PROPOSED MUSIC ACADEMY

FOR

INTERNATIONAL WORSHIP COMMISSION (I. W. C.) KADUNA

"ACHIEVING *SYMPOHNY OF ARCHITECTURAL FORMS*"

BY

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A Thesis submitted to the Post Graduate school, Ahmadu Bello University Zaria, in partial fulfilment of the requirement for the Award of Master of Science degree in Architecture (MSc ARCH).

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OCTOBER, 1998

DECLARATION

I, **OBANEWO TITUS ADENIYI**, hereby solemnly declare that this dissertation is an authentic documentation of my research work and has not been accepted in any previous application for a higher degree.

All sources of information are specifically acknowledged by means of references.

3/11/08

OBANEWO TITUS ADENIYI

Dedication

This Write-up is dedicated to the giver of Life, the perfection of beauty and plesantness - God Almighty.

And to every TRUE music minister of His Majesty.

CERTIFICATION

This project dissertation entitiled **PROPOSED MUSIC ACADEMY FOR INTERNATIONAL WORSHIP COMMISSION (I. W. C.) KADUNA "ACHIEVING A SYMPHONY OF ARCHITECTURAL FORMS" by OBANEWO TITUS ADENIYI** meets the regulations governing the award of the Degree of MSc. ARCH, A.B.U. Zaria and is approved for its contribution to knowledge and literary contribution.

Chairman Supervisory Committee	Date
Member Supervisory Committee	3-11-98 Date
Member Supervisory Committee	Date
Head of Department of Architecture	Date
Dean Post Graduate School	22/07/99 Date

ACKNOWLEDGEMENT

It is common knowledge that no sane man attains this feat of work without help from certain other good spirit, minds or bodies.

To this end, my appreciation goes first to my God and Father for preserving me and showing me so much Love, mercy and favour, causing me to attain to this point in life inspite of all seeming unsurmountable oppositions.

I'll also like to appreicate my Dad, Mr T. I. Obanewo who laid the foundation for this work, giving me the much needed education and never stopped seeking the best for me in life. Many thanks to you.

And to my Mum and all members of my family for your trust and believe in me, your encouragement in words and finances I say a big "thank you". Brother Francis, Brother Moses, Brother John, Brother Victor - I lack words to appreicate you.

And to all members of the RHEMA family always around to assure me of a destined success by way of exhortation and prayer - you have done well.

My Supervisor Arc. Dr. W. B. Qurix, always critical and inspiring, Arc. Yeboah, Arc. Sagada, Arc. M.D. Ahmed, Arc. Mukhtar and all who have at a point or the other contributed to my study of Architechture - I say I am grateful.

Rev. Bola Arowolo (I.W.C), Evang. Dapo Kale (Kale Vision Music Ctr. Kaduna), Minister Amusan (Rhema chapel Ilorin) for their overwhelming contributions on music and music training - thanks a great deal.

I won't forget friends, friends who stick closer than Brothers, Bro Tim, Phil, Inno, Musa, Bro Harry, Moses Odebiyi, Abdul and so many others - its been nice knowing you all.

And to Tosh (my understanding model maker) and Tessy (a friend and faithful typist), Major Whyte (you came in when it seemed too smoky) - thanks to you all.

Kai! the list is unending and might not be contained in this whole thesis pages. All of you, yes you, who have in one way or the other ministered to my life, my heart, my heart, my spirit surely and lovingly appreciates you.

God bless you all.

Love.
Titu

ABSTRACT

Of all sounds we hear or percieve, musical sounds are amongst the most pleasant to the ears and have been so organised, much more to possess such beauty and fineness to make them influence human emotions, serving as a means of communication, to advice, encourage, discourage, express or instruct. Thus Music has found wide range of use in work, Personal and social activities as well as in Ceremonies - religious and non reglious alike.

In the church, music is an inspiration for worship. Good music is a boost for qualitiativc worship of God. It is therefore essential that custodians of music in the church (Music ministers) be well trained in the art of music for worship, to fulfill their roles in the church. This training is the major cause of the clients of this proposal the International Worship Commission (I. W. C) Kaduna Chapter.

Moreso, training is an essential criterion needed for the proper development of an individuals potentials in music and like most forms of art, training requires an ideal environment, structure and facility in order to achieve its altimate goal.

The purpose of the author is to make a proposal towards the training process of musicians and on the other hand to discover and establish by synthesis a relationship between Arctitecture, music and worship.

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CHAPTER ONE

1.0 INTRODUCTION

The entirety of this write-up deals with three basic subjects: Worship, Music and Architecture and their relationships. The center of it all however is the provision of Architecture for Music training (to enhance worship).

This first chapter however briefly discusses the clients or users of the proposal, the purpose intentions, aims, objectives and scope of the entire proposal.

1.1 International worship commission (I.W.C)

The International worship Commission (I.W.C.) is an international, non denominational christian organisation committed to the spread of the Gospel of Christ and the worship of God across the nations of the World, including Africa, America, Asia and Europe. This commission was born in Accra, Ghana in 1988 at a crusade meeting. Since inception it has been committed to organising massive training all over the world. It has chapters in all countries, and in Nigeria in particular, it has chapters in all states or the federation with the national headquarters in Lokoja the Kogi State capital. this proposal however is being made for the kaduna chapter.

1.1.1 Missions of the I.W.C

The missions of the I.W.C include:-

(i) To present Jesus Christ to every soul in all nations.

(ii) To abolish Idolatry

(iii) To create an awareness and educate people on the true worship of God.

(iv) To visit churches with the view to developing their worship life so as to enhance corporate anointing in worship.

(v) To raise up able Ministers of God

(vi) To harness individual's ability and gifts towards true worship.

These activities are carried out in drama, media presentations (Television and Radio broadcast), literatures, crusades, missions and most prominently through Music.

Worship in a very important aspect of the christian service and life. It implies to show devotion, admiration, appreciation and reverence for God Almighty. It is expressed in many ways one of which is music which has been found to be an inspiration for worship as it is known to evoke emotions to submission, reverence and honour of God. Consequently soothing the hearts, lifting up burden and sorrow, healing minds and body and making or creating an atmosphere of God's presence. At the end of the day the sense of security, joy, fulfilment, strength and peace which a worshipper derives is a prove of the immense wealth and power of music. To this end musicians or music ministers in the church, all need to be properly trained in the art of music to enhance effective church worship. This training process like any other requires a functional and structural facility and suitable environment for a proper administration and acquiring of learning process,thus architecture comes into intrinsic play for a design and construction of buildings for music training. This relationship between music and Architecture is here in this write-up expressed as symphony of Architectural forms which is what this write-up aims to achieve.

1.2 Problem statement

A music academy us an institution where music is studied and or performed. At the moment, no structurally and functionally ideal facility of the sort exists in kaduna city.

This has urged the writer to make a proposal to that effect. Furthermore major attempts that have been made towards building structures for music includes, recording studios, recording industries, performing arts complexes and so on. Not much consideration however has been given to the training of the musicians themselves, which should be the first stage towards improved musical performances and production. The music academy should check such problems, if made available.

1.3 Motivation

A motivating factor for this proposal is that music has found wide range of use and acceptance in many spheres of man's life, in work, leisure and ceremonies. It serves as a means of expression and therefore communication. This makes it necessary to enhance its propagation.

Other motivating factors includes: the cause of the international worship commission to spread worship through music, the need to exploit, developed support an train individuals with inherent talents and potentials for music; to influence the appreciation and enlightenment of the public, many of who hitherto might have been mis-informed or uninformed of the immense depth, strength and wealth of music.

1.4 Need for proposal

The study and or performance of music is a task that no doubt requires an ideal environment, ideal equipment (facility) and articulation of functional spaces.

At the moment nothing exists as the music school of the I.W.C in Kaduna. Furthermore, music schools found all over kaduna city consist of at most three standard sized "bedrooms" containing a few benches, musical instruments and not enough room for circulation (for quite a number of students of the art). One very significant and

disarming problem is the rowdiness that pervades practice sessions of these places. As a result, the proprietors and indeed apprentices of these schools do not find fulfilment in their course, much more because music is difficult to administer without a proper organisation of its institution.

To crown it all, these music schools put together do not seem to meet the swarm of talents roaming the streets in search of how and where best to develop their God giving potentials and find fulfilment in life.

1.5 Architectural relevance of proposal

The music academy is intended to attract users in and around kaduna, from reputable music performers, researchers and mentors coming as guests, to music proponents alike. Thus, its architecture - structure and landscape, is expected to exude the flow of pleasantness, harmony and quality possessed by good music.

Moreso as Architecture is a means of expression of some emotion or the sort, it should be one that has the capability to leave its trail as a souvenir in the minds of visitors who come and go and indeed all who glimpse it. To this end, its functional reliability, stability and power of vista must not be compromised.

This form of Architecture is tasky. Inspite of that however, by careful analysis and combination of forms, unique use of materials as well as the ideal technological approach, the basic essence of this Architecture can be enhanced.

Moreso, it will stand to further enlarge the image of kaduna city as the "Liberal city" of the nation and as the home front of northern cities. Much more with other fundamental institutions of learning it contains.

1.6 Aims and objectives

The aim of this proposal is to analyse the different functional units of a music academy and evolve a design that expresses symphony of Architectural forms. That is harmonizing all units with an adaptable and conducive environment, by use of forms.

The objectives are:- To evolve a true modern design of a model music academy, complete in its setting and such as expresses new order of forms; To provide a sufficient articulate and rhythmic human, vehicular and equipment circulation pattern, to provide or create an atmosphere well-landscaped and conducive for inspiration, learning, research and performance of music.

1.7 Research methodology

The research methodology for this proposal includes:-

A comprehensive review and documentation of published and unpublished materials in the fields of music and architecture with the view to giving a concise insight into the arts of music and architecture and deducing a relationship between the two to explain or express symphony of architectural forms.

An appraisal of existing related building types (case studies), foreign and local examples, made in words and photographs with the view to assessing their merits and demerits, to inculcate the merits in this proposal and avoid the demerits to enhance a better design.

An interview of music school proprietors, musicians, music students and proponents made so as to discover the difficulties faced with learning music in their environment as well as to seek their opinion or idea about a model music academy needed to enhance their career. These idea where found necessary and reasonable will be incorporated in the proposal.

1.8 Scope and limitation

The design of this complex as a proposal for the I.W.C much as will be desired by the writer to contain all facilities, time constraint finance and insufficient case studies are inhibiting factors. In view of these,the scope of this proposal will be the provision of the training facilities -music school, incorporating other relevant facilities to suit the desire of the I.W.C to propagate Gospel Music majorly.

CHAPTER TWO

2.0 REVIEW OF RELEVANT LITERATURE

2.1 Introduction

The history of Arts in general is the history of man's efforts to simultaneously express his emotions and to achieve beauty by arrangement of lines, colours, masses, words and tones, the specific arts thus resulting of which Music and Architecture are parts.

This chapter deals with a brief review of relevant literature on Music and Architecture. The early part of it discusses music, its origin, instruments, music forms and so on, while the latter part focuses on Architecture and Architectural forms.

The essence is to give a concise review of what both forms of art are like and at the end attempt to deduce a synthesis or relationship between them which expresses symphony of Architectural forms.

It is worthy of note that most sources of data available particularly for the music text are in music dictionaries and encyclopedia and scarcely, books from music literature authors.

2.2 Music

Music can be defined as the art of organising sounds and silence into meaningful patterns which posses a form of beauty and power to convey some emotions.

This definition is just one of the few definitions of music. Homer (1970), defines music as an art through which a composer communicates certain ideas, feelings or state of mind to a listener. Encyclopedia Americana says it is a documentation of human experiences recorded in sound and movement. The Longman dictionary of contemporary English defines it as an agreement of sounds in pleasant patterns and tunes.

However, non of these definitions in itself is sufficient of a complete expression of music. This is owing to the fact that people perceive it in different ways. And as Homer (1970), further recognises, music may be subjective, appealing to the emotions, or objective, appealing to the intellect. Boethius CA80-524 was of the view that music is an all embracing harmony of the world and so divided music into harmony of the universe, harmony of the soul and body and harmony of sounding tones. Confucius says its "born of emotions and Young (1974) perceives it as part of nature which accounts for why it greatly affects man, as man is also a part of nature.

In all of these opinions, one thing is certain and that is, music is so organised as to stir and influence or affect a listener's emotions or intellect.

Although music is said to be one of the oldest forms of art, its origin is obscure and remains largely a question of speculations of various kinds with scholars differing about it. For instance, Greek mythology has it that the word music is derived from the Greek word "Muse", the name of nine goddesses responsible for the learning of arts and science. Certain medieval writers however see it differently, as derived from "moys" the Egyptian word for water, thus contruing it from a connection with Moses.

Pahlon (1923), opines that primitive man was limited in words, giving names to only the things he saw. Music came in when he had to give voice to his unseen feelings as he found recourse to sound.

Eistein (1974), believes primitive man may have been attracted by bird songs which he continually used as a model for imitation.

The new book of knowledge writes that music probably began as soon as languages developed, with hunting tools struck together as instruments. People sang

chants to help in magic rites through which they believed rain, sunshine, crop growth and so on (the entire course of nature) could be evoked or ordered by use of songs.

