NATIONAL ISLAMIC CENTRE ABUJA.

(THESIS)

SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF M.SC (ARCHITECTURE) TO THE DEPARTMENT OF ARCHITECTURE FACULTY OF ENVIRONMENTAL DESIGN AHMADU BELLO UNIVERSITY, ZARIA.

JUNE 1982

DANJUMA USMAN MBH.D YAKAWU

B.SC. (HONS) ABU

D E C L A R A T I O N

I hereby declare that this thesis has been composed by myself and that it is a record of my own research work. It has not been accepted in any previous application for a higher degree. All quoations are distinguished by quotation marks and the sources of information are specifically acknowledged by meabs of references.

— DANJUMA USMAN MOH.D YAKAWU

D E D I C A T I O N

DEDICATED TO MY PARENTS, WHO STRUGGLED FOR MY EDUCATION AND SU'AD MUAZU WHO WAITS PATIENTLY FOR THIS MOMENT.

QUOTATIONS

READ IN THE NAME OF YOUR LORD WHO HAS CREATED OUT OF GERMCELL READ! FOR YOUR LORD IS MOST BOUNTIFUL: HE HAS TAU (MAN) THE USE OF PENTA MAN WHAT HE DID NOT KNOWN! (QUARAN 96: 1-5)

"EVERYWHERE IN THE WORLD TODAY THE BLIZZARDS OF CHANGE ARE SHAKING UP THE OLD STRUCTURE OF MEN AND MAKING IT DIFFICULT FOR THEM TO ATTAIN MENTAL EQUILIBRIUM, AND THE MODERN BAY CANUTES THAT THEY CANNOT STOP THE TIDE OF MODERN IDEAS WITH THEIR LITTLE FINGERS.

FOR NEW IDEAS ARE OFTEN UP SETTING AND THE PATH OF PROGRESS IS LITTERED WITH DEBRIS OF TECHNIQUES AND INSTITUTIONS THAT HAVE OUTLINED THEIR USEFULNESS."

— Mokwugo OKOYE

A C K N O W L E D G E M E N T

My first and fore-most thanks go to my family especially by brother Alfa Mohammed who has been the back-bone of my educational career.

Acknowledgement also is due to Architect Trewor Dannatt who's work and publication have inspired me to think of this study, My thanks also go to the staff of Jama'atu Nasir Islam, especially the secretary, for their help during my data collection.

I should acknowledge my great dept to my good friends and comrades Yashim Musa, Mohammed J.I., Babayitso Usman, and Justin Ezeoke who have helped one way or the other in my work. My special thanks go to Mr. Mulfwang Mannasseh, not only for his encouragement but also for his assistance when I need it most.

I should acknowledge my debt to staff members of department of Architecture, especially Professor E.A. Adeyemi, my mentor Dr. Schwerdtferger, Mr. Gniadzik, thesis Co-ordinator Mr. E.A. Beeko, Mr. Solanke and Dr. Tukur Sa'ad who helped me by their constructive discussion, and cr criticism.

Finally, my thanks go to those who gave me moral support and wish me success, especially,

Mohammed Kolo, Alhaji Wali, Umar Abubakar,

Romoke Oba, Anne Ibegbulam and Aliyu Kadir and thanks to those who made the studio days lively. May God bless you all.

C O N T E N T S

CHAPTER ONE

INTRODUCTION

"Bissimillah-alrahman-alrahim"

In the mentioned of Islamic building ie building serving Islamic function, certain forms have been identified with them and term them to be part of Islamic architecture such forms are Dome, arches, etc. Now the question is are the forms Islamic? To answer the question, the first question we must ask ourselves is whether there is such a thing as 'Islamic Architecture'. Do we mean the architecture produced for and by Muslims to serve Islam as a religion, referring, consequently, only to that architecture which did serve a religion funding (Mosque, Tomb). Or do we mean all architecture produced in Muslim lands? And if this should be so what does Islamic mean in this context.

If 'Islamic' is not an adjectives defining a religions quality should it be understood as a a word that identifies a special kind of architecture, that of a civilization reflecting, or determined by special qualities inherent in Islam as a cultural pheonomenon? Does such architecture exist? Is Islamic architect different from non Islamic architecture if the answer is affirmative we are faced with definition of those qualities that set Islamic architecture apart from non-Islamic architecture. It has been established that qualities that defined Islamic architecture are

1) Concentration on the internal that means"hiden" architecture it doesn't reveal its function for external. This can be due to fact that Muslim needs privacy.

2) Form and function:
   Closely related to the concept of a 'hiden architecture' is the striking and almost total absence of a specific architectural

form for a specific function. There are no forms in Islamic architecture that cannot be adapted for variety of purposes, a muslim building serving a specific function can assome a variety of forms.

The four-Iwann' courtyard structure of central Asia and Iran, which is also found in other parts of Muslim World, these structures function equally well as palace, mosque, madarasa, caravanserai, bath or private dwelling; at different times and in different places, infact, they were built to serve all these functions. In other words, an Islmaic building does not automatically reveal, by its form, the function it serves, there is always flexibility in Islmaic architecture. Aren't these qualities similar if not the same to those existing in non-Islamic architecture, especially in the forms, the "modern movement" in architecture reveals that any building can look other building inform despite it's function but it has to satisfies it's functional requirement..

This thesis looks at this from this point of view but in order to established this fact we have know how the forms termed Islamic originate.

CHAPTER - TWO

THE ORIGIN

2.1 HISTORY

It is one of the several ironies in the survey of the in extricable relationships between a religion and its architecture that we must start with this generalization: the Arabs who launched the Islamic religion as an imperial and cultural force knew no genuine architecture of their own. The modest dwelling in the scattered sedentary centres of the Hijaz region of Arabia such as Mecca and Medina hardly deserve the term "architecture" Indeed, the building abilities of Bedouins who made up the early Islamic contingent did not go beyond tent construction of the mosque or 'Masjid' - that is a place of prostration, but in reality not only the place of worship but also the political and social centre of Islamic life (islamic centre) - these early Arabs had no idea, architecturally speaking and its eventual form was the result of an evelutionary process that involved an entire generation.

Even from what has been daid here it is evident that early muslims had no clear or consitent concept for a mosque. Since the mosque was fundamentally a meeting place in which it became essential to indicate the direction of 'qibla' to orient the faithful in their prayers a direction that Mohammad had marked out by driving a tance into the ground it was only later that 'qibla' was to be dignified by the Mihrab.

The house of Mohammed was used as mosque it was a modest structure a square plot of land some 165ft on each side, surrounded by an outer wall of old-baked bricks and only about 10ft high. Outside the east side, and facing the court were the miserable mud huts of the prophet's wives. Part of the northside was covered by a roof of mud and branches supported by palm trunks, these huts housed the poorer of the prophet's followers. Another portion, facing Mecca, had been built on the south side and it was here that Mohammad spoke with the disciples, performed the 'Sallat', the calling of the prayer is from the roof top.

1. Chamber of the women
2. The roofed are, oriented toward Mecca under which Muhammad prayed.
3. Roofed area under which guest slept.

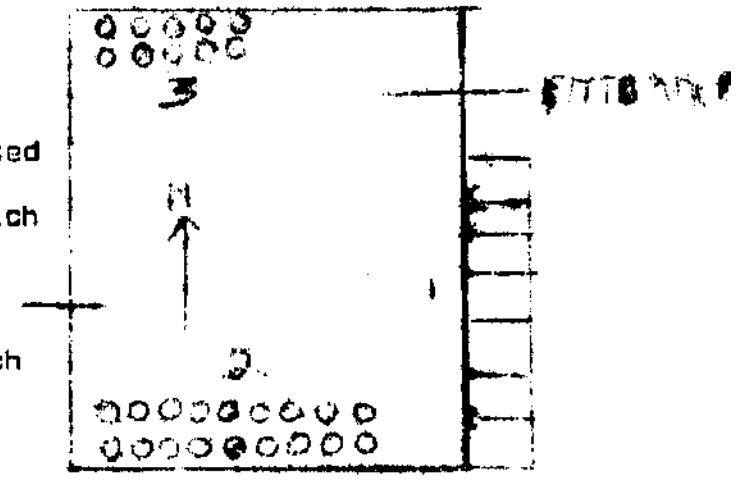


Fig. 2.1

From early times merchants and pilgrims to Mecca have influenced the architecture of the Arabians, it can be seen clearly in their forms which vary considerably:-

the towered structures of the Yemen appear to preserve a plan of some antiquity, possibly related to the lofty buildings of Mecca, Medina, Taif and Jidda and also to the tower - houses of the Hijaz highlands. The decoration of these houses is related to that of the lower buildings of Gulf, where Iranian, Indian and East African influences may be detected:

The great courtyard houses of Oman are rather different to the buildings of the nothern Gulf, Closer to Zanzibar and other East African forms, certain Arabian buildings do not stem foom local traditions but reflect the pious patronage of non-Arab Muslims visiting the holy cities and their sanctuaries.

.2 S P A I N

The Muslim state in Spain began to fourish in the second half of the 8th Century, after a member of the Syrian Umayyad royal escaped from the 'Abbasids' and set himself up in cordoba with the help of the many Syrian Arabs who had migrated to Spain.

From the first offlorencence of Islamic architecture in Spain, there was a strong preference for elaborate decorative effects in the earlier period stone and stucco were fovoured; later brick replaced stone and poly-chrome tilling was also included.

(1) CORDOBA, GREAT MOSQUE

This stone structure, with marble columns and some brick, forms a rectangular enclosure within high walls. There is an open court-yard to the north and a covered sanctuary to the south. The 8th Century Mosque of 'Adb ar Rahman I' had only ten arcades running perpendicular to the 'qibla' wall. The most remarkable aspect of those mosques is the structure of these arcades. Because the available antique columns were two short to sufficiently raise the roof of the sanctuary, peirs were built on each column to support round headed arches. With alternating stone and brick voussoirs, on which the roof vested. Although the origin of this structural system is uncertain, the design was followed in all later extension of the Great Mosque.

(2) CORDOMA, Minaret of Sanjuan

The tower of the church of Sanjuan was formerly a minaret, it is built of stone and some brick and is rectangular in ground plan. The Minaret is not aligned to the cordinal points because of its relationship to the orientation of the Mosque to which it belonged. Subsequently destroyed (the Minaret is now free standing).

(3) SEVILLE, Great Mosque

Although replaced by the fifteen century cathedral, the court yard of the origin mosque survives along side the north wall of the cathedral. The wall is of fired brick and some areas of the inner surface were formerly covered with elegant plaster relief decoration.

2.3 NORTH AFRICA

The countries of the magrib - Morocco, Algeria, Tunisia and Libya are here grouped for their historical connections and parallel architectural developments. The earlier monuments, dating 9th century, incoporated architectural elements from both the Abbasid east and Umayyad Spain after the 11th century, with the devastating invasion of the Hilal Arab tribes, however, there two traditions became so polonized that such a fusion was no longer possible; there after, the Maghib especially Morocco, remain with the same cultural orbit as Muslim Spain. Repeated immigration from Spain and the political domination there, for a time, of North Africa dynasties, ensured constant artistic contact with that country. After the decline of Muslim Spain in the 13th century the isolation of magrib from the rest, of the Islamic World increased despite the coming of the Ohomans. Morocco, cut off by the mountain did not experience the

Turkish domination. The mosque at Quairouan Kairouan sourses and Tunis, display a clarity and uniformity of concept in the positions of internal arcades, low roots, court yard with this square multi-storeyed minarets, vast rectangular enclosures that was to become universal in subsequent countries.

RABAT, Mosque of Hassan (12th Century)

The aisles of the sanctuary are multiplied to form a triple transept along the 'qibla' wall, and two internal court yards appear in addition to the more usual long court yard near the entrance. The columns were composed of cylindrical stone drums. The minaret is partly preserved and probably would have been 60m. high.

2.4 ISLAM IN WEST AFRICA

The history of Islam in Africa South of the Sahara is one of interaction between two cultures - Islamic and African. In condition of considerable ethnic and geographical diversity, districtive West African mosque type evolved - a synthesis of muslim and African architectural concepts.

Islam came into West Africa by the Sahara caravan routes in about the 9th century. Two main direction of incluence can be identified; Western routes, linking the

Maghrib with Berber, African gold trading centres in the West Sudan, where close relation were established with the black pagan Soninke State of Ghana; and estern routes, bringing the Kingdoms of the central Sudan-Karem, Bornu and the Hausa States - into contact with Tripoli, Tunis and Egypt. The earliest known West Africa mosques were those at Koumbi Saleh and Tegdaoust, Arabized Berber Settlements occupied between the 9th and 13 centuries and tentatively associated with the ancient Ghana.

Acient Ghana fell to the almoravids in the 11th century and it was not until the rise of black muslim Kingdom of mali and its successor state, Songhai, in the 13 and 14 centuries, Islam spread effectively into the Savanna region and the Djenne - Timbukty area became the centre of Islamic diffusion.

Here developed a type of clay mosque of often referred to as 'Sudanic'. The introduction of Muslim architectural forms and techniques was a many stranded phenomenon some, the square minaret, for example, were adapted to local technologies, while others such as tired brick construction or arch forms in dressed stone, were never widely used. The diffusion of these techniques and forms depended as much on non-Arab Muslims as on direct Arab influences.

The diffusion of the building of clay mosques to the south and east of Niger bend occured through the trading and missionary activities of black made groups

the Dyala, who, from the 14 century established Muslims settlement along their trade routes from Djenne to the Akan gold fields and the Wangarana who first introduced Islam to the Hausa states in the 14 and 15 centuries. The form of the Dyula mosques especially their Pinnaded, butressed and trabeated construction reveals their Djenne origin. The Hausa - Fulani mosques however with multi domed roof systems suggest a local technology influenced not only by mali and songhai but directly through the central Sahara caravan routes - by North African forms. The role of the 19th century fulani reformers was also significant not only in Hausa land but throughout muslim West Africa.

