CHURCH CENTRE YOLA

A THESIS

PRESENTED FOR THE DEGREE OF MASTER OF SCIENCE IN ARCHITECTURE

By:

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JUNE, 1980

C H U R C H CENTRE, Y O L A

D E D I C A T I O N

Dedicated to my Parents, Sister and brothers. To the memory of my deceased brother Mr. Dauda N. Kama who died at a time I was busy preparing this thesis, and to God's Service.

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ACKNOWLEDGEMENTS.

If we accept the premise that one doesnot live in a vacuum, then whatever I have in my head about Architecture today has been in part due to interaction with various persons or their works, whose names are too numerous to list here.

Such generalised gratitude however does not, in my opinion, do Justice to individuals who have had particular impact on my thinking particularly on the subject of Architecture. To this end, I wish to recall Architect Peter Magyar. Although Mr. Magyar has not been physically around during the preparation of this thesis, his contribution in moulding my mind to the subject cannot be forgotten.

I also wish to thank Mrs. Barbara Urbanowicz with whom I worked closely during my BSc. Project. Her list of references on church Architecture have been very useful. Another person deserving special thanks is Mr. Gniagzim whose ideas especial on structures has been very helpful.

Mr. Stan Kawka has been next doors to my studio during this work. Suggestions he made have

been very informative. I also wish to remember Dr. Schwertterger for the regular discourse we have had during his visits to our studio.

Mr. Chanana's friendliness is also herein appreciated. Finally, special thanks go to my Supervisor Mr. C.S. John. He has been fatherly in the conduct of my thesis without whose gentle attitude I might have broken down. He was also very appreciative of my efforts.

I cannot conclude this thesis without mentioning the moral support I received during the co course particularly the thesis year. My classmates have been nice people. My studio mates deserve special mention here. Bunmi Isimi, Wande Shonekan, Tonye Braide Rixe Imana, Rufus Assadugu, Adekunle Thomas and Kola Olusola. They shared sleepless nights with me in the studio.

Mallam Mohammed Adams (alais Abujah) deserves special mention. He was a friend in deed. Others whose support I have found valuable during the thesis include: Rev. Wilson Sabiya for information on the Lutheran Church of Gongola State, Mr. Bana P.M. for excerpts on church design, Mr Barka L.C. a close associate and philosopher/friend.

In conclusion, a paragraph must be devouted to Miss Anah Daniel, for love. I cannot conclude this acknowledgement without mentioning the cooperation of Mr. Solomon Ogbebor in typing the scripts.

A B S T R A C T

The idea of Church Centre was motivated by the Author's appreciation of Christian activities within Gongola State and the need to propagate such activities especially within the Urban Centres. Missionaries have built quarters scattered around the State in various locations. These quarters have had buildings such as Churches, Schools and Clinics which offer a number of services to various communities around them and were located according to which areas accepted Christianity readily at the time the Missionaries came. The Clinics and schools were probably presented as Charity Symbols but has infact acted well as forums for further contact with the public where Christian Sermons are taught. The First Missionary to this area was Dr. Bronnum. A dane, he settled first (in 1913) at Numan Area of the State. Numan has thereafter been the church headquarters.

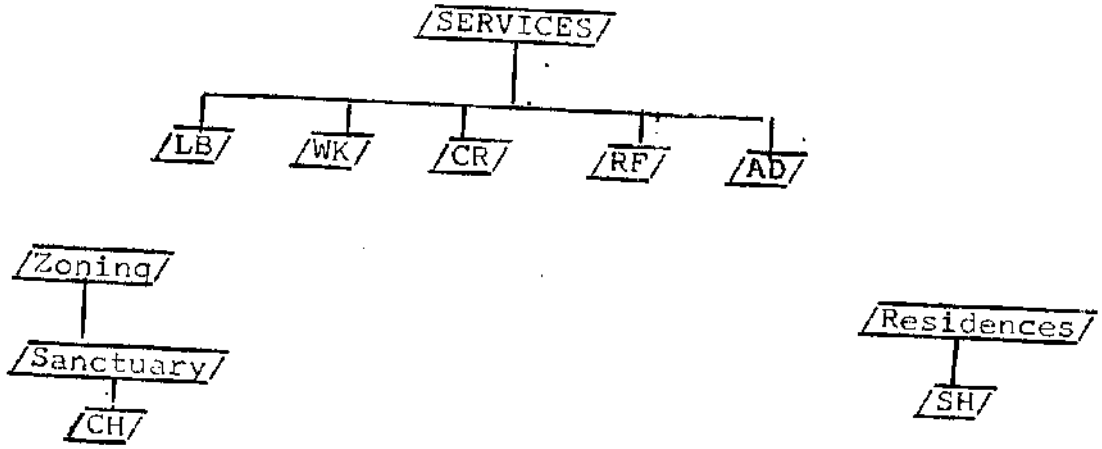
In view of recent developments the need for a Church Headquarters sited in Yola Capital of Gongola State cannot be over emphasised. This area has attracted urbanisation and will continue to do

so as a result of development priority given to it. Apart from the fact that Yola is the most communicable (Road Transport, Air, Telephone) and is centrally located in the Christian Geographic Area, the existing Christian Facilities are no longer sufficient for the population and type of society now in the area. Again, this location places the centre closer to the Government Secretariate. Furthermore, I believe that it is in such an Urban Centre that propagation of Religion is most acutely needed, for, apart from the fact that the Rural Communities are adequately served by existing facilities, the Urban Areas need a mark of Christianity.

The centre is aimed at providing such a mark within the Yola Urban Region. It would also serve as Headquarters for the State where coordination and planning of Christian activities would be carried out. There does not exist such a centre presently and implementation of one may have positive impact in improving Christian activities in the State. It will also provide a place for conference and research.

The Author visualises the centre as a place where people could meet and interact, pray individualy or in group, which could be small or large. A place where people could play around and recreate. A place for socialisation. A place that could aid the Ministry of the Christian Doctrine. A place where one could learn about Christ, A place where people could confer. As a result the centre implies:-

1) An attractive landmark possibly symbolising Christ /CH/
2) Accessibility to public and service to them.
3) A quiet place where Christians could retreat for prayers /CH/
4) A reading place where Christian Theology may be investigated /LB/
5) Workshops where personnel may brush up /WK/
6) Conference rooms for meetings /CR/
7) Recreation Facilities for Leisure /RF/
8) An Administrative Arm for running and maintainance /AD/
9) Housing Units for staff /SH/



NOTES:

CH	-	Church.
LB	-	Library.
WK	-	Workshop.
CR	-	Conference Rooms.
RF	-	Recreation Facilities.
AD	-	Administration.
SH	-	Staff Housing.

P R E F A C E

This report is a result of a study carried out by the author over a period of two academic terms (Jan-June 1980). The study was aimed at furnishing the author with information upon which a design proposal for a Church Centre was Synthesised.

Owing to the short time within which work had to be completed, the author cannot lay claim to having exhausted available information on church design which is taken as main object of concentration. I have included a list of Bibliography at the end of the publication for the use of anyone interested in further work on the subject.

In preparing the report, attention is given to aspects most relevant to the Design of Church Buildings alone although aware that this cannot be seperated from the theology. It is hoped, however, that this could provide a basis upon which further analysis on Church Design may have roots and from where theologians may relate the development of church forms to theology. Eventually this could serve as a starting point for the realisation

of certain relationships between form and meaning about which consumers of buildings are often largely ignorant.

The material in the report has come from three main sources viz-written literature, Oral discussions and finally author's own observation and experience. The Literal Sources are acknowledged as they appear in the text.

The study is started with a panorama of church development, the Early Church Buildings, the Medieval and Finally the Modern. This is done with bias towards discovering the forces that have shaped and are still shaping the Church as a building. From this study, a concept of the plan is eventually derived relevant to place and time.

Following this, the programme and analysis of design is stated. Included also are technical studies such as on the choise of site, Acoustic's, lighting and structural design concepts adopted in the Design. An abstract explaining the motivation, aims and objectives of the project are discussed at the beginning of this publication.

CHAPTER ONE.

PART I. - GENERAL.

The History of the Church is traced in order to explain the purpose of church rooms from evolution through the ages. This is intended to identify the special requirements of Church Buildings the point from which one could start design.

Religion itself is as old as man. The gods men worship has persisted across ages despite the collapse of various civilisations. Hence the first pre-requisite to religion is the acknowledgement of a power greater than Human.

From earliest times the houses of god (caves, forests, mountains, tombs etc.) are proof of man's abiding effort to explain the mysteries of birth and life and death. Each place of worship can be seen as an attempt to translate myth, symbol, dogma and ritual, into Earth Stone and Wood.

Gods are approached in an offhand manner and their dwelling places are characterised by serious, vital, sometimes lofty, sometimes dangerous purpose to which they are consecrated. Many of such places are stupendous, overwhelming and informing the imagination. Indeed the existence in everyland of a

great number of mighty religious sanctuaries and ceremonial centres is a witness to more than organised, large scale protracted labour. It suggests perhaps, that man stands apart from all other creatures not only as a tool maker and word maker but as a worshipper and temple builder as well. In this panorama of Christian Religious Buildings, we may observe the flow and the flowering of religiou's concepts and architectural motifs which preceeded and often moulded those of our own day. Like us, early man was concerned with the ultimate relities of life and death human fertility; the daily struggle for survival and the ever present threat of extinction. Faith created myths, images and sanctuaries to deal with fear and wonder, longing and hope.[1]

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[1] Houses of God by Jeannette Mirsky 1965-Introduction.

PART II. EARLY CHRISTIAN ARCHITECTURE.

Church as a word, has two meanings - the building used for Christian Worship and the religious Community of Christians and therefore conveys how intimate is the connection between Christian Architecture and the doctrine of fellowship with Christ and the brethren.

Ecclesia, a Greek word, was used for the Jewish Congregation, when the Scriptures were translated from Hebrew for the Greek Speaking, Hellenized Jews of Alexandria. Later, Ecclesia described the Christian Community. The word can Serve to remind us that Christianity as both Doctrine and edifice began as a Jewish sect and grew to power in a Hellenistic world ruled by Rome.[2]

A specifically Christian type and form of places of worship and hence of Christian Architecture, rose relatively slowly after tne spread of Christianity. For a long time spacious private houses sufficed for the needs of worship (preaching and the Lord's

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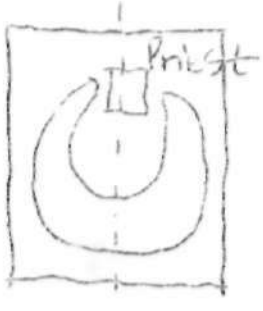
2 Houses of God by Jeanette Mirsky 1965.

