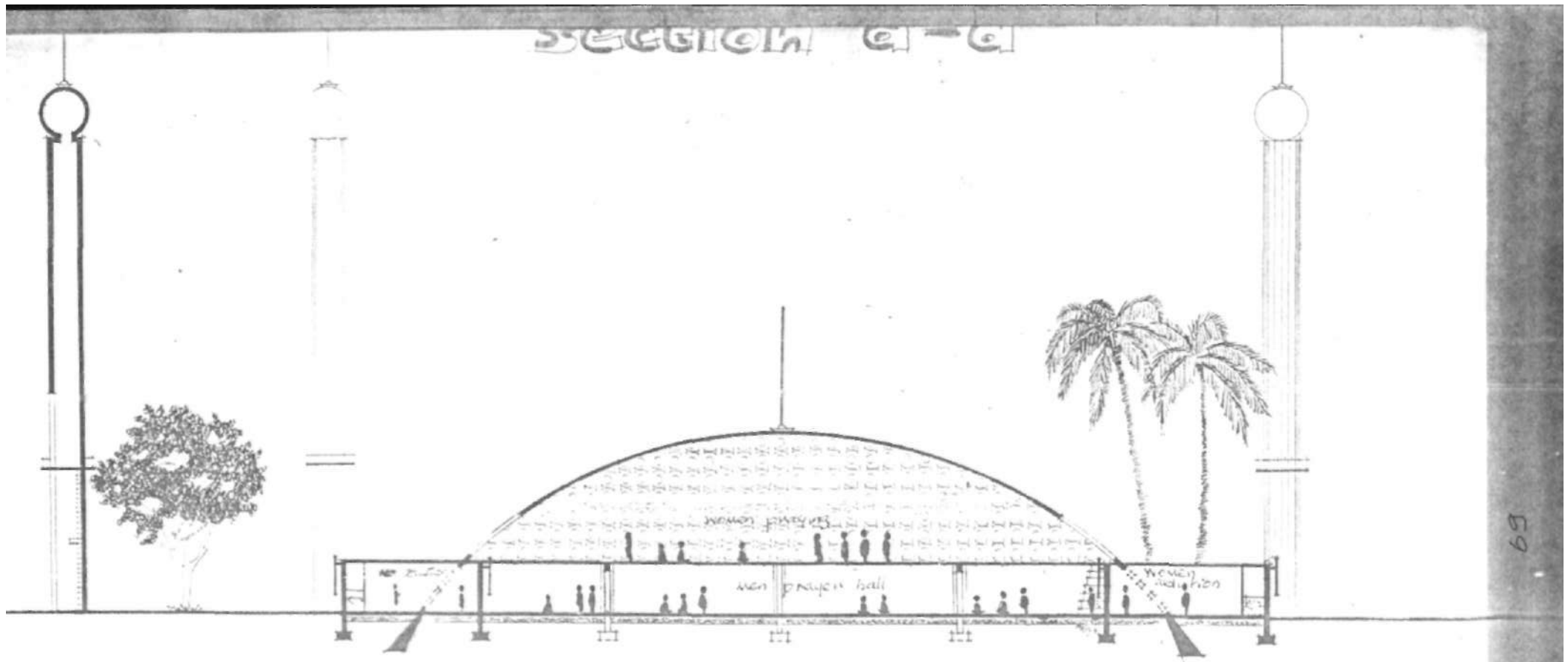
Side elevation



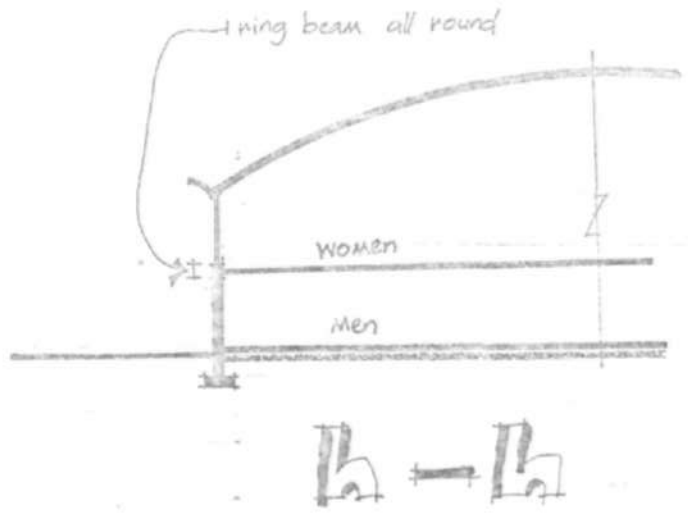
ground floor plan

friday mosque

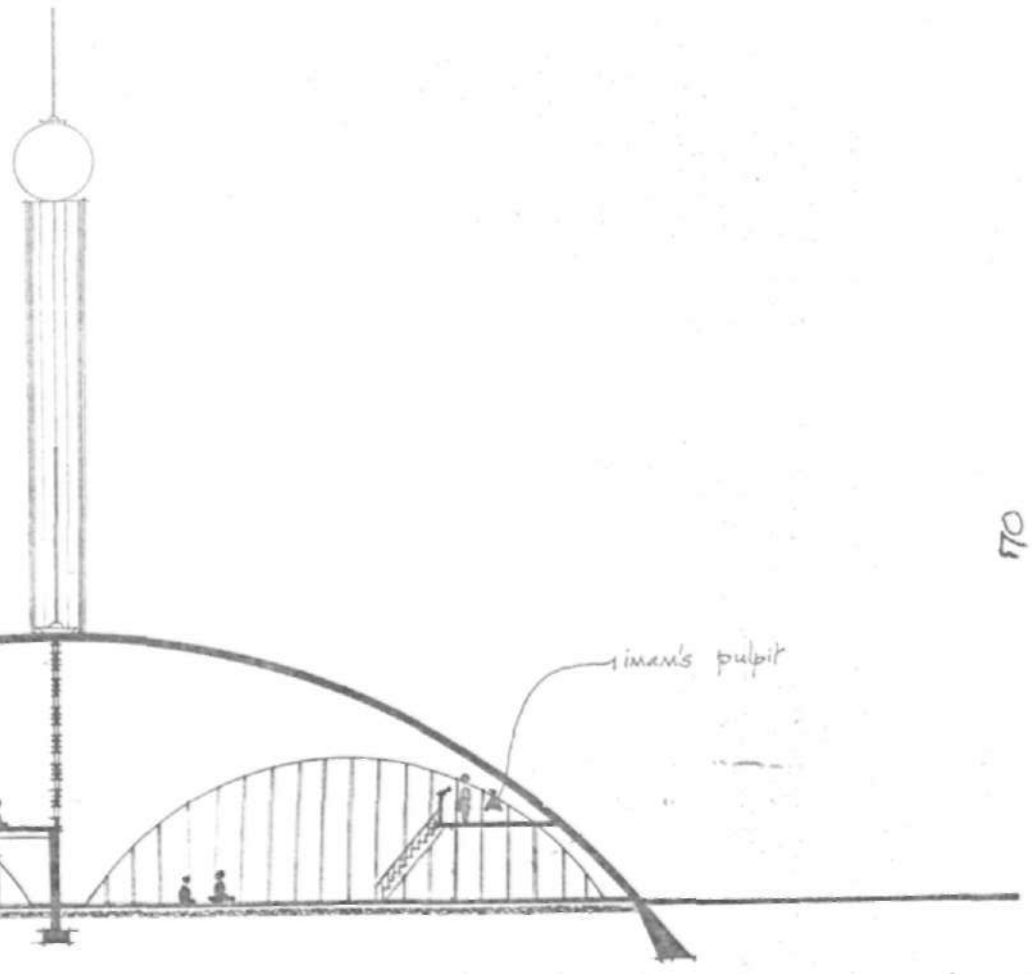




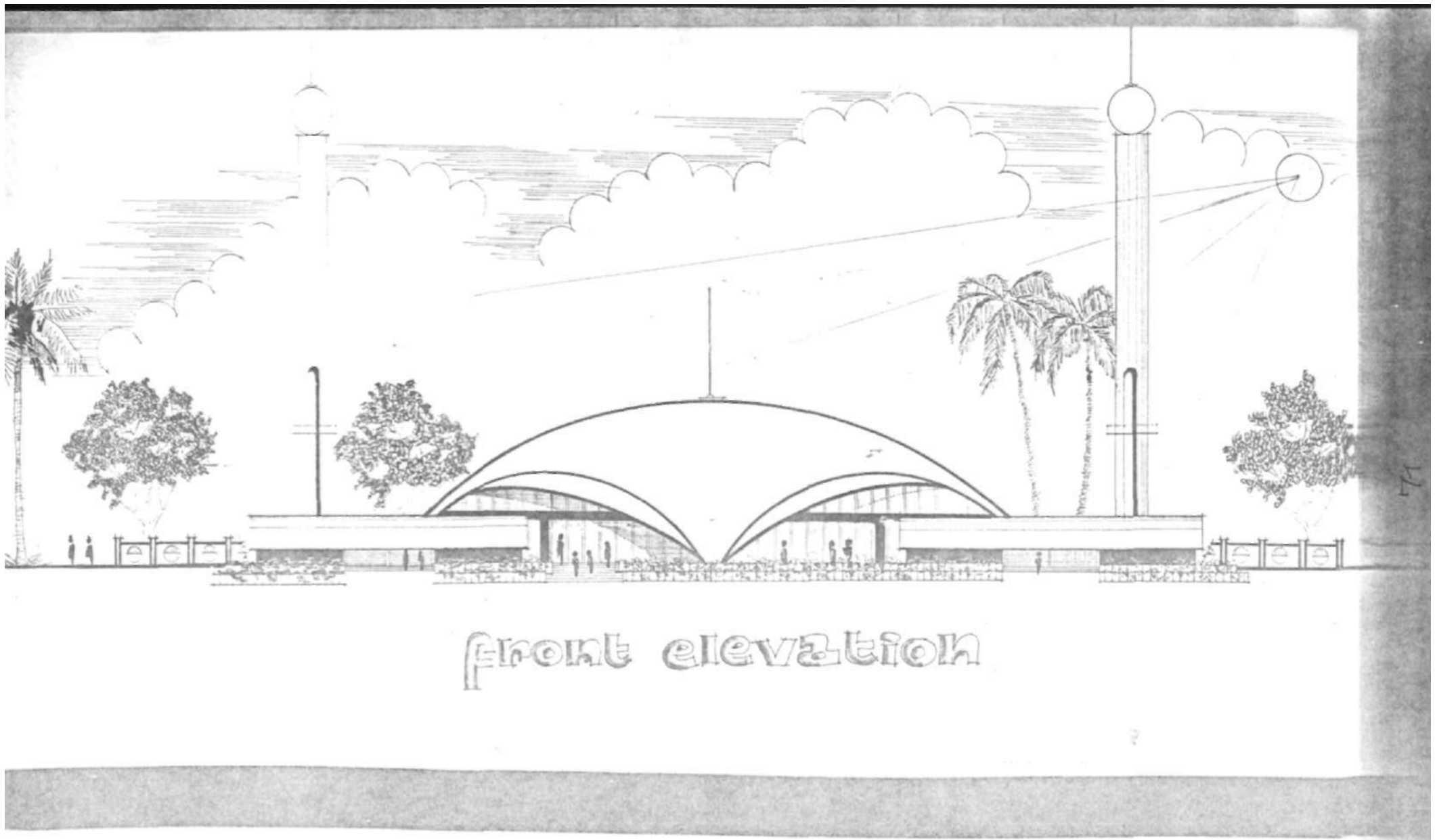
f - f



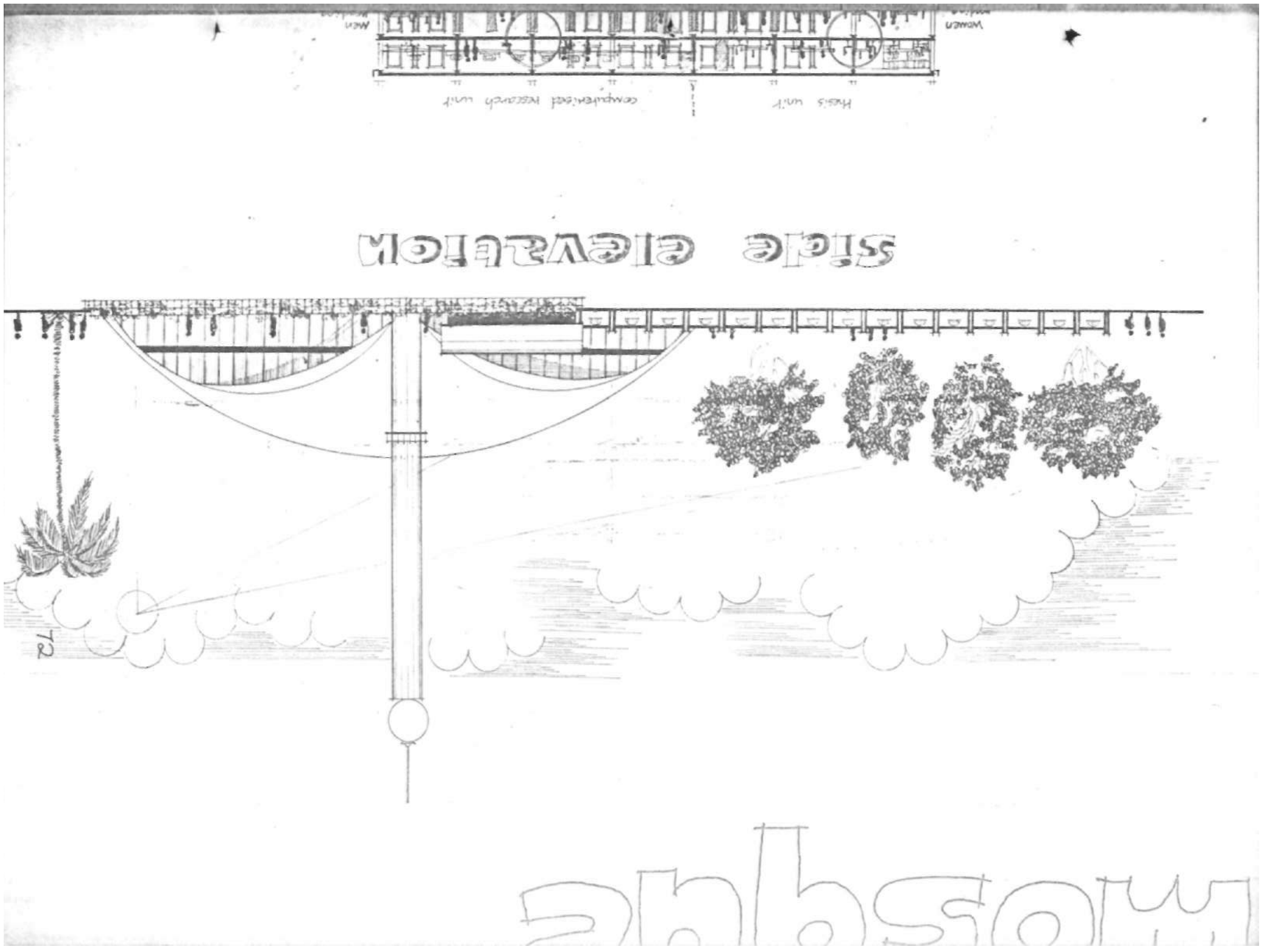
h – h



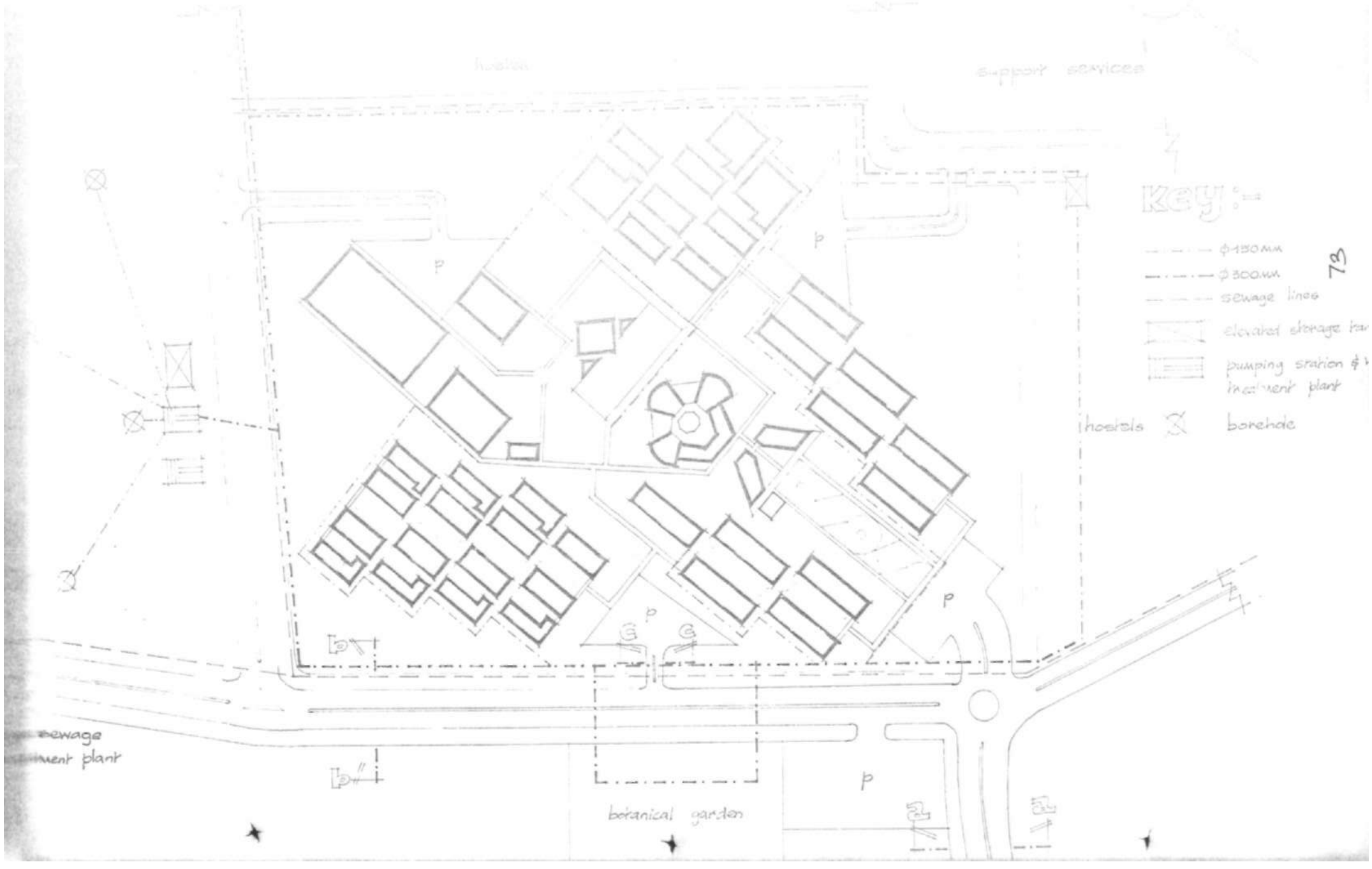
section g-g

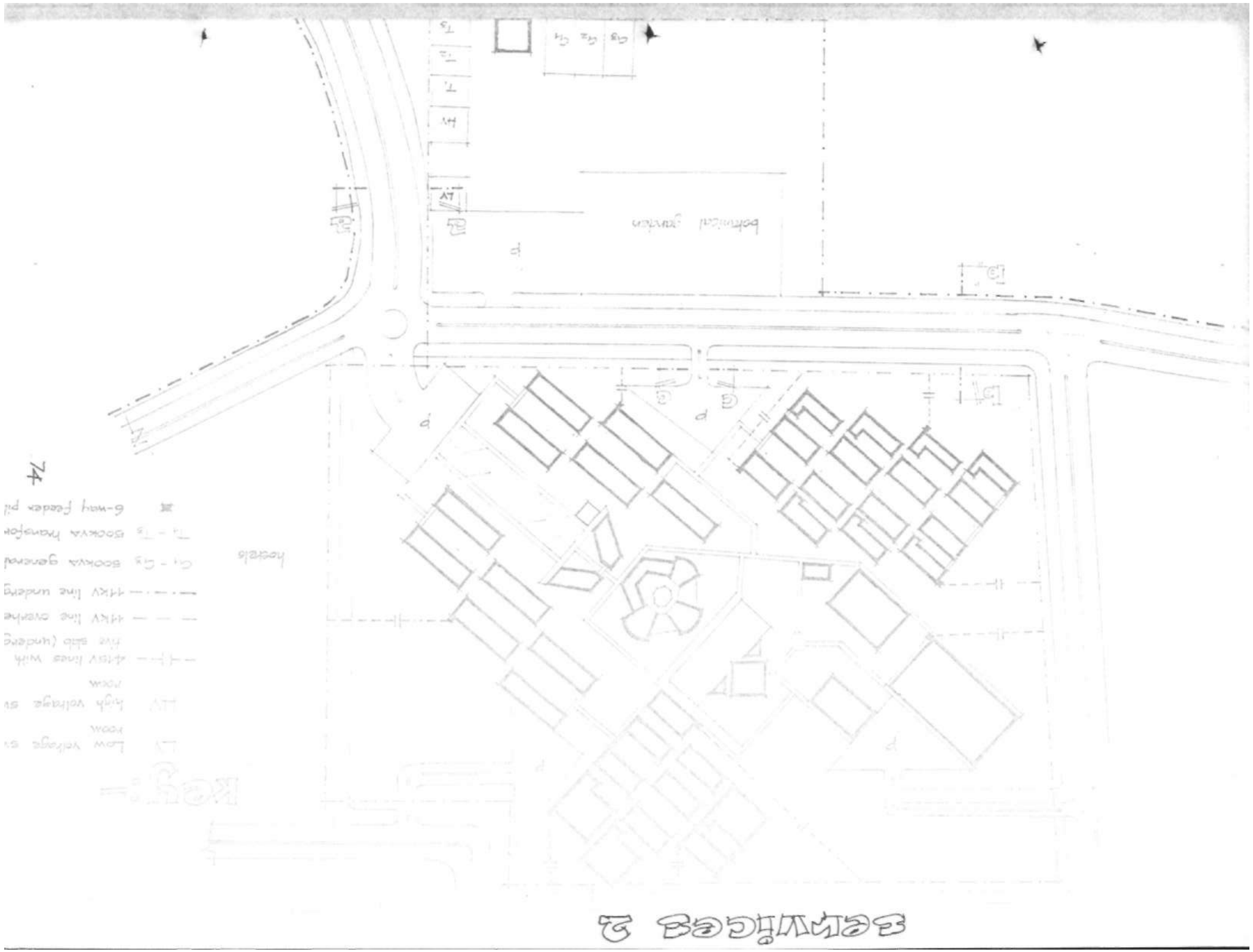


front elevation


side elevation
Men
Women
Basis unit
computerized research unit

services 1


support services
Key:-
ϕ150mm
ϕ300mm
sewage lines
elevated storage tan
pumping station &
treatment plant
borehole
P
botanical garden
sewage
ment plant


Botanical Garden
Key:-
LV Low voltage sv room
HV High voltage sv room
4TSV lines with fire alto (underg
44kV line overhe
44kV line underg
C1 - C5 33OKVA general
T1 - T5 15OKVA Manajor
6-way feeder pil
located