One significant truth about all of these no matter the speculations is that music is pleasant, acceptable and has been of great value to man. And like Schumann says, "perhaps it is precisely the mystery of her origin that accounts for the charm of her beauty".

The History of music is not left in this seeming chaos. Until the 20th century music was said to be unique amongst the arts as it lacked History. History in the sense that its actual products, the musical sound itself, could not be preserved except in the form of oral traditions and later written scores called Notation which were quite insufficient to grasp the composers moods or intentions.

By the 20th century however, with increased knowledge and technological advancement, the system of recording sounds and performance was developed to compliment a now highly developed Notations. Apart from helping musicians bring to life a composer's ideas, taught, emotions and motives, it provides music with the history it hitherto lacked. Today, this history has become one of the composer's resources used to provide certain models of techniques and general concepts of styles and sounding means. Musical sounds can be accurately reproduced and heard continually with the electronic devices as turn tables and gramophone records, tape recorder and cassettes of musical concerts and performances in video recorders and tapes or motion pictures.

Every civilization, tradition or culture has had its own music to play in the course of time so that today various kinds of music are recognized the world over-African music African music, and most prominently Western music. Western music has developed more widely than any other and succeeds in influencing virtually every other tradition

it comes in contact with, without being more than occasionally or superficially influenced in return. It is the music of Europe and America.

Two types of Western music can be recognized: classical or art music (which includes symphonic, bullet and music for opera (music drama); and popular music (which includes Folte, Country, Jazz, Rock, music from musical comedies and films).

2.3 Importance of music

Music has found wide range of uses in different spheres of human endeavor from the early times till date, having proven its importance to these spheres of life. Three categories of where it has found wide use are discussed.

In work: In the early times people labored by hand or long hours, which was quite boring and tiring. They therefore resorted to singing songs while they worked to enhance quality and speed of work. Today, we find many offices and industries providing background music for their workers for improved productivity. In the department of Architecture Ahmadu Bello University, Zaria, Nigeria Students are known to provide background music in their studios to aid their quality and speed of design work. Hence showing music as an inspiration for work.

In personal and social activities music has also found use. For instance, it provides a forum for individuals to express their feelings or relax, sleep and feel refreshed. Some people perform music for leisure, perhaps during picnics or just sitting under a tree in the cool of a summer day playing a guitar, or even singing in a group or choir. Occasions as dinners, parties, and so on are not left out. Music helps to liven up these sessions.

In non religious ceremonies as sports, graduation, crowning of royalties, new yam festivals or the likes as found with the eastern parts of Nigeria, music is used to grace the occasions. It creates an atmosphere percular to the particular ceremony. Religious services on the other hand use music to create a state of the inexplicable, as mystery, awe and reverence. Moreso today, church music attempts to create a feeling of transition from the normal world around to the heavenlies where God reigns supreme. This music sooths the spirit and humbles the mind, subjecting an individual to a state of surrender, to his creator. Furthermore, it produces a sense of participation among worshippers.

2.4 Musical Instruments

Over the years, musical instruments have developed from the very crude to the highly sophisticated electronic and computerized systems of today. Nonetheless many traditions still uphold the use of some of these old or primitive instruments which are peculiar to them and suitable for their forms of music.

Musical sounds or notes are produced when air vibrates a certain number of times per second. These vibrations called sound waves must be contained in some way so performers can control the pitch (highness or lowness of sound), loudness, duration or quality of Tones. Moreso, anything which contains sound waves must also provide sustained and amplified sound called Resonance. Most instruments are found to incorporate both a vibrating source of sound and a resonator. For instance in a box guitar, the vibrating source is the strings while the resonator is the box. This operational system of instruments has given rise to four basic categories of instrument types, namely: Chordophones or string sound producing instruments like the guitar; Aerophones or Air sound producing, like the flute and other wind instruments; Idiophones or self sound

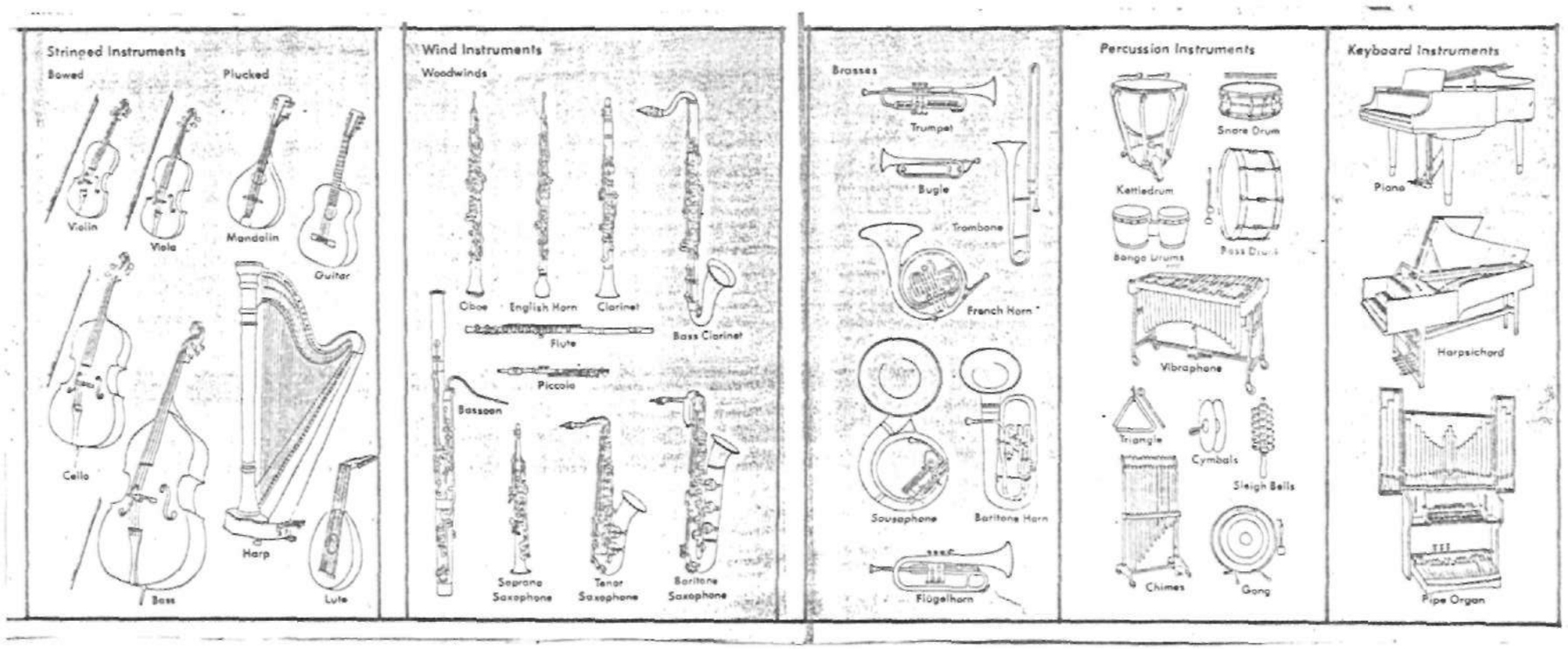


fig 1 MUSICAL INSTRUMENTS.

SOURCE: WORLD BOOK ENCYCLOPEDIA VOL. 13.

producing instruments made from resonants like wood or metal as in xylophones and cymbals. They are usually struck. Membrenophones made from membranes or stretched skins as in drums.

Having said these, it is also important to note that certain musical forms like the orchestra as well as present day modern music forms has necessitated the classification of musical instruments as:Stringed instruments of which violin, viola cellos and guitar are examples; Wind instruments which produce sounds by blowing a column of air into them, ranging from the tiny piccolo to Basson, trumpet saxophone and so on; Percussion instrument which include just about anything that can be hit, thumped, scratched rattled or shaken like the drum and bongo and noise makers like cymbals and tambourine; Keyboard instruments, having a series of keys connected mechanically to a sound producing device for strings, percussion, winds, idiophones and electrophones, like the Grand piano, harpsichord, Organ and so on; Electronic instruments are powered by electronic means with a loud speaker as vibrating medium. They range from the electric guitar to the computerized synthesizers.

2.5 Forms of Music

Forms in Music simply implies the shape or structure of a musical composition. and just as the Architect uses ground plans for construction of buildings, so the composer of music has in mind a design of his composition which serve as a foundation for organising his musical elements (Rhythm, melody and harmony). This musical form evolves in response to the composers ideas, purpose, intentions and imaginations.

iv. Tone colour (or Timbre) is the quality of musical sound. It expresses the difference between sounds of equal frequency (rate of occurrence) and intensity (or strength) produced by different musical instruments. When an instrument is struck a combination of its actual notes and a number of other tone (called overtones) which are related to it is also sounded. These number of overtones depending upon their number and strength or intensity determine the sound quality of or tone colour of musical instruments.

For instance, a soft and sweet sound is produced by a flute which has few weak overtones, when a note is played on it. The same note played on a trumpet which has strong overtones seems powerful and bright.

Generally, Rhythm, melody and Harmony are refereed to as the Three dimensions (3D) of music. they are what the composer organises to give shape and structure to his composition. Furthermore composers treat sounds in respect of Rhythm, Melody and Harmony in several ways to produce different music forms. they can:

a. Make sound high or low

b. Combine it with other sounds so that several sounds are heard simultaneously.

c. Make it stronger or weaker

d. Place it before or after or within other sounds in succession.

e. Regulate its duration or rhythm

f. Alter its quality (tone colour) in countless ways

g. Or use a combination of the above possibilities.

In responses to these, different music forms have evolved, from the early anthem, cantata, overtone, rhapsody amongst others to present day classical or popular music forms as jazz, rock, raggae and so on. However symphony is one form of music that has survived the early medieval times to date.

2.5.2 Church Music

Church music has had its origin since Bible days (Genesis 4:21) adducing it to Jubal. Music has always been an integral and indispensable part of Christian worship and living. In it, is the true expression of musical strength and wealth experienced, for how can one describe the Bibles's admonishion to christians to sing "Psalms and Hymns and spiritual songs singing with Grace in your hearts to the Lord" Colossians 3:16. Furthermore, 44 out of the 66 books of the Bible includes Psalms and Hymns and Spiritual songs and refer to over five hundred accounts and admonishion to God's people to worship and praise Him with voice and instruments.

In the medieval times, Church music developed in form of chants accompanied by series of melodies designed to be sung by one or more people. The choral, sonata and orchestra forms culled from Hymns connecting oriental, Greek and Roman monody. It was also a major influence on the music of the world.

Today however with improved musical standards, knowledge and sophisticated instruments church music like its secular counterpart has taken new and dynamic dimensions from classical to popular music forms. The difference between the church and secular music remain in the lyrics however. Moreso, church music is divine, of God and aims towards worshipping and glorifying God, edifying the church, instructing, inspiring convicting and comforting amongst other things.

Moreso, musical sessions in church programmes are known to be "power packed" and therefore highly esteemed by christians. They are known to be sessions of healing, deliverance, joy and victory as has been from old Bible days as evident in : Joshua 6:20-21, collapse of the walls of Jericho; 2 Chronicles 20:22-23, triumph over three allied enemies. Exodus 15:1-21, crossing the red sea; 1 Samuel 16:23, soothing of the spirit and so on.

2.5.3 Symphony

The word symphony originates from two Greek words which imply a "sounding together". Many dictionaries render it as "a harmony of sounds". Its full rendation however is Orchestra symphony and it refers to a form of music which is a large composition involving an ensemble of instruments and players (about 60 - 110 or 75-150 in number). These instruments are of four major groups: string; wood wind; Brass and percussion and are arranged in peculiar order and ratio for the best musical sound production.

In the Eighteenth Century it was used as an introduction to an Opera or music drama and it had three sections. The first being a lively opening, the second a quieter middle part and the third a brisk close. It later developed and became a composition of four movements, independent of the opera, and having passion elegance and refinement introduced into it. Furthermore each movement was an individual composition on its own having a basic tempo or speed throughout. The first of the four movement is moderately fast, the second the slowest, the third having a dance like tempo while the fourth is a triumphant or exciting conclusions. However by the 19th century composers tried to make their music express their personal feelings more fully than before, perhaps to make it tell a story and therefore increased the length of movements.

Today with improved technology and understanding of music short symphonic compositions for small ensemble of instruments which are by no means inferior to the earlier ones can be found either as original styles or as improved or continuous styles of the earlier ones.

2.6 Architecture

At various times and by different people, Architecture has been defined. These definitions like those of music in their own peculiar ways are correct, but insufficient individually to adequately define the art, Architecture.

However Architecture can be defined as the Art and Science of the design and construction of buildings for various human needs and functions. As an art it is a means of expression that tends to evoke or fulfil the social and emotional values of a people place or domain by stimuli of shelter, refuge, security, worship and so on. As a science, the technology and materials required to establish and enhance this expression come into intrinsic play to produce a good building.

Architecture is said to be one of the oldest forms of Art dating from pre-historic times (when primitive man needed shelter against environmental harzads) and found in virtually all societies usually reflecting their values. About 2000 years gone by, Vitrurius a Roman. Architect recognised three different requirements to qualify a building as a piece of Architecture. These are called the elements of Architecture and have stood the test of times to present day. They are Utilitas, Firmistas, Venustas, implying commodity, firmness, delight respectively. In other words fine Architecture must have:

Commodity or utilitarian or functional purpose, having a reason for its existence.