Super), as related in the Acts of the Apostles (Ch. xxviii, vs. 30-31): 'And Paul dwelt two whole years in his own hired house and received all that came unto him. Preaching the Kingdom of God and teaching these things which concern the Lord Jesus Christ, with all confidence, no man forbidding him.' Domestic Churches of this type continued in use far into the C3 and C4. The most important rooms were a small assembly room (with a Dais for the Bishop) for Sermons and Eucharist, and a smaller room (with a tub at one end surmounted by a canopy) for baptism. There were subsidiary rooms for charitable purposes, a vestry and for housing priests and church officials.

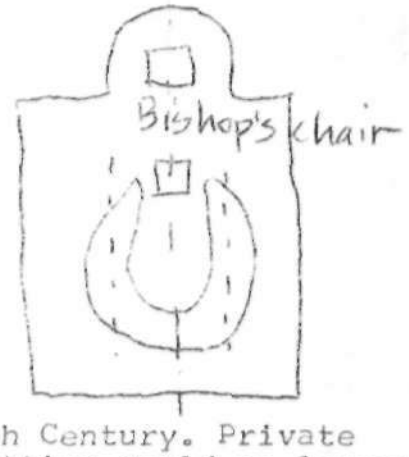
When Christianity became publicly avowable under constantine the great (306-37) and was clearly favoured by him, it felt the need of more formal places of worship. For tnis the Roman Market Basilica was taken and adapted to local and Lithurgical needs. Colonnades added to the long nave, lit by windows high up in the wall, created Aisles on either sides of it. The nave was covered with a gable timber roof and the aisles with lean -to roofs against the wall above the columns of the nave. The west end was preceded by an Atrium. An apse terminated the

east end producing a clear longitudinal emphasis in contrast to the transverse orientation of the classical basilica Constantinian Buildings mainly adhered to this basic basilical schema, e.g. old St. Peter's and S. Giovanni in Laterano, Rome. In large basilicas the aisles could be doubted; there are sometimes a Transept before the apse, connected with the nave by a triumphal arch (St. Peter's) In place of the apse occasionally a centrally-planned termination was built (the octagon on the Constantinian Church of the Nativity, Bethlehem, and the supposed rotunda in the Holy Sepulchre).

illustration's



1) Early Christian Worship private setting. Intimate contact but still directional



4th Century. Private setting could no longer contain assembly. Public setting (The Roman Basilica) was used. Not clear if built by early Christians or adopted since this was the only public building form present at that time. Directionality enhanced.

PART III. MEDIEVAL CHURCH.

The Christian Basilica eventually underwent a number of variations: 3 Naves, 5 Naves etc., Roman, Gothic Baroque etc. but always the old traditional ground plan was followed. In order to appreciate fully the position of Christian Architecture during the Medieval period, a detailed study is included herein.

NOTRE DAME DE PARIS (12th-13th Century).

The history of Notre-Dame de Paris is not only one of a Gothic Church but also one of a 're-creation' of the Middle ages in the nineteenth century and a sign post of taste. Through the ages, many changes have been made in decorating and reconstructing various parts of the building. The State it is today is not therefore its pure state as built originally between the 12th and 13th century.

I have chosen to discuss it as a medieval church representing the Gothic style of building Cathedrals. It is chosen because it is believed that it is from its regions that a great part of our medieval art derives although its genesis took place at a far

earlier period than the Gothic.[3]

The need to endow the capital of Louis VIII with a Cathedral worthy of that name, the Personality of Maurice de Sully, the development of the first Gothic style were the three main factor's that explain the origin and style of Notre-Dame de Paris in its first state.

The builders at that time were either the bishops themselves or master Masons who often built for the royalties. The bishops and the kings were also in close Union. These builder-bishops visited one another willingly accompanied by their master Masons, exchanged views or at least competed with one another in excellence in the construction of the house of God. They often adapted styles of other Cathedrals for the construction of theirs and sought to achieve excellence that would contribute to the Glory of the bishop and the renown of the capital. Most of the Cathedrals therefore resembled. For example the facade of the Collegiate Church of Mantes is slightly earlier and

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3 NOTRE DAME DE PARIS AND THE SAINT CHAPELLE By Yves Bottinean p. 46.

very similar to that of Notre-Dame de Paris.[4]

The system of construction employed is the cross-pointed vaulting. This system probably started from the end of the 11th Century by the Anglo Norman style of Architecture which first used them in a regular manner for example in Durham Cathedral.[5] This then passed to the royal Domain. The principle of pointed vaulting is easily identifiable. Each bay of the building to be constructed is conceived seperately. The various webs of the vaulting rest on the ribs numbering four or six which cross at their centre, two sort's of arches frame the vaults: the transverse ribs which seperate the successive bays from one another and the wall ribs which mark the meeting of external walls and the web of the vault. (See illustration). The combination of these vaults with pointed arch were to provide flexibility hitherto unknown. The Architects learnt to balance the thrusts by the use of flying butresses then, taking the logic

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4 NOTRE DAME DE PARIS AND THE SAINT CHAPELLE by Yves Bottrineau p. 15.

5 Ibid. p. 14.

of their system to its utmost limit, they reduced the construction to a framework making it a stone, cage supported by multiple arches enclosing the vaulting and filling the intermediate space with immense stained-glass windows.

The Cathedral was financed from the bishop's purse; the produce of the soil, dues, rents, tithes levied by churches. It was endowed by gifts of all kinds such as those of Louis VII who gave two hundred livres and of those of dignitaries of the Chapter. Countles were the modest gifts, if one is to believe the legate, Eudes de Chateauroux who wrote: 'the Cathedral of Paris was to a great extent built with widows' mites.[6]

Most of the art treasurds were either done by great artists of the period invited to Sculpture the Cathedral or were donations by individuals and groups. For instance Anne of Austria donated a silver candelebrum (October 9, 1639).[7] The Paris goldsmiths also m made a number of donations every May.

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6 Ibid. P. 16.

7 Ibid. P. 32.

The overshelming emotion that can seize any man, even an unbeliever, when looking at a Cathedral like Notre.-Dame De Paris cannot be overemphasised. Of this Yves Bottineau wrote:- 'Those arches carved with foliage, those buttresses which support the walls and end abruptly like broken tree trunks, the freshness of vaulting, the shadows of the sanctuary the gloomy aisle, the hidden passages, the low doors, all these arouse a feeling of Labyrinthine forests, while enhancing religious dread, mystery and sense of the devine. The two lofty towers placed at the entrance of the building rise above the elms and yews of the cemetry and make a picturesque effect against the blue of the sky... the birds themselves seem confused and take them for the free tops of the forest, the rooks sweep around their summits and perch on their galleries. But suddenly vague sounds escape from the tops of the towers and drive away the affrighted birds. The Christian Architect not content with wanting to build forests, wishes, so to speak, to imitate their murmurs and, through the sounds of the organ and of suspended bronze, has added to this gothic temple, the noise of the winds and the thunders which roll in

the depths of the woods... The Union of poetry, of mystery, of admiration and of reverence that the visitor feels, even if he be merely a simple believer and does not walk beneath the arches, as Paul Claudel, to recover his lost faith is immense.[8]

The Cathedral is richly decorated. Sculptures of saints, Kings, queens, bishops and of many personalities of the Holy Scripture; Christ, the Virgin, Saints, martayrs etc. represented the world as conceived by Christians of the middle ages. The believer could decipher in the stone, then polychromatic or in multi-coloured glass, all that he should know, believe, or Hope. The decorations were done with majesty and monumental grauduer. The Cathedral is embellished with striking scenes pictures in stone.

As far as we can recreate it in imagination, the Cathedral of Maurice and Eudes de sully in its original purity was in the form of a latin cross, with the trancepts only just projecting. The choir was surrounded by a double ambulatory and the nave by a double side-aisle; neither the ambulatory nor

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8 NOTRE DAME DE PARIS AND THE SAINT CHAPELLE by Yves Bottineau P. 46.

the side aisle had external chapels. The elevation was in four stages; great archades, galleries, small roses and tall windows, the choir had been planned without flying buttresses. The nave on the other hand, had them from the start in double flight.

The Cathedral although venerable and richly decorated, was none the less inadequate for the capital of the Kingdom or even of the domain which was effectively subject to Louis VII. It was too small for great ceremonies. The plan in itself was n not original, the principal axis was deviated, there is inadequate lighting (efforts to improve on lighting were made later. Infact this might have restricted the Influence of Notre-Dame de Paris as the search for light was one of the essentials of Gothic.

Despite the demerits however, the Cathedral has also its merits. Its considerable dimensions are remarkably harmonious. Its great size proved by the double aisles, places it amongst buildings of exceptional dimensions at its time. See illustration on next page:

CATHEDRAL	(METRES) HEIGHT OF TOWERS	(METRES) LENGHT	(METRES) WEIDTH	(METRES) HEIGHT UNDER VAULTY
NOTRE-DAME DE PARIS	69.00	130	12	35
CHATRES			13.85	36.55
REIMS	81.50	138.70	14.60	37.95
AMIENS	65.00	133.50	14.60	42.30
BOURGES			15.00	
SENS			15.25	
BEAUVAIS			16.80	48.20
NOYON				22.70

SOURCE: NOTRE-DAME DE PARIS AND THE SAINTE CHAPELLE by Bottineau. P. 17.

The ratio between the supporting members and the total floor surface is very favourable: 17% C.F. Dome des Invalides 26.8%[9]. By suppressing the alterration of supports in the nave and by flattening the columns on the walls of the aisles, the builders

9 NOTRE-DAME DE PARIS AND THE SAINTE CHAPELLE by Yves Bottineau. P. 17.

saved a great deal of space. Vistas were dealt with skillfully - west front is beautifully treated, the strongly marked horizontal rhythm tempers the upsurge of its height without breaking it. Sexpartite Vaults were used in the nave. The master masons made them less domed than usual and thus diminished the thrusts on the side walls and transferred the stresses more precisely on to the springings; the walls could then be pierced by openings very large for the period. The fame of its sculpture was considerable and influenced the construction of other Cathedrals of its time.

It was during the medieval period that the concept of the Church Building as a monument was carried to the limit. This was meant to demonstrate the power of God in Grandoise Buildings.

A second concept in church design which also has roots in the medieval period is that of verticality. The Cathedral, were built to great heights and the towers and spires built even higher than any other building in the setting. The verticality principle is yet another aspect commensurate with special value.. The elements of monumentality and verticality are further discussed under the conceptual plan of the church.

PART IV-MODERN CHURCH FORM.