The "Sudanic" mosque was the dominant Islamic structure in West Africa. Islamic sources for secular architecture are less readily identified but it is probable that the elaborate palace complex of Hausa and flat roofed mud construction in general owed something to muslim influences.

MAURITANIA - CHINGETT, GREAT MOSQUE

On the Western Sahara Caravan route, this town was an important Muslim centre from the 13th century onwards. The mosque is of split stone and clay with a roof of palm bean on stone piers Twin Mihrab and minbar riches, characteristic of other Sahara of the mali - Songhai, clay mosques, are built into the qibla wall. A square minaret of the "Sawma'a" type rises from the south west corner of the court yard.

TIMBUKTU, SANKORE MOSQUE

Similar in construction to the great mosque at Timbuktu, this mosque has a number of distinctive features. The courtyard is surrounded on three sides by enclosed arcaded galleries, there is a single muhrab niche and the minaret is heavily buttressed, it was used as centre of learning in early 15th century.

GHANA - LARABANGA, FRIDAY MOSQUE

The ancient Mande- Dyula trading settlement, important as a centre of Islamic diffusion, is located south east of Djenne. Local tradition associate and foundation of the Friday Mosque with Dyula cleric during the reign of one of the Gonja Kings. The rectangular building, with heavily prinnacle buttresses and square pyramidal towers with projecting beams, is constructed from rectangular sun - dried bricks.

NIGERIA - KANO, FRIDAY MOSQUE

Many Hausa day mosques were characterised by heavy tower-minarets derived from the square north African form. Anathema to the Fulani reformers, they were mostly replaced by mosques with stair - minarets. The Kano minaret demolished in 1937 - 1938 1938, the Friday Mosque of Katsina, which survived until the early 20th century, are evident exceptions the age of this mosque and its minarete is uncertain though its foundation is ascribed to Muhammed Rumfa, the Hausa ruler of Kano. The height of the minaret was about 20m. the adjoining sanctuary was a low flat roofed structure within a walled enclosure.

MASKA, FRIDAY MOSQUE

On the southern fringes of the Katsina emirate, Maska was an important weaving and dyeing centre. This mud-brick mosque, which replaced an early pre 19th century structure with with a tower - minaret, was built for the Fulani ruler oral tradition suggests that it was erected by Dahiru, as on of builder of the Friday Mosque at Zaria. Although it is smaller than the Zaria Mosque and undecorated it formal and structural qualities tend to confirm this attribution.

ZARIA, FRIDAY MOSQUE

This mosque is attributed to a famous Hausa Builder, Mallam Mika'ilu Babban Gwani. Before its reconstruction, in 1975, it consisted of a multi-domed sanctuary with an adjoining court, surrounded by a walled enclosure and built like all Hausa-Fulani building of oral mud bricks. The space within the sanctuary are spanned by complexes of mud arches reinforced with corbels of palm tree beams ('AZARA'). Supporting piers and part of the 'qibla' wall are decorated in relief. Apart from the sanctuary, preserved within a new concrete mosque, most of the old building has been demolished. Four modern minarets stand at the corners.

History and Essentials of Mosque

In order to express the equality of all worshippers before God, early musques were as wide as they could practically be, and the subsequent enlargement of mosques often took the form of making them wider still, as happened at Cordoba. The prayer hall was often quite shallow in depth, so that the Great Mosque at Damascus, built only about 75 years after the prophet's death, was 25 bays wide and only three bays deep. The court yard used to absorb the over-flow behind was usually square, as at the even earlier mosques of "wasit" and San'a', and at "Qaurawan" and the mosques of "Amr" and Ibn Tulun in Cairo. Most, but not all, has a shaded walk-way provided around the court yard by the erection of a colonnade or arcade, This served also to provide additional shaded prayer space and teaching space (the study of the Quran was obligatory for children). A fountain or pool was sometimes placed in the centre of the court yard, more for its psychological and physical cooling effects and perhaps to symbolise the ablusiton function than to serve for ablution, which usually took place before the worshipper crossed the threshold.

Two types of structure were used, beams or trusses supported by columns, or beams, trusses, vaults or small domes supported by arcades, the policy of continual enlargement often resulted in an extraodinary proliferation of bays, e.g. 624 at Cordoba and 476 at the Friday mosque in Isfahan.

Mecca, was given architectural prominence. This was almost certainly initiated by the desire to do honour to the ruler or his governor who read the Khutba from this position on Fridays. The introduction of the mihrab, in the form of a semi-circular niche, is thought to have been the earliest expression of this, although it may have served merely to house a glass lamp which there is some evidence represented the light of Allah. According to the Quran, Surah XXIV, 35:

> 'Allah is the light of heavens and
> the earth; a likeness of His light
> is a niche in which there is a lamp
> the lamp is in a glass and the glass
> is as it were in brightly shining
> star lit from a blessed olive tree'.

But at an early date the form of the ceiling in front of the centre of the qibla wall was also changed to express the importance of that zone in the mosque; in the Great Mosque of San'a', five raised roof lights were inserted, and in Great Mosque of Damascus there is a raised central column, including a dome, running from the mihrab to the court-yard facade.

By the time of the erection of the mosque of Quirawan, in the ninth century, there was a high dome in front of the mihrab, which became an increasingly common feature in mosques, derived perhaps from the Sassanian associations of a domed space with royalty and the presence of God.

Ablution varied much throughout Islam, but were essentially drived from the ritual ablution revealed to Muhammed by the Angel Gabriel (Quran, Surah V,8): 'Ye, who believe, when you prepare for the prayer, wash your faces and your hands up to the elbows, and rub your heads (with wet hands) and (wash) your feet up to the ankles'. The ritual order of the activities was important. Many Muslims also washed their hands, rinsed their mouths and cleared their noses three times before beginning the ritual, and rubbed their ears and washed their necks before washing their fee. Still water was acceptable in most rites of the faith, but the Hanafis of parts of the Middle East, India and Pakistan insisted on the provision of separate spouts for running water. For ablution purposes it was usual to provide, outside of the sacred area of the mosque, a range of private cells, each with its own water supply or pool. Where resources did not render this practical, ablutions took place around a common pool, which was kept clean by the fish stocked in it. A screened area was then provided for changing underwear, a practice favoured by many devouted Muslims before prayer. Seperate lavatories, or at least a screened lavatory area, were also essential. The entrance from the ablution area to the mosque often involved passing through a shallow wading pool to ensure the cleanliness of,the feet.

At an early date of area near the centre of the wall on the qibla side, that is, the side facing towards

The call to prayer was at first simply made from the roof of the mosque, and some surviving rites retain this practice. It was probably from the Syrian Christians, who summoned their congregations by beating wooden clappers from the top of stone towers, that the Muslims first had the idea of elevating the muazzin, who sings the call to prayer, to a greter height. As with contemporary Carolingian towers, the early superstructures of minarets were mostly of wood, and all we have surviving are their square masonry bases, so that we know little about their upper forms. High brick minarets were built in Iraq and Iran, however, and eventually this type was erected everywhere, often in stone for greater elegance and permanence.

There seems to be some prejudice against the use of minarets surviving to this day among some of the Zaidis of Southern Arabia and the Ibadis of East Africa, Oman and parts of Libya.

Later developments of the mosque focused around two factors the growing strength of Iranian influence, and the desire to protect the congregation against the cold in the northern climates of Turkey and Turkish Europe. The amazing vaulting achievements of the Parthians and Sassanians were evidenced to the early Islamic architects by the vast audience chambers, each spanned in a single brick barrel vault which opened directly out of the courtyards of many surviving but ruined palaces (Ctesiphon,

near Baghdad, with a span of 83ft and a height to the ceiling of 93ft, is the largest and most famous).

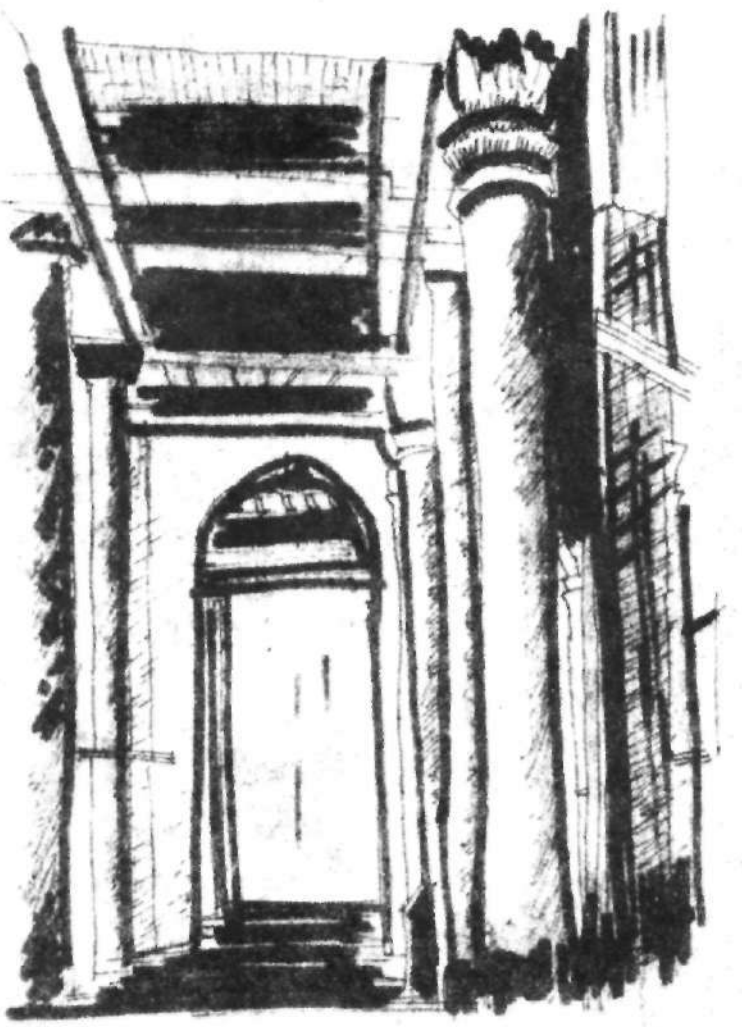
As Islamic architects became bolder and more sophisticated, it was natural that they should try to emulate these vaults, and this meant adapting the mosque plan. It was done in two ways; first, by placing a giant vault in the centre of the prayer hall, opening it up to the court-yard to provide a less encumbered view of an important body of worshippers, while retaining the domed area of the mihrab behind it (thus, incidentally, repeating exactly the sequence of audience hall to throne room of the Sassanian royal palace); second, by surrounding the court-yard by four such open, vaulted spaces, known as "iwans" or Liwans", arranged on a symmertical, axial pattern, a development which had already happened in some late Sassanian palaces. These measures, which took place in the late eleventh and early twelfth centuries AD, transformed the mosque, giving it a monumental grandeur it had not known before, and were eagerly taken up throughout the Islamic world.

At the same time, or a little earlier, the teaching function of mosques was proliferating in the provision of many special rooms for both teaching and residence, and eventually in the establishment of a new building type, the madrasa, which usually rather resembled a mosque, at least in its basic form, but was a non-sacred building.

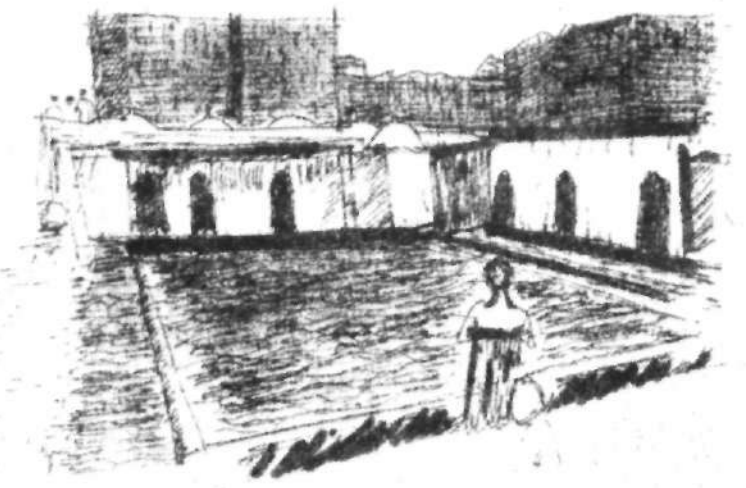
The problem of dealing with bitter winter cold in the Turkish areas of Anatolia was solved in the madrasas and mosques of the twelfth century onwards by the bold expedient of closing in the court-yard under a single large stone dome. In association with the use of one, two or four vaulted "iwans", this produced a large volume unencumbered by columns but retaining its links with traditional mosque plans. ISinanas architecture in sixteen century Istanbul owes more, indeed, to this precedent than its superficial resenblance to Hagia Sophia suggests.

Large dome mosques were also built, under Turkish influence, in Egypt, Iran and as far afield as India. It is important to note that in these late mosques the dome does not read as the symbol for an important tomb, as is so often claimed due to the common use of the Arabic word for 'dome' to mean 'memorial tomb'.