Firmness, being firm, durable strong with a well built structure meant to last a long time without expensive maintenance.

Delight, aesthetically pleasing to look at, beautiful and enabling habitation, to live or work in it comfortably and efficiently.

These three elements must be balanced by an architect to produce an efficient, durable and pleasing building to quality as a piece of Architecture.

Generally in his design process, the Architect thinks in terms of space, planes and openings. He perceives his building as space enclosed by planes (walls, ceilings and floors) and uses opening (doors, windows and archways) to connect the enclosed spaces one to the other and to the exterior. In other words he gives shape to space by arranging openings and planes to obtain appropriate and practical functional forms.

He is tasked with articulating a given space (site), giving it structure by demarcation and arrangement of the various functional units of the building and then using materials to give it shape or body. This is achieved by the use of the basic tool of forms.

Nathan (1972) defines forms as recognisable entities that have meaningful structure and capable of standing alone. By them we are able to distinguish and perceive everyday life and like Colier (1963), attests. there is no visual communication of any sort which is formless and spaceless. In order words there is no object around that is without definite structure or pattern. Thus we have Forms in nature and Man-made forms.

Forms in nature refer to humans, animals, trees and plants and so on. They are made up of intricate units called tissues, cells, fluids, bones and so on which are inseparable one from another but which blend together to form a united functional whole or entity. Manmade forms on the other hand refer to buildings, cars, ships, machines and so on. Although there parts or units are separable, having been assembled together, they are also united and useful to each other. For instance, the roof cannot stand without the supporting wall, which inturn cannot be protected without the roof.

Nathan in his book "Abstraction in art and nature" explains the concept of forms clearly. According to him a close scrutiny with purpose and interest at an object reveals that structure and shape (which are revealed in space) make up the form of the object. That is to say that an object is its shape, determined by its structure and revealed in space. For instance the human hand can be perceived and understood by the skeleton of the bones which are its underlying structure. The clear edges of the finger give it shape and indicate the flesh as the covering of the basic structure.

2.6.1 Architectural Forms

Architectural forms or forms in Architecture, are concepts of design and actually refer to ways of arranging and articulating materials in space (Ranson 1987). It embraces all aspect of spatial forms from internal structure to visible shape of a building as well as how they are organized and ordered in intrisic harmony.

i. Internal structure form of a building refers to the arrangement and demarcation of the various functional spaces needed within it as well as the technique need in articulating these spaces. In other words the articulation of these spaces is a function of the events or activities to which the building is meant. Thus the creation of Architectural spaces only exists by request of its function. This expresses therefore the form of a building as a cover to its technical and functional requirements by the exploration of the derative of the free space or site given. This form is perceived as a cloth to a skeleton of Architectural needs.

ii. Visible shape form is another aspect of Architectural forms though not solely dependent or related to function, but refer to one that conjures a particular organization of shape, so as to arouse an individual's emotions and intellectual participation. It can be described as shape derived from the structural and aesthetic requirements of a building, enhanced by use of appropriate materials.

At various times in history Architects have considered certain shapes more useful, efficient and beautiful than others in the achieving of internal structure or functional form and and visible shape forms of buildings and hence employ them in their designs. These shapes are also called the basic set of two dimensional forms. They are the circle, rectangle and triangle and are used in combination one with another as well as with their three dimensional (3D) projection or derivatives in contrast and proportionate balance to formulate the structure of a building whilst using materials to express its shape or shape its expression.

Depending upon the Architects intentions, Forms are used to evoke or express certain emotions and meanings in their arrangement and combinations. He does this not only by the creative instinct within but also by an understanding of the dynamic and organic qualities of the basic set of 2D forms and their 3D derivatives.

For instance, the circle is known to have a constant area in all ramification, vertically, horizontally or diagonally along its center and thus a rotational quality that gives it a locus of movement in a clockwise or anti-clockwise direction along its center. The sphere and hemisphere are some of its 3D derivatives.

The rectangle is a shape that dominates everyday design culture. It possess a seemingly intrinsic static nature whose dynamic qualities can be revealed by an alteration of its altitude to the base line on which it lies. The cuboid and cube are its 3D projections.

The triangle has varied dynamic qualities standing on the slants of all its three sides giving it implicit movement up slope or down slope. The tetrahedron is its 3D derivative.

2.6.2 Combination and Contrast

When the combination of a variety of two or more of the two dimensional (2D) forms and their 3D derivatives are made, a corresponding beautiful or qualitative contrast can be achieved and these are what the design harmonizes. Various contrast of forms in relation to *shape*, *surfaces* and *positioning* exist, each capable of evoking its perculiar emotion or intellectual expression.

i. In relation to shapes contrast of forms that can be achieved include geometric and Organic where an easily apprehended shape like the square is said to be geometric, while one whose contours are hazy or wondering requiring scrutiny to be grasped as a whole is said to be organic. Other contrast of forms in relation to shape include Area/line, straight/curved, thick/thin and so on.

ii. In relation to surfaces rough/smooth, static/mobile, high/low, light/dark an be achieved. Rough/smooth surfaces express a quality of depth. Rough surfaces are apparently perceptible crests and troughs and seem warm, while smooth surfaces deny penetration of perception to any depth thus appearing continuous and cold.

iii. In relation to positioning, forms are read in relation to a fixed rectangular context either sanding/lying, referring to vertical or horizontal orientation or rectangular/slanting.

The moment any set of form is actualized and combined with others, it gain its own meaning from the physical nature of its elements and from its adopted new contrast of other forms.

fig 2. CONTRAST OF FORMS

IN RELATION TO SHAPES.

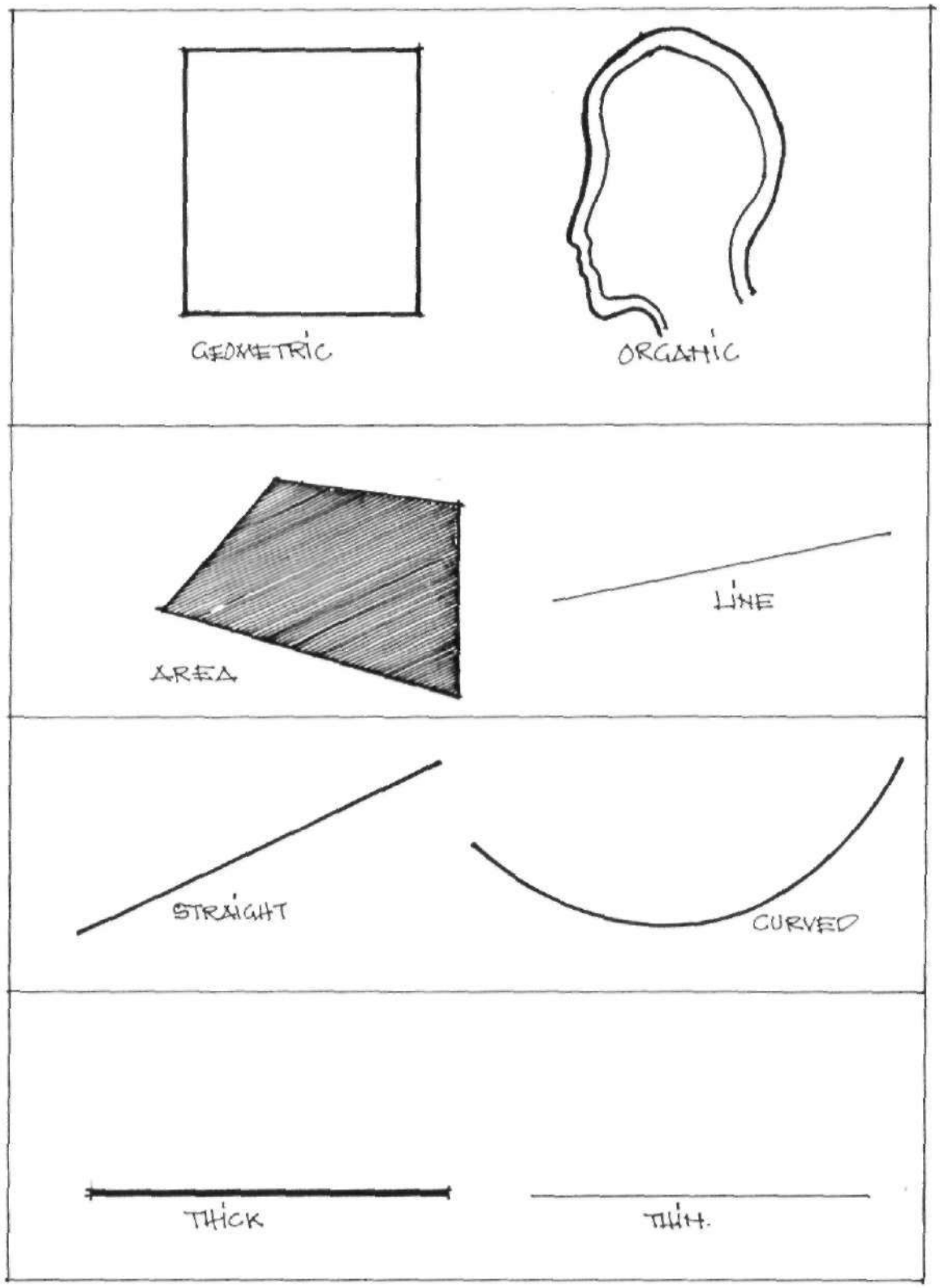
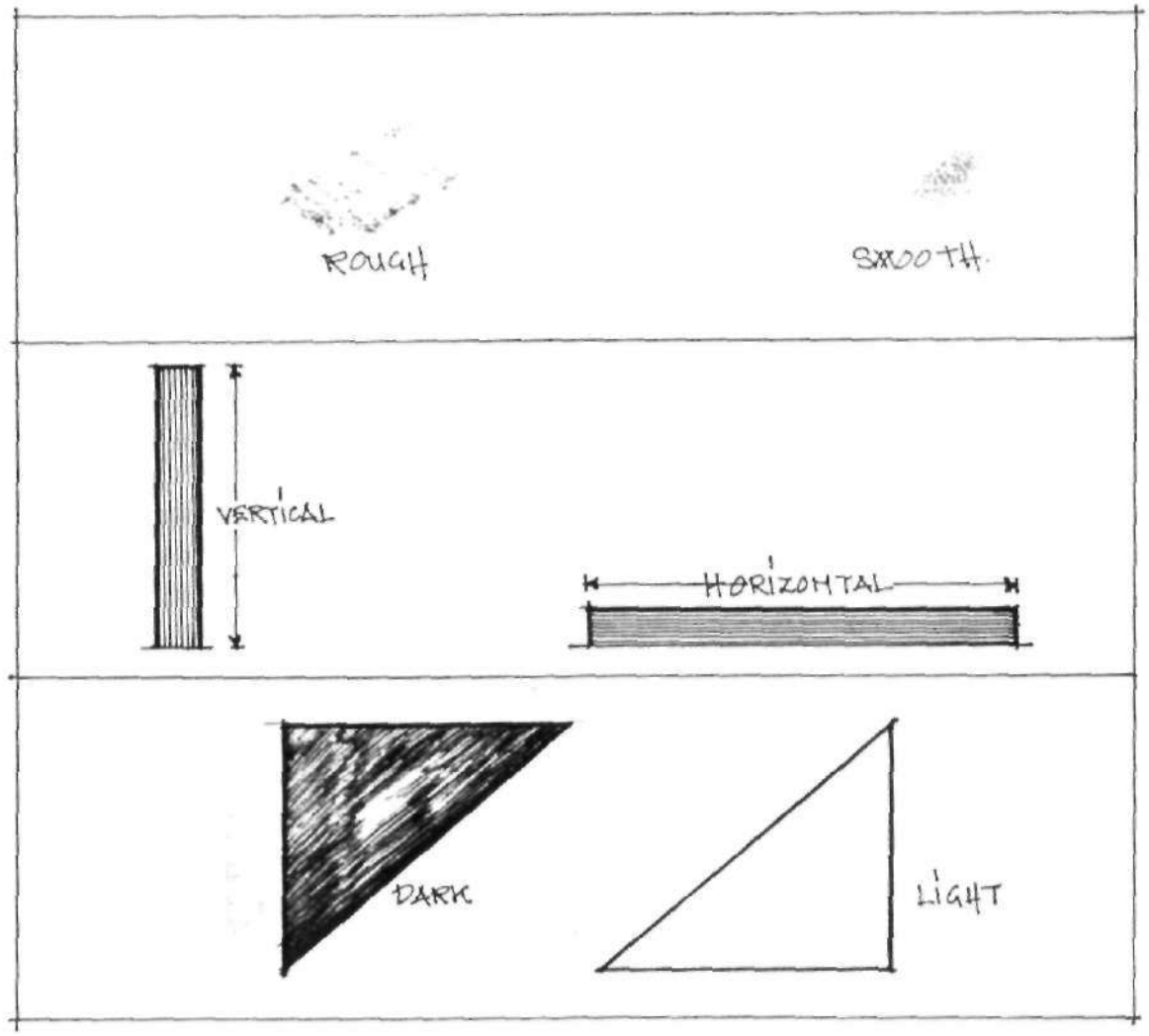


fig 2.