The major change in structure and form of the church plan started with the advent of Reinforced concrete as a technique of construction. This period was in 1922-23 when August Perret constructed Notre-Dame du Raincy. See fig_____. Perret substituted the Arch and Vault structure of the Medieval period with reinforced concrete column and vaults construction. This innovation was then perpetuated by Le Corbusier one of the fathers of Modern Freedom in Architecture. This freedom has eventually ushered in a new ground putting an end to the predicament which befell architecture in the 19th century when it experienced again and again in the old style of the middle ages and filled the land with Pseudo-gothic or some other style. The new freedom has enabled us to see new forms again and again in the Horizon; now circular, now square, and mutiangled, but always new and original.

Inorder to demonstrate the new freedom, its style and the place of emphasis, a detailed analysis of Notre-Dame-du-Haut at Ronchamp is discussed here under. This way a contrast is demonstrated by means of highlighting differences, for it was no

more a momument, no more a forest of columns but the artistic use of concrete in a fashion dictated mainly by the taste of the designer.

NOTRE-DAME-DU-HAUT AT RONCHAM.(Credit: Le Corbusier Architect.

Leslie larson believes that the natural light is a major factor in the evolution of this chapel. He wrote:- 'Once having entered and wandered about within its thick walls, is not easy to remain unaffected by the Chapel of Notre Dame-du-Haut, which terminates a step gravel road above the town of Ronchamp, in Eastern France... The exterior combines a substaintial concrete Mass, arching curves, steely convex in the three towers and gently concave in the roof line, and clean-edged rectangular wall contours contours containing trapezoidal openings of various sizes in the surface, patterned assymetrically. The perforations in the surface appear small and dark and suggest that perhaps the space within is likewise.

To the contrary, the interior space comes on one almost as a shock in its lightness and mobility. It is an agile space, which alternates between darting and flowing, but is never static. Upon entering

and allowing a few seconds for the eyes to adjust to the relative dimness, one is immediately impressed by the lightness in weight of the interior aspect of outwardly bulky walls and roof. This is a building constructed of concrete and the great thickness of the wall can be seen, obviously, but their bulk seems to recede rather than dominate the space within. The contours of the interior derive in an even more sweeping and dramatic way than those of the exterior, from the bold and yet intricate interaction between angle and curve. The forms are free, in the sense that they elude the classifying mind. But they are not free in the sense of being without reason or discipline. They did not elude the mind of Le Corbusier, their creator, but originated from his sense of space and substance and the interpretation of the two. The structure is very selective of the light it admits into its interior. In all instances the light, as it tries to enter, is squeezed through constricting opertures of different shape and sizes and arrives in the interior bearing the marks of its difficult passage.

The heavy mass of the roof is raised inches above the walls on small columns which go almost unnoticed. The impression is one of suspension from above rather than support from below. Light seeps in along this long thin line gently losing itself on the sweeping contour of the dark brown ceiling. Most of the rectangular and trapezoidal openings in the walls are relatively small at the exterior surface but splay out as they enter the building, forming a pattern of larger indentations on the interior side of the wall. Thus they follow the direction of the rays of light which naturally tend to spread out when once through a constricted opening. Compositions in clear and colored glass, simple but with enough delicacy to soften the bold indented forms of the openings, alter the light as it enters and produce a richness of pattern and colour. There are some larger areas of clear glass as well, which admit light more generously and soften. The dark-light contrasts of forms.

At the alter end of the space and surrounding a square, the double-glazed operature which holds a figure of the virgin and child are a series of tiny perforations which produce sparkles of light on the

surface of an otherwise opague wall. This strongly substaintial wall is a kind of inversion of the wall perpendicular to it which is dominated by the larger apertures. During the day, the only non-daylight source of light is a rack of candles almost sculptural in composition, near the alter end of the space. This is a dramatic use of an ancient light form within a space so dominated by newly modified natural light. As the candles burn down and some are replaced or go out, this composition of light changes and is in a continual flux as is the natural light from the movement of the sun. The combinations of the changing directions of the natural light entering the space through such a complex of openings, cause a continual modification in the spatial condition within.

There are many foci of visual interest in the interior which are produced by the combination of light and evolving structure. Whichever way one looks, from whatever position within the space, the assymmetrical composition of the visual field is agreably dramatic. The surface of the interior wall, a heavy textured stucco, produces an over-lay of small shadows, in varying contrasts according to the contours of the walls and the direction of the light.

Although the general mood of the chapel is non agitating, it is impossible for the eye to remain immobile. The contours, their molding revealed by the light, draw the eye and eventually the body in a pattern of movement around the space. Movement follows the walls which run straight, then turn a sharp corner, then curve. Along the way the space condenses itself into three rounded chapels, startlingly lit from above with a brilliance in the nature of a sudden updraft. This is part of the unexpected experience of dramatic lightness which contribute to the total unforgetable spatial encounter. The narrow height of these chapels also contrasts the broad sweep of the ceiling in the main space. These spaces within the space terminate above in the three towers which dominate the exterior.

The fowering spaces of the chapels are lit from above in a brilliant cascade of light which enters from high in the tower, behind the observer through patterned The light is reflected by the concoured walls behind simple alters providing an even transition from brightness to relative darkness on the surface, from top to bottom, of the space.

CHAPTER TWO.

THE DESIGN CONCEPT.

In this chapter, I have discussed results of study made of the doctrine of the church for which I am designing. Such a study is relevant because forms of worship normally pattern around a Doctrine. The form in turn determines resources required for the purposes of worship and their disposition.

A detailed study of the practice is first preceeded by a short History of the church. At the end of the chapter the important features of the church as relevant to Design are noted. Examples of existing churches in the state are included in the list of illustrations (figs. ' as further evidence.

All Denominations emerged out of the 16th century reformation whence we have two main branches of churches - the Catholic Original Parent stock and the protestant with its multifarious branches today.

The various branches have been introduced by reforms which included:- Martin Luther (Lutheran), Peter Waldo (Waldensians), John Wycliffe, Joh Hus, Huldrelich Zwingli, John Calvin, The Wesleys and

George Whitefield (Methodists), English Reformation (Anglican), George Fox (Quakers or Society of friends), St. Ninian and John Knox (Presbyterian) Rev. William Booth (The Salvation Army)[1] etc.

The denominations were founded not because the leaders wanted to innovate but because they considered that some part of Christ's Original Testimony has been forgotten or has been insufficiently acted upon by the main body. A denomination normally has emphasis on various aspects. The following brief notes illustrate this.

CATHOLIC.

Mother church. Denotes christian community which has continuously accepted authority of Bishops of Rome [illegible] Rests on belief that before his death Jesus Christ entrusted continuance of [illegible]ch to the apostoles and gave overall authority to one of them-St. Peter who was Bishop of Rome when Jesus ascended. This special authority has in turn passed to successors. Popes. Hence church is regarded as continuation of Christ's presence on

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[1] Extracts from the Architects Journal March 1966-Oct. 1969.

earth, hence the concentration of power in Clergy with the Pope on top.

ANGLICAN. (CHURCH OF ENGLAND).

Its Doctrine owes much to English response to the 16th Century Reformation. Most Reformation Churches limited their conception to Bible alone rejecting anything not found there especially developments after Biblical Times. Anglican Moderation retained the clerical orders of Bishops, Priests and Deacons. More frequent Communication.

METHODIST CHURCH.

Grew out of the Church of England, founded by John and Charles Wesley (born 1703 and 1707 respectively. Believe in Doctrines of evangelical faith and place emphasis on evangelical preaching. Evangelism rooted upon devine revelation recorded in Holy Scriptures. Believe in Preaching and Converting en mass.

SOCIETY OF FRIENDS (OR QUAKERS).

Originated through Preaching of George Fox (1624-1691). Motivated by political and religious conditions of England at their time. Quarkers have always been sure that life is more than creed.

Lived simple unostentations lives. Believe that God can communicate with Man directly. They do not partake of outward Sacraments. No separate Priesthood. Do not require members to subscribe to a creed and do not make use of Prayer Books for worship-so no pre-arrangement of any individual with responsibility to lead worship-any member can lead prayer.

PRESBYTERIAN CHURCH OF SCOTLAND.

Claims to be continuation of Celtic Church. Grew from Missionary activities of St. Ninian, first brough Christianity to Scotland C. 397 A.D. from St. Columbia. Also a reformed church. Basically emphasises a church government based on Courts containing both Clergy and Laymen. The Courts have general spiritual oversight of congregation and parish. Ministers recognised as teaching elders and the laymen as ruling elders. Believe in the priesthood of all believers. Greater stress on preaching of the Word than Holy Communion. Not necessary for any human being to come between God and a Worshipper-the only mediator accepted as Jesus Christ.

THE SALVATION ARMY. (SALVATIONISTS)

Arose from evangelical meetings conducted in East London 1865 by Rev. William Booth, a Minister of Methodist new Connexion. This Body modelled on John Wesley. Booth decided to take the church to the people-His Services held in open air, tents, theatres. Used brass bands playing secular tunes to accompany hymns. Converts (soldiers) wore uniforms. Regarded care of poor and rehabilitation of outcasts an essential part of the church - campaigning for social Justice and Religious Liberty. 1878 became known as the Salvation Army. Today one of most respected social and religious organisation in the world. Believe that their whole life is sacramental devouted to the service of men and worship of God. It is this believe which drive the Army to March forward on its "war against sin" and the tragedies of affluence.

LUTHERAN CHURCH OF GONGOLA STATE, NIGERIA.

The church I am designing for, bears the name Lutheran indicating that the church has doctrine in line with the Protestant Practice as opposed to Catholic. This, however, a broad base definition

and posed a problem of nomenglature among the other denominations who are also reformed (e.g. Anglican, Presbyterian, Methodist etc). My source of information Hence had to come from interviews with the local church as to their specific practice and Doctrine.[13]

The practice of the church is first discussed on general basis with no reference to order of importance. The important or distinctive features are then noted. The church had its roots in Denmark, Britain and America. It started in 1913 with the arrival of Dr. Bronnum to Numan. He was sponsored by the Danish Branch of the S.U.M. (Sudan United Mission) who had links with the English and American Branches. A medical Doctor, He was detailed to bring the Gospel to the Adamawa Region by the S.U.M. Denmark. Information about this area was got from Dr. Karl Kumn who had earlier travelled across the Region on a fact finding mission.