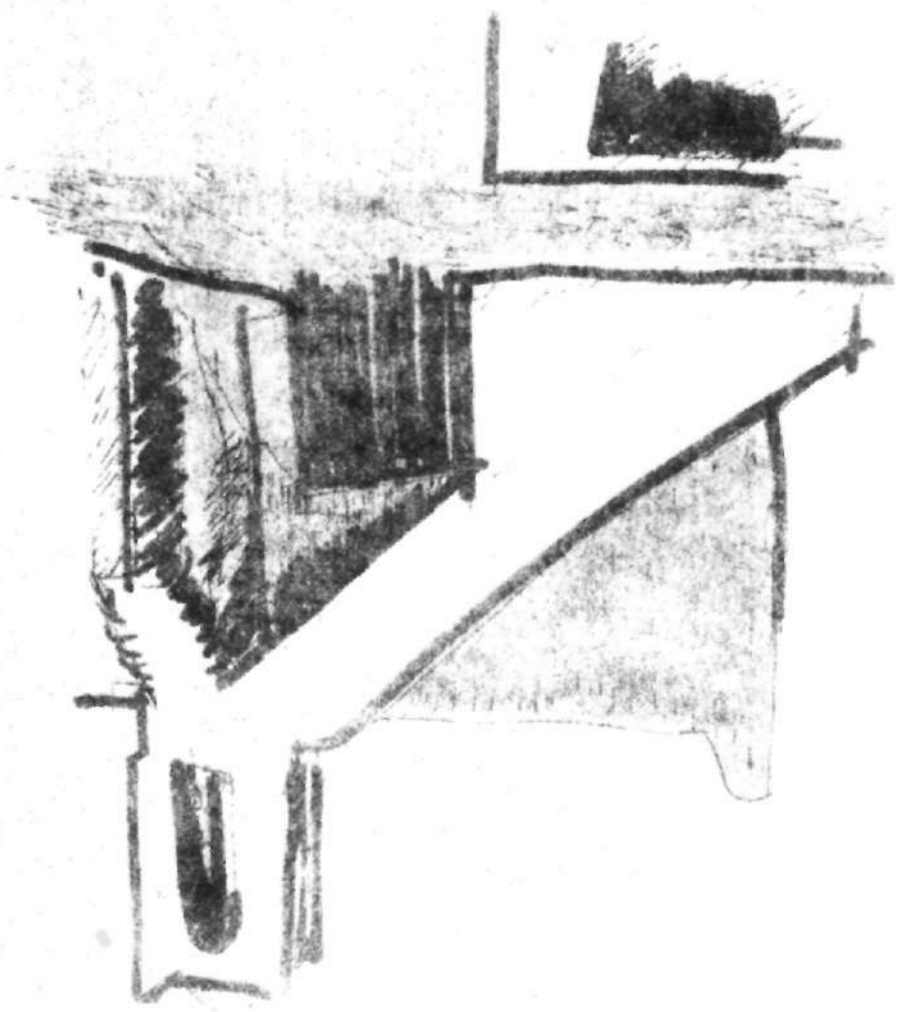
It can now been seen that Islamic borrows what suited it along the way and adopted it. So the so called identifying forms were borrowed by Muslims and didn't originate from Muslims.



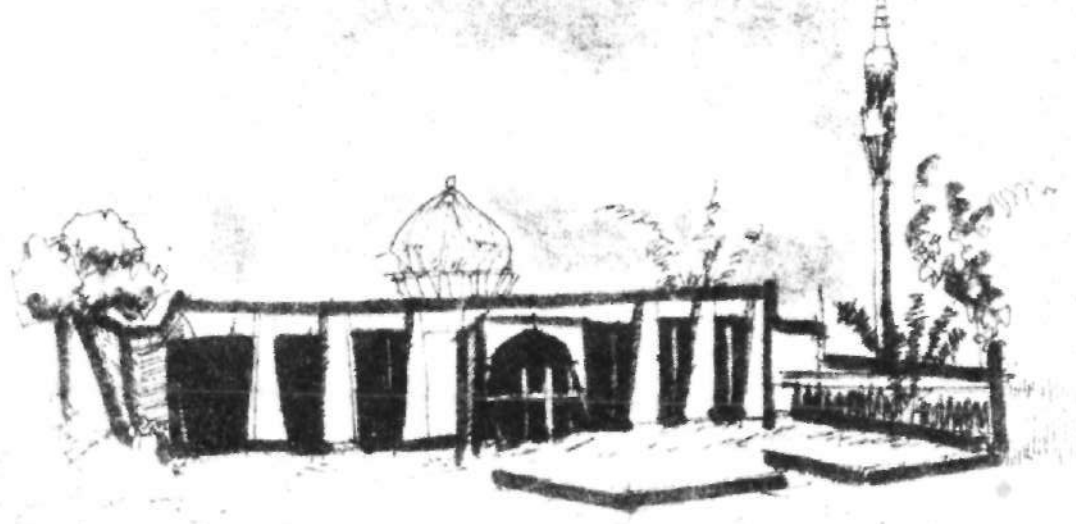
A NINTH CENTURY MOSQUE AT SHIBA - KIRKAWBAH
YEMEN WITH HIGH COLUMNS SUPPORT WOODEN CEILING



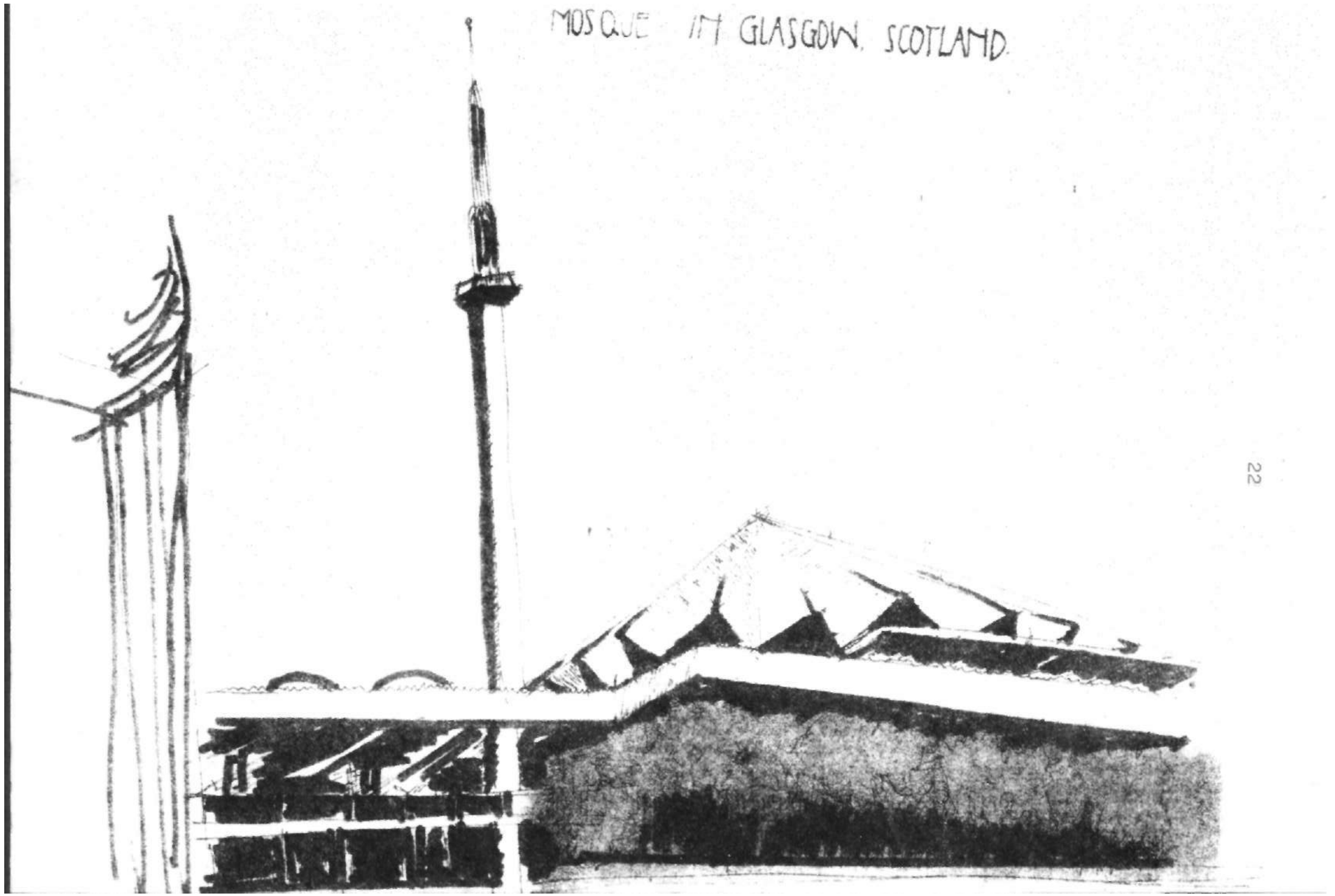
ABULUTION POOL WITH PRIVATE ROOM AROUND
THE EDGE YEMEN



CASE STUDY OF EXISTING SITUATION



MOSQUE IN GLASGOW, SCOTLAND.



CHAPTER - THREE

CASE STUDY

3.1 LONDON CENTRAL MOSQUE

The mosque is for the Muslim Community of London and a focus and inspiration of the half million Muslims in that country. The site adjacent to Hanover Gate in Regent's Park was placed at the disposal of the Muslim Community by the Crown Land Commissioners and in 1944 the existing building, a large house, was opened as an Islamic Cultural Centre. In 1959, a design for the Mosque was submitted to the Royal Fine Art Commission, who found it unacceptable mainly on the environment. In 1969 an open international competition was held. Fifty-two designs from from seventeen countries were submitted and that by Frederick Gibberd was awarded first prize. Work on the site began ealy in 1974.

The Brief

The brief for the design was given in the condition of the competition and it was subsequently modified and extended as the design was developed in detail with the Council of Management of the Mosque. The building requirements fell into three broad group; the Mosque, an Islamic Culture Centre and Flats for the Staff. This accommodation could be provided in a number of buildings but it was decided that it should be combined together as one composition to underline that Islam is not just a religious observance but a way of life.

The primary function of a mosque is communal prayer and unlike the church it is a fundamentally simple building required only to accommodate the worshippers kneeling on prayer mats, facing towards Mecca. The simplest way of arranging a series of rectangular prayer mats is in a rectangle and so the prayer hall or congregation hall is a rectangle arranged with its short axis orientated towards Mecca which is marked by a niche, the Mihrab.

Recessed into the west wall opposite the Mihrab is a gallery for women recessed because it is a requirement of Muslim liturgy that women must neither sit directly above nor in front of men.

The minaret, the most conspicuous feature of most mosques, has the least liturgical significance. Its purpose of calling the faithful to prayer (now quite often by loud-speaker) will have been abandoned in Regend's Park, the structure being erected for its symbolic importance.

On special religious day (Eid days) several thousands people will congregate at the mosque and so the competition conditions required sites to be provided for marquees. Those using the over flow accommodation need the facilities of the mosque and the closer they are to the prayer hall the more involved they become. This led to the idea of extending the hall on either flank wall by folding doors opening on terraces designed for marquees.

The congregation hall will accommodate about 950 people but on Eid days the marquees and a general purpose hall can increase the total covered accommodation to a capacity of nearly 5000.

The most important place, the prayer hall, should be the most impressive space and so it seemed that the rectangular space should extend upwards and if that extension were in the form of a dome it would solve another problem posed by the competition. The promoters were obviously worried, the winning design should have b been a 'modern' conception, unrecognisable as a mosque, for they said 'they wished the Muslim Community of London to be inspired by the visual effect of the mosque as being reflective of traditional mosques in which they have worshipped in their own countries'. Since most of them are from Arab Countries, the dome and the four-centred arc are the most characteristic architectural forms of Islam and immediately recognisable to Muslims; it seemed that these forms could still be valid without becoming mere decorative devices, said the Panel jury, but is it?

Dome Construction

A new form of dome construction was developed for the competition design which was subsequently examined by the consulting engineers and found to be valid. In broad terms it consists of covering the rectangular hall

with a flat reinforced concrete slab supported by columns set in from each of the four coners - like a table with legs set in. The columns expand into the slab in the shape of a mushroom, the two structures thus becoming homogenous. The slab has a large circular hole in the centre from the edge of which rises a reinforced concrete ring beam carrying the precast light weight concrete drum segments. On the top of this drum is the dome itself, which is a light metal structure of the same four-centred profile as the arched walls. It consists of eight tubular steel lattice frames rising from the drum to the apex which are clad on the outside with a copper alloy sheeting, gold in colour, fixed to double diagonal boarding and on the inside with an acoustic finish on expanded metal. The whole structure is braced against wind pressure by the surrounding wall units and parapet beam is the new technique of dome construction neccessary.

Islamic Requirements of a Mosque

In order to answer the above questions we must first of all know the Islamic requirement of a mosque. Islamic theologians argue about the nature and function of the Mosque. Most authorities begin by pointing out that all that Allah requires, according to his word as recorded by his prophet Mohammed, is that a place of worship should be set aside (Quran, Surah IX, 107-108), that it should be sanctuary (Surah IX, 17 -18), and Surah IXX, 11, 17)

and that the direction of prayer should be indicated in some way:

> 'And now verily we shall make thee turn (in prayer) towards a qibla (direction of prayer) which is dear to thee. So turn they face toward the masjid al-haram (Mecca) and ye (O Muslims), wheresoever, ye may be, turn your faces (when ye pray) toward it'. (Surah II, 144)

It will be noticed that no mention is made of a building, and many Muslim places of prayer are unroofed. While it is true that many Muslims even pray wherever they happen to be, this is because the demands of the faith, requiring in most rites at least five periods of prayer at specific times throughout the day, make it extremely difficult for all Muslims to reach communal places of prayer at the right time. Nevertheless, there is need to be considerable virtue in praying in a sanctuary that is kept for prayer, hence the proliferation of tiny mosques and of road side open-air plat-forms for prayer found throughout the Islamic world.

Prayer is a communal act, although it is nowhere specifically mentioned in the Quran, seems to have been initiated by the prophet Mohammed himself in Medina. (Sunnah) If one may judge from the practice of his immediate successors, he must have held a communal prayer

once a week, on the holy day,(Friday) at which he addressed the assembled people on all matters affecting them as a community, both materially and spiritually. From this practice was derived the hutba, the Friday sermon to the people in the Mosque given from the top of a flight of steps, the 'Minbar', by the ruler or his representative. This became a strictly observed practice throughout subsequent Islamic history.

Naturally, such an assembly was very large and as the earliest solution to housing it was to provide a shaded or roofed praying area with an overflow space in an open courtyard behind it.