IN RELATION TO SURFACES



IN RELATION TO POSITIONING

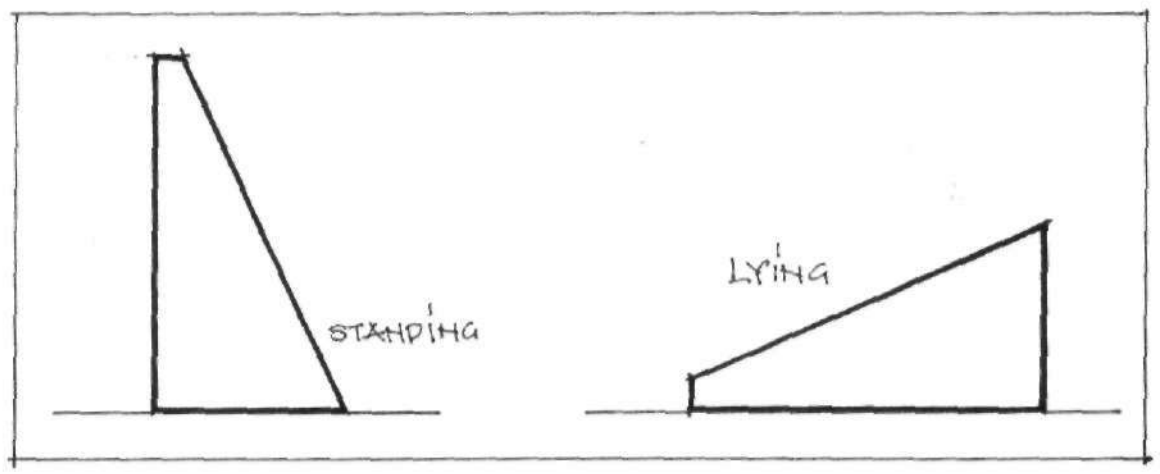


fig 3 CONTRAST OF FORMS.

This text on "combination and contrast "of forms was studied from Ransom Philip's "Design" (1987) (page 72 to 80).

Furthermore, though there is nothing inherently new in itself. But a new arrangement of old principles or fundamentals can generate new expression.

2.7 Music and Architecture: (Symphony of Architectural Forms)

Having reveiwed the concepts of music and Architecture one can deduce or derive a synthesis of both which can express symphony of Architectural forms.

As the composer or musician combines his musical sounds to obtain a form of music so as to express his ideas or feelings, so the Architect combines his forms to express his. Furthermore as the quality of good music or symphony depends on its composer so the quality o a building depends on the capability of its form creating Architect to give it the invaluable quality termed "Architecture".

Summarily what is significant about symphony is that its a large musical composition of players and instruments properly arranged to produce musical sounds possessing a flow of pleasantness and agreement or harmony, usually in three, four or more movements. Each movement being an implicit composition of its own and capable of evoking peculiar influence on the listener.

As sound is to symphony.

So sight is to Architectural forms. Thus symphony of Architectural forms implies a composition of a piece of Architecture consisting different building units arranged by use of Architectural forms which harmonize together within a whole adaptable environment and each unit capable of evoking its peculiar influence on the onlooker.

This influence may be subjective or objective depending on the Architects intentions.

CHAPTER THREE

3.0 CASE STUDIES AND SITE CONSIDERATION AND ANALYSIS.

3.1 Description

Case studies refer to the study of already existing building structures which have relevance in characteristics to that which is being proposed. The basic essence of this case studies is to employ and improve on that which exists in that being proposed.

In this write-up, both foreign and local case studies are being made under the headings Name of building, year of Construction; Architect, General characteristics, form, other features. The general description so made, at the end will enable a discussion, of the assessment of the building under Merits and Demerits.

3.1.1 Merits and Demerits

(i). Merits imply, the good aspects, advantages or positive attributes of the building, with the view to if necessary, adopting some of its elements.

(ii) Demerits is the opposite of merits and imply the disadvantages, defects or flaws of the building, meant to be avoided.

3.2 Arts center, classrooms and Music School, Christ's Hospital, Horsham Sussex.

3.2.1 Architect/year of construction: Howall Killick Partridge and Aims, June, 1974.

3.2.2 General Characteristics

The brief was for nine classrooms with small subject library and seminar room; a theatre for 450-500 with ancillary accommodation; an enlarged music school to provide 10 teaching rooms, 41 practice rooms, band room, library and a small recital hall.

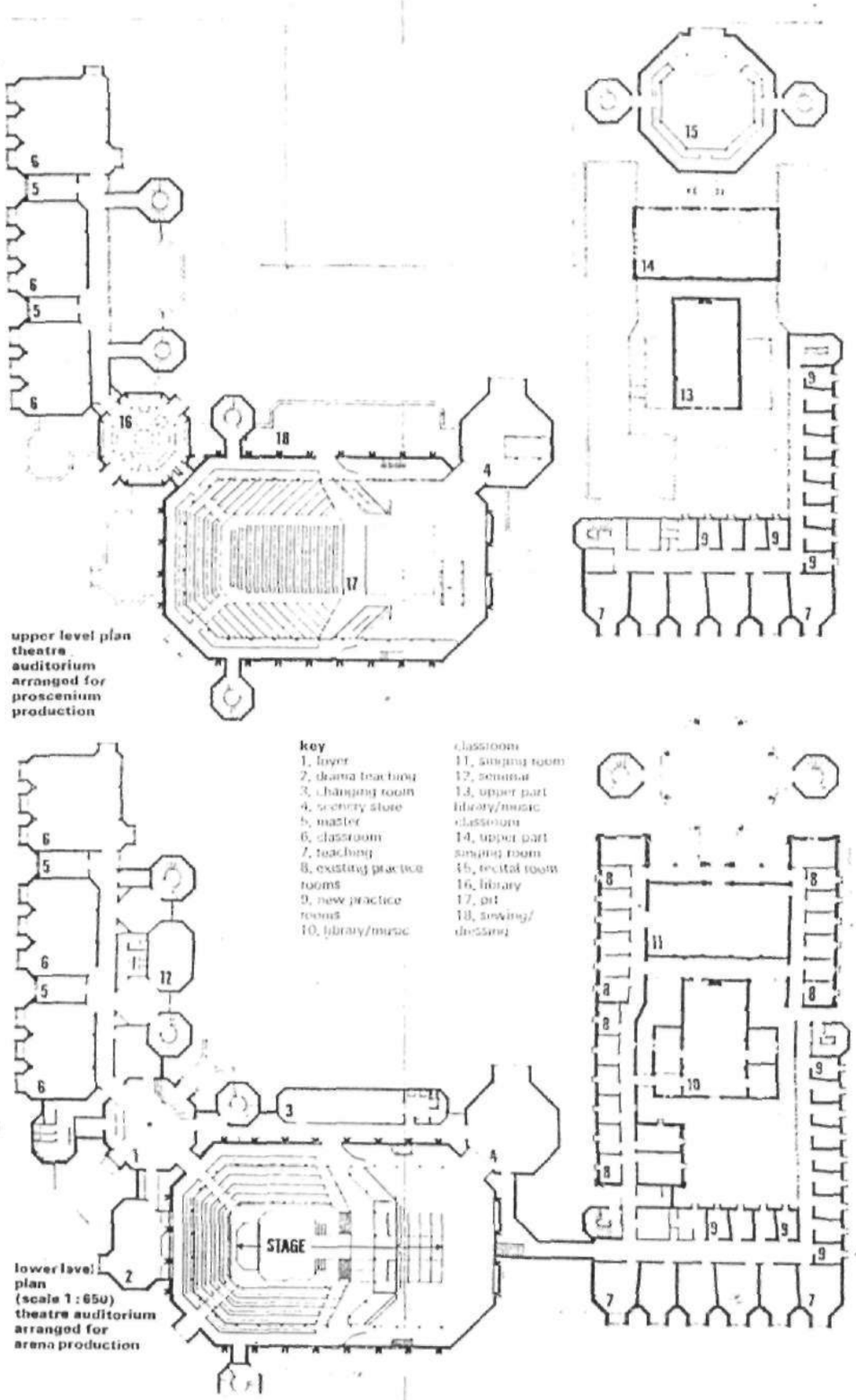
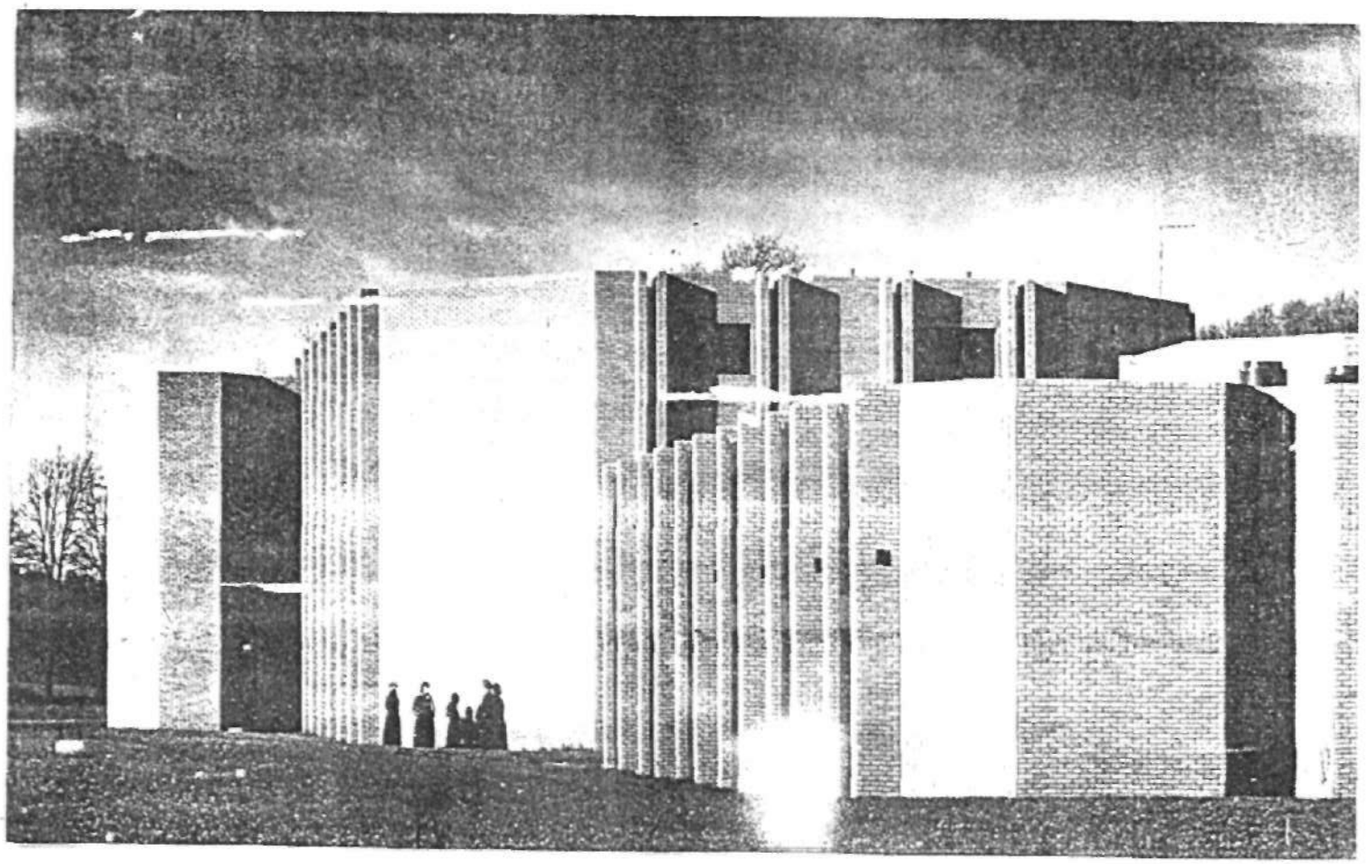


fig4. ARTS CENTER, CLASSROOMS AND MUSIC SCHOOL, CHRIST'S HOSPITAL, HORSHAM SUSSEX.

SOURCE: ARCHITECTURAL REVIEW (1975 FEB) Vol 157 no 936.



ARTS CENTER, CLASSROOMS AND MUSIC SCHOOL, CHRIST'S HOSPITAL
plate 1. HORSHAM SUSSEX.

The building was located on a level site and planned such that theatre should be between classrooms and music school. Music rooms consisting practice rooms, teaching rooms chorus rooms and so on are clustered for acoustic purposes and located back on to the stage end of the theatre, while classrooms are located beyond foyer back on to rear of theatre. The theatre located in the middle has along its side a large changing room (with showers and conveniences) has two basic theatre arrangements: arena and proscenium stage arrangements.

3.2.3 The entire building forms a three sided courtyard. The geometry of plan forms a mixture of a basic rectilinear and 45° diagonal grid to form ingenius octagonal forms, relieving the monotony of rectangular rooms. Externally all the buildings are in red brick with elegant glazing and each group of forms grow from the ground to a flat top cut-off point as it reaches the appropriate height. The octagonal recital room and library make elegant consorts for the domineering theatre.

3.2.4 **Other features**

The flexibility in obtaining a double stage arrangement is achieved by "Boy power" (utilizing the manual strength of the schools Boys). The interior of theatre is made of red timber galleries and jigsaw-like in nature. There is an existing Landscape of fine trees and grass.