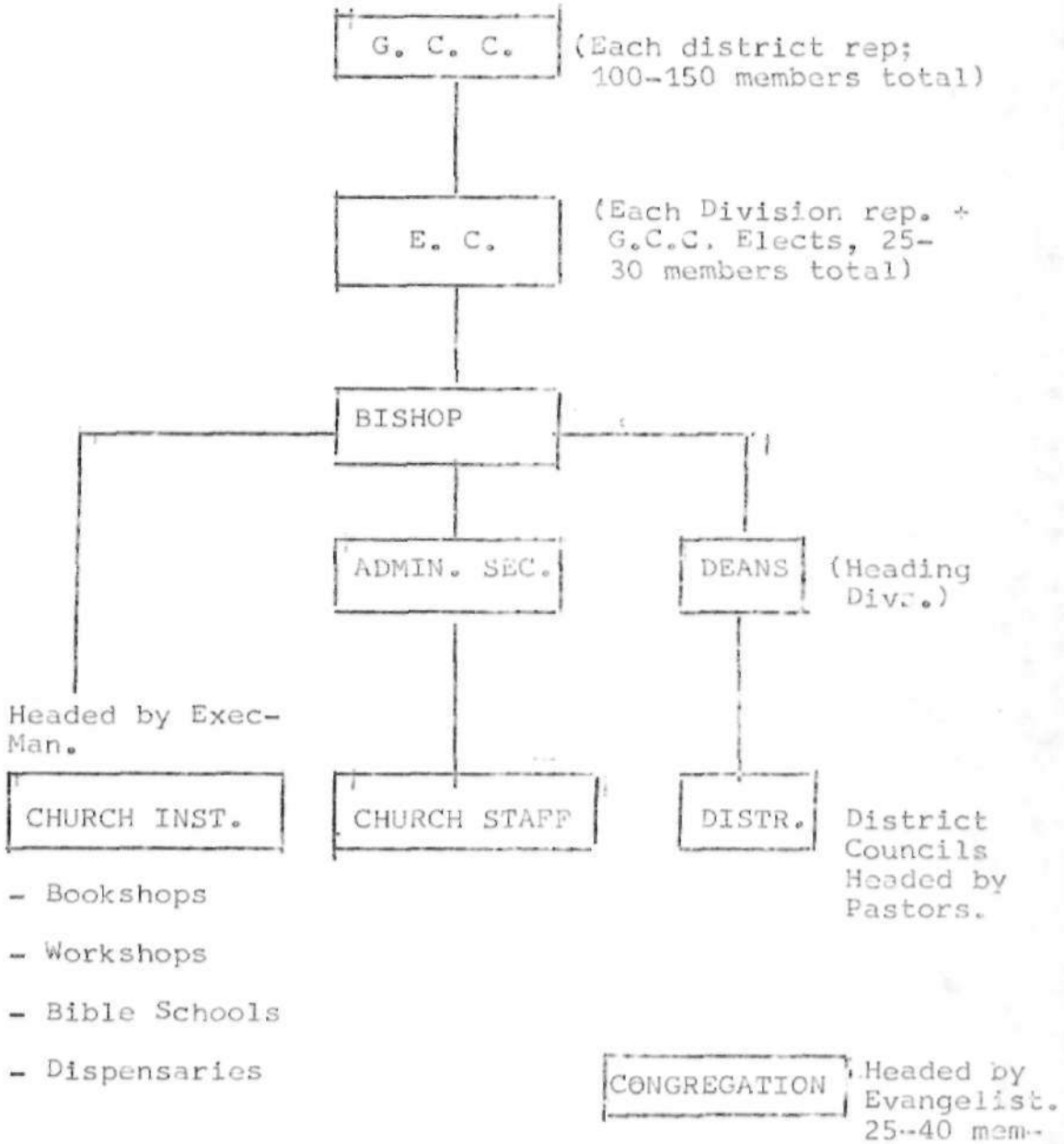
After Establishing the church in Numan and Environs, the church then spread into surrounding areas and eventually covered a large area. The church grew and developed as Nigerians were received into the church by Holy Baptism.

The church today, consists of a number of parishes called Districts. This structure most likely came due to two factors. First the spread of the Gospel was gradual. Churches were accomplished at different times and that depended on the resources of the missionaries, and the accessibility of the tribes. Secondly, the Area consists of distinct ethnical groups with varying cultures thus calling for the establishment of seperate churches in the different groups.

These smaller churches had their own Missionaries and local Administration in line with the original aim of establishing a church which could take its place among others as a self reliant and independent church. The various churches have been maintained as part of the Headquarters.

The church eventually became independent in 1957 ruled by a council. This council is made up of Elected representatives from all districts plus a number of missionaries appointed by the executive committee of the church. Since then, the church has been autonomous and runs its affairs maintaining external links only where they wish. An illustration of the present organisation is given (fig.

However all doctrines are as handed over by the missionaries.



Fif(xx) CHURCH ORGANISATION.

Source:-Rev. Wilson Sabiya.

Note. G.C.C.-General church council
E.C. -Executive Council.

After going through a brief History of the church, it is now my intention to discuss the activities that take place in the churches.

THE MINISTRY OF THE WORD.

Congregation arrive and take any sit. The Pastor moves straight into the sanctuary from the vestry which adjoins the sanctuary during service. The Pastor should be seen to preside over the assembly. In absence of Pastor, Catechist or Evangelist may preside but in which case President does-not wear Pastor's gown and omits some portions of service limited to the Pastor. Services generally last 1¼ hours with congregation seated except during singing when they stand. At beginning of service Pastor calls the congregation to confession of sins. Congregation confess their sins en mass. Pastor pronounces God's forgiveness to congregation. Subsequent activitie's such as reading of the word, singing continue. Pastor remains near alter between it and the congregation signifying his role as link between congregation and God. Pastor reads part of scripture in position near the alter but the sermon is always preached at the pulpit also on sanctuary stage located between alter and congregation. A

Preacher could be invited from congregation upon earlier notice. Any assistance example for the collection of offering comes from congregation. Announcements and notices are also passed at the pulpit usually by a clerk of the church.

BAPTISM.

The christening service or baptism generally takes place within the framework of morning worship. Although unbaptised members are allowed into service, full membership (Ecclesia) is only received after baptism. It is after this rite that a member is registered and has to pay annual subscription fees for renewal of membership. Done at Font which is located on sanctuary stage. The person wishing to be baptised moves forward to font where he receives baptism after promising to comply with the Doctrines of the church. In case of infants, parents answer on its behalf. The whole congregation is allowed to witness baptism but closer associates to the new member may stand in place of sitting or move near font. Allow ample standing room. It is done by scooping of water on the Head three times. Synonymous with the words: In the Name of the Father, the Son and the Holy Spirit. Only an ordained pastor is allowed to baptise.

HOLY COMMUNION.

Usually follows normal morning service. The wine and bread is prepared before the start of the service. Communion rail placed near alter where th those who have come forward for communion kneel before alter. The pastor stands facing the congregation and after blessing it, dispenses the bread and wine (latter in small individual glasses) to each of those who have come forward. A small trough should be fitted to the inside of the communion rail where communicants may place the empty wine glasses. Rail should not be massive in order to avoid feeling of Seperation between alter and congregation.

MARRIAGE.

The ceremony takes place in the church and may be in the framework of Sunday Service or any day as per arrangement. A choir may be in attendance. The couple stand in front of the congregation before the alter table and the Pastor Officiates facing the congregation. Only ordained Pastor can officiate at marriages. A central aisle in the church is advantageous for ceremonial procession of bride and groom.

BURIAL OF THE DEAD.

This is a special service done for deceased subscribed member. The pastor conducts a service in the church with coffin placed in front of alter in the sanctuary. At the end of the service the pastor goes before the coffin in procession and proceeds to the cemetry.

ORGAN/CHOIR.

An important in accompanying congregational singing only. They have no special importance and can be located anywhere.

CHILDREN.

Are allowed into service but not Holy Communion. They are encouraged to join Sunday School Classes seperate from service.

(1) Baptism has greatest emphasis including infant Baptism - Trinity. Also pre-requisite to Holy Communion.

(2) Communal Devotions encourage with maximal participation of congregation, Democracy.

(3) The Sanctuary house; the Alter, Communion rail/Font, pulpit and Pastor seats and all placed in front of congregation. Sanctuary is hence an important stage were lithurgical are performed.

All these elements are regarded as instruments by which the pastor performs his duty of a minister between God (Alter as his throne), and the congregation.

(4)Finally, there exists a cleric order which is illustrated below:

Bishop (overall Head, ordains Pastors w with help of Dean's)

Deans (Head Church Divisions consisting of a number of Pastors).

Pastors(Head Church Districts).

Evangelists (Serves a Church, as Leader of Congregation but no autonomy-as he cannot perform certain rites).

Congregation (Donot lead a Church. Participation through general service).

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CHAPTER THREE.

PHYSICAL FACTORS ANALYSIS.

Any structure designed for use by people must contribute positively to the comfort of occupants and must also function well for its purpose. The church is a building designed to accommodate a congregation for purpose of worship. It must therefore provide an environment conducive for the physiological comfort of users. In addition to phychologic need. Thus implies the provision of correct thermal, Acoustical and optical levels for the purpose of worship. In addition the structure must be secure strong and durable enough to protect worshippers from the weather and also should be phycologically and aethetically satisfying.

In this chapter, the structure is discussed with reference to these elements and an attempt is made to indicate my attempt in incorporating those factors in the design. It should be noted however that my attempt was to find a structure that would compromise these factors for there doesnot exist any structure that solves all problems optimally. After this, I proceeded to develop the structure which eventually was an embodiment of solutions to all the factors put together. .From this came concept which I have concretised into design form.

In considering material and form of construction, the major factors considered are:

(1) Stability

(2) Economy

(3) Adaptability

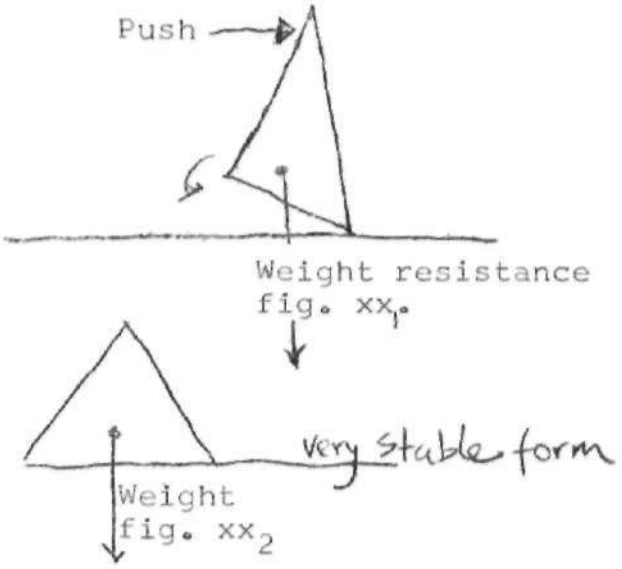
(4) Rigidity

(5) Maintainance Thermal Movement

(6) Noise Control

(7) Fireresistance

(8) Psychologifa



As illustrated in fig xx_1 & xx_2 above, the pyramid is itself a very stable form. The centre of Gravity G is very low and resists displacement very efficiently.