Even larger assemblies, involving not merely the male adult populations of a town or city by congregations from much further afield, take place in the two Eld, one the festival to mark the beginning of the Islamic year and the other to indicate the end of Ramadan. No building could house such crowds in one communal prayer, so the prophet Mohammed is said to have himself initiated the laying out of a large open-air place to prayer outside the boundary of each major city, the 'Musalla'. As they exist today, these places of prayer are surrounded by low walls, or at least they have a wall on the qibla side. They are paved, and the direction of prayer is indicated by a small niche, the mihrab, the height of a man, inserted in the qibla wall. Usually a flight of four or five steps projects from the wall next to

the 'mihrab', or is recessed into the wall, forming the 'minbar'; from the top step the ruler, or the leader of the prayer, the Imam, delivers the official sermon. Beyond the plat-form, a well with an adjoining water cistern, or a stream, provides the water necessary for ablution before prayer. (If the provision of water is impossible, the congregation perform the ablution with dry sand).

These then, are the ingredients of a place of prayer, according to the tenets of Islam, and all other features, including the dome and the minaret, are later accretions. The dome at the Regent's Park should have not have been there at this age.

It is curious that it was the very Turkish nature of the main feature of Gibberd's competition design, the minaret, that so disturbed the building committee of the new mosque that it had to be changed, by no means for the better.

3.2 CONFERENCE CENTRE, HOTEL, AND MOSQUE RIYADA, SAUDI ARABIA

Brief

Competition conditions for conference centre stated that 'the building is intended for national and international Islamic Meetings and Seminars and will in time become a Cultural Focus for the Capital City of Riyadh'. Brief required main conference hall (1,400 seats) with fu full technical facilities; five seminar or committee rooms

(one with raked seating for 190); extensive foyer space on different levels for circulation, exhibitions, refreshments and relaxation. administrative areas; accommodation for delegates and artistes; facilities for press; VIP entrance facilities and supporting accommodation.

Hotel brief was for 200 double bedrooms, some capable of forming suites; lobby, reception area and and extensive lounges; dinning facilities for about 400; coffee, barber and beauty shop; back of house facilities including kitchens, laundry, dry-cleaning, storage and staff rooms. Building was partly seen as extension of international conference facilities rather than as commercial hotel. Brief for Mosque required entrance area lea leading to mosque with washing place off it; squre enclosed and roofed space for 250 worshippers open on one side to large court yard (for over flow) surrounded by pergolas; room for Imam; and minaret.

Statutory and other Requirements

None for conference centre and hotel. Mosque was originally sited parallel to road which was correct geographical orientation with worshippers facing mihrab wall and Mecca, but religious authorities decreed liturgical orientation, which set building at angle to road and made interesting contribution to design.

Conference Centre

Hall is placed within surrounding foyer planned on three interconnected levels - entrance level opposite porte cochere opening into general foyer and exhibition space entending full length of south-east side; upper level from which door ways lead into middle of hall and which extends beyond hall to serve as foyer to meeting rooms and north west side; and lower level which provides additional foyer space and refereshment areas, and off which are lavatories and service areas. VIP reception is at upper level on south west side, still within foyer volume and forming ceiling to offices below, Can also be reached from hall by side doors at plat form level. Main access to hall is through wide central opening which leads direct to cross gang-way. Hall has 1,400 seats and level but modelled ceiling 'floating' over clerestory which admits natural light but can be blacked out with blinds if required.

HOTEL

"M" Plan of bedroom wings with saw-tooth northern edge was evolved from desire to have all 200 bed-rooms with patios facing north and as much privacy between them as possible. Apex of 'M' provided central position for vertical circulation andservice rooms. There are no internal corridor and bed-rooms are entered off galleries which over-look covered court-yards formed in angles of

'N' and rising full height of building. Drive-in is by ramp up to first-floor level so that most rooms are within one or two storeys' reach (meaintenance in Saudi Arabia of mechanical services such as lifts was difficult at time of competition) and restaurant, kitchen and service entrance is on ground floor and isolated from main circulation areas. Between entrance and covered court-yards are public lounges and reception area, parts of which are on two floors. To left of entrance is stair which leads down to restaurant and garden level, and adjacent is link with conference centre which also serves some small shops including coffee shop with terrace over-looking garden on lower level. Administration is next to main lounge and near reception area.

MOSQUE

Entrance is along pergola which turns right-angle to form back of Mosque court-yard. It passess first through informally shaped court-yard with steps up to screened ablutions building. Space of outer court-yard interlocks with mosque courtyard.

Roofed area of mosque was originally open on court-yard and side but since completion, has been closed in at clients' request. Minaret stands apart at roadside.

3.3 C R I T I C I S M

Before us stretched a wild open valley, and in its foreground, immediately below the pebby slope on whose summit we stood, lay the capital, large and square, crowned by high towers and stron walls of defense, a mass of roofs and terraces, where over-topping all frowned the huge but irregular pile of Feysul's royal castle.....' Plagrave, approaching Riyadh in 1863, must have passed very close to the suburban site on which Trevor Dennatt's conference centre and hotel now stand. He arrived from the north west after visiting the ruined town of Dariya, which Riyadh had replaced as the capital of the second Saudi State after its destruction by the Egyptian army under Ibrahim Pasha in 1818. Palgrave's description reminds us that desert towns were once compact and defined. Walls and towers rising out of the sand provided and image that was clear and strong. For the bedouin it signified a life that was safe but controlled - a life that he was not easily persuaded to exchange for the freedom of the open desert.

When Feysul died, four years after Palgrave's visit, the supreme power in the Nejd passed to the Rashid of Hail, though Riyadh itself was not taken until 1891. Every spring and summer the Rashid rulers would readily exchange the luxuries of the town for the simple normal life of their Shammar bedouins.

'The town cannot coerce the desert,' wrote Lady Anne Blunt who visited Hail in 1879, 'therefore, it they are to live at peace, the desert must coerce the town.

The bedouin's congental antipathy for town life provides at least some of the reasons for his present-day disregard of urban values.

Like Kuwait or Jeddah, Riyadh has been torn apart by fast roads and pushed deep into the desert. With its recapture by Abdul Aziz in 1902, the town became the centre of a rapidly expanding state. The new Saudi Emir defeated and killed Ibn Rashid at Muhanna in 1906, captured Hofuf from the Turks in 1906 and Annexed Jebel Shammer and Hail in 1921. Having driven Hussein into exile, he occupied Mecca in 1924, Medina in 1925, proclaimed himself King of the Hejaz in 1926, of the Nejd in 1927 and of Saudi Arabia in 1932.

The population of Riyadh during that period doubled from 14,000 to 28,000. By 1945 it had reached 60,000. Yet Riyadh was still a small town. Such a modest rate of expansion could still be absorbed within traditional urban patterns. But with the peace and afluence of the post war years Riyadh's population began to grow at the rate of 10,000 a year, reaching the 250,000 mark in the early 70s.

Suburbs outside the walls existed already when phiby first visited Riyadh in 1917, but they were built compactly, like the old town, for foot traffic. It was

only after the walls were pulled down in 1950 that the character and scale of new development changed. Adobe was replaced by reinforced concrete as the main building material. Water mains, electricity and sewers were installed. Roads were asphalted and wide avenues laid-out of four motorised traffic and to connect the ministries, government offices, educational establishments institutes and clubs that were either newly created or transfered from the commercially more important Jeddah. Today these buildings tend to nestle behind high walls flanking the avenue-walls whose continuity is broken only by steel gates that demonstrate the Arab craftsman's infinite capacity for making patterns.

Of these avenues, the two longest are Air-port Street, connecting the town centre with the Air-port; and Motmarot Street, which intersects Airport Street, serve the conference centre and joins the road to Dariya. Much of the latter still cuts through the undeveloped desert and the conference centre itself is out on its own, without any urban points of reference and with a background of only sky and infinite horizon. Trevor Dannatt had neither the 'fixes' which an old Turkish fort provided for Sir Leslie Martin and David Owners' government offices at Taif, nor scenic background which the mountains gave Frei Otto and Rolf Gutbrod's conference centre at Mecca. Theo Crosby, who was a member of the

original supervising committee, tried in vain to persuade the government to provide a more central site. If Dannatt had nothing to relate to, he included a feature in his own buildings to which others might subsequently relate.

This is the Mosque minaret, uncharacteristically tall and slender for Riyadh, where Wahabism usually demands the less ostentatious form of a squat tower or merely a roof top, either being considered more than adequate for the simple function of calling the faithful to prayer. Because of its position by the road set somewhat apart from the other buildings, because of its conspicious verticality and contrasting white concrete structure, it already identifies the remote site with the city and could, in the land of sensitive architects, provide a point of reference for future development in its direction.

The Mosque is the most eloquent building on the site. It reflects the architects' non-conformist background and his understanding of desert puritanism. Wahabism dates from the middle of the eighteenth century, when Dariya was the Capital of the Saudi State and Mohammed Ibn Saud and his son Aziz were concerted by Mohammed Ibn Abdulwahab to this purged form of Islam. Wahabism was to Islam what the reformation was to Christianity or perhaps more accurately, what non-conformism was to the Established Church. When Riyadh superseded Dariya, it automatically became the centre of Wahabi influence and, just as the leaders of the first Saudi State had

found the new religion politically useful, so Abdulaziz in 1921 instituted a revival, called the Ikhwan or 'Brotherhood' movement, to coincide with his Agricultural reforms.

R. H. Kiernan remarked that 'more than 50 Agricultural settlements have been founded, containing some 50,000 souls.

The turbulent bedouin element in the Saudi empire has been to some extent converted by the Ikhwan movement into a fighting force harnessed to the State through the local Sheiks, who are representatives of the Central Government. No fighting between tribes is allowed before the Government has had a chance to settle a dispute without bloodshed, and there is peace such as Arabia has never known.

Ikhwan demanded more vigorous religions standards than Wahabism and greater self-denial. Like Wahabism, it insisted on a return to the principles of Islam to the basic practice and teachings of the Prophet, whose architectural ambitions are epitomised in the saying recorded by Ibn Sa'd. The most unprofitable thing that eateen up the wealth of a Believer is building. The house which the Prophet built himself at Medina in 622, and which later became a mosque, 'consisted of an enclosure of mud-brick about 100 cubics (56 yd. square, with walls 7 cubics high and a portico on the south side made of palm-trunks used as columns to support a roof of palm-leaves and mud.' (See Chapter- Two, Figure 2.1) It was

the spirit if not the letter of such simplicity that Wahabi Mosque aimed at recapturing, and that Dannat's Mosque at Rayidh so trimphantly succeeds in doing.

After the informal shape of the entrance court and the brilliant light-and shadow play of the cloisters, the self-efficient character of the mosque proper is all the more striking. It consists of a court-yard and a covered area at a slightly lower level, originally open to the court and enclosed by a wall on the other three sides. There is a shallow mihrab but no decoration except for a slight there which provides a little surface modelling. The roof structure over the covered area-octagonal concrete columns supporting a system of primary and secondary beams whose pattern is quietly reflected in the floor finishes was conceived as independent and physically separate from the surrounding wall structure. Unfortunately a clerestory of tinted glass between the top of the wall and the underside of the oversalling roof, as well as a screen dividing the covered area from the court-a-desire for greater comfort which ill accords with the Wahabi spirit has compromised a clear architectural statement.

If the minaret is for special importance to the townscape, the site itself is dominated by its two main buildings, the conference centre and hotel. The measures taken to control site flooding, part of the original

design but cut for economy and only put back as a result of a serious flood, provides a hard base of stone embankments and walls spread over the whole site, which hold together all the divers parts of a large project and consitute a marvelous example of aesthetic gain from purely practical requirements. This concern with making of buildings was given fresh impetus by the post war Scandinavian influence which affected architects of Dannatt's generation.

Theo Crosby reckons that he learnt from it 'a kind of craftsmanly elegance, a comfortable lightness of touch, which immunised him almost completely from the Brutalism that followed in the sixties'. At Riyadh these qualities are most evident in the oak platform and structure which surmounts the minaret.

His use of concrete stems from a craft feeling for the material. He prefers surfaces which are more consciously considered than those of the Brutalists. The podium of the conference centre is in-situ rusticated concrete and the fascia white mosaic; the hotel walls are in local stone or cleaved concrete blocks which look like stone. With uncompromising consistency only the columnar structure and what it supports, most of it inside the buildings, has the concrete exposed off-the-shuttering, with a variety of finishes appropriate to the scale of the structure.

Though different in concept, the organisation of two buildings has certain similarities. Both provide what

Dannatt has called 'that substitute for external space which seems to me part of the Arab Architectural tradition (whether done with or without Architects.) In the conference centre it is a grand foyer on different levels, in the hotel high internal court-yards with tiers of balconies providing access to the rooms. Both buildings, too, are entered above ground level. The entrence to the conference centre is at split level, with accommodatee the bars, and half a fight up to the upper foyer which provides access to the auditorium and to the meeting rooms on the north west side, the end room with its raked floor neatly making use of the change in level by providing entrances at both ends. The hotel entrance is at first floor level, which enables the maximum number of guest to walk to their rooms (down one floor, on the same level, or up one or two floors) and isolates the ground floor, with its restaurant and garden, from the main circulation area.

Dannatt's main buildings are best appreciated from the secret garden that lies below the ramped entrance drive to the hotel. From this central position both buildings can be taken in with one sweep of the eye. Both buildings keep their distance, the conference centre because of its forms step back. On the one side the eye takes in the conference centre with its rectilinear geometry and expansive colonnade; on the other it perceive a series of slopping or receding planes. These two con-

capts are contrasted as 'temple and residential hill', and it is clear from an early sketch, that it survived without fundamental change.

Although Trevor Dannatt belongs to the tail end of that generation of English architects who embraced the Modern Movement, his commitment to the actual design and construction of buildings has always been too deep for him to get engaged in polemics. 'We must accept building as our bedrock, know it inside and out...,' he declared in a talk given at the RIBA.

It is fine concept which succeeds in varying degrees, and magnificently in the porte cochere, where the structure stands unadulterated, performing the same function as Kahn's ruin of the building'.