3.2.5 **Merits and Demerits**

i Merits

(a) There is an agreeable and simple use of forms

(b) A unique theatre allowing flexibility of two stage arrangements

(c) Cluster of music rooms and splay of practice room walls to provide good acoustics.

ii Demerits

(a) There is a monotonous use of red bricks

(b) There are no provisions for welfare facilities as common rooms.

3.3 Music Centre University of East Anglia, Norwich

3.3.1 Architect/year of construction: Arup Associates, Oct. 1973.

3.3.2 General Characteristics

Brief requested a concert/recital room (to be used also for recording/broadcasting): electronic workshop with office: green room and changing rooms for performers; offices for porter and secretaries: Music rooms for director and seven lecturers; postgraduates, room, seminar rooms, eight practice rooms; music listening room; music and instrument stores; foyer and ancillary accommodations.

It was planned based on fitness in relation to its environment, acoustical control and cost. Concert room/recording studio was placed at end of an existing shopping spine to compliment a squash court block. Practice rooms were arranged on one floor of maximum acoustic isolation while ancillary accommodation and electronic recording rooms were arranged on two levels between squash court and concert room. Corridors were developed into foyer with glazed roofing (for natural lighting). Site slope was utilized to vary room volumes whilst maintaining constant ceiling level.

3.3.3 Form

The basic geometrical form is a staggered rectangular form comprising a double volume rectangular structure to which a longer single volume rectangular strip which

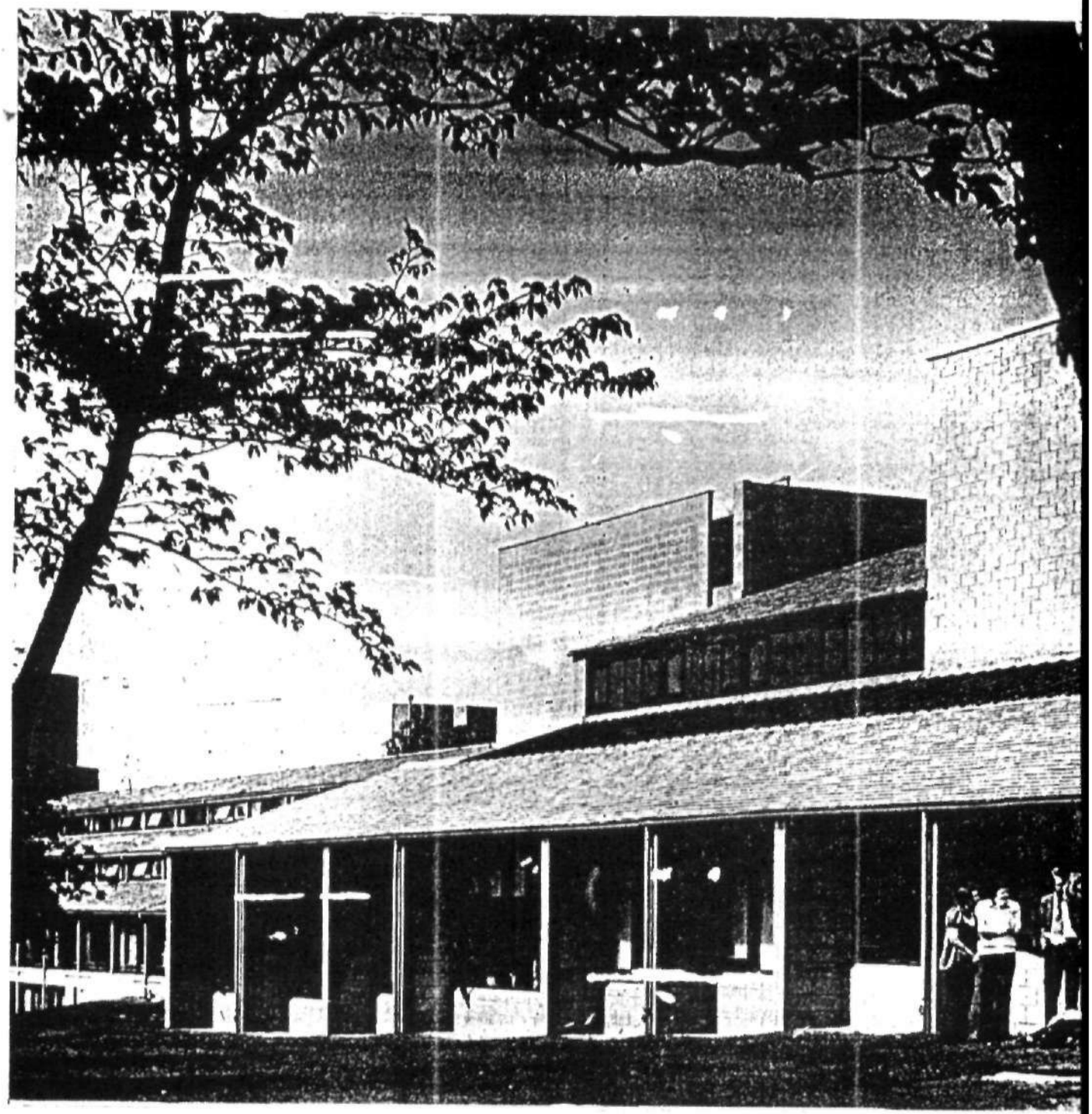


plate 2 MUSIC CENTER UNIVERSITY OF EAST ANGLIA
NORWICH.

protrudes beyond the entrances of the double volume structure. The material used were chosen to ensure the new building formed a homogenous part of the entire University complex. Light grey dense blocks and concrete roof slates with dark brown stained window frames were therefore used to match neighboring staff house. Larger rooms were glazed from wall to wall while practice rooms had long slit windows.

3.3.4 Other Features

There was provision for a small amphi theatre adjacent to the entrance, for outdoor activities. Load bearing dense concrete block work used with suspended floors of reinforced concrete. Double doors and lobbies were provided for music rooms. All doors fitted with foam seals and thresholds to minimize air gaps.

Also foyer was ramped for easy transportation of instruments. Internally, white fair faced block work was used for all circulation areas and inside concert room, while smaller rooms were plastered and painted white. Dark brown carpet was laid throughout except in ancillary and recital room.

3.3.5 Merits/Demerits

(i) **Merits**

(a) Site contours are well utilized

(b) Music rooms arranged in a volume and in linear manner makes for good acoustics.

(c) Natural lighting provided for corridor/foyer.

(ii) **Demerits**

(a) Concert hall not adequate for performances.

(b) Improper location of toilet facilities

(c) Building is inadequate to meet desired functions

(d) Uneconomical design.

3.4 Kale Visions Music Centre Kaduna

3.4.1 Architect/Year of Construction

3.4.2 General Characteristics

Kale vision music center is located within a reisdential area in the central town of Kaduna along Abeokuta street by Kabba road. It was originally a residential structure from which the shcool is carved out. It contains two offices (for director, secretary/waiting) three practice rooms, a courtyard for practice/teaching and recording studio within the courtyard.

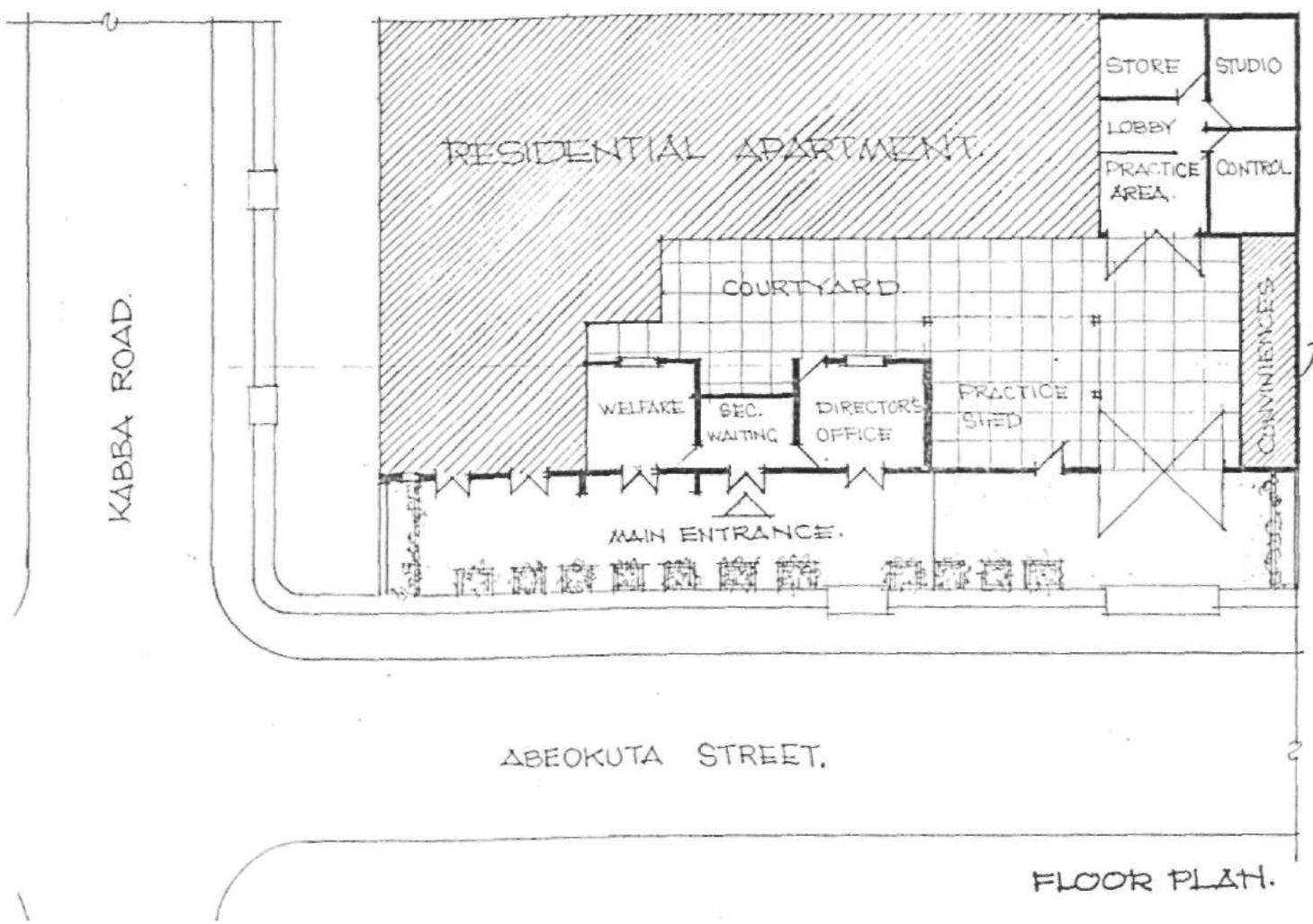
A major gate serves as entry point into the courtyard and the residence. On the immediate right hand side of this gate is located a kitchen and conveniences. And directly opposite this gate with the courtyard in between is a garage turned instrument store and recording studio. A narrow path in this enclosure is sometimes used as practice area. On the immediate left hand side of the gate is a practice/teaching shed. The offices can be accessed outside of the gate or within the courtyard.

3.4.3 Form

It has majorly rectangular sheet. The center itself is major 'L' shaped structure to which a larger rectangular residential part is attached leaving an almost narrow courtyard within. Part of the courtyard is covered on steel poles which serves as supports to shade an area for practice and teaching.

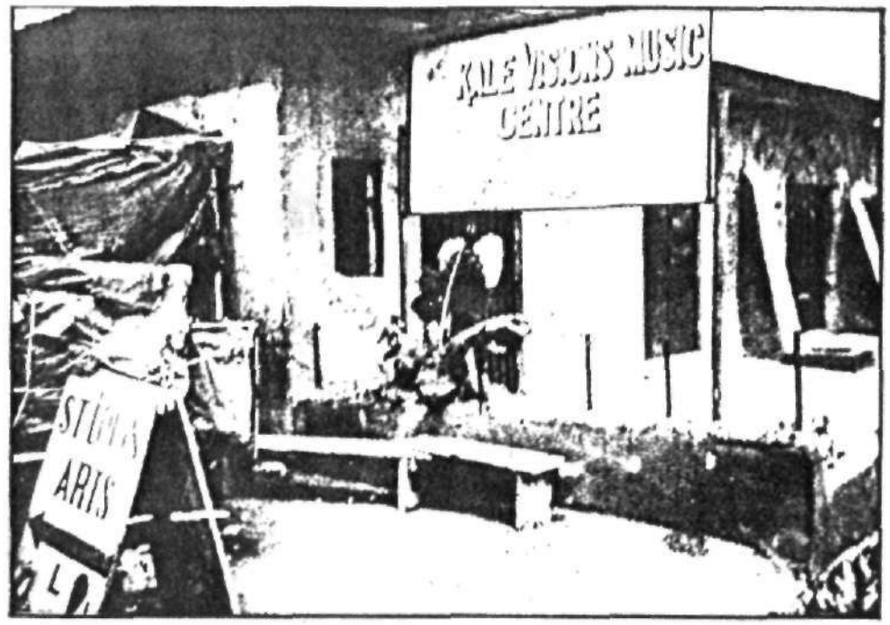
3.4.4 Other Features

The recording studio is a major feature in this structure. It is well designed and equipped within and easily rates amongst the best in the city.