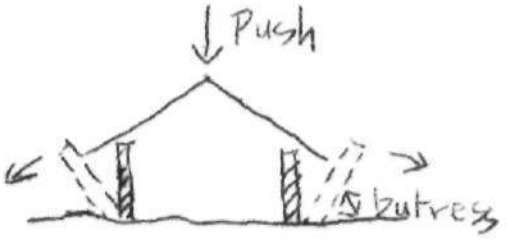


Fig. xx_3

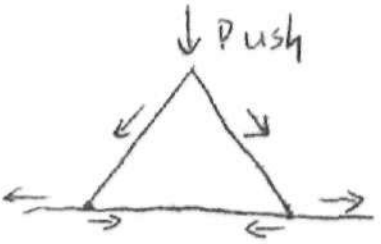


Fig. xx_4

The triangulated form is also a rigid one. The arrows in fig xx_2 illustrate how the members effectively and efficiently resist forces. This form also solve the problem of buttressing which was a problem in medieval Cathedrals.

In the choise of material, insitu reinforced concrete construction is taken over steel construction after an analysis of their suitability to the project. Table xx_5 below in the next page gaves a brief summary of comparisons.

The third advantage of the pyramid from apart from stability and rigidity is Economy in resisting stresses.

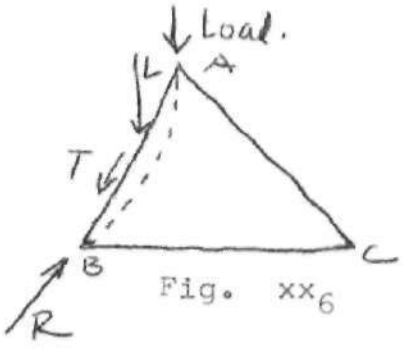


Fig. xx_6

Fig. xx_6 above indicates the transmission of forces T resulting from loading along member AB. This force is met by resistance R provided by the soil. The member AB is thus placed under compression. There is also a tendency for AB. to bend along dotted line thus creating flexural stresses. Reinforced concrete hence serves as an economical material in resisting forces in this structure as the compressive aspects are resisted by the concrete while the tensile aspects are resisted by steel reinforcement.

TABLE XX_5

STEEL	REINF. CONCRETE, INSITU
Higher fire risk	- Lower fire risk.
Higher Maintainance-costs e.g. painting of members difficult especially at joints, difficult to clean	- Lower maintainance costs maintainance limited to surface decoration.
Specialised skill for construction	- Local Unskilled Labour can be used
Dry form of construction an advantage	- The use of formwork adds to estra costs. However flat shuttering is an advantage.
Danger of corrosion	- No deterioration due to corrosion since o_2 and CO_2 necessary for the process is excluded.
Double covering for waterproofing and soffit.	- Only waterproffing necessary as concrete surface may be finished as soffit.

Adaptability and flexibility were also form and structure determinates. Absence of internal supports are good not only for acoustical and visual consideration, but also allows for a high modification index. The interrior can be planned freely. This also implies an economic achievement as maximal floor area is achieved.

Psychologically, relaxation comes from structure designed in an obviously logical manner. The concrete heavy beams have also been moulded in a fashion commensurate with the concept of one evalasting God.

Regarding thermal movement, the structure is designed in a way it could be easily subdivided. This subdividion is illustrated in fig. xx_7 below:

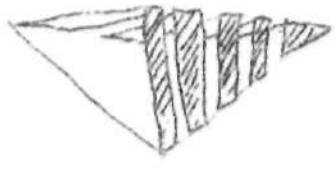


fig. xx_7

Note- Each Unit is structural thus enabling easy subdivision for thermal movement.

ACOUSTICS.

Excessive reverberation and lack of speech intelligibility are the main acoustical defects of medieval churches, particularly large ones. These acoustical characteristics have not only influenced the style of organ music composed for the church but also have left their mark on the lithurgical pattern Furthermore, the adoption of polyphonic choral music, the chanting of words, an perhaps even the use of archaic tongue may have been associated with the highly reverberatd conditions prevailing in medieval churches.

According to the Lutheran concept of Lithurgy, the congregation must be engaged in a dialogue between the celebrant and his attendants. Since the congregation participates in the musical portion of the service as well, churches should be designed both architecturally and acoustically, to facilitate and encourage this verbal and musical dialogue. As a result, the following points were observed in the de designed .

(1) The chancel and pulpit are well elevated and should be surrounded by reflective enclosures in order to provide favourable

conditions for the projection of speech sound toward the congregation. Chancel is elevated as far as sight lines will allow. This is also in line with psychological reason for elevated alter area.

(2) The organ and choir should be in an area that provides a favourable acoustical environment for music, and they should be surrounded by reflective surface without creating echoes, flutter echoes,or sound concentrations. The spatial relationships between organist, organ, choirmaster, and choir must be carefully considered. In desi design, organ and choir are placed on raised level (balcony) at the entrance end of the church opposite the alter.

(3) Coupled spaces need individual reverberation control so that reverberation conditions in them will not conflict those prevailing in the main body of the church. To this end, the stage area (sanctuary) and the auditorium (nave) are designed within one volume of space. This has advantage over those passed

on coupled spaces such as the cruciform plan where the trancepts are acoustically disadvantaged areas. The balcony is well integrated acoustically and the hexagon (inclined walls) make good sound dispersers. See fig. for illustration.

(4) Extraordinary case should be exercised to eliminate noise as a pre-requisite for mediatation and prayer of marking and disturbing effects). To this end the choise of site for church takes good care of external noise. Also noise insulation is considered in construction detail, of church (Impact noise from rain). Furthermore the retaining/screen wall around church provides noise buffer. Floors to hall and balcony are covered in cork tiles to minimise impact noise due to congregation movement. Cork tiles are preferred to carpeting for ease of cleaning.

(5) Care is taken to minimise volume of auditorium-essential for the control of reverberation recommended optimum vol/seat

for protestant churches = 7.2m^3 Achieved is 4.5m^3. This is due to inclined effect of enclosure, in reducing overall vol.

(6) Shape of hall is chosen to minimise echoes and flutter echoes - ceiling/floor not parallel, fan shape in plan is adopted thus minimising occurence of multiple reflection- this inclusion is kept within 140^o recommended in respect of the directionality of sound[11] from parallel surface - flutter echoes. Also inclined enclosure, encourage sound dispersion. Furthermore enclosure are finished in rough gun sprayed acoustical plaster to enhance sound dispersion.

(7) Intelligibility of speech and music in the church hall is a necessary pre-requisite as stated earlier. This aspect is imprtant as the effectiveness of Sermons depend on whether the word of God (Ministry of Word) as spoken by the preacher is heared by the

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11 Environmental Acoustic by Leslie L. Doelle P. 63.

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congregation. Owing to the capacity of church unamplified speech will not produce adequate loudness (what is optimum capacity?) Sound Pressure or Acoustic power to reach and be heard by audience at the farther end. As such an electronically aided speech system is proposed. An inbuilt central speaker system fed by microphone built into the chancel and pulpit from where the ministry of the word is spoken is employed. As for music the practice has been for the congregation to sing together. The church auditorium is designed with bias to optimum reverberation for music.

$T = \frac{0.16V}{A + XV}$ where T = Reverberation Time in Sec.

V = Volume of Auditorium in m^3

A = Total Surface Absorption

X = Air Absorption Coefficient

As electronically aided speech system is proposed there is no need of placing reflective surfaces (panel) near the sound source or suspending them from the ceiling to provide short-delayed reflected sound energy.

(8) Portable chairs used. These have a negligible amount of upholstering thus providing an insignificant absorption. In the design for T, effect of chairs are neglected only effect of audience considered.

(9) Level flooring is desired in order to minimise theatrical effect. This makes it difficult to supply the audience with direct sound and further confirms the need for an amplified speech system.

FIRE.

Fire is not a mauor determinant in the choise of material because fire risk in church buildings is low: The main fire source is electrical. However, the choise of reinforced dense concrete construction is of advantage over steel construction. The number of exits and their widths is such that the congregation could evacuate in 2½ minutes. Minimum number of exits from a room or storey according to regulation standard for up to 2,000 persons is seven.

LIGHTING.

It has been realised that the visual experience of a human being represents a complex of factors. It is not merely the work plane in simple brightness ratio to the background that matters. Consideration should be given to impressions of light and shade in their variety of manifestations in the total field of view. Lighting is not simply providing comfortable intensity level on the visual task without glare, with the surrounding area in properly reduced contrast.

The existence of many planes, of many objects in various relationship to each other and the various planes which add up to foreground and background should be recognised and an attempt made to recommend lighting which would drawn from the visual scene its multiple interest. The Human being who is performing the visual task as part of his human activity is alos given central importance in planning the lighting system. To this end, the following objectives were sought in choosing a lighting system for the church.

(1) To respect psychological interest of worshiper by
    (a) creating a mystical atmosphere essential for meditation.
    (b) reducing feeling of confinement.
(2) To direct concentration on alter.
(3) To create visual interest within space by:
    (a) revealing character and contour of building
    (b) combining shadow and brilliance for contrast
(4) To design light source as integral part of building.
(5) Provide sufficient lighting for visual tasks.

The means of achieving objectives above included the use of:

(1) Natural daylighting.

(2) Artificial lighting (flourescent, incandescent, Hg.vapour)

(3) Potentials of structure (character, details, texture)

(4) Use of coloured glass (stained glass).

Table xx in the appendix indicate various illumination levels.

THE SITE.

The centre is sited within the Yola Urban Area. The Urban structure is one made up of three discrete population centres which are: the Yola traditional town, the Jimeta Township and thirdly the Bajabure layout. I have located the centre within the Bajabure layout for a number of reasons.

The Yola centre has a predominantly Moslem Population while the Jimeta Township has got a number of churches which serve the population sufficiently. In fact the Lutheran church is building a new church of capacity 2,000 beside the old one. Furthermore there is a case of suitable land shortage in the Jimeta area.

For reason of maximal utility and also availability of more suitable land at lower cost, I have proposed that the centre be sited in the Bajabure area. This settlement is devoid of any church building.

The factors determined the site chosen within the Bajabure layout itself. These are:

(1) Raised terrain for conspiciousness.

(2) Quiet zone necessary for meditation.

the site chosen is at the Head of Jimeta Bridge off (but not directly) the Jimeta, Maiduguri Highway. Site features are illustrated in figs (xx-yy) at the end of the publication. Table xx on the next page indicated the constraints and possibilities posed by the site. The main advantage of site is the absence of conflicting land use. The site is sufficiently removed from traffic network. It is set in a residential area with nearest Business/Commercial centre more than ½km away. The soil is good for building (hard bedrock good for foundations). Land also slopes away from site making for easy drainage.