Exercise 2

power plant

Main entrance to campus

Water distribution & sewage systems

key:-

- telephone lines
- electric lines
- sewage lines
- water lines
- open drains



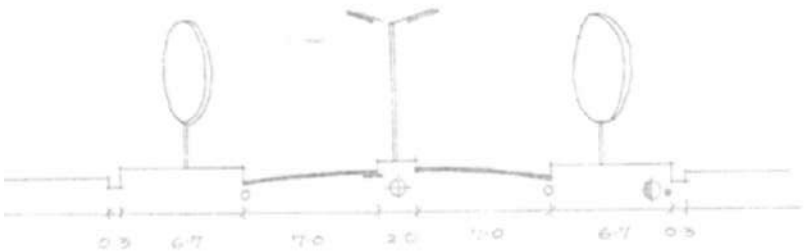
2-2 - 1:2500

40M WIDE ROAD

75

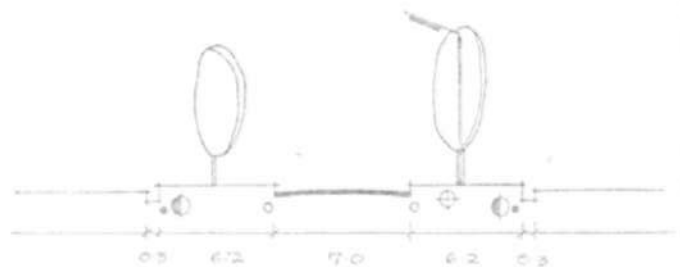
main entrance to

electrical supply network



b-b - 1:2500

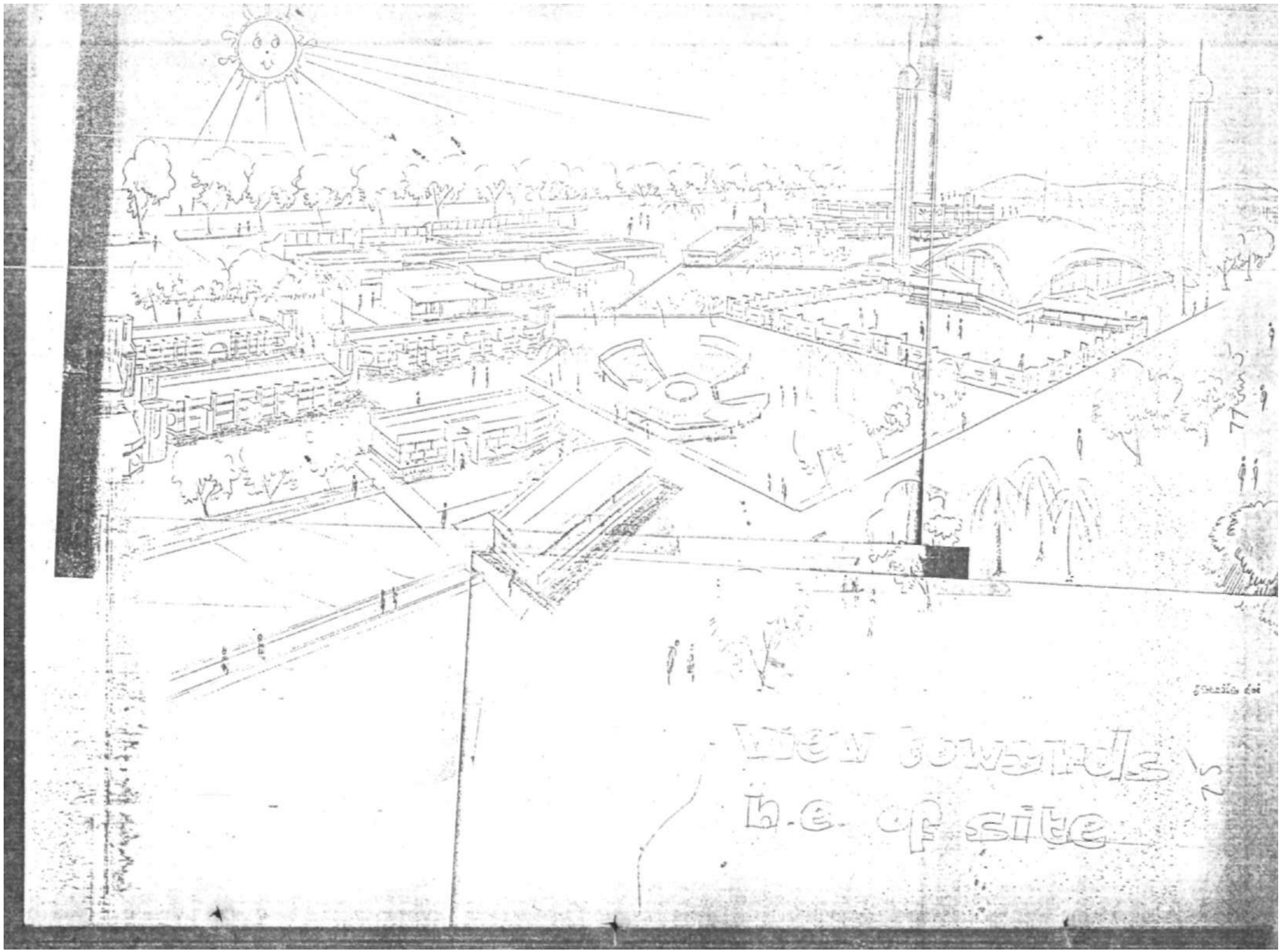
30M WIDE ROAD

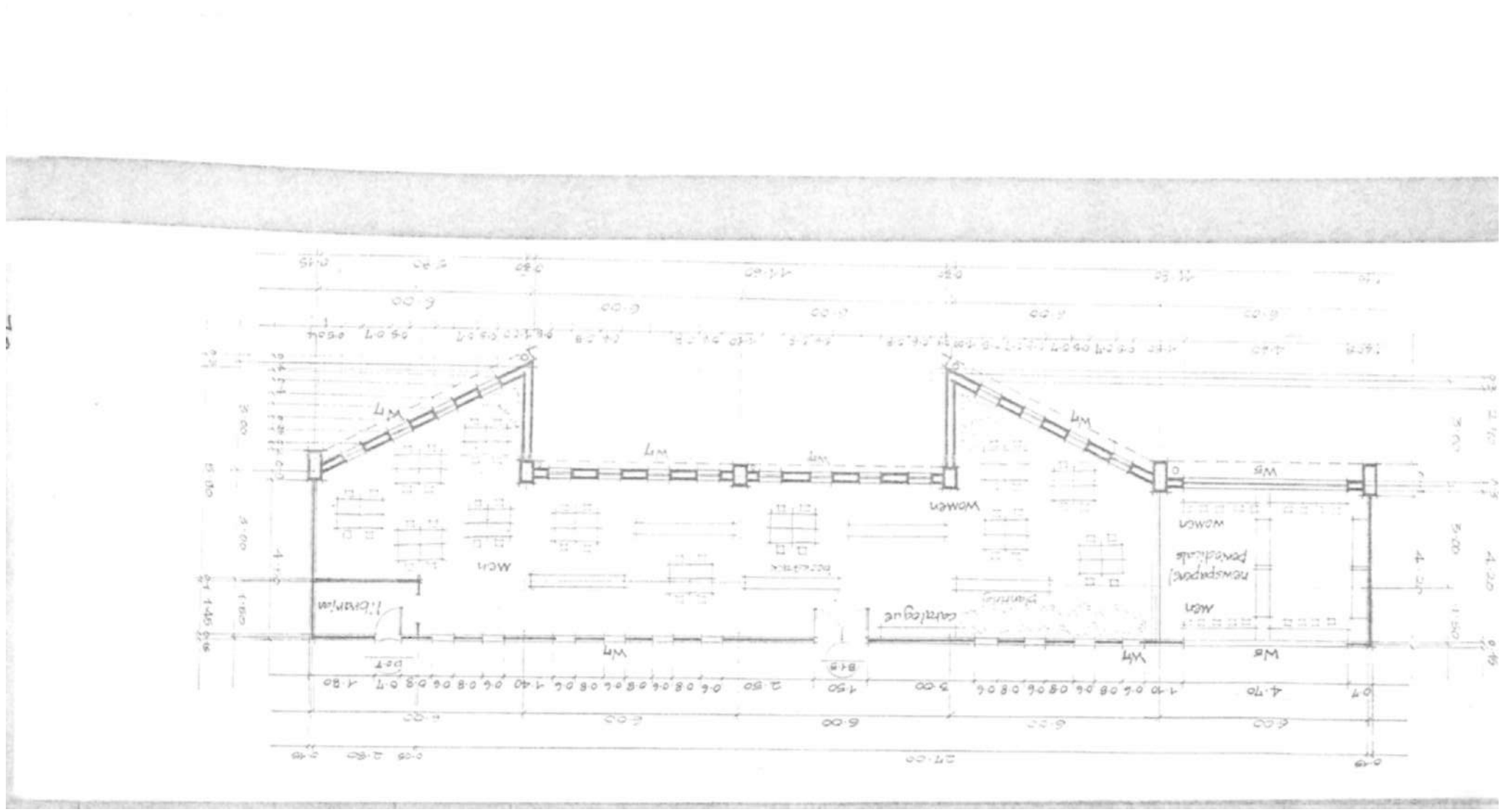


C-C - 1:2500

20M WIDE ROAD

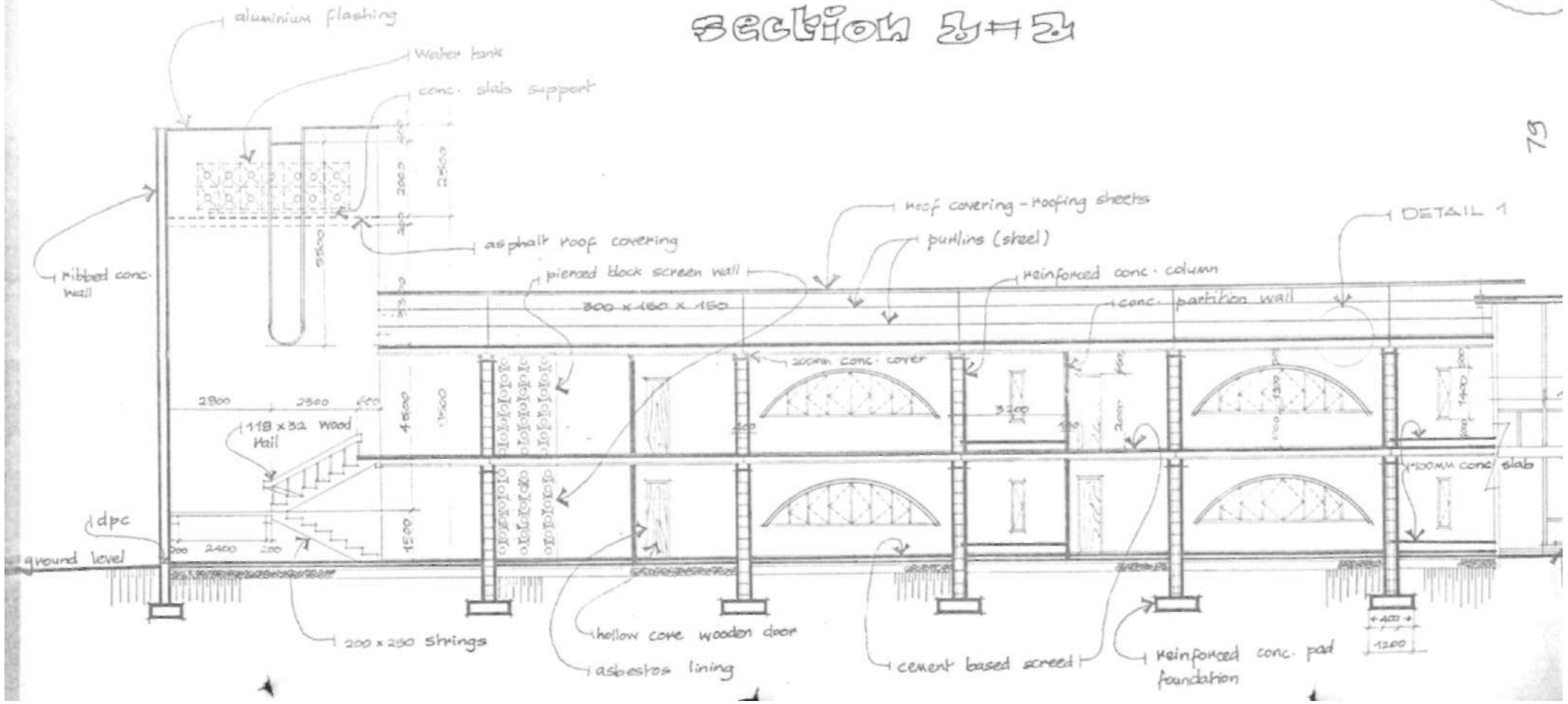