Inside the foyer it succeeds on the entrance side as far as the VIP entrance at one end and the link with the hotel at the other. Here the glazing runs along the grid line and can tuck under the horizontal edges of the inverted pyramids. Between the link and the committee rooms, however, a clerestory runs along the column line, so that its top member has to follow the zig-zag of consecutive inverted pyramids. This also breaks the structural unity of column and cap, for glazing is rarely as transparent as architects would like it to be, especially when framed in such substantial aluminium sections as here. The foyer outside the committee rooms had been intended for banquets. Extra width and a

second line of columns, cut when economics were requested, would have avoided the feeling of an incomplete structure.

What would have been the suspended middle row of caps, is now firmly supported along one edge by the committee room wall. Large scale structure works in spaces that are large enough to maintain the integrity of that structure. But it is far more difficult to accommodate where the eleborate needs of a modern building require comparting. Even the lower foyer-a-large enough space by any standards-has a low, unarticulated ceiling through which the column clusters of the main structure merely pass, while a secondary structure of single circular columns mixes confusingly with these. In the VIP lounge, a relatively small room screened by glass partitions where a single column cluster stands off-centre, not only has it become impossible to 'read' the structure intellingibly, but its scale is also over-powering.

Closeness by itself, however, it not necessarily harmful. All large buildings tend to have 'borrowed' space and, to experience the foyer structure from the interpreters' gallery above the committee rooms or, even the smaller scale hexagonal structure of the hotel from the ladies' gallery, is like walking in the triforium gallery of a cathedral. In both the eye can take in the whole structural system, however close it may be to any one part of it.

The relationship of auditorium to foyer has its antecedents in London's Festival Hall, on which Dannett worked. The concept is of an auditorium 'box' dropped into a surrounding multi-level structure. Each is independent and success rests on the clarity with which this independence is expressed. The auditorium roof is a still space-frame supported on four gigantic concrete piers which stand outside the 'box' set diagonally at the four corners. At the back of the auditorium the foyer levels are cut back to detach the 'box' as much as possible.

Around three of the sides one can look down to the lower foyer level and up to the underside of the oversailing auditorium roof. Spatially this is an almost unqualified success almost, because unavoidable functional requirements, like the projection box and with services and finishes; it is also looking, though imposing its square geometry over the polygonal hall has resulted in some awkward shapes at the edges.

The wall treatment must be hailed as a breve attempt to decorate - an attempt which Powell and Moya, for instance, funked in their dinning hall for Wolfson College at Oxford. Refering to this dinning hall, Michael Brawne pointed out how 'the inward focusing of attention... makes all the wall surface of the space extremely important'. He went on to criticise the inadequacy of plain timber boarding.

'The eye moves from an understanding of the clearly structured space to the pattern of the wood grain; the intermediate hierarchies of space and surface modulation are absent and are missed. The classical covabulary of of pilasters and paneling or niches would have had a recognisable series of gradations which also would have aided an understanding of size and focused attention on the components of the space'. Whether one likes Dannatt's wall treatment or not, it does provide precisely what Browne finds is missing at Wolfson. Indeed the marble projections could be 'read' as pilasters, the silk panels as niches and the clerestory as an entablature.

The design can be a source of inspiration for architect of "Modern Movement" since it doesn't use any of the forms identified with Arabia or Islamic.

CHAPTER - FOUR

DESIGN DETERMINANTS

4.1 S I T I N G

The siting of the National Islamic centre at Abuja - the New Federal Capital is considered on the following levels.

1. The New Federal Capital would be the seat of Government and purely an administrative centre, siting it therefore is justified since all the Ministries will move to Abuja and the Islamic Centre which is administrative centre for Islamic affairs will be able to co-ordinate its activities with the Government easily.

2. Proximity to other town in Nigeria and cities in Africa. Abuja the heart of Nigeria is centrally located, the distances of other major cities is approximately equal thus the Islamic centre is centrally located in other to co-ordinate the Nineteen (19) State Islamic activities (Fig.4.1)

As shown in Figure 4.2, the New Capital will not only be geographically central to Nigeria, but also to all Africa, making the city of international significance. A five hour jet ride can transport one to nearly every important city on the large continent. This centrality and accessibility will have implications on the role and function of the Islamic Centre.

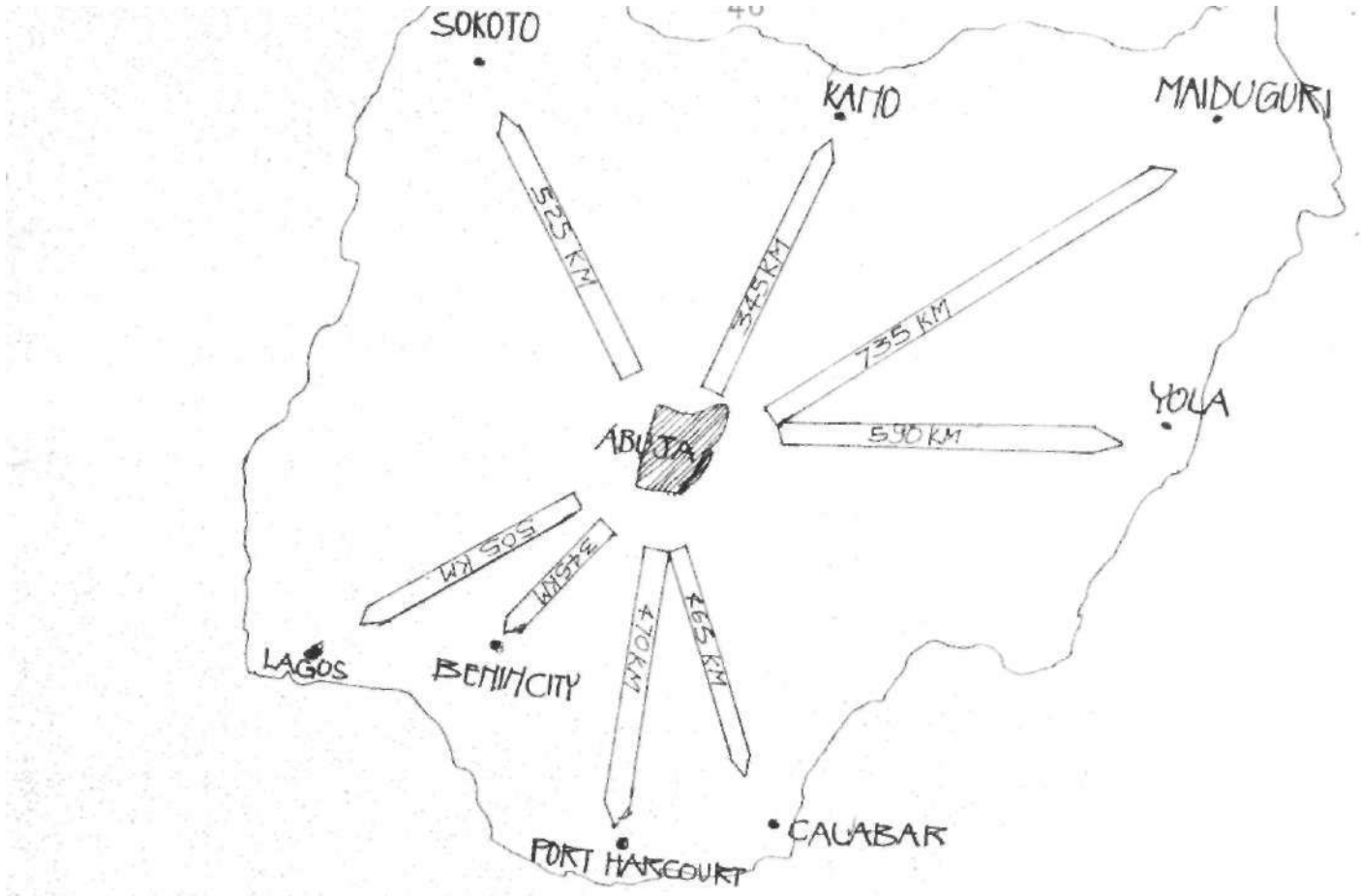


FIG 4·1 CENTRALITY OF FCT TO 19 STATES.

FIG 4·2 CENTRALITY OF FCT. TO AFRICA

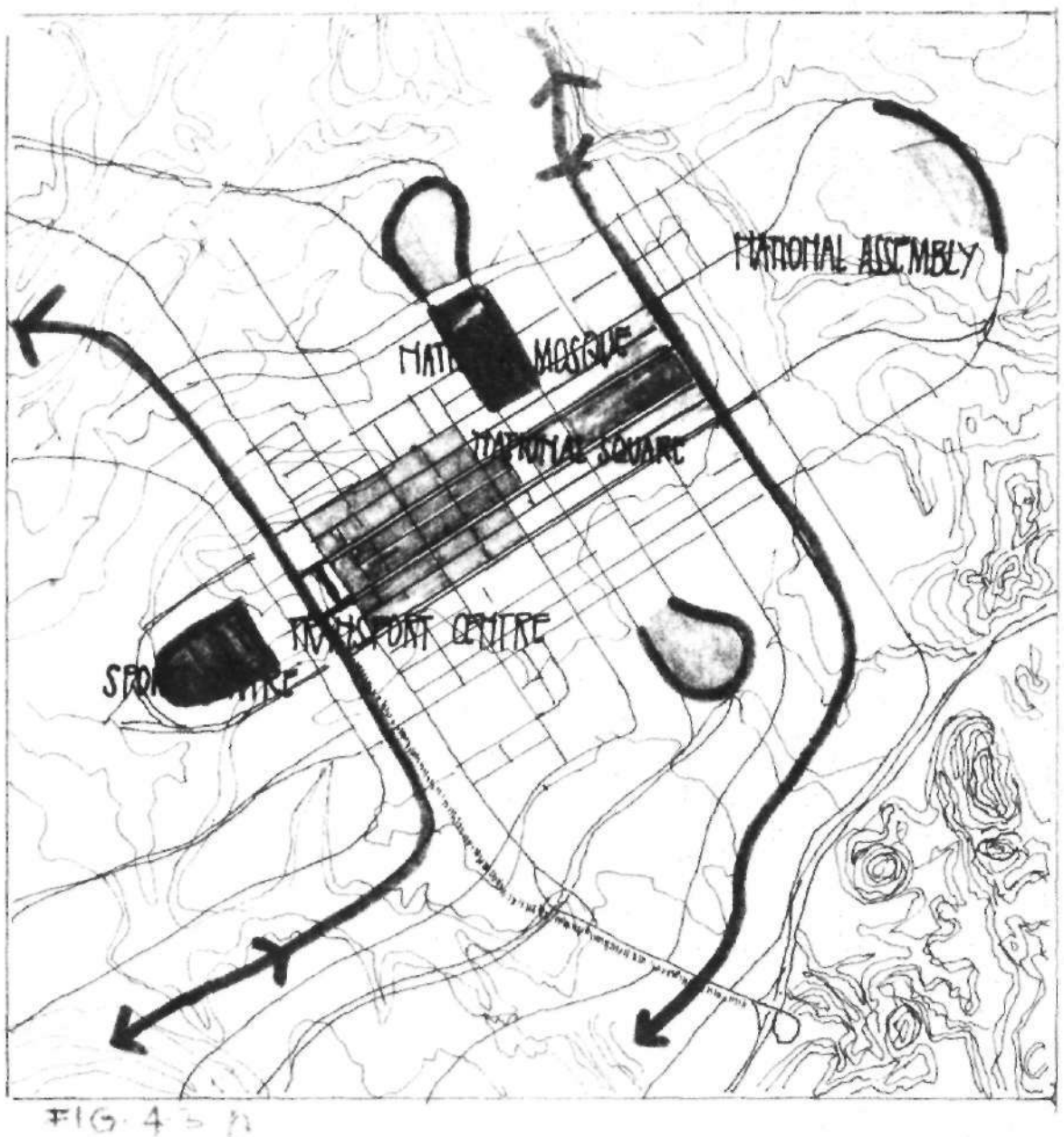


FIG. 4 - 2

THE SITE

The site is located at the central area of the city and it is at the periphery of the central towards the National conference centre and with Administrative Zone. (See Figure 4.3)

4.2 ENVIRONMENTAL ANALYSIS

The interrelationship of land use with environment which involved physical, functional, legal-political, economical and social relationships is the environmental analysis.

4.2.1 C L I M A T E

In the Bio-cilmatic Design chart for Nigeria which show the climatic region of Nigeria, Abuja is within group II, (See Figure 4.3)

R A I N F A L L

Rainfall the start of rainy season is around April and tapers off very rapidly after October thus, the duration of the rainy season is between 180 to 190 days. Figure 4.4 shows the mean monthly rainfall for Abuja area. The mean monthly distribution shows a tendency for concentration in three or four months. In the area 60 percent of the annual rainfall is in the months of July, August and September, this concentration shows the need for drainage system that can handle large volumes of water very quickly. The Federal Capital has frequent occurrences of squall lines which begin with dense, dark,

49

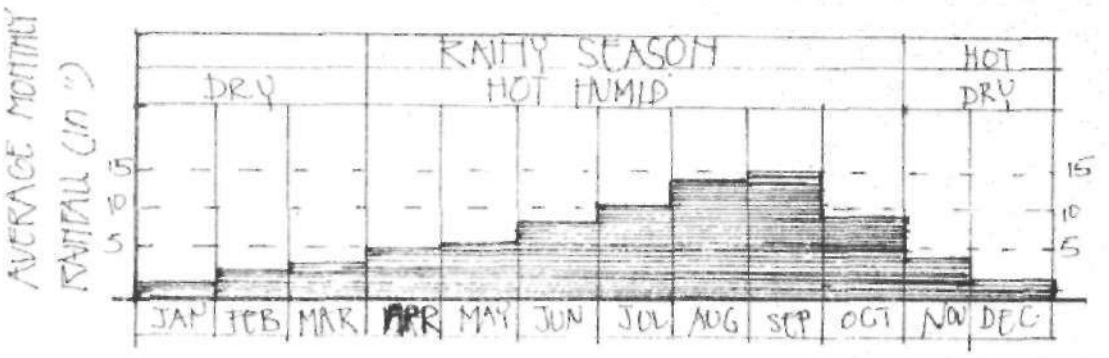


FIG 4.4 MEAN MONTHLY RAINFALL.