TABLE XX.

CONSTRAINTS.

- Limits overall Symetrial site planning - delimits building and into discrete patches	TOPOGRAPHY-	Site irregular characterised by rock out- crops, troughs steep & gentle areas	-encourages a Symmetrial site plan -Suggests planning in clusters -use of stone as building material -Use of stone as landscape elements (sculture) -Use of differences in levels
-Master landscaping policy	VEGETATION-	Poor, few trees (Boobad) Cotton trees) with area generally of shrub bush & patches of wild grass No Springs, pools existing	-good planting soil on highest points with exposed rock basements in troughs. Good basement for water retention.
-Higher costs for water supply.	PLACEMENT-	Site generally higher than surrounding 30m(180-210) above primary road level.	-good view of general surround (Jimeta town, Benue river, bridge and interstate roads). -approach by foot is possible all round(existing tootpaths) interesting. -Site naturally delimited, generally quiet with cool breeze. -Lower costs for engineering works e.g. storm water drainage, sewage disposal by gravity.

SITE PLANNING CONCEPT.

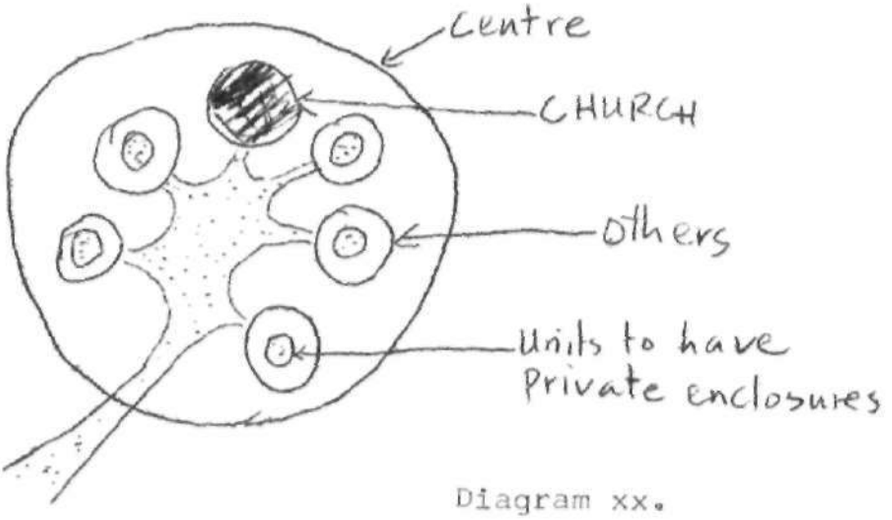


Diagram xx.

Diagram xx above illustrates the concept used in laying out facilities on the site. The large circle represents the whole site while the smaller ones represent the other facilities grouped according to similarity of functions. The circle representing the church is shown darkened.

The Planning objectives aimed at are:

(1) Good relatedness the units are placed around open space and access to any part is through it. This open space encourages interaction and also gives the centre a good visual connectedness, it is a place for socialising.

(2) Church is recessed to back from others commensurate with sacradeness of House of God. Also a quieter zone necessary for meditation.

(3) The Church building should dominate thereby serve as a signpost.

Yola has a latitude of 9°N. The climate can be described as tropical semi arid. The average maximum temperature is 39°C during the day in early summer. The average minimum temperature is 12°C at night.

Rainy season occurs from May to October. The Heaviest rainfall ever experienced was 75mm on August 15th 1977. The total annual rainfall is about 1000mm.

The wind distribution in respect of Yola can be classified into the following categories.

November - Early April.

North easterly or easterly dry winds with occassional gustiness of 15-18knots. There is the dry Hammattan haze with poor visibility.

Mid-April - October.

Humid southerly, south-westerly and westerly winds with moderate or high humidity at night.

Late June-September.

Occasional heavy squally thunder storms with rain. Wind gustiness of up to 50knots are usually experienced. There are damages of up rooting of trees, removal of roots, market stalls etc.

Yola happens to be not and humid at most times in the afternoons.

SEE DIAGRAM XX FOR ILLUSTRATION OF CLIMATIC CHARAC= TERISTICS.

STRUCTURE/HARDWARE.

The Hardware is chosen with Psychological factors given paramount importance. These include:

(1) Manifesting a religious atmosphere necessary for meditation. Problems considered here included:

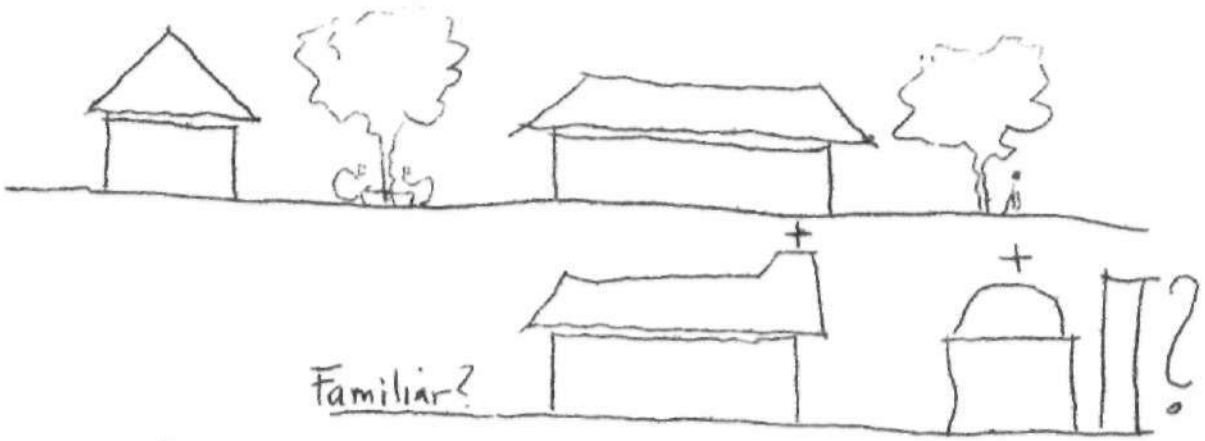
- Spatial quality
- Use of light and dark
- Use of solids and voids
- Contours and texture
- Symbolism.
- Verticality/monumentality.

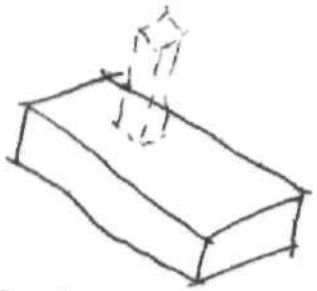
of the forms analysed, the one chosen is based on

(1) Symbolical meaning to users.

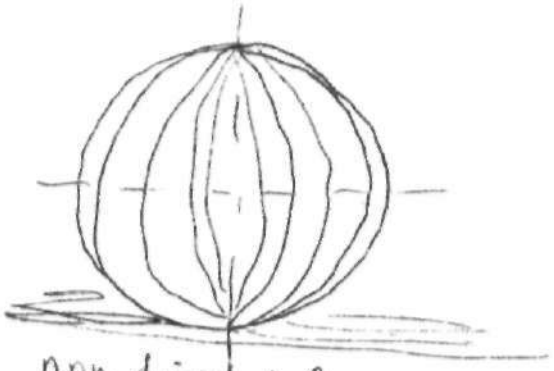
(2) a form that minimises contradictions between its own formal requirement and the functional requirement of users.

Figs xx illustrate certain forms that were looked into.





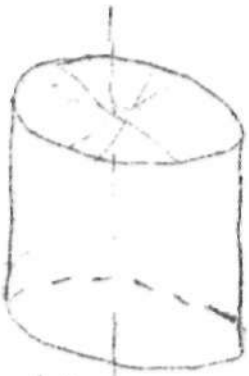
Basically horizontal



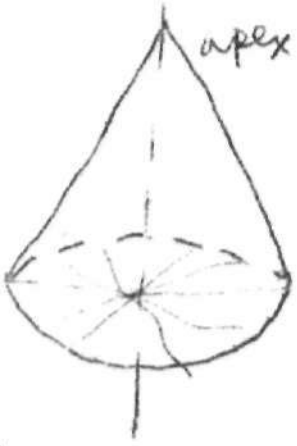
non directional



vertical ?



Directional, no apex







apex, verticality.

ACCOMMODATION SCHEDULE (PROGRAMME)-PROPOSED

The following components have been catered for: Administration, Teaching, Library, Bookshop, Housing, Church building.

ADMINISTRATION./

SPACE	AREA in Sq.m.	Remark
Bishop's Office	34	Office + Sec. + 1w.c.
Director	34	- do -
Clergyman/Secretary	24	Office + 1 w.c.
Vice Clergyman	24	- do -
Choir master	10	
Accountant	10	
Estate Officer	10	
General Office	70	10 clerks at $7m^2$ each.
Maintainance	10	
TOTAL ADMIN.	226	

/TEACHING/

SPACE	AREA in Sq.m	Remark.
Classrooms ($3a + 6u_m^2$)	192	Also used for conference, workshops. To have good connection with outdoors, eventually bigger conference hall. Activities include Bible translatios, Refresher Couses.
Storage (3 at 12_m^2)	36	
TOTAL TEACHING	228	

/LIBRARY/

SPACE	AREA in Sq.m.	Remark.
1 Librarian	18	
1 Asst. Librarian	16	
1 Meeting Room	24	
2wc+2ub	8	
Entrance Foyer	64	Pissibility of using Foyer for exhibition.
1 Reading Room	64	
1 Ref. Section + Journals	64	
2 No clerk offices	24	
Storage	64	
TOTAL LIBRARY	346	

/BOOKSHOP/

SPACE	AREA in Sq.m.	Remark.
Shop	64	
Store	32	
Bookshop Admin.	64	Admin includes waiting, photo copying rooms, manager's office.
6		
TOTAL BOOKSHOP	160	

/HOUSING/

SPACE	AREA in Sq.m.	Remark.
1 Director		
5 Bedrooms at $16m^2$	80	
Lounge	25	
Dining	9	
Kitchen	9	
Store	4	
2wc+29h+2wb.	10	$137m^2$ Total
1 Clergyman/ Secretary	- do -	$137m^2$ Total
1 Vice Clergyman	- do - 4 Bedrooms	$121m^2$ Total
1 Choirmaster	- do -	$121m^2$ Total
1 Accountant	- do -	$121m^2$ Total
1 Estate Officer	- do -	$121m^2$ Total

SPACE		AREA in Sq.m.	Remark.
12 Junior Staff at 89m^2 each	1	1,068	1,068
Bishop's Lodge			
1 Bedroom at 25m^2		25	
1 Lounge at 30m^2		30	
1 Dining at 30m^2		30	
1 Ferrace at 30m^2		30	
1 Kitchen at 7m^2		7	
1 Laundrette at 7m^2		7	
1 Bathrooms at 7m^2		14	143m^2 Total
Visiting Lectures.			
5 Nos. each			
B.R. at 25		125	
Lounge at 25		125	
Kitchenette at 7		35	
Bathroom at 7		35	320m^{2}Total
TOTAL HOUSING		2,289	

/HOSTELS/

SPACE	AREA in Sq.m.	Remark
72 Rooms at $10m^2$ each	720	$874m^2$ total
Toilets at 0.2 per student	157	$874m^2$ total
Cafeteria for 350 at $1m^2$ per student	50	
Kitchen and storage	50	$100m^2$ total
Common room	50	$50m^2$ total
TOTAL HOSTEL	1,024	

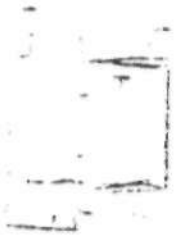
/CHURCH BUILDING/

SPACE	AREA in Sq.m.	Remark
Capacity 2,000 at $o.6m^2$ per seat	1,200	
TOTAL CHURCH ROOM	1,200	

ILLUSTRATIONS.