96


Men towards
be offsite


W7
W7
W7
W7
W8
women
men
women
newspaper/
periodicals
men
counter
counter
W7
W8

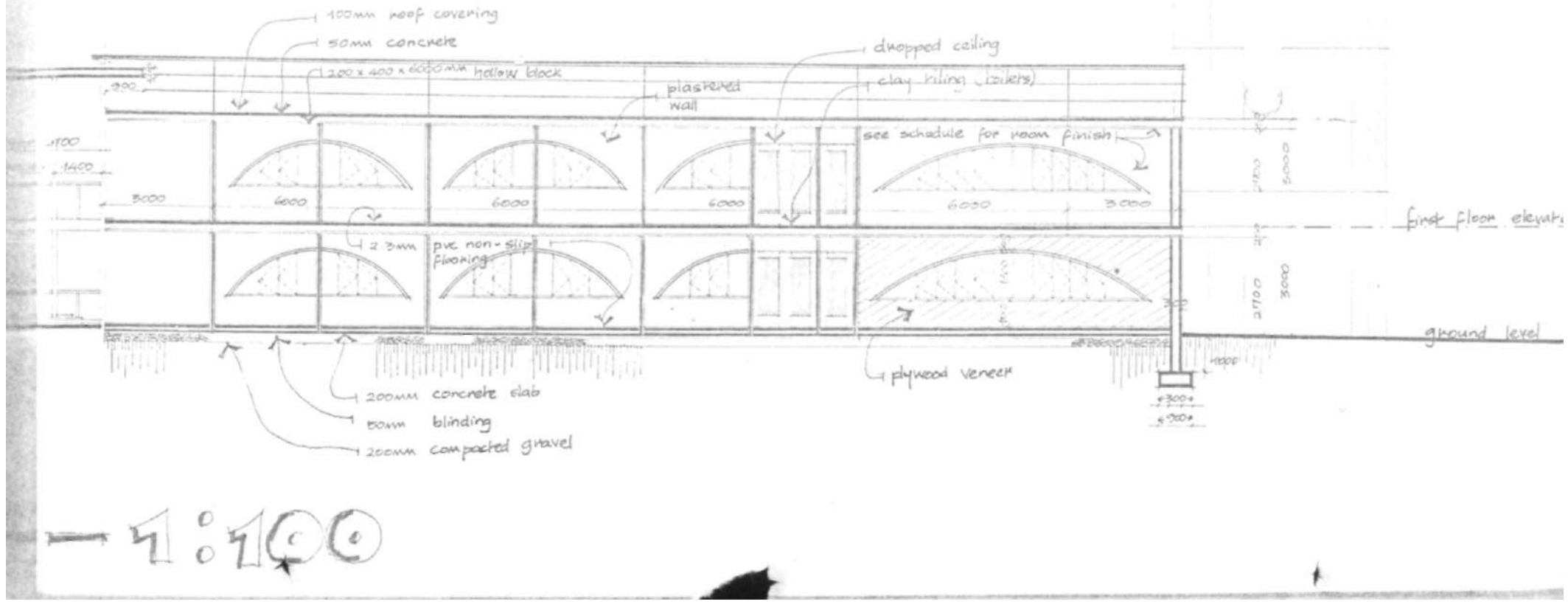
working

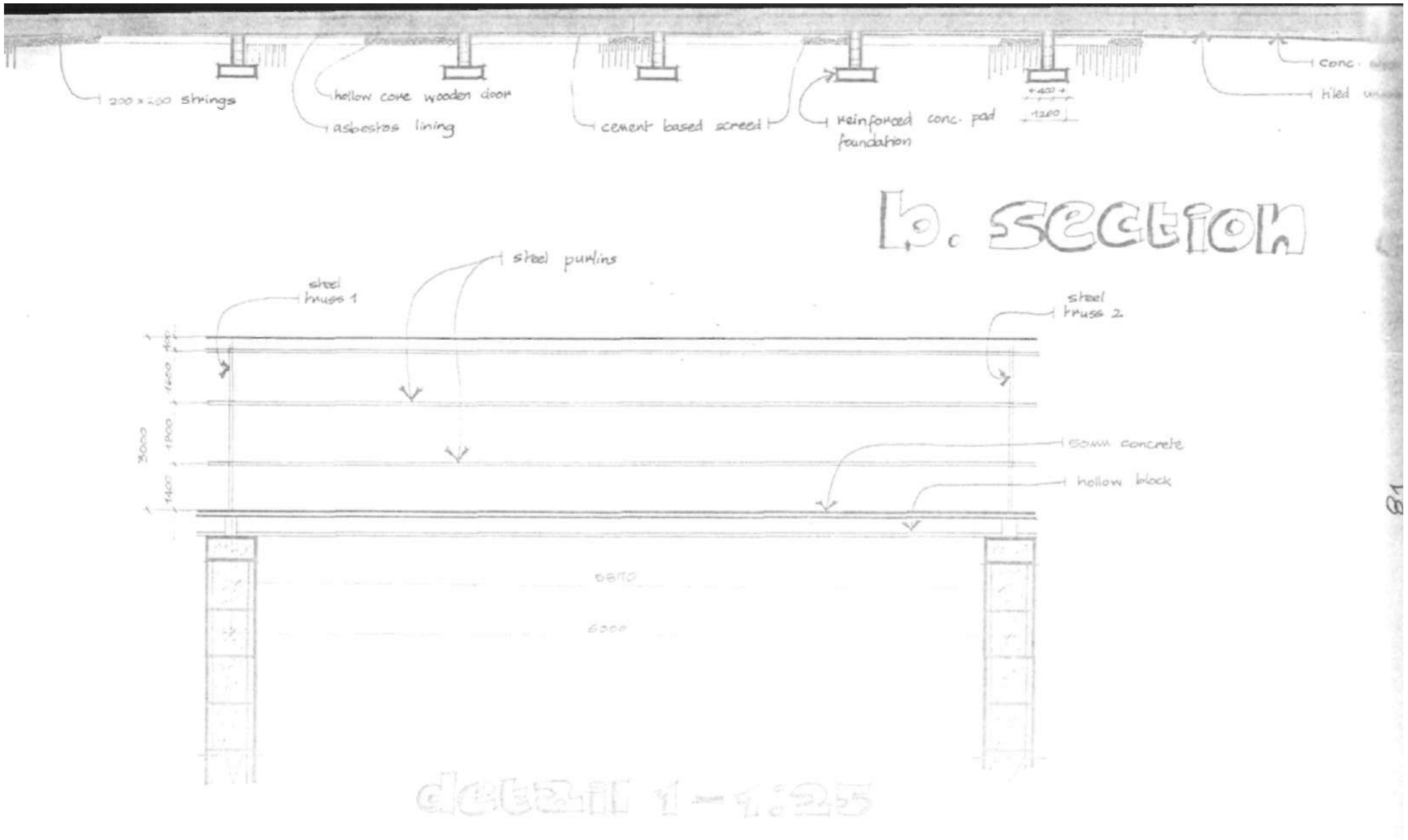
section 3-3



Drawings

Section 3-3




200 x 250 strings
hollow core wooden door
asbestos lining
cement based screed
reinforced conc. pad foundation
conc.
tiled
b. section
steel purlins
steel truss 1
steel truss 2
150mm concrete
hollow block
3000
1400
1800
1400
detail 1 - 1:25