(a) [illegible]

WEATHER REGION OF NIGERIA.

FIG 4.3

cumulnonimbus clouds with thunder and lighting, followed by strong winds and intense rainfall, the intense rain may last for up to one half hour and then followed by drizzle of several hours duration. This condition is then replaced by few day of bright, clear skies, it is thought to originate from the Jos Plateau region and to travel from east to west across the area. It is most common in the late afternoons, at the beginning and ends of rainy season and often causes serious properly damage.

Another weather phenomenon is associated with the presence inselbergs these features exert an influence on local weather greater than their size. These inselbergs start of covenctional activity and cause intense relief rain in their immediate surrounding thus the first point that of drainage should be considered properly.

HUMIDITY

In human terms, Human sensibility to temperature is greatly affected by relative humidity figure 4.5 shows the monthly variation in temperature and humidity. During the dry season, relative humidity fall in the afternoon to as low as 20 percent in the city, site zone. This low relative humidity, coupled with high afternoon temperatures account for the dissicating of the dry season. This suggest the use of planting, ponds,fountain and pools to increase the moisture content of the atmosphere.

In the rainy season the relative humidity is much higher, especially in the morning hours when it can reach

as high as 95 percent. Even though the temperature is slightly lower, the effect is to create a heat trap when this situation occurs, the general feeling is to be uncomfortably hot. Thus adequate ventilation should be provided to avert the situation.

TEMPERATURE

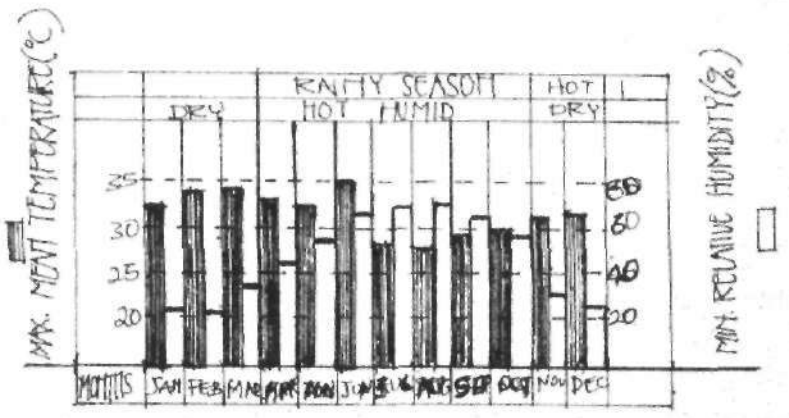
In human terms, wet radiation is felt as the air temperature, the response to which is greatly influenced by the conditions in the air. Federal Capital records its highest temperature during the dry season when there few if any clouds, changes in temperature of as much as 17°C have recorded between the highest and lowest temperature in a single day. During the rainy season, the maximum temperature is lower due to the dense cloud cover. Suggested solution is to have massive structive and light weight structure called composite structure. thus, during the afternoon when temperature is high the building can be used and in the hight and early morning hour when it is cold the building can be also used.

HUMAN CONFORT

Abuja is conforable almost throughout the year except for the too cold and dry January - March and hot humid June to October. In the design confortable atmosphere should be provided during these months. Figure 4.5.

SUNSHINE

In Nigeria, there is a general increase in the total hours of sunshine further noth from Atlantic coast. The amount of sunshine ranges from minimum of 1,300 hours in



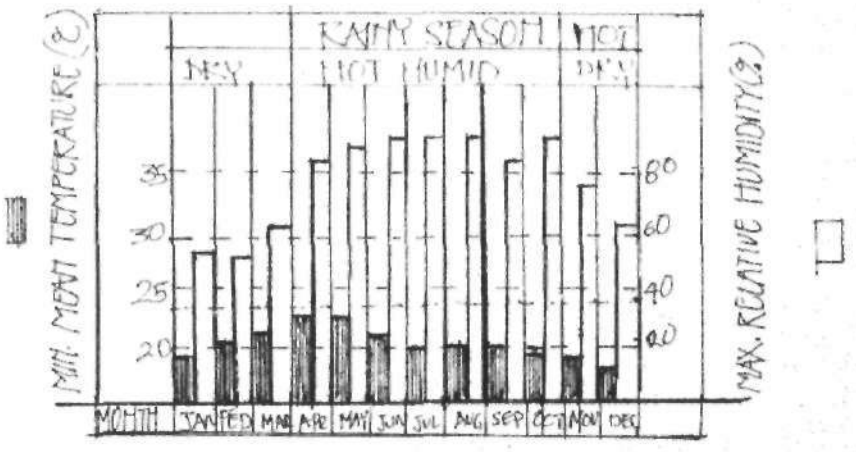


FIG. 4.5 MEAN MONTHLY TEMPERATURE AND HUMIDITY.

the Niger Delta to over 3,200 in the extreme north east of the country. The citysite is exposed to 2,500 sunshine hour, annually the monthly pattern of variation shown in figure 4.6 is the critical issue. During the dry months (November to April), the monthly variation increase from over 275 hours on the city site sun radiation cases discomfort by increasing body temperature and glare. Thus there is the need for sun shading devices and planting.

Glare can be reduced by planting trees around the building site, the windows should be shade by sunshade devices calculated using sunshade angle protractor; the building should be painted in light colours to reduce heat absorption from the sun.

WIND DUST

Two major air masses dominate the climate of the site. These are the tropical maritime air masses and tropical continental air mass. The tropical maritime is formed over Atlantic ocean to the south of the country and is therefore warm and most it moves in-land generally in a south west to north east direction. The tropical continental air mass is developed over the Sahara Desert and therefore is warm and dry and blows in the opposite direction. The osillation between these two air masses produces the highly seasonal characterities of weather conditions. The tropical continental mass is associated with dry season and the tropical maritime mass create the wet season.

MEAN MONTHLY SUNSHINE DURATION.

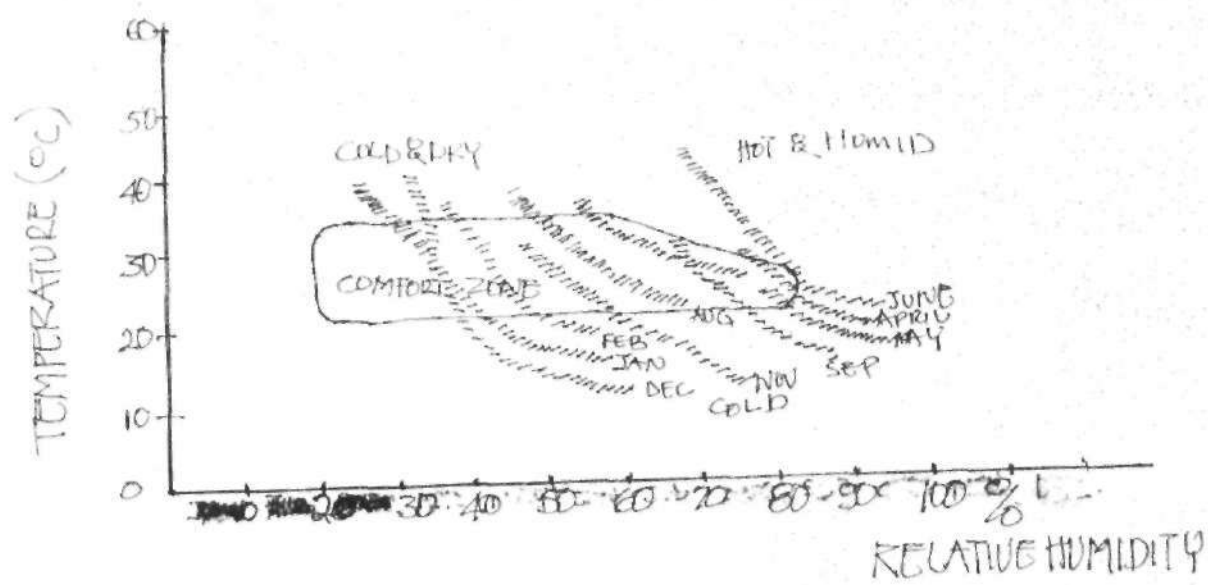


FIG 4.6

The Author tried to visualized the condition that will prevail there and used it in the design.

The site is bounded by four roads on the sides, the road running along North east and South west labelled Road A is the busiest of all and Road C running the parallel is B than the rest, the less busy roads labelled Road B is running North west and South east are busier than Road C and less busy than Road A. The logical point of ingress and egress will be at either Road C or Road B to ease traffic.

The site is a rolling ground (generally flat) it is slopping toward a vally with a stream further away from the site. The slope is between 2% and 5% thus the drainage following the slope will ease construction and less expensive.

The good view from the site is toward the river and view of the site is from all the side.

SERVICES

The site will have all its services it needs from the distribution net-work of the services in the city.

289981

1.4 THE PROBLEM

As earlier mentioned the problem of not knowing the site physically site is one problem. The site analysis was based on survey map and author's perception of conditions that will exist there.

As shown in Figure 4.7 the city site would exprience less Hamattan because of the wind shadow caused by Aso Hills but still the dry, cloudless and sut laden condition associated with the harmattan can be felt.

A comfortable living environment will depend on maximizing the aspects of the environment which reduce heat and the effect of humidity and protect from rain and dust. Planning with climate should take place at all scales.

4.3 SITE ANALYSIS

In design programme, the site analysis comes after the data collection and it is the beginning of the whole design. This analysis is establishing the existing element and it helps in harmonizing the new structure with existing condition.

From Nigeria Architects Code of Practice, this analysis should take into consideration the followings boundaries and existing properties, easement maximum and minimum height permissible and allowable useable area of site.

THE ANALYSIS

The problem of the site, that it cannot be located physically or by site visit due to the fact that the new Federal Capital is under construction and the site is still bushy thus it can't be located, therefore, the analysis is purely based on the countour map provided.

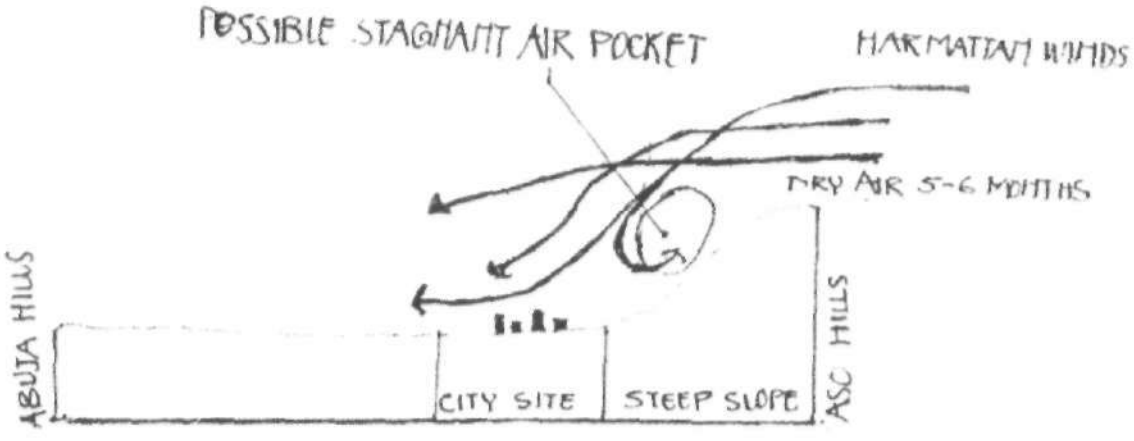


FIGURE 4.7 SEASONAL WIND PATTERN.

The site, apart from traffic problem that of being bounded by four road making the pedestrian net-work continued, there is difficulty in data, non-existing Islamic Centre, the present Islamic headquarter in Kaduna has no one complex which accommodate all the facilities this thesis is providing. The facilities have been scattered around the town.

4.5 THE BRIEF

The facilities to be located on the site are

- Administrative block
- Conference - Hall for the National Conference
- Small that deals with Islamic Literature
- Adult Education
- Library complex which will serve the Administrative Staff as well as public.

MOSQUE

A mosque to accommodate over 1,800 people for Friday Prayers it should be a Secondary Mosque to the National Mosque.

BOOK-SHOP/MESEUM

A small book-shop where Islamic and other related book will be sold and Meseum where Islamic Art will be displayed.

The project is estimated to cost ₦30 Million. This thesis will set out to design the general lay-out on the site and concentrate on the Administrative, Library and Conference Complex together with the Mosque.

FUNCTIONS AND OBJECTIVES OF THE CENTRE

1. To promote and revive Islamic culture
2. To provide centre for conferences, seminars and public lecture.
3. To act as an Information, Education and administrative centre.
4. To act as liason office between various Islamic movements.
5. To be responsible to Federal Goverrment and State Government on all matters related to Islamic religion.

CHAPTER FIVE

ARCHITECTURAL DESIGN PROPOSALS

5:1 Scope: The design of the Islamic centre will include

1) The general layout of the centre and then the design of individual complexes
2) The individual complexes are:
   i) Mosque
   ii) Administrative complex
   - Administrative block
   - Library
   - Conference hall
   iii) School
   iv) Workshop/Meseum

This thesis will make attempt on the design of the Administrative complex, and the conference hall.

In the design of the general layout, space requirement and accommodation schedule should be done in order to allocate area for each unit.

5.2 SPACE REQUIREMENT AND ACCOMMODATION SCHEDULE

Administration Block which will accommodate the following:

- The Hajj Department.
- The Zakkat (usher) Department.
- The Adult Education Department.
- Personnel Management
- 19 States representatives.

ADMINISTRATION UNIT	SPACE	REMARKS
ENTRANCE HALL	108m^2	Space for receptionist 8m^2 - Public Information unit with 2 staff/waiting 100m^2
HAJJ DEPARTMENT		
• Account Section	96m^2	8 Nos. offices Approx. 12m^2
• Personnel Section	180m^2	12 Nos. offices Approx. 15m^2
• Registry	36m^2	3 Nos. offices Approx. 12m^2
Store	24m^2	2 Nos for the section
Toilets	15m^2	1 wc/12 person
Chairman	12m^2	1 office
ZAKKAT DEPARTMENT		
Account Section	72m^2	6 Nos. Offices 12m^2 Approx.