FLOOR PLAN.

fig6 KALE VISIONS
MUSIC CENTER
KADUNA, NIGERIA



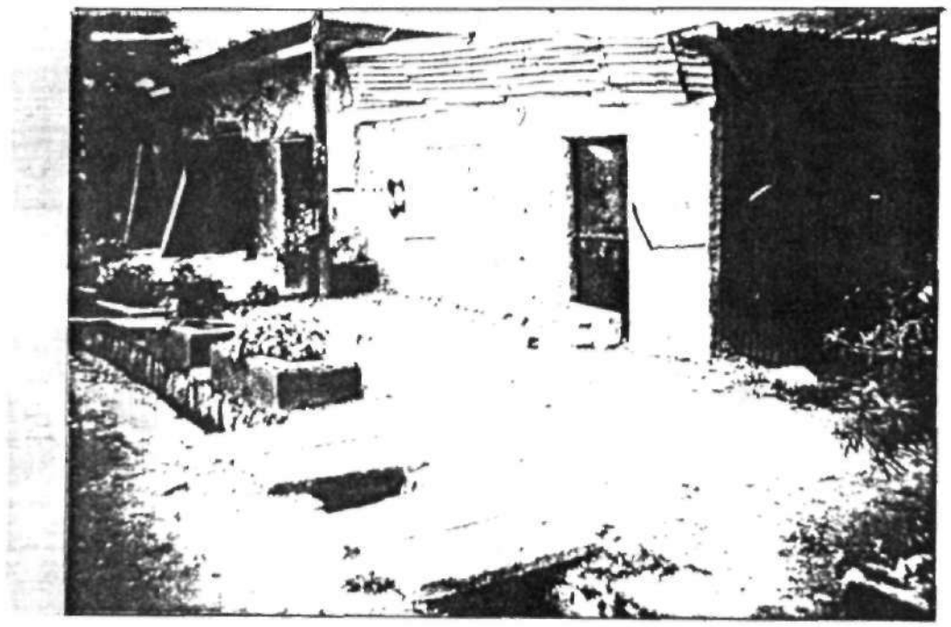


plate 3 VIEWS OF
KALE VISIONS MUSIC CENTER KADUNA

The entire structure is built of mud construction and plastered within and without with cement-sand plaster and roofed with corrugated zinc roofing sheet on wood trusses. The front part of the structure is painted with reddish brown gloss paint.

3.4.5 Merits/Demerits

i. **Merits**

a. Fine, well equipped recording studio.

b. Courtyard helps in ventilation.

ii. **Demerits**

a. Poor location within residential and rowdy environment.

b. Lacks sufficient well designed and defined functional spaces to meet needs.

c. No theatre (or the like), music rooms, common rooms etc.

d. Structural system, insufficient for acoustics

e. No aesthetic value.

3.5 Sony Music Entertainment (Nigeria) Limited Lagos

3.5.1 Architects/year of construction

3.5.2 General characteristics

Two recording studios, rehearsal rooms, office accommodation, reception, toilet facilities.

The building is a music company which specalizes in recording of music and production of pre-recorded cassettes. It is an affiliate of Sony music entertainment New York, U.S.A.

It occupies a trapezium shaped site. The buildings are zoned according to functions. Recording studios and rehearsal rooms are located further away from traffic

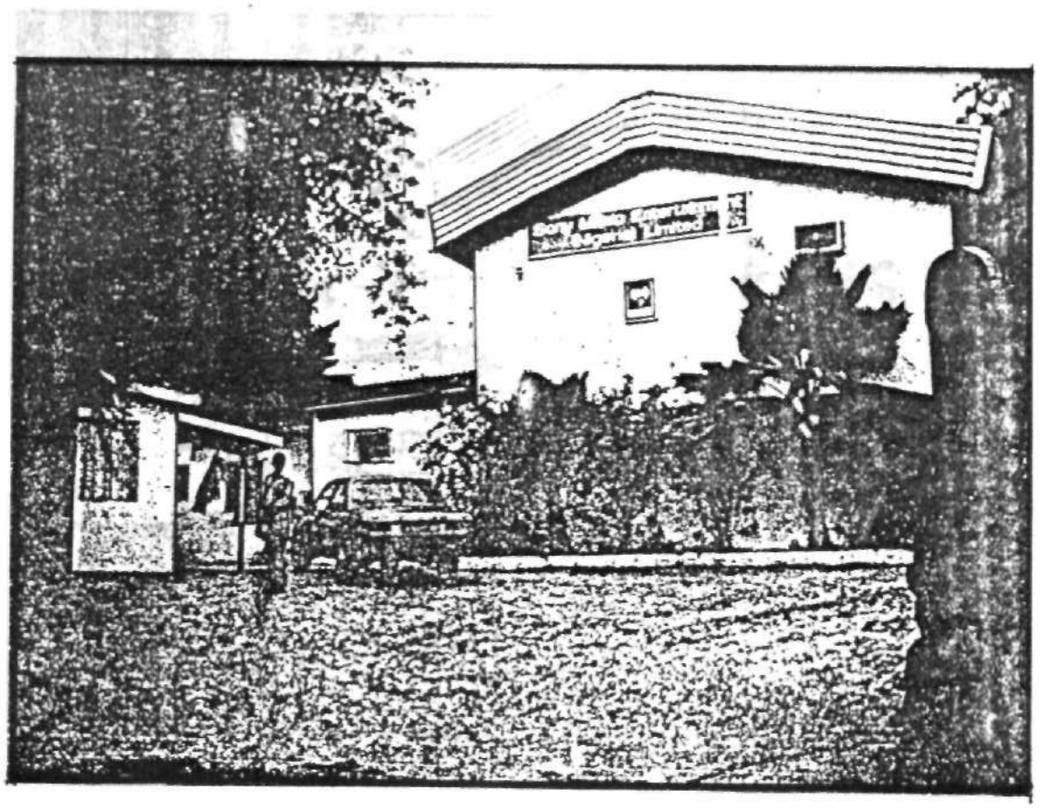


plate 4 SHOWING SONY MUSIC ENTERTAINMENT LAGOS, ENTRANCE VIEW.

and office to isolate noise. The two recording studios link the rehearsal rooms by a lobby which doubles as a sound lock and also as an access to toilet facilities. It also serves as access to the basement by a straight flight stairs down where recording and rehearsals are done. These areas are linked to the office area by walking with a central paved courtyard separating them. Reception foyer is a free standing structure detached, on the easterm side of site.

3.5.3 Form

The Major Geometrical shape is the rectangle. The structure consists of two storey office accommodation and a semi-detached one storey with basement, studio and rehearsal rooms block. The structural system is of column and beam construction with 230mm sandcrete load bearing walls plastered both sides. Roof is of hardwood timber construction covered with longspan Aluminium roofing sheets.

3.5.4 Other Features

Interior of studio and rehearsal rooms are treated with acoustical materials, with removable booths and some electroconstic devices. Exterior of office and reception are painted with texcote and interior with emulsion paint. Airconditioning systems are also provided, with telephone services. A major part of complex is paved.

3.5.5 Merits/Demerits

(i) **Merits**

(a) Zoning arrangement adopted for functional spaces is commendable

(b) Studios and rehearsal rooms are well located and separated by courtyard to discourage noise interference and cost of providing acoustics against noise.

(c) Courtyard is desirable for ventilation, lighting and relaxation.

(ii) **Demerits**

(a) No storage area for equipment.

(b) Inadequate provision of studio and rehearsal room accommodation

(c) Parking spaces are not properly defined

(d) No space for landscaping due to paved areas.

3.6 Macro and Micro site Considerations

3.6.1 Macro Site:

The City Kaduna is located only slightly north of the central position of Northern Nigeria, lying between latitude 10°27'N and longitude 7°17'E of the Greenwich Meridian. It is a strategically located city in the North, not only for its Administrative conveniences but also as a commercial and industrial center. It is linked with major towns around it. To its north is Zaria (80km away); to its east is Jos (239km); to south is Abuja the Federal Capital Territory (about 160km away); and to its west is Ilorin which links other western cities up to Lagos. Furthermore railroads link it to other parts of the country:Kano, up north, Lagos and Portharcourt down south. It also links other parts by air routes.

Kaduna city has been so chosen for this proposal for certain reasons: Kaduna has been the home front of Christianity in the North, there is a massive increase of churches who need to be thought the art of worship; the I.W.C. annual music festival, (Songs Report) takes place in Kaduna and also, Kaduna has been I.W.C.'s major breeding ground for the array of its talents.

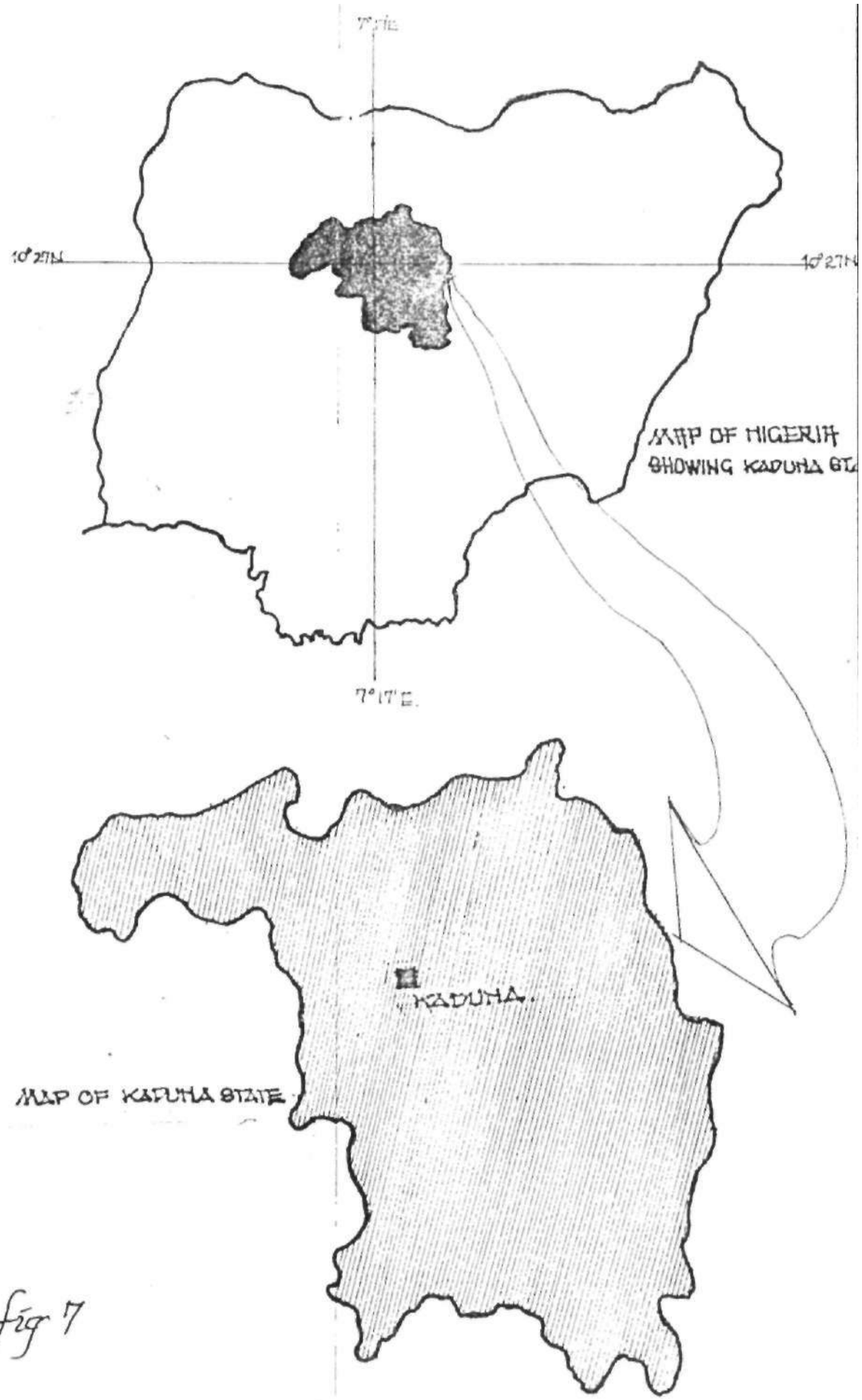

7°7'E
10°27'N
10°27'N
MAP OF NIGERIA
SHOWING KADUNA ST
7°17'E.
KADUNA.
MAP OF KADUNA STATE

fig 7

3.6.2 The Micro Site.

The proposed micro site for this proposal is located to the east of Kaduna City along Katsina road. The Muslim Pilgrims welfare board boarders it to the north on the opposite side of the (Katsina) road. To the east of the site is Kaduna Clinic and School for the deaf with an orchad separating them (within a Valley through which a stream runs). To the south of the site are a primary school and medium density residential housing spanning round to its west.

This site has been chosen for: Its relative quietness: its easy accessibility to would be users and the public; the area along the stream quiet enough for open air or outdoor meditation and therefore inspiration for music ministers, if well treated with landscaping elements.

3.6.3 Geographical Characteristics

i. Geology

The basic geological structure of Kaduna is one consisting of magnetic mixed strealey rocks with granite in parts with varied darker and softer bands. Over the years however most of the surface area has been demanded into laterite.

ii. Soil

The soil type is of laterite formed as a result of drift deposits which mantle a solid sedimentary and pre-combarian basement of granite rocks. This soil type common to the Northern plains may have a covering up to 14 feet in depth and made up of fine textured laterite, which tends to be water logged in the rainy season and dries out during the dry season.

iii. Topography

The site is relatively flat and slopes very gently towards the western valley into the stream. The calculated gradient for the site is 1m in which is about.