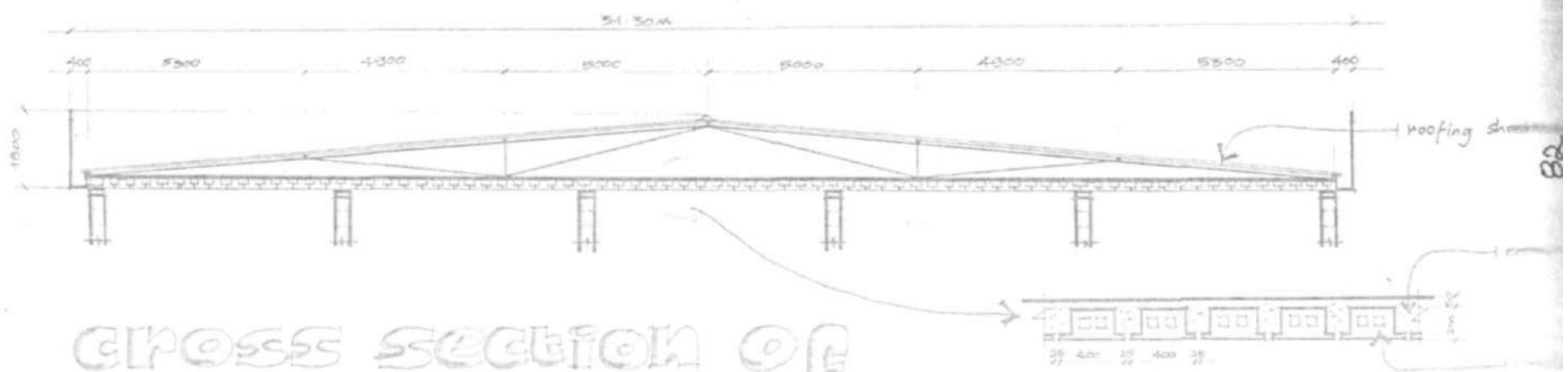
she seats

200mm concrete slab
50mm blinding
200mm compacted gravel

plywood veneer

300
300

— 1:100

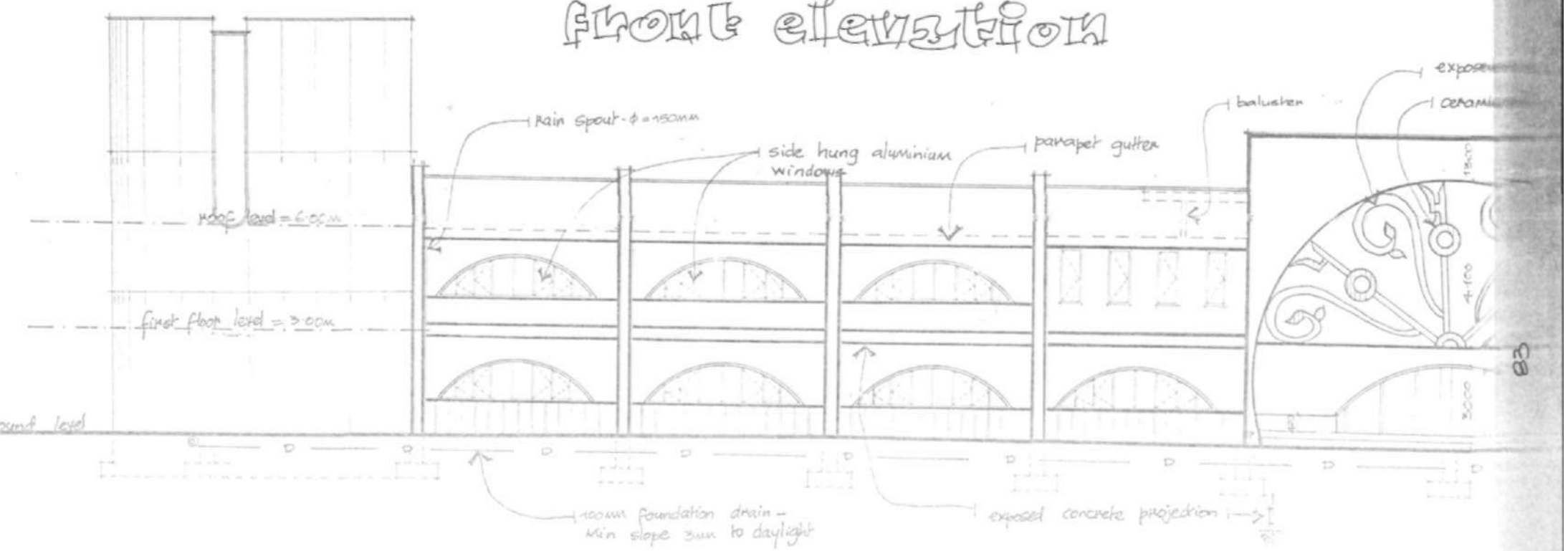


cross section of detail 1 - 1:100

1:25

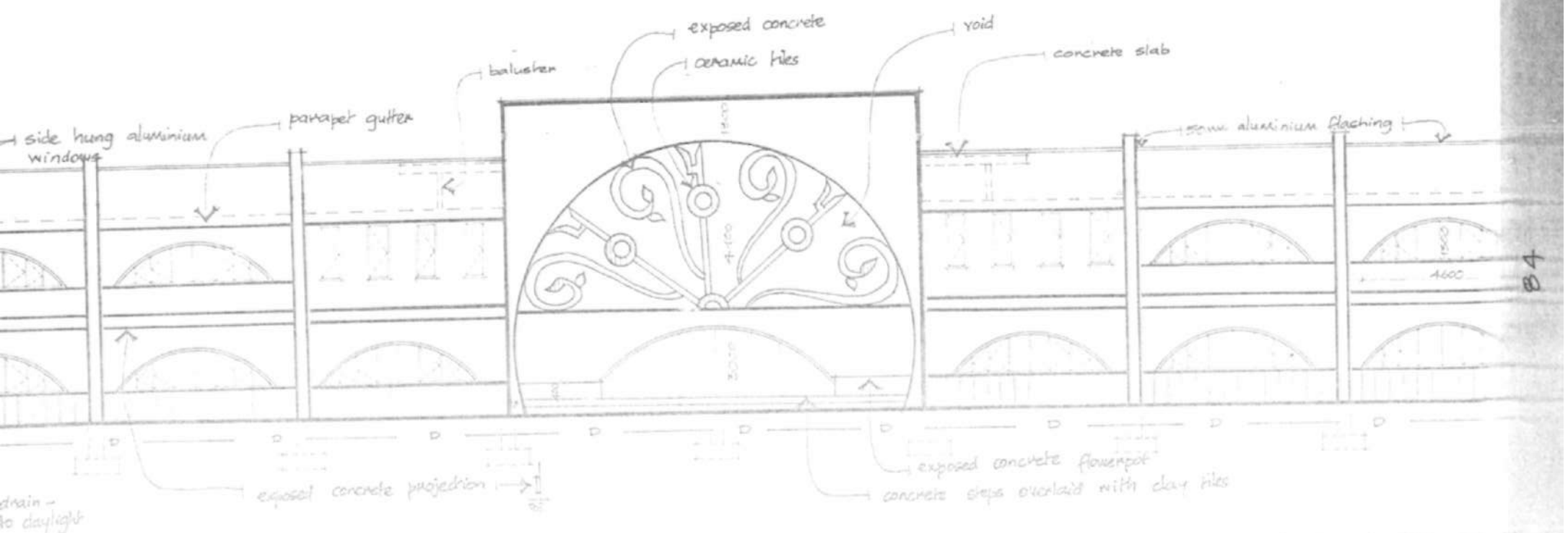
detail 1 - 1:25

front elevation



c. front elev

front elevation

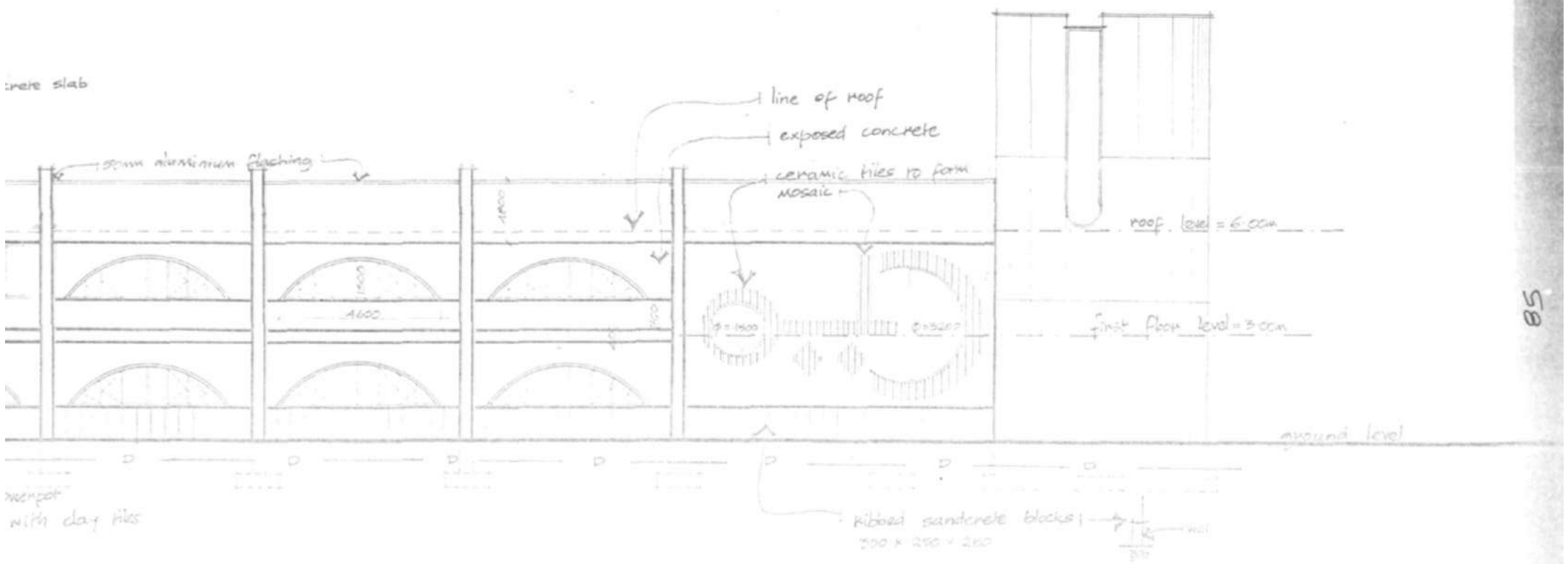


1 : 25

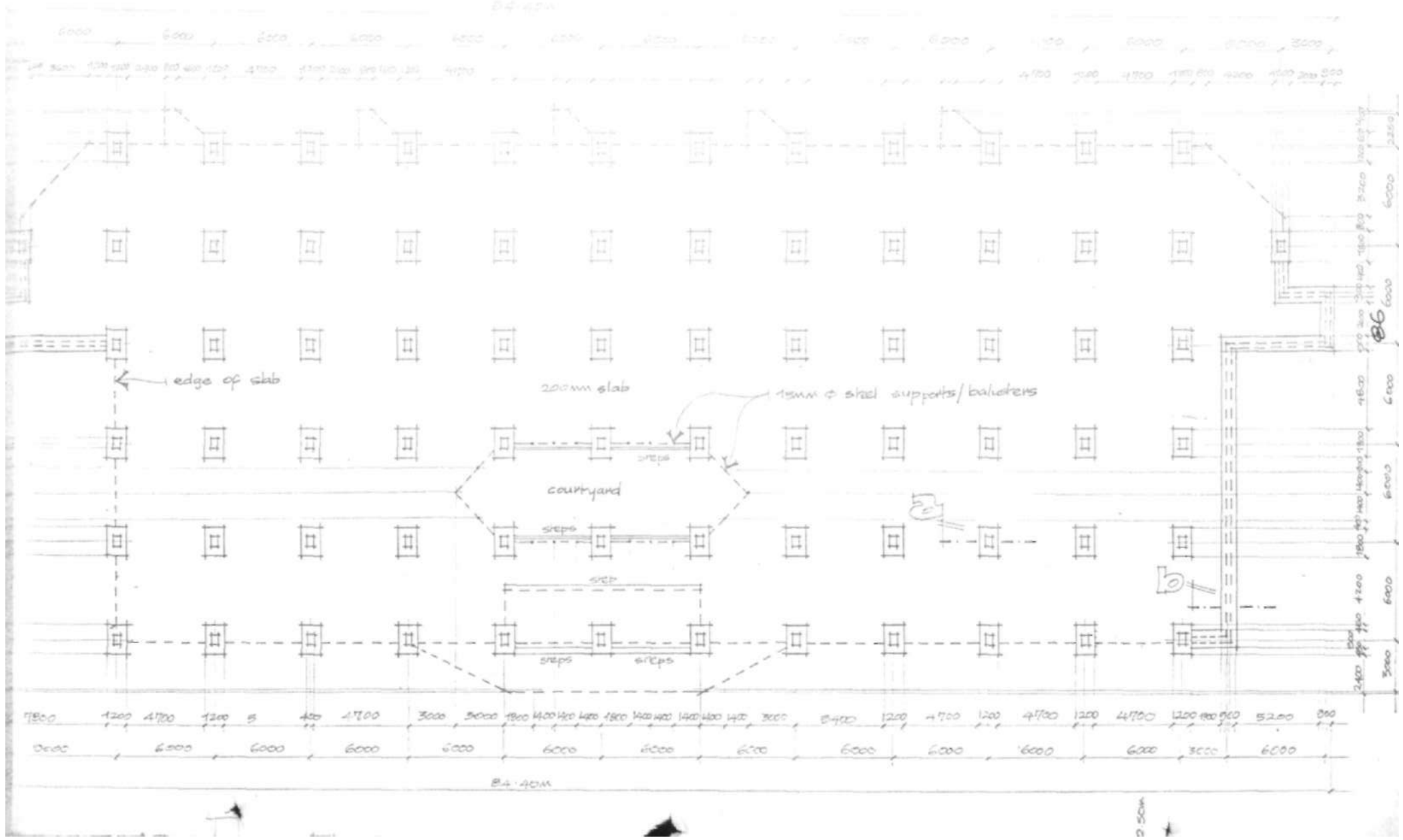
c. front elevation 1 : 100

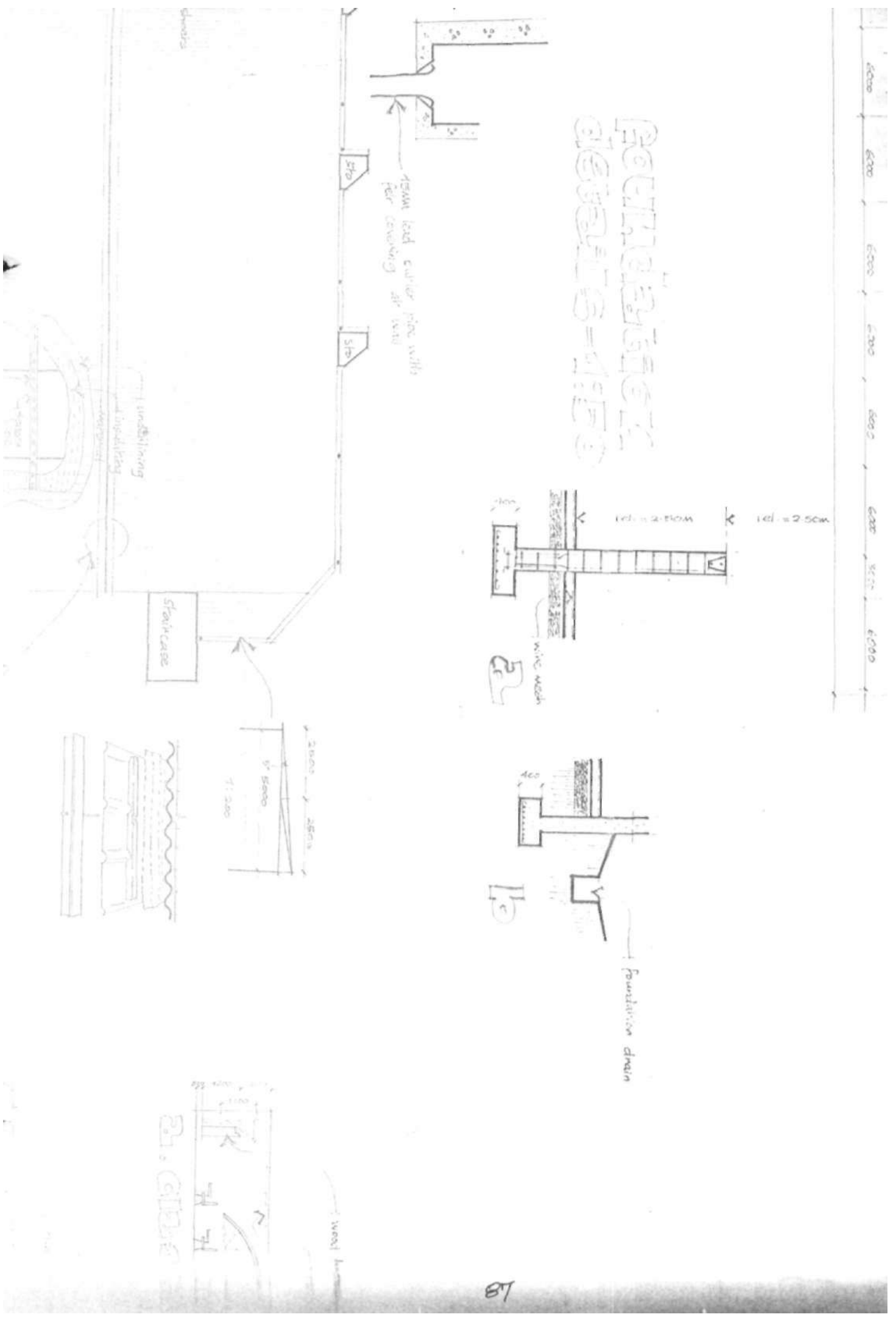
1:225

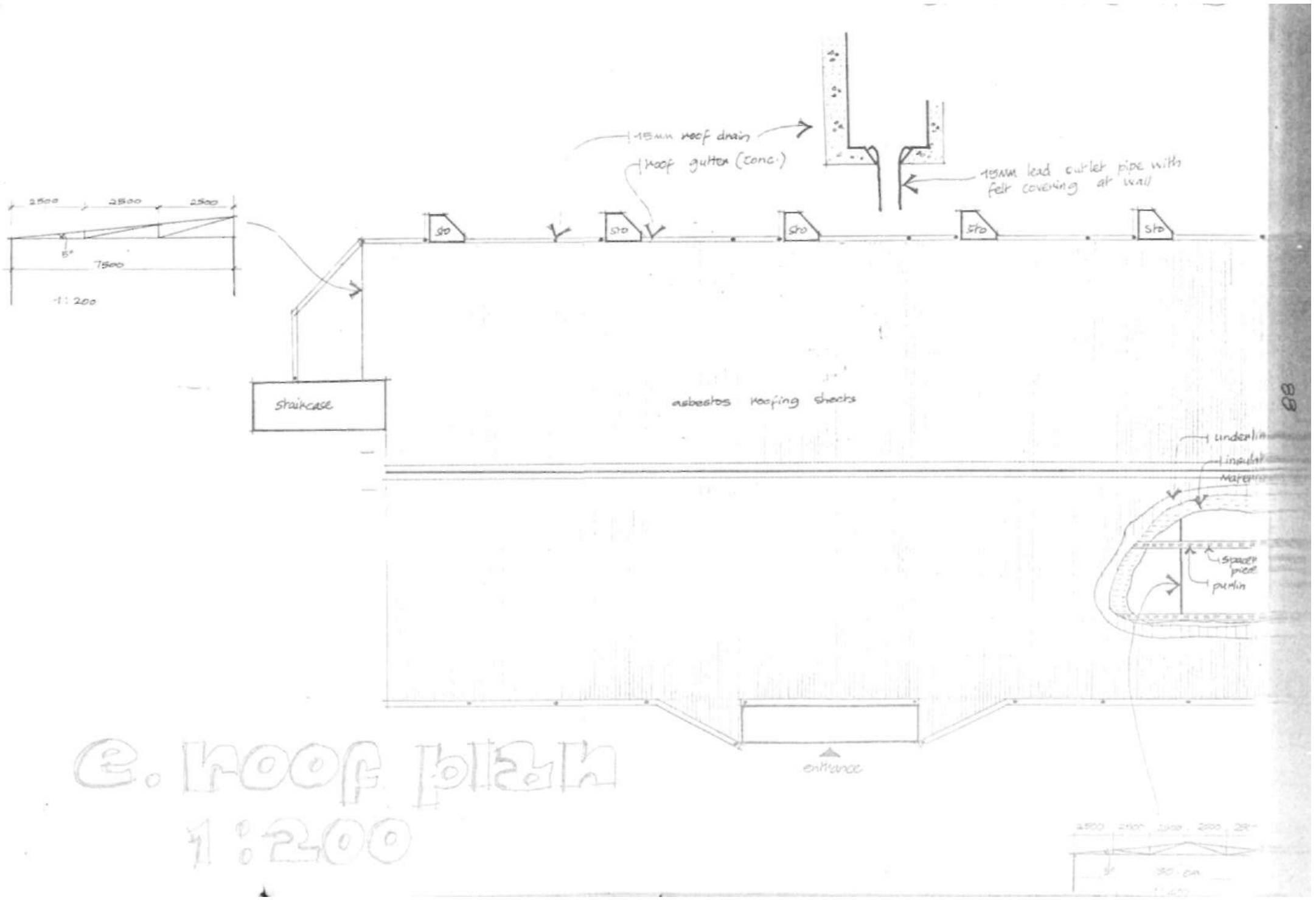
front elevation


line of roof
exposed concrete
ceramic tiles to form mosaic
roof level = 6.00m
first floor level = 3.00m
ground level
1600
1600
1600

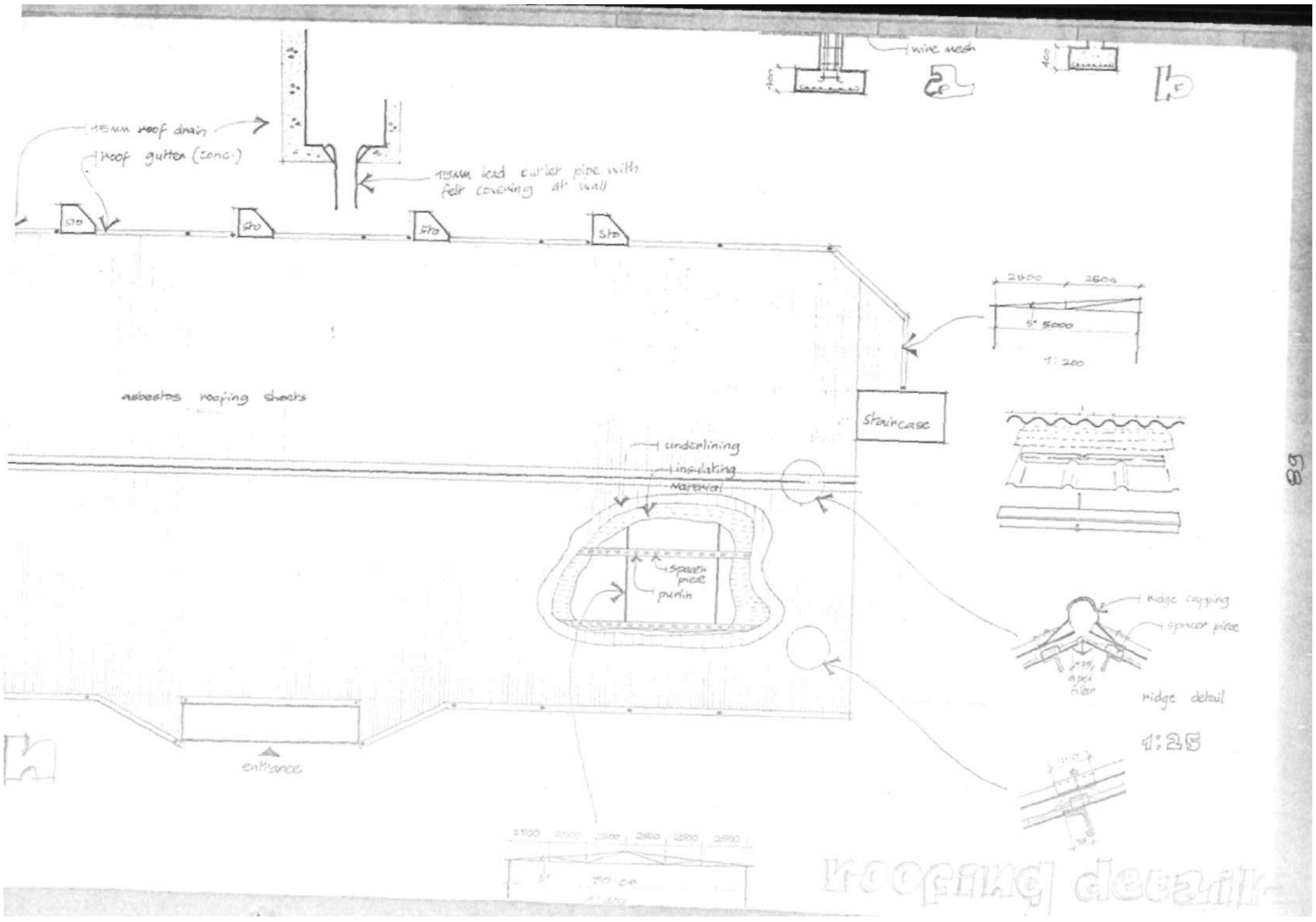