Personnel Section	120m^2	10 Nos. Office 12m^2 Approx.
Registry	27m^2	3 Nos.
Head of Department	12m^2	1 Office
Toilet	10m^2	1 wc/12 persons
ADULT EDUCATION		
Personnel	120m^2	10 Nos. Office 12m^2
PERSONNEL MANAGEMENT		
Typist	27m^2	4 Nos. offices 9m^2 each
Personnel	60m^2	5 Nos. offices 12m^2
STATE REPRESENTATIVES		
19 states representative	328m^2	19 Nos. of offices 12m^2
Secretary	270m^2	19 Nos. offices 9m^2
Toilets	15m^2	1 wc/12 person
Stores	36m^2	4 Nos. 9m^2
THE LIBRARY		
Main entrance Hall	729m^2	Includes control, card-store, 1 staff toilet Jamlr exhibition space and staircases
Zerox room	20m^2	Binding and
Repairs and store	55m^2	Printing.

Unpa rking and Despatch	77m²	
Journal	61m²	
Staff Restaurant Romm	81m²	
FIRST FLOOR		
Quaran reading area	140m²	With enclosed carrels
• Reference	100m²	@ 7.2m²
• General reading /equipment	243m²	Open and close steel Equipment for transfering books and viewing.
Newspaper/Resting	101m²	
	20m²	

CONFERENCE HALL

Full Capacity	=	800
) 0.6m²/person	=	400m²
Toilets	=	30m²
Total	=	430m²

SCHOOL

Home Economics	=	90m²
Islamiyya	=	210m²
10x5 Tutors	=	60-75m²
Store	=	50m²

BOOKSHOP/MESEUM

Number of books(max)	=	25,000
32.5/m²	=	$\frac{25,000}{32.5}$ = 83m²
Supervisor	=	10m²
Meseum	=	1500m²

MOSQUE (Main area)

a) The main prayer hall (Al-muhrah)

b) The muhrab (niche) where the Imam stands or sit for sermon or leading prayers.

c) The Minaret where Muazzin stands to call for the prayer

d) The ablutionary where people can perform the punlication exercise

e) Toilets for the convemiance of the people

Space Requirement

Space required by one standing person = 500mm

" " " " postrating from side view = 1300

The total area required per person = 0.500 x 1300 x 0.65m^2

:: 1,650 men = 1072m^2

500 women = 325m^2

- Imam's chamber = 16m^2
- Muzzim " = 12m^2
- Reading rooms = 36m^2
- Stores 40m^2

Total area = 1,501

5.3 PROGRAMMATIC GOALS & METHOD OF IMPLEMENTATION

Flexibility/Expansivity

Each major area viz: Administrative complex and supporting services should be expanded by simple Linear addition without disturbing building visual order.

2) To give a sense of exhilation and awake sparial excitement.

3) Space continuity, unbbstructed by intermediate support. This applies mostly in the mosque planning where large number of people will be accommodated.

(4) To design a centre satisfying Functional, spatial implementation and structural requirements.

(5) To secure healthy and sanitary condition in the overall site consideration.

(6) To have functional, harmonized and adequate circulation.

(7) To emphasize aesthetic.

LAYOUT:-

1) Grouping of Individual. Units: Administrative complex, comference hall, library, school, meseum and workshop according to functional relationship.

2) Grouping of the Units according to noise levels, degree of privany and degree of accesibility.

The success if this design will depend on how most it satisfy the above goals and objectives.

5:4 PROPOSALS

PROPOSAL: 1) To provide flexibily:- This could be achieved by:-
deriving a structural form that can be easily be repeated without changing the basic form.

2) a) Accessibility (using pedestrain paths as much as possible.
b) Noise level especially in the library and administrative block.

3) Orientation to reduce solar penetration.
i) North - South
ii) Shading East - West facades.

Concept

To use Mosque structure as dynamic architectural sculpture by using one of the Islamic Symbols.

5:5 DESIGN REPORT

In the design report, the processes and ideas in the design will be stressed so that the success of the design will be seen clearly.

The site concept was first concieved as follows:-

The mosque should have been the focal point thus centrally located and the supporting structure surrounding it with the rest unit vi„:- administrative complex school etc. In the above arrangement, the mosque cannot be easily reached especially during friday prayers when there are a lot of people and the traffic is heavy. The mosque needs to be located at a get away area where it can be reached easily and get out from, easily. Thus, the decision of keeping it at the periphery of the s site where it can satisfy the above condition i.e (ease traffic congestion) gave birth to the new site plan. The mosque being at the periphery with the "quibla" wall facing the North-East (Mecca). The administrative complex is located at the front of the mosque, this is due to the fact that in Islam, people are not allowed in front of mosque thus siting the administrative complex will control people, i.e. (facing them to the back side of the mosque). The school located at the side of mosque to enable the school to use the mosque's varendah for some of its activities. The mecca (North-east) facing of the mosque gave rise the orientation of rest unit in

similar manner in order to bring harmony into the site.

In the design of the administrative complex which comprises the administrative block and the conference hall carefully analysis was made.

1) the administrative block:- The planning of block is in quantra ngle form to facilitate the latest technology in administrative design. The quantrangle form was also used in the library planning, each of quantrangle unit is joined to next unit and this gives r rise to checker type of expansion thus achieving flexibility. The joints or where they are joined served as the service area vix circulation, toilet store etc.

In each of the quantrangle, a court yard is provided in middle to provide adequate lighting and to allow cross-ventilation in all the rooms.

Sun shading devices were provided after calculating the angles from the sum protractor. The roof structure is simple mono-pitch steel trusses.

ii) Conference hall:- The hall is attached to the administrative block by the service area of the hall (viz. Entrance hall, toilets, store etc.) thus fitting into the checker form. The conference hall will be used for conference, drama and film shows. The conference hall is on top of snack bar where conferences can relax together with the staff.

Finishes: Sound absorbent materials are wall finishes and also cieling is curved to deflect sound to the audience.

iii) Mosque:- The mosque is simple building, rectangle in shape with the shortest side pointing to the position of 'Kz'aba' (mecca). The building consist of "Muhrab" where the Imam stands, the main prayer hall for men and divided by a partition from that of women. Courtyards at the both side of mosque with a pool for Abulution, to create micro-climate, and to remind the worshipers of Importance of abulution, the court yard is also to accommodate the over-flow of worshippers during Friday, 'Idk-fitir','Idi-kabir' prayers.

Structure:- The structure of the roof is shell roof curved into two half moons with a tie beams in tension, transparent glass blocks are in between the tie beams. to provide lighting, on the glass blocks are Arabic Words from the Quaran (seedrawings).

5.6 C O N C L U S I O N

In the design of a religious centre such as this, there is always the need for careful analysis of the people that will use the building and also the type of architecture associated with the religion. It is in this respect that the Author went far back to trace the origin of what is term Islamic architecture, and also forms identified with it. The Author approached the design in the above manner so a as to know the forms that are Islamic, because the author thinks that Islamic architecture is a sociological problem than a form problem as architect Trevor Dannatt puts it in one of the RIBA meetings. It can be seen clearly that the author belongs to the "modern concept" movement.

The successes of the design one would point are: proper marriage of the functional requirements with its environment, the use of latest technology in the planning and also in structure of the complex so that it can be of age.

To future architect, of 'modern movement' this can be a source of insperation.

REFERENCES

1) Duffy/Wankum (1969), Office Landscaping.) - Anbar Publication Limited.

2) GADZAMA, H.A., Zaria Friday Mosque. M.Sc. Arch. thesis A.B.U, Zaria.

3) GERIEL, B. (1979) Islamic Centre for Zaria, M.sc. Arch thesis, A.B.U, Zaria.

4) KANI, M.A. (1979) Islamic centre, Kano, M.sc. Arch. thesis, ABU, Zaria.

5) KRAEMER/SIERERT PARTNERS(1977) Open-plan offices. New Ideas, Experience and Improvement Mc Graw-Hill Book company U.K.

6) LeggeH, Brubaker, Gohades, shapiro.(1977) Planning Flexibility learning spaces.

7. MITCHELL. A. Architecture of Islamic world

JOURNALS

8) ARCHITECTURAL RECORD Vo.162 No.1(7) 1977) Religious Buildings July PP 101-116

9) Building Design No. 494 1980 May, PP 14-16 Islamic Cultural centre

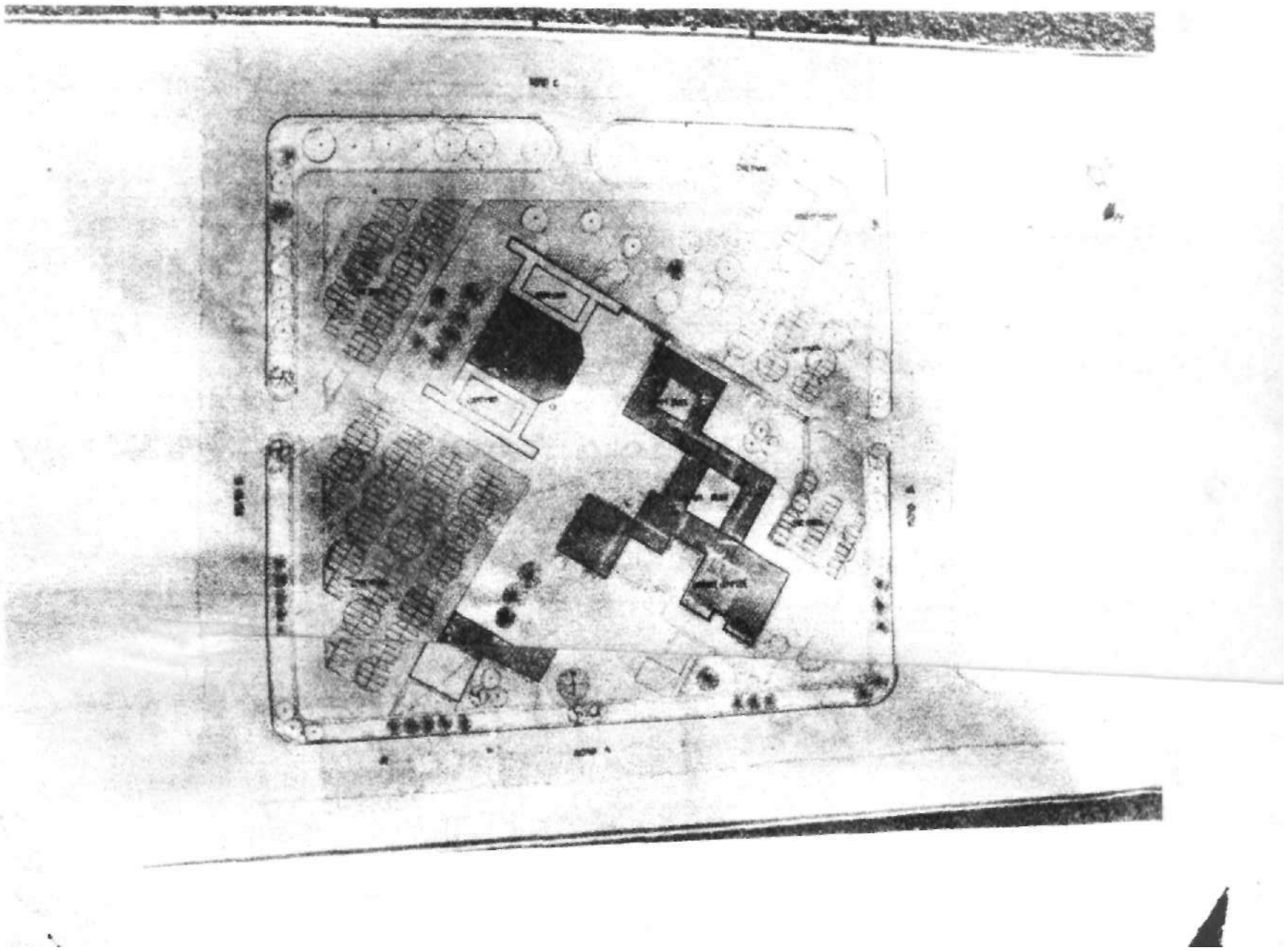
10) Building Vol.237 No. 7105 (37) 1979 Sept. PP.16 Islamic architecture turns Modern and traditional design