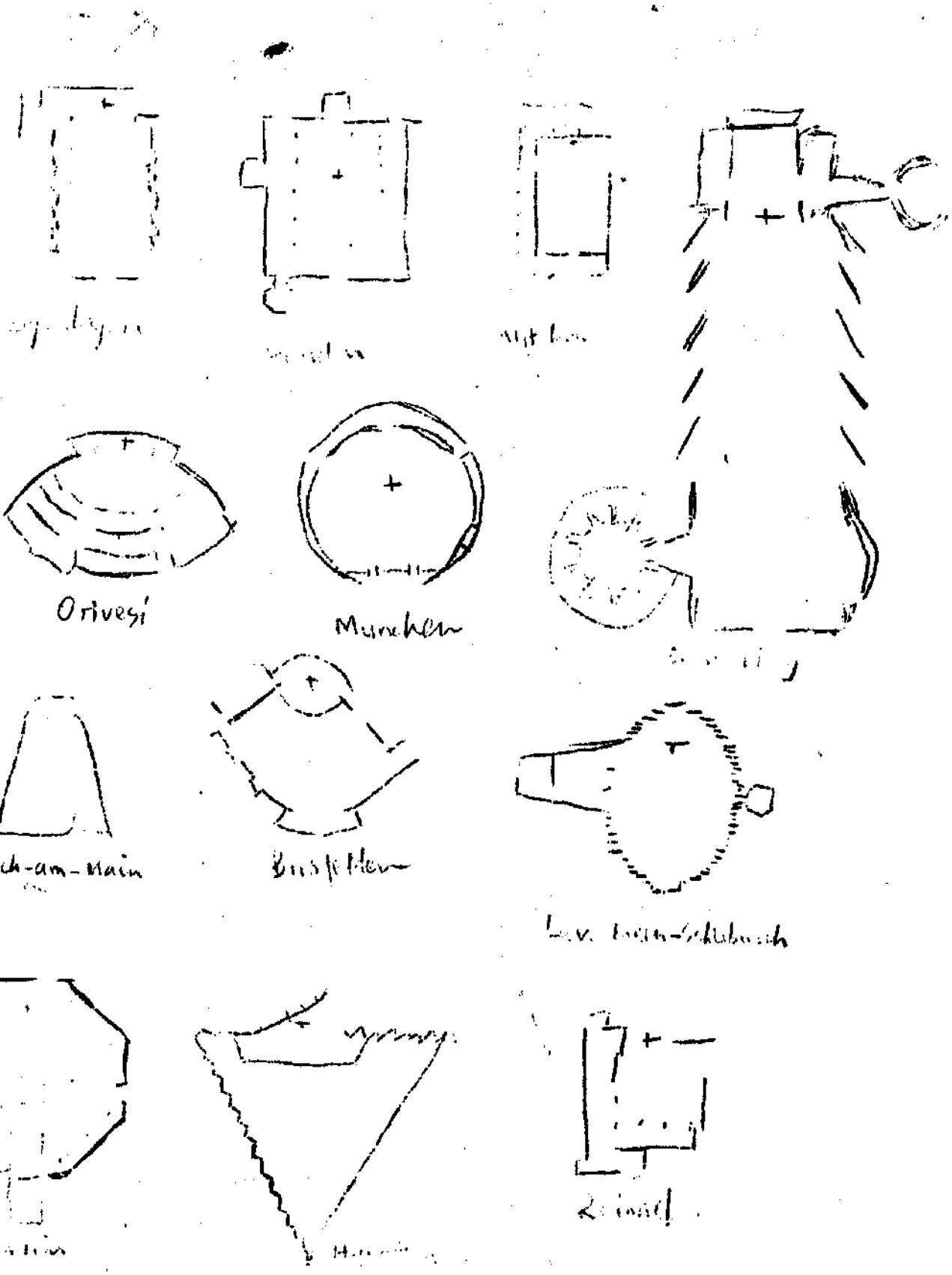


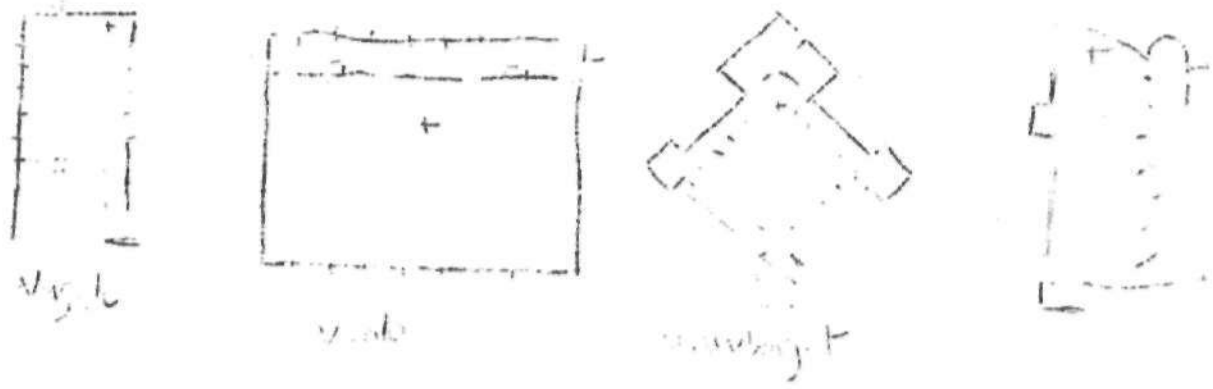


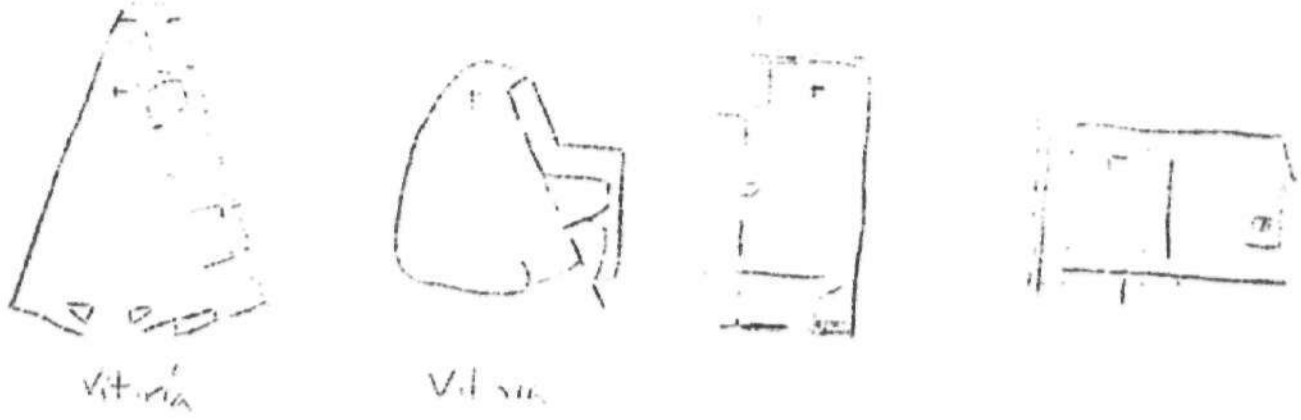


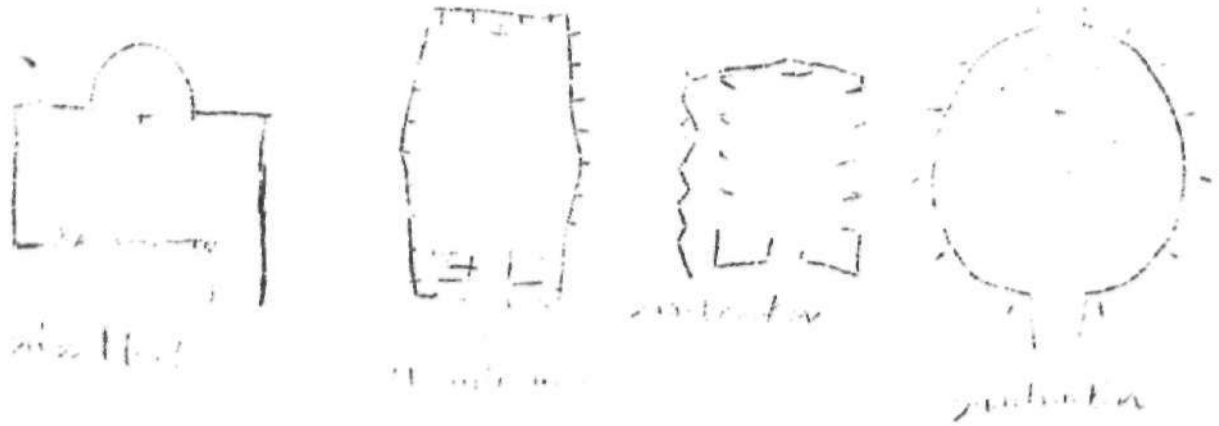


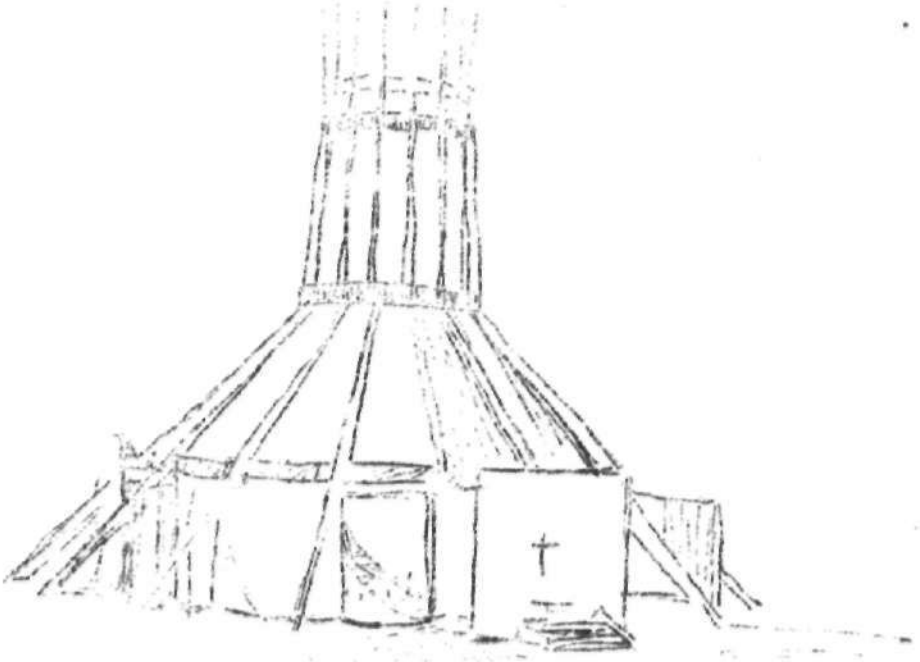



Ortivesi
München
Höchst-am-Main

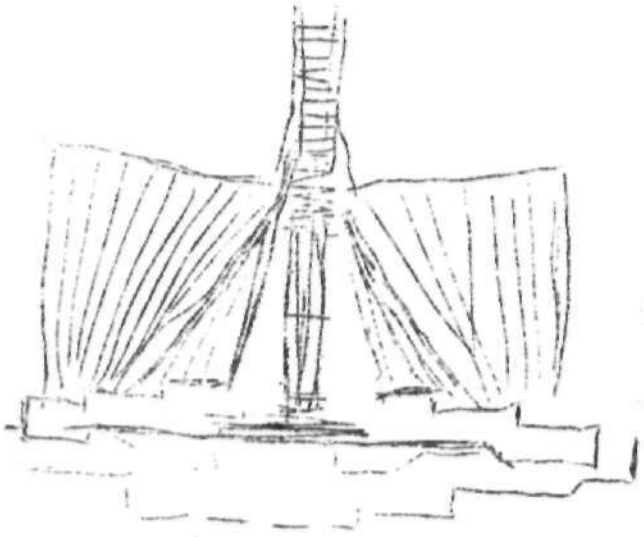


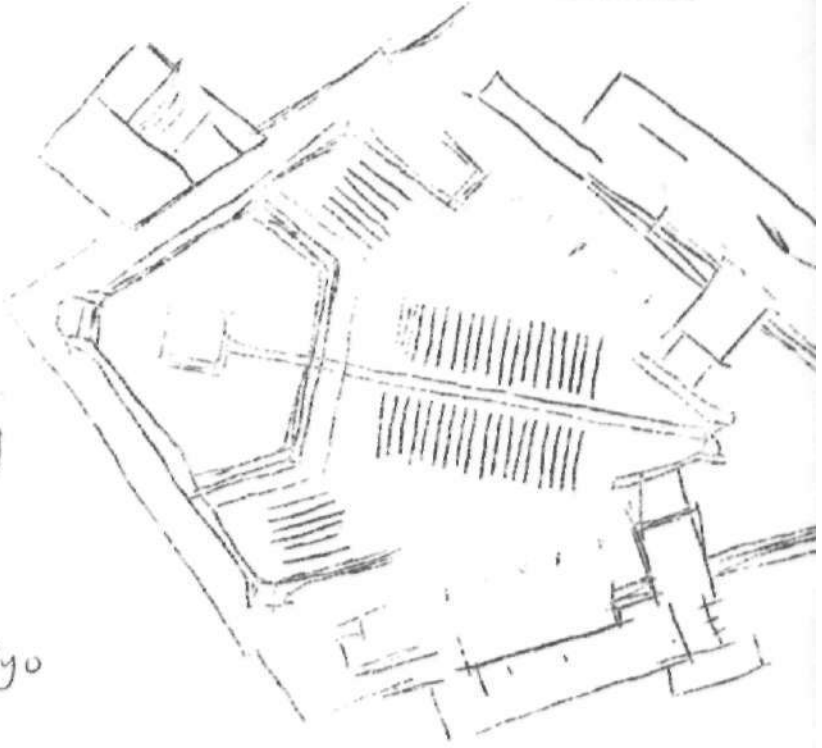






Cathedral of Christ the King
Liverpool