The bulk of rain water will be collected at the stream.

iv. Vegetation

The vegetation is basically of park savannah characterised by a continuous canopy of shrubs as well as thick tall grass. At present orchard trees align the stream. Non of these however is expected to constitute any constraint on site.

Nonetheless, inorder to provide for a cool environment and enhance ventilation and landscaping, it will be necessary to plant shady trees where possible.

3.6.4 Micro Climate

i. Temperature

The highest temperatures recorded are usually in the month of April with range between 35°C (95°F) to about 40.5°C (105°F) while the lowest is between 7.2°C and 12.7°C, recorded in the month of January.

Furthermore, it has a mean range greater than that recorded in temperate climates, thus extremes of cold and hot may be experienced in a single day causing considerable changes in humidity, hence strains on people.

ii. Relative Humidity

In the dry season, this may be below 10% in the afternoon and about 30% at dawn. It could be uncomfortable in this period, moreso with fine dust blown across by the harmattan winds. August however, is a relatively cooler month due to the rains which bring a humidity of over 70% at mid day and 95% at dawn.

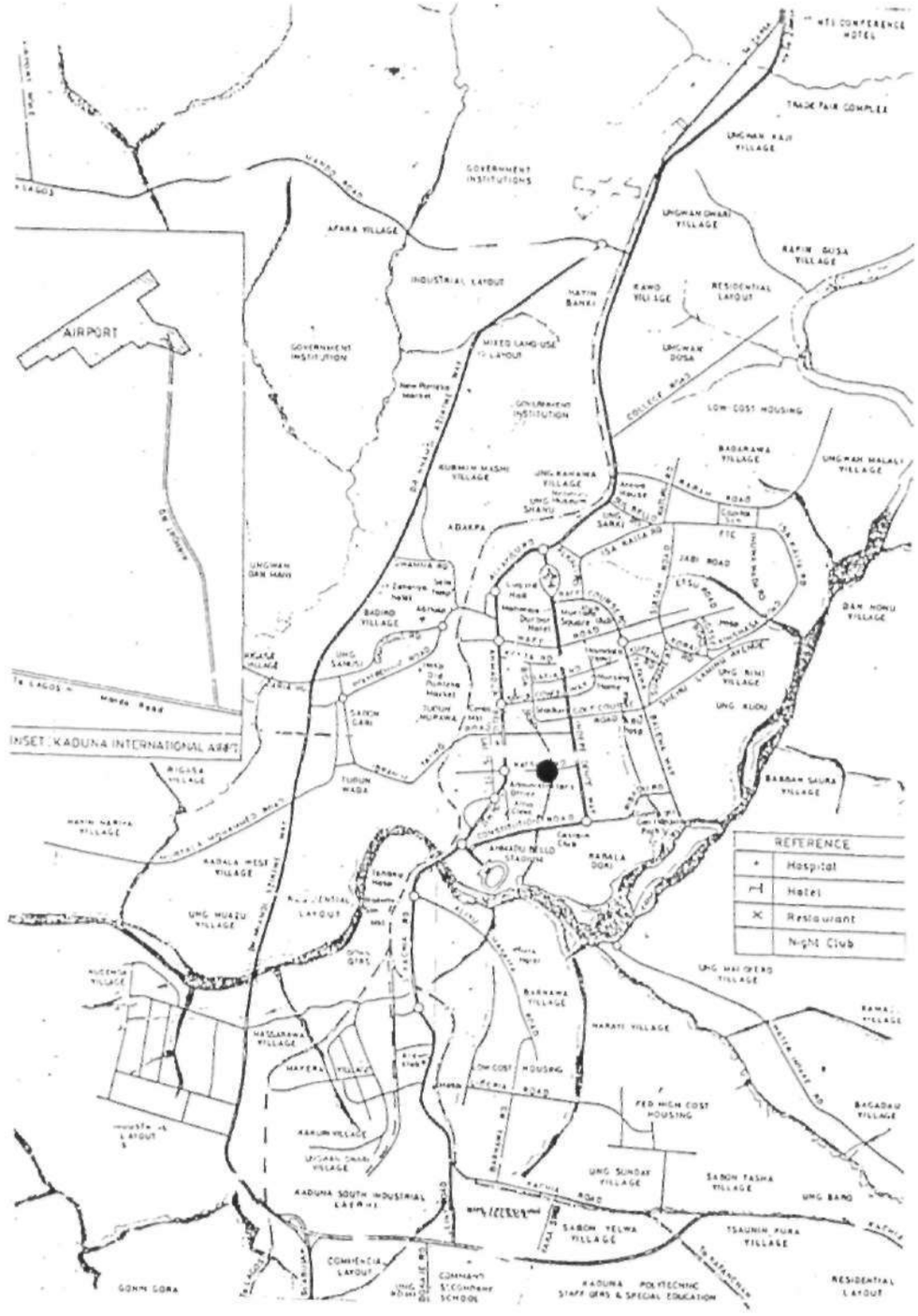
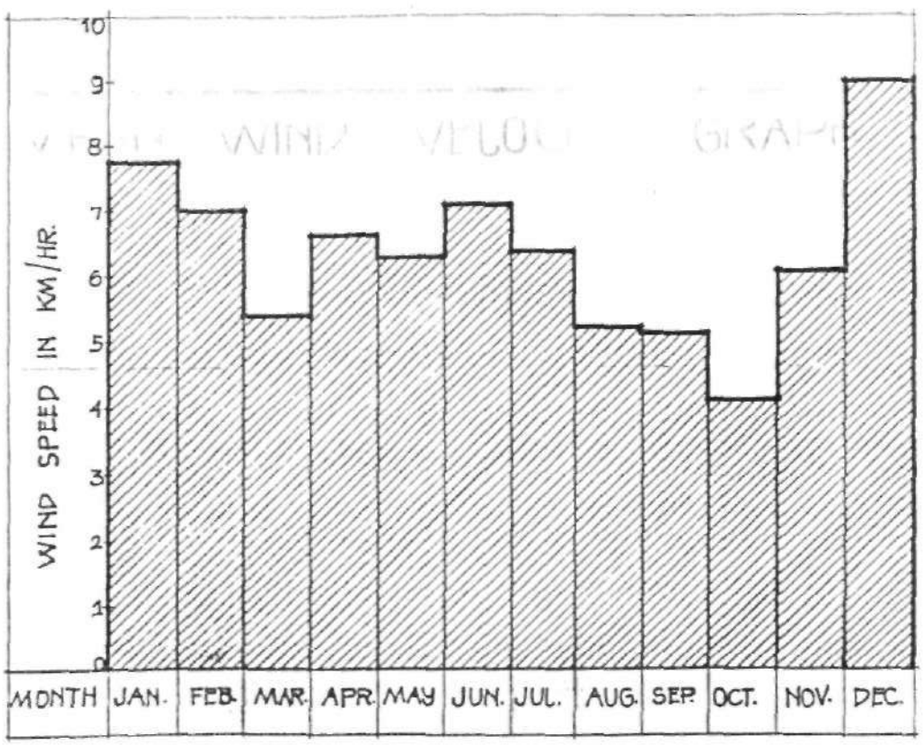


fig 8 • SITE LOCATION

MEAN WIND VELOCITY GRAPH.



MEAN TEMPERATURE GRAPH.

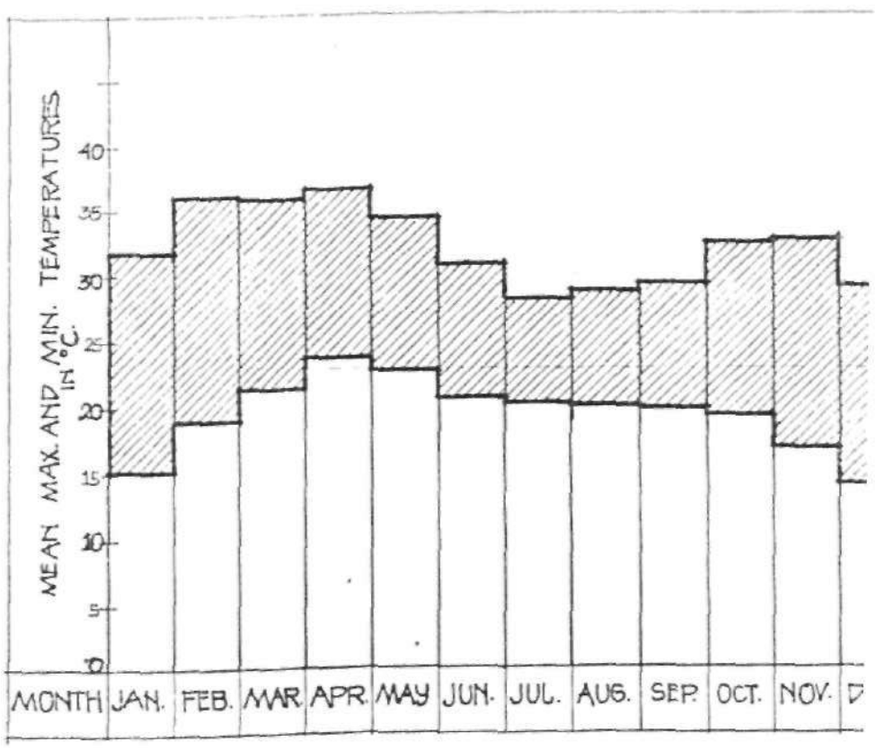
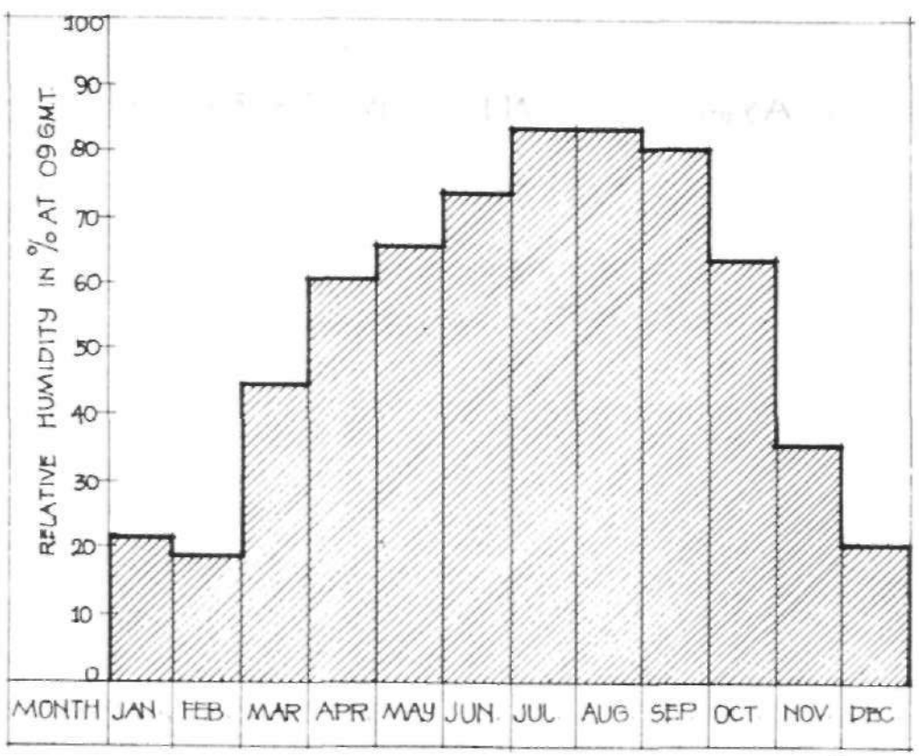


fig 9.

MEAN RELATIVE HUMIDITY GRAGH.



RAINFALL GRAGH.

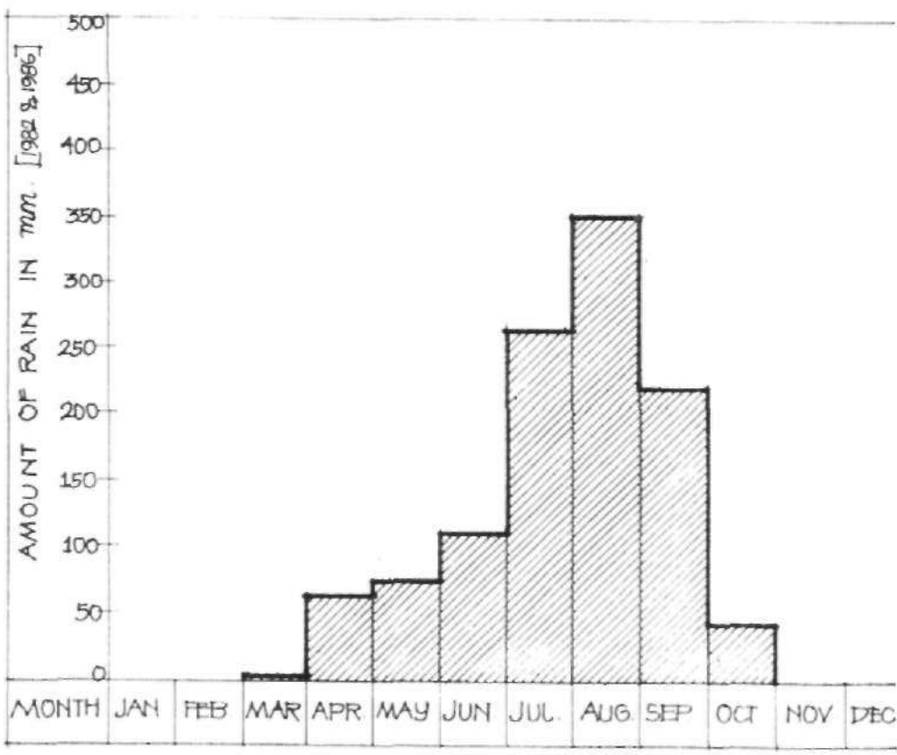


fig 10

There is need for adequate cross-ventilation for all year comfort in Kaduna as well as effective shading to reduce the desiccation of high temperature and low humidity.

iii. Winds

Two major air masses prevail in Kaduna. They include: the tropical continental air mass associated with the North East (NE) trade winds of Sahara origin, responsible for the dry season; and the tropical Maritime air mass associated with the South West (SW) trade winds formed over the Atlantic ocean blowing to the NE which is responsible for the wet season.