foundation plan




Staircase
Foundation drain



E. ROOF PLAN
1:200


wire mesh
100
100
15mm roof drain
roof gutter (conc.)
15mm lead outlet pipe with felt covering at wall
STD
STD
STD
STD
2800
2600
5° 5000
1:200
asbestos roofing sheets
Staircase
underlining
insulating material
spacer piece
purlin
ridge capping
spacer piece
apex filler
ridge detail
1:25
entrance
3500
3500
3500
2800
2800
2800
70 cm
roofing detail

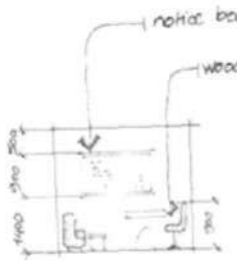
NO.	NAME	FLOOR				WALL				CEILING	
		PVC FLOORING	CLAY TILES	CARPET	CEMENT FINISH	PLYWOOD VENEER	CERAMIC TILES	PLASTER	PLASTIC		
101	ENTRANCE		●					●	●		
102	STAFF RM.			●				●	●		
103	STAFF OFF.	●						●	●		
104	SEC.	●						●	●		
105	H.O.D.			●				●	●		
107	CONF. RM.			●				●	●		W. WALL - PLASTER
108	CLASSROOM				●			●	●		
109	RES. UNIT				●			●	●		
110	STAIR				●			●	●		WOOD RAILING
111	TOILETS		●					●		●	DROPPED CEILING - ½" GYPSUM BOARD
112	CLOSET				●						MADE OF WOOD - PROVIDE WOOD & SHELF

f. room finish schedule

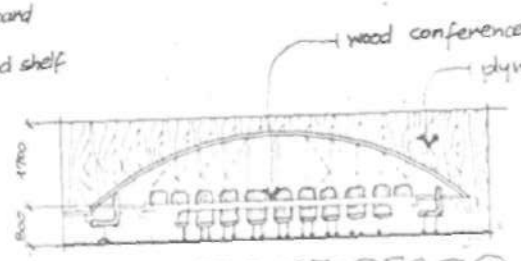
08



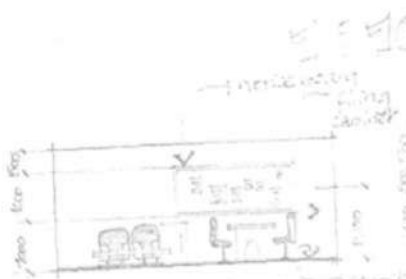
a. classroom



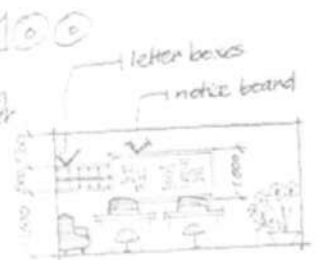
b. staff office



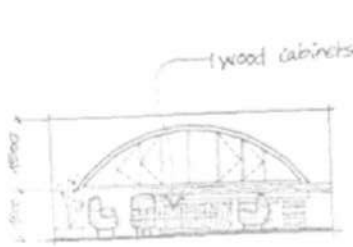
c. conference room



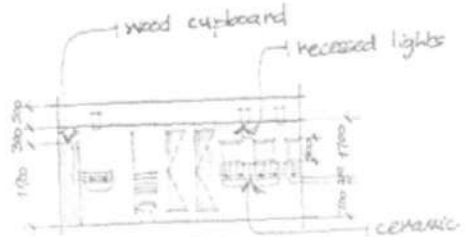
d. h.o.d.'s office



e. general office



f. staff room

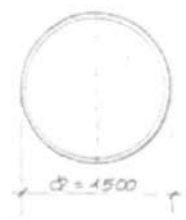
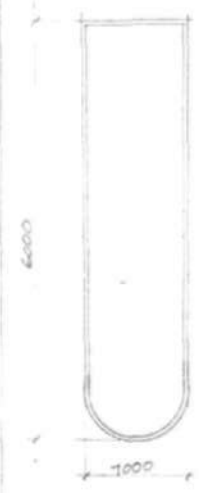
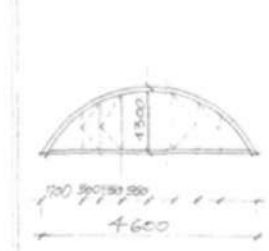