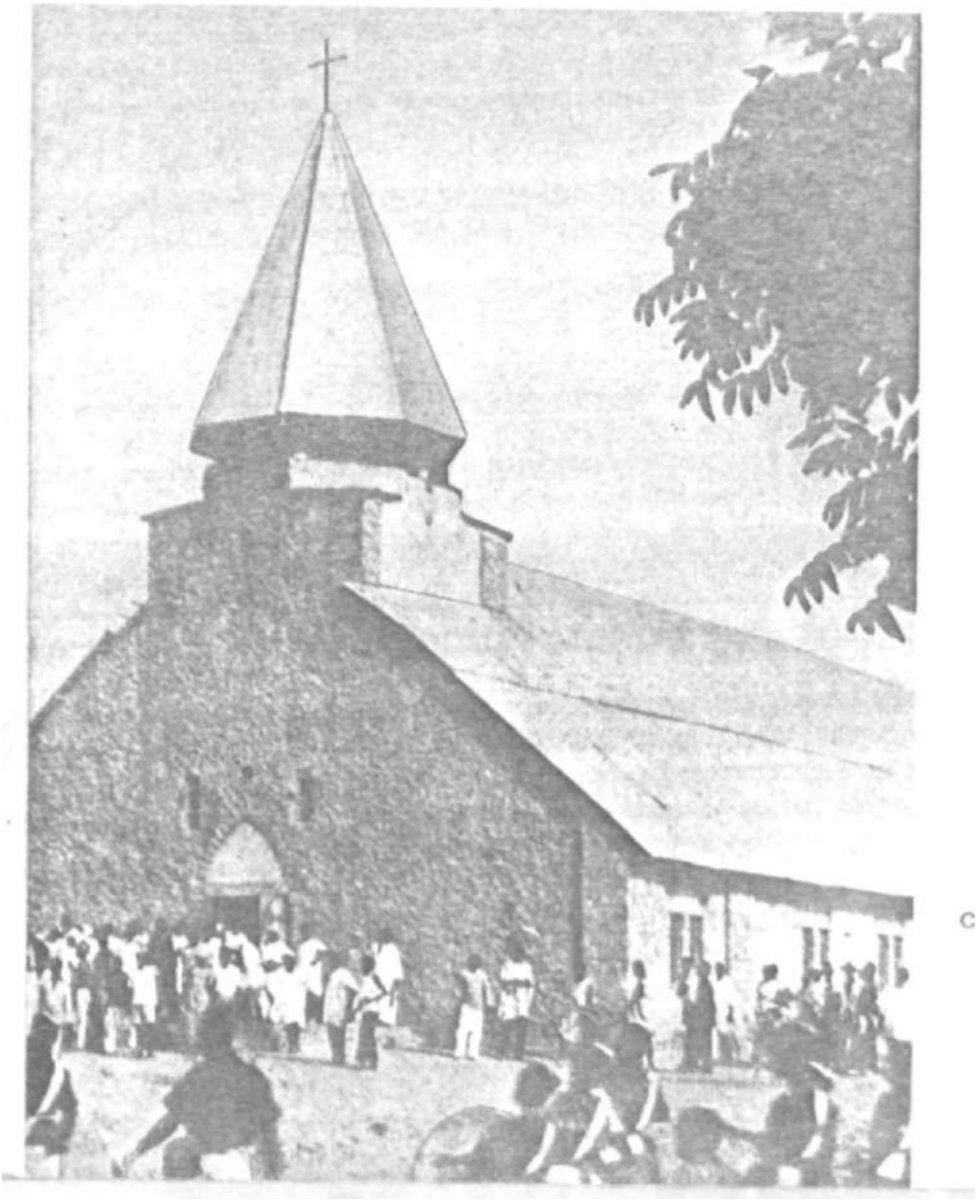
St. Mary's Cathedral, Tokyo
Kenzo Tange.



Kefas and Benauto



St. John's Church (1916)



C



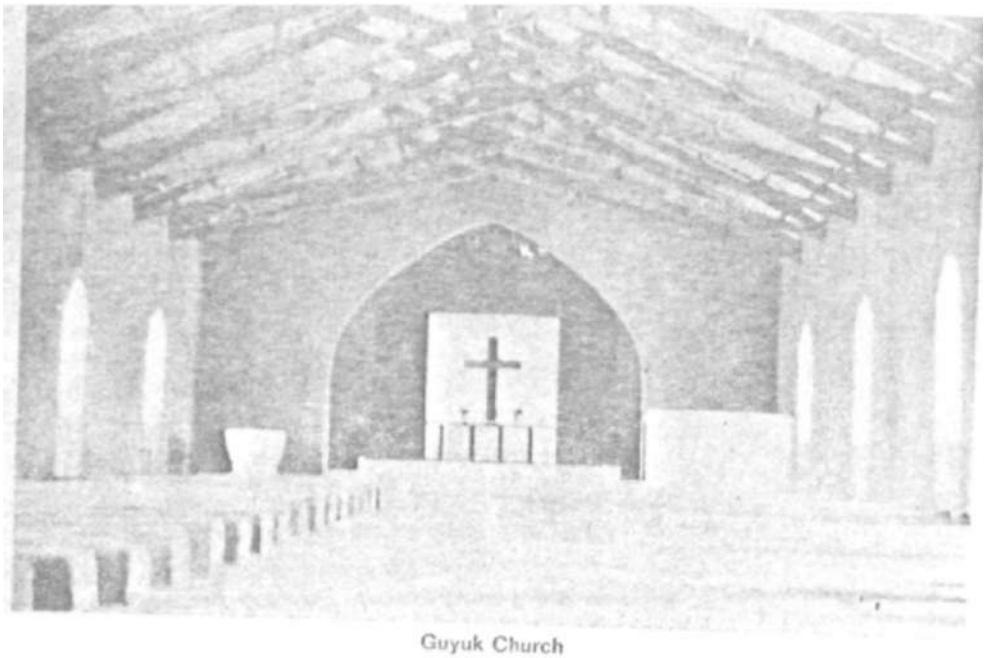
Voice of the Gospel
Studio, Jos



Theological College,
Bukura



Lutheran Church in Jos



Guyuk Church



Pastors' Class at Dashen (1965)

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