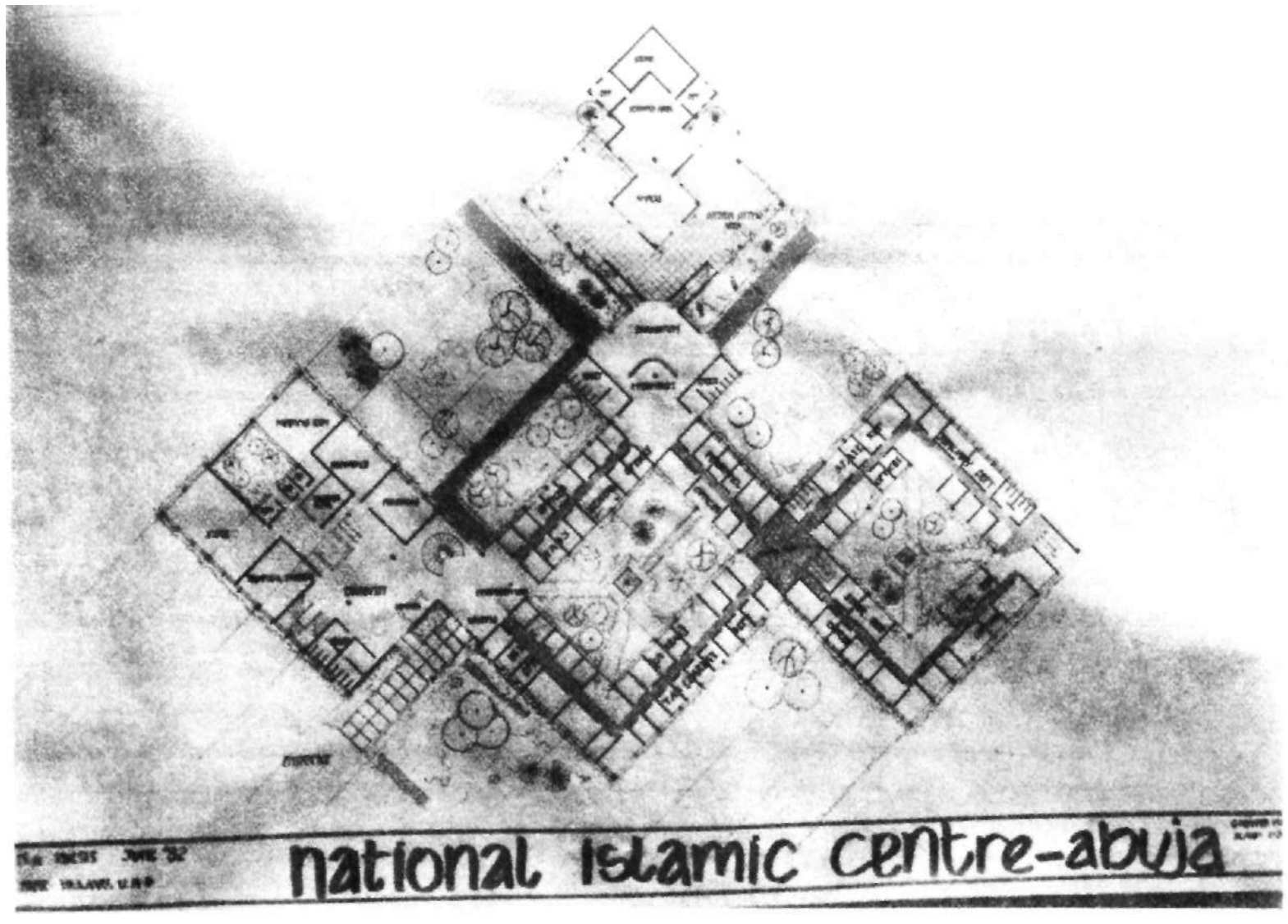
11) Domus No.570, 1977 May PP. 13-16 Study and meditation centre

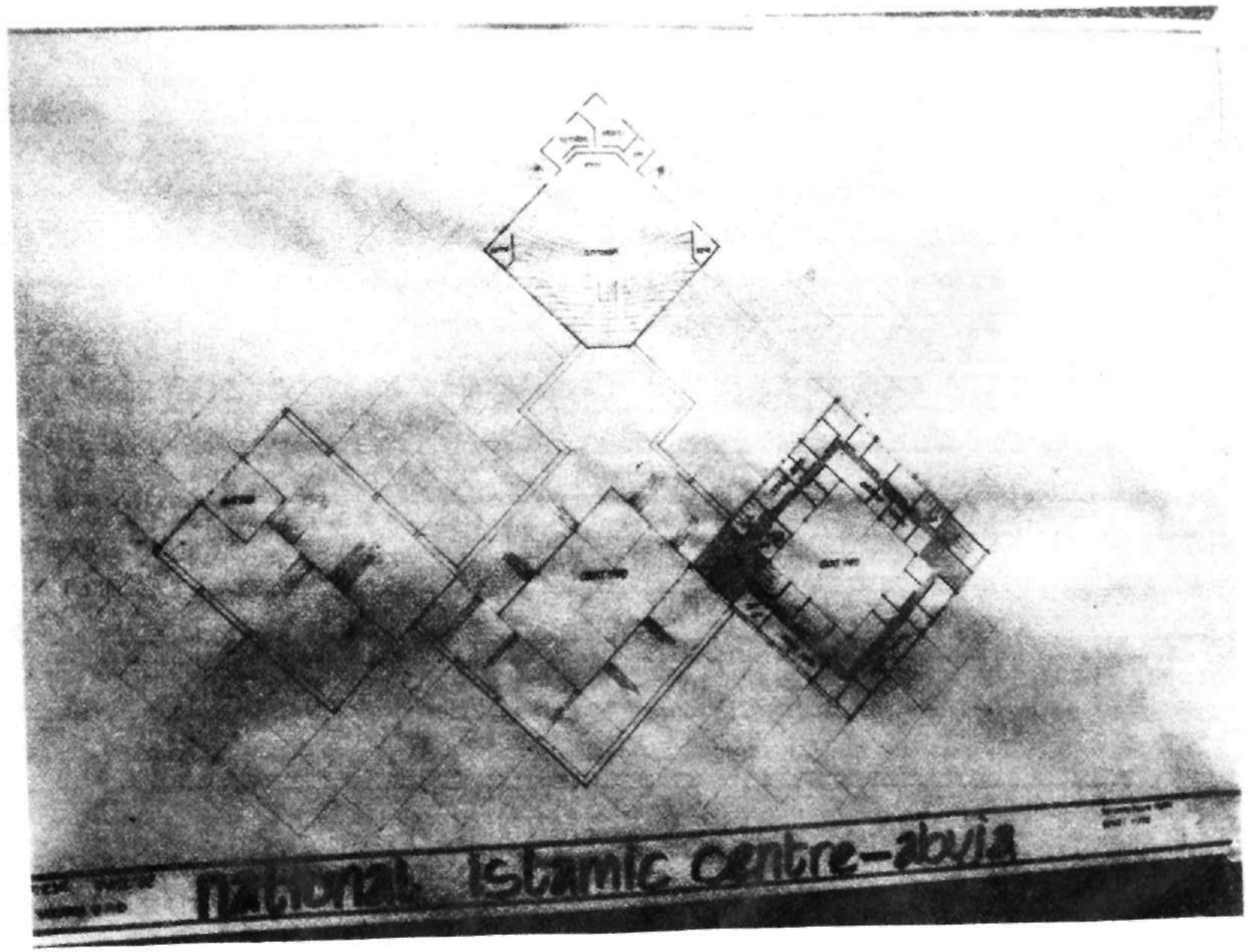
12) Alkenaa No.1, 1979. Feb/March, PP.84-85 Islamic centre

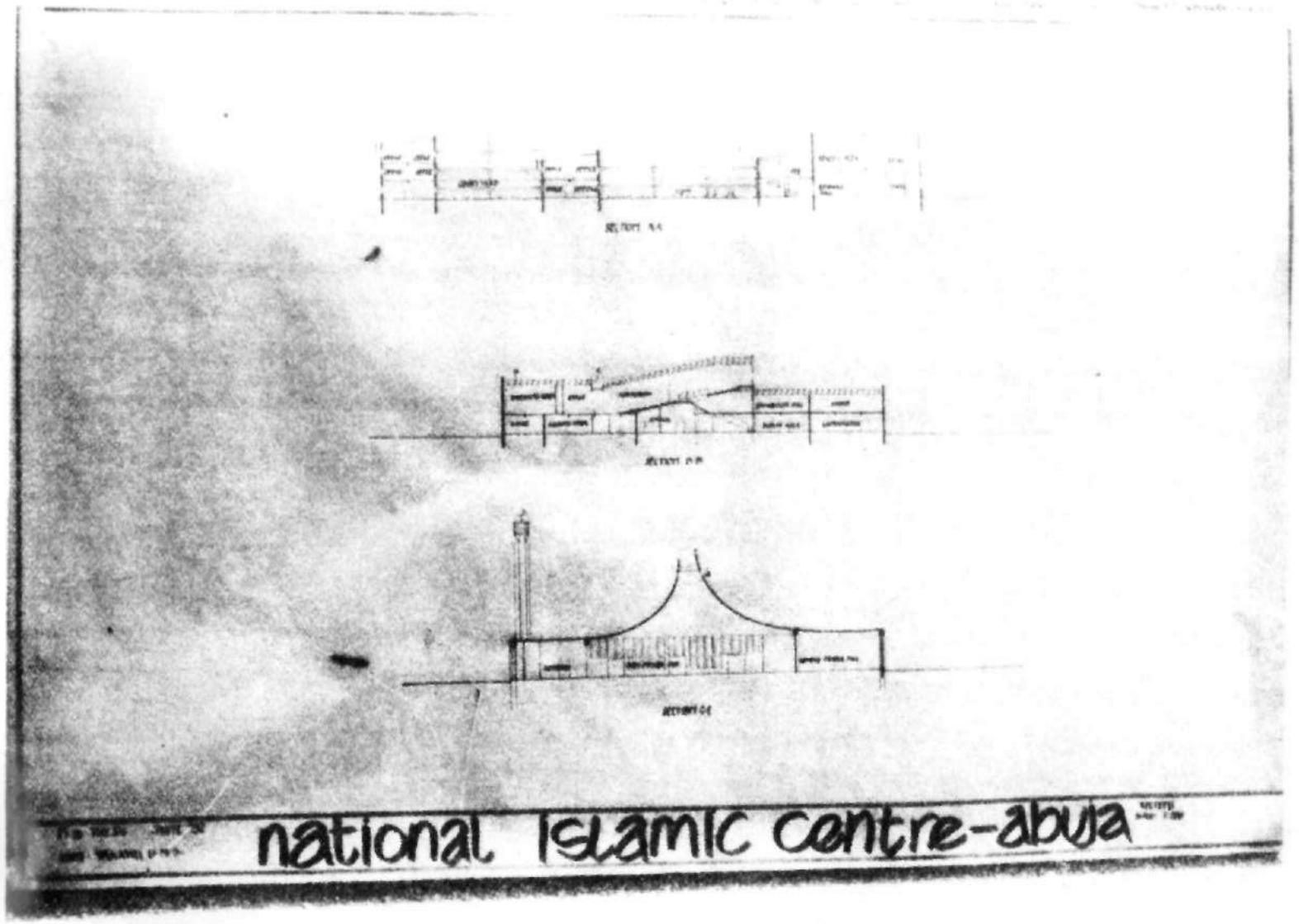
13) Islamic Architecture and its Decorations

14. Kureja C.P.(1978): Tropical Architecture, Mc Graw-Hill - Publishing Company, New Delhi.

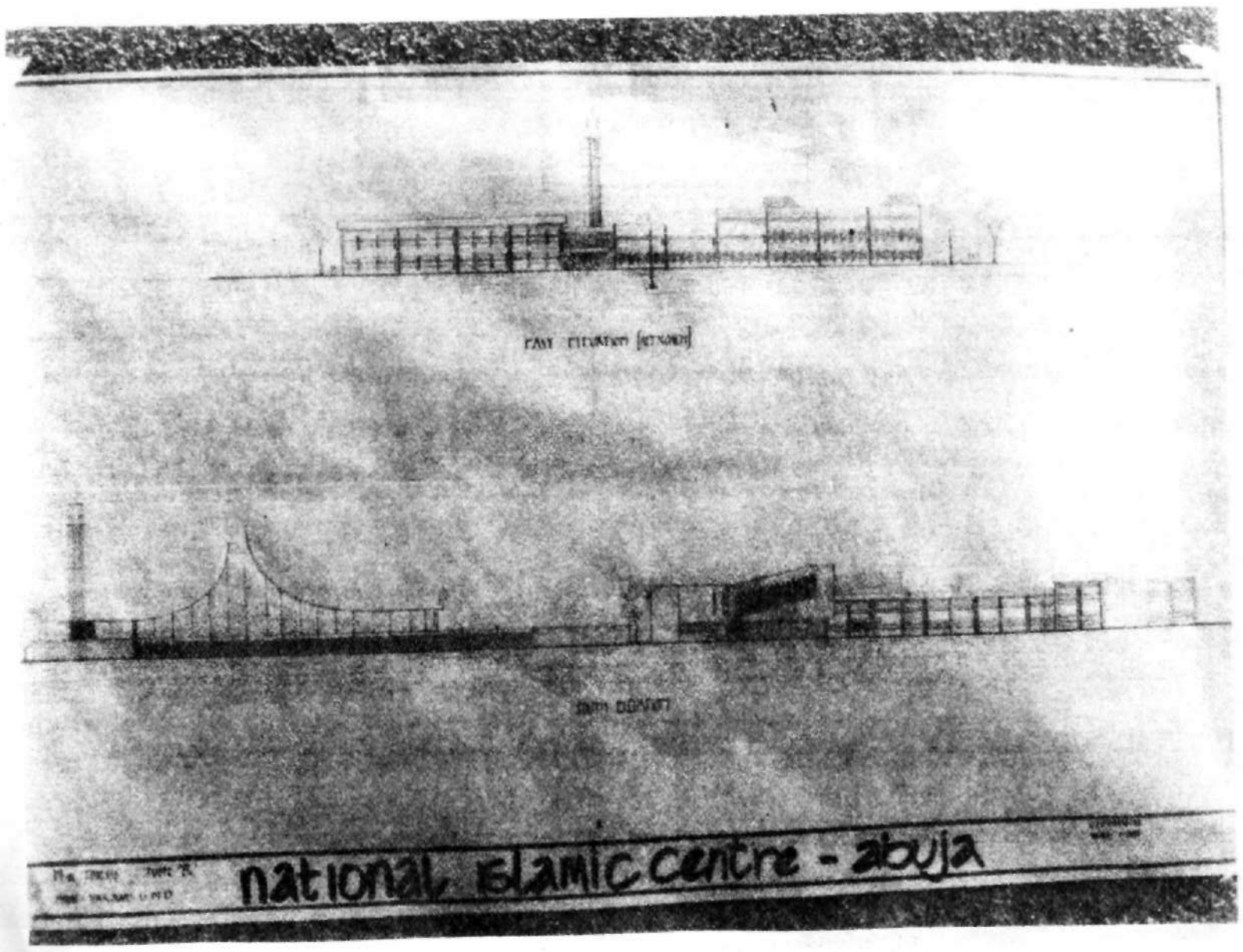



national islamic centre-abuja


Islamic centre-abuja



national Islamic centre-abuja


national islamic centre - abuja