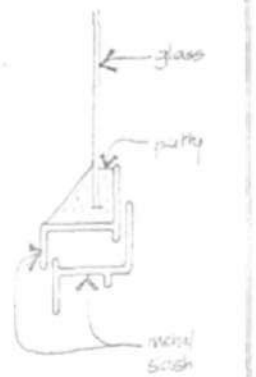
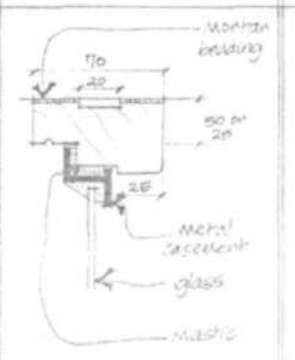
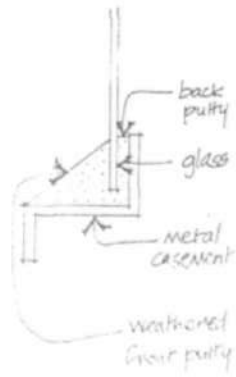
g. toilets

g. interior elevations

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door and window schedule

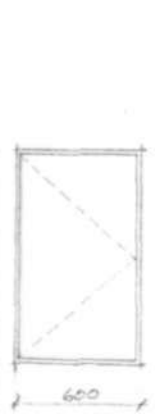
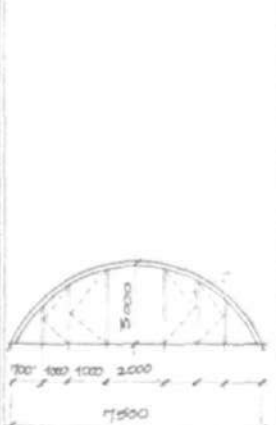
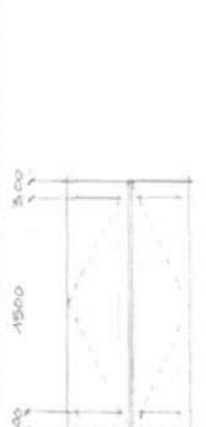
	W_1	W_2	W_3	W_4	W_5	W_6
DIAGRAM & DIMENSIONS						
Nº. REQUIRED	1	1	22	2	36	2
LOCATION	conf. room, research unit	conf. room, research unit	classrooms, main stores, stores, lobbies	staircases	classrooms, staff offices, staff room, general office, library, secretary & hod	toilets

LOCATION	conf. room, research unit	conf. room, research unit	classrooms, main stores, stores, lobbies	staircases	classrooms, staff offices, staff room, general office, library, secretary & h.o.d., toilets	toilets	class… libr…
ESCRIPTION	pivoted window (glazed)	fixed glazing	timber casement window	fixed glazing	small casement windows (aluminium)	fixed glazing	case…
SECTIONS							

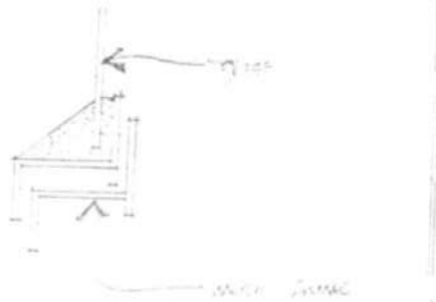
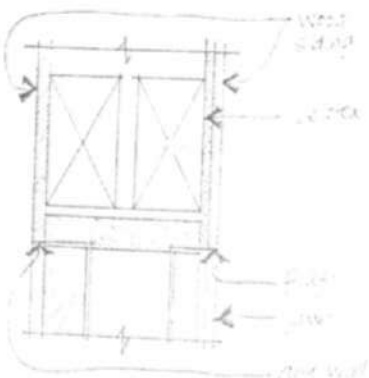
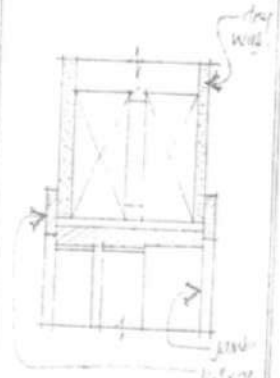
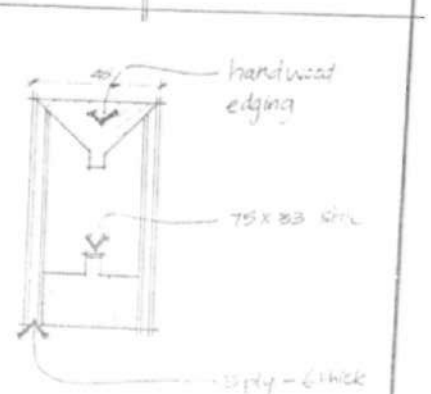
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In. door and windo…

on plan

W_7	W_8	A	B	C	D	E	F
							
31	2	1	3	10	42	27	30
Storeroom stores,	conference room,	Main entrance	Staff room		staff offices, head office	Main stores, classroom stores	lavatory

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conference room, research unit	main entrance	staff room, general office, conference room	classrooms	staff offices, hod's office, secretary, general office	main stores, classroom stores, toilets	lavatory entrances
small casement windows (aluminium)	glazed doors (aluminium)	wood frame with glass panel	wood frame with glass panel	wood frame with solid core	hollow core	hollow core
						

schedule

REFERENCES

CHAPTER 1

1. Encyclopadia Brittanica, Vol 12, London, 1965, p.671.

2. See Nasr S.H., The Contemporary Muslim and the Architectural Transformation of The Urban Environment of The Islamic World, Geneva 1978, p.2;
See also Berque J., An Islamic Heliopolis, Geneva 1978, pp.18-pp22;
and see also Ardalan N., The sense of Unity, University of Chicago Press, 1973

3. Mosques and Modernity, Inquiry, February 1987, pp70

CHAPTER 2

1. Jaffar S. M. Some cultural aspects of muslim rule in India, Idarah-I Adabiyat-I Delli, Delhi, India 1979

CHAPTER 3

1. David F., History of Katsina, 1937

2. Masud A., Ma'aruf S., Indigenous Urban Heritage:A case for traditional design practices among the Hausas; a paper presented to the Nigerian building and road research institute for seminar on architecture, climate, February 1988.

3. Ibid

4. Doi A.R.I., Islam in Nigeria, Gaskiya Corporation Ltd., Zaria, 1984.

CONCLUSION

In this thesis, I have attempted to highlight the architectural planning principles, with particular refrence to Islamic traditional architecture interwoven with local traditional motifs while designing the Islamic Institute of Research and Advanced Studies.

The case studies of various Islamic institutions in various parts of the Muslim world offers an insight as to what has evolved in planning and designing the Islamic institutions in the last 1400 years.

It is worth noting that the veiws expressed by experts in Islamic art and architecture are that the very concept around which Islamic architecture is woven is the concept of Tauhid, strict monotheism which rejects totally the worship of icons. The absence of images, either of human beings or animals, from Islamic art led the Muslim artists to develop new form of decoration which were geometric and vegetal forms. In West Africa, as well as in Nigeria, the same concept of Tauhid prevades through Islamic art and architecture. This can be seen clearly in the design of all types of buildings.

This paper has attempted to highlight various important features of both the planning principles of an Islamic city. This has been done so as to help in the planning of an Islamic educational institution.

BIBLIOGRAPHY

1. Ardalan N., The sense of Unity, University of Chicago Press, 1973

2. Berque J., An Islamic Heliopolis, Geneva 1978,

3. David F., History of Katsina, 1937

4. Doi A.R.I., Islam in Nigeria, Gaskiya Corporation Ltd., Zaria, 1984.

5. Encyclopadia Brittanica, Vol 12, London, 1965, p.671.

6. Faruqui and Faruqui, The Cultural Atlas of Islam, Macmillan publishing company, New York, 1981.

7. Federal Polytechnic Kaura-Namoda Masterplan 1995, Department of Urban and Regional Planning, A.B.U. , Zaria.

8. Haider, G., Towards an Islamic Enviroment, a paper presented at the conference on the future of the Ummah, 19th-21st July, 1987.

9. Mosques and Modernity, Inquiry, February 1987, pp.70

10. Jaffar S. M. Some cultural aspects of muslim rule in India, Idarah-I Adabiyat-I Delli, Delhi, India 1979

11. Masud A., Ma'aruf S., Indigenous Urban Heritage:A case for traditional design practices among the Hausas; a paper presented to the Nigerian building and road research institute for seminar on architecture, climate, February 1988.

12. Nasr S.H., The Contemporary Muslim and the Architectural Transformation of The Urban Environment of The Islamic World, Geneva 1978, p.2;

13. Akbar J.A., Support for courtyard houses, Open House, vol. 5, No.4, 1980, pp2-pp15

14. Places of Public Gathering in Islam: Proceedings of Seminar Five in the Series Architectural Transformations in the Islamic World, held in Amman, Jordan, May 4-7, 1980.

15. Sa'ad, H. T., Between Myth and Reality: The Aesthetics of Traditional Architecture in Hausaland, a dissertation submitted in partial fulfilment for the degree of Doctor of Architecture in the university of Michigan, 1981.

16. Tadco and Cole., Polytecnical University , Federal Capital Development Authority, Abuja, Nigeria.

17. Tropical Architecture, vol.6, 1982.