The maritime winds blowing from the SW direction are cooler and generally more desirable than the cold dusty harmattan winds. It is necessary to orient buildings and their openings to enhance natural ventilation from maritime winds and to screen off the harmattan winds by use of barriers as trees, walls, and so on.

iv. Rainfall

Rainy season in Kaduna spans between May and June and climbs to a climax from July to September measuring between 11-12 inches.

It is necessary to provide drainage systems capable of holding large volumes of water.

3.7 Summary

It can be deduced from the case studies that the major concern of a music structure is that which pertains to acoustics. The following can be deduced.

i. Music structure or buildings should be located far away from noise sources or in relatively quiet environments.

ii. On the site, buildings should be zoned according to noise levels: Noisy, less noisy and quiet areas respectively with the latter found deeper within a site, away from noisy traffic.

iii. Planes in building as well as openings require special acoustic treatments inorder to serve their purposes.

Planes refer to walls, ceilings and floors while openings are doors, windows and son on.

a. Provide cavity walls between rooms (to attenuate noise) by using dense concrete blockwork or provide finish material like gypsum board over sound dampening boards on dense plastered masonry blockwork.

b. Also provide carpet on screen underlay or carpet over foam rubber on screen underlay to absorb noise.

c. As much as possible, avoid hard floor surfaces within music room spaces particularly corridors.

d. Provide sound locks or double doors with foyer before entering music room.

e. align music rooms in single linear pattern or cluster music rooms and use splayed and extended cross walls between rooms to prevent flutter and enhance good acoustics.

f. Also locate music rooms on single volume and in double volumes, allow partition walls terminate at upper concrete slab.

g. Provide double glazed windows to reduce noise interference and provide worth roof lighting to corridors.

iv. Provide ramped surfaces where site situation permits to ease transportation of instruments.

v. Define enhance and accesses and where necessary separate instrument and human access.

vi. Provide adequate landscape, trees, shrubs and grass ground cover to make for a cool environment and help absorb sound or interfering noise.

CHAPTER FOUR

4.0 FORMULATION OF BRIEF

This chapter generally discusses the formulation of a brief as well as planning consideration for a music complex such as the music academy being proposed.

The early part of the chapter discusses the classification and relationships of the various units of a music academy. This is a summary of briefs studied from various case studies discussed (as well as those not discussed in this write - up), a review of relevant architectural literature (such as "Time savers standard for Architects" and "Architectural acoustics"), as well as those made from interviews with music directors of music schools and churches.

The other half of the chapter however discusses the planning considerations necessary for a music academy of the sort being proposed. It is also largely a result of studies from relevant architectural literatures as well as case studies made.

It is worthy of note that in this text a deliberate attempt is made to be as concise as possible, to enhance easy understanding of the basic principles involved in the planning of a music complex as well as to avoid a boring reading of the text which really is very technical and will require due consultation with an acoustical expert to give a more elaborate and accurate information. However, this is beyond the scope of this write-up.

4.1 Classification of the Academy

Generally, music schools consist of a music programme which may be classified into four parts namely: Classes in music theory (music appreciation and voice training); Classes in music related activities as drama and choreography; Choral activities; and instrumental activities.

Furthermore, training in these fields will involve: listening skill development, learning to listen to music intelligently and perceptively; acquiring basic information about music styles, forms, terminology and other fundamental information for a knowledge of music; positive attitude development towards music. To this end, these training will require facilities for the best noise control possible. The size and shapes of rooms and construction materials being important factors to be considered. With regard to those rooms with optimum reverberation time, even sound distribution and freedom from undesirable sound absorption at certain pitches are basic requirement.

Moreso, good traffic circulation pattern (of vehicles, pedestrians and equipment) as well as proper and adequate storage of training facilities (as musical instruments) are very essential ingredients in the design of this school. Ventilation and wghting are not excluded.

4.1.1. Components of Academy

The components of the music school can be divided into two district classifications depending upon the use of the areas. There are those used for instructional purposed and those serving in Auxiliary capacity.

i. Instructional areas include

   a. Regular classrooms, used for normal academic activities like classes for music theory, history, composition, arranging and appreciation. It may contain listening facilities storage spaces for books and records, projection facilities and probably a rhythm instrument like a piano. It should accommodate a number of students.

b. Rehearsal Hall: These will be required for instrumental rehearsals, choral rehearsals (as well as rehearsals in other related activities as music drama, choreography and the likes).

Instrument rehearsal room: These are used for instrument rehearsals for large band or orchestra. The size is dependent upon the number of instruments and players expected to use it at a time. Generally an area of $2.16m^2$ per player or volume of $10.8m^3$ per player is recommended. Its walls ceilings and floor should possess adequate sound control systems. The floor may or may not be tiered, but diffusion of sounds should be provided for.

Choral rehearsal rooms: These are used for vocal classes. The size is dependent upon the number of singers, choir or group as well as if they are required to stand or sit during rehearsals. It may also be tiered to prevent obstruction of tones of singers at back rows by those in the front and also for ease of conductors observation. Choral rooms may also be made to serve as regular classrooms for large number of students. It acoustical requirement though not as elaborate as that for the instrument room, yet should be adequately met.

It is worthy of note at this juncture that sometimes, combined instrumental and choral rehearsal rooms are provided for. However this is found not to be always ideal due to the difference in acoustical requiremnt of both areas. But generally, rehearsal rooms should possess shaped enclosures which make for sufficient sound diffusion, carefully

selected and well distributed acoustical finishes (on floors walls and ceilings) and high degree of noise control to enhance well controlled reverberation time.

c. Practice rooms which are unique facilities for music training are used for individual practice and mistructions, or as listening rooms. Isolation of some, ventilation, size, amount of rise and supervision (by instructor) are essential factors to be considered in their desgin. Moreso, care must be taken to prevent interference between the rooms and other areas.

Practice rooms should be able to accommodate an individual with whatever musical instrument used for practice. Furthermore an increased emphasy on group practice necessitates the provision for band rooms which are larger practice rooms. They all should be located in proximixity to storage areas for ease of transportation of instruments.

d. Office studios: Music instructions are best achieved by learning on a one to one basis. Thus the provision of a room serving as an instructional room as well as office accommodation for instructor. This not only helps the individual (student) in acquiring or developing his skill but also, it is essential for the teacher or instructor who needs to also practice, study and research to update his skill and aid his profession and distinguish himself in the art. The room should be made sound proof as well as to contain the teacher a piano or keyboard and at least four students at a time.

ii. Auxiliary Areas. They refer to supporting facilities for the acquiring of music skills as well as for proper functioning of the school. They include:

a. Administrative core This is major part of the music school. It will provide office accommodations for the director and other administrative staff of the school, duplicating room, computer room, archive and so on.

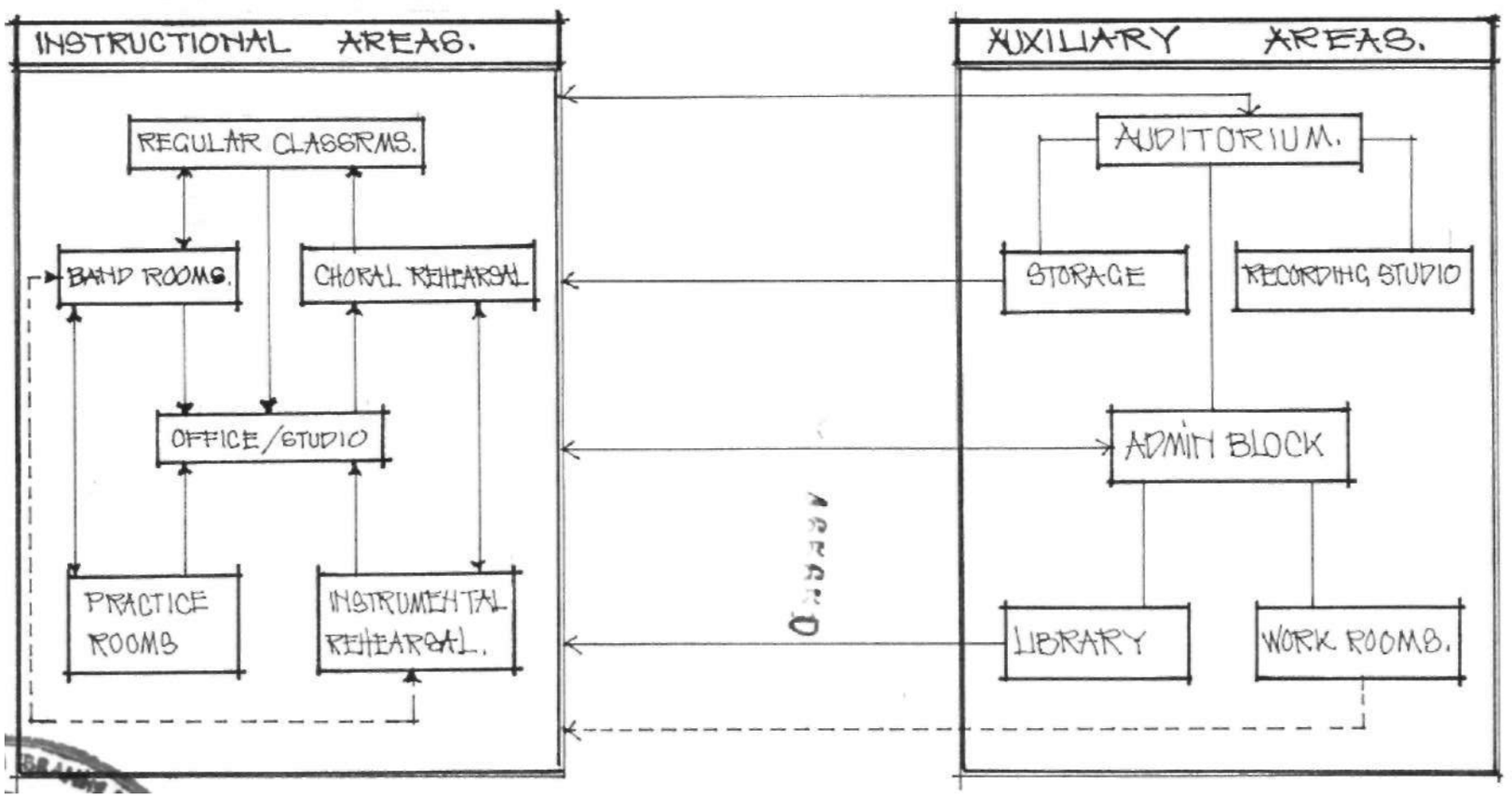
b. Library: A music library should be provided for to contain suitable studying materials, reading room, listening facilities (sound proof individual booths) storage facilities for books records tapes and so on. It should be provided to be able to render services to members of the public also. In some cases, it is advisable to provide special smaller music libraries for band, orchestra and choral areas separately.

c. Instrument storage: This is required for storage of musical instruments and gadgets alike. This should be adequately provided for with planned articulate traffic pattern and proper heat and humidity control. It should be strategically located so instruments can be retrieved by students and easily transported to practice areas or vehicles outside, usually conceniently located to to serve as buffer zone between two sound producing areas. It is planned with instrument type and size in mind.

d. Workrooms or workshops are meant for repairs and maintenance of musical instrument and musical gadgets alike. Should be located close to music rooms.

e. Theatre: A theatre or auditorium is about the single largest supporting facility to be provided for in the music school. It is required for music performances training. It should accommodate a considerable number of audience say about 400, bearing in mind also the presence of members of

fig 11 SHOWING RELATIONSHIP OF UNITS OF ACADEMY.



the public. It should provide stage for music and drama performances and well shaped and acoustically treated audience sitting area.

4.2 Planning Consideration

The peculiar consideration of music rooms and therefore music schools, pertain almost entirely to acoustics. Other factors as materials, construction methods, finishes, ventilation, lighting and so one are to a large extent dependent upon the acoustic requirement of the place. In other words, acoustic consideration precedes their provision.

Acoustic can be defined as the science and technology of sound and of its effect on people, it refers to the quality of sound as perceived or transmitted in a music room and building.

The acoustic consideration of the music school deals with making music rooms and buildings quiet as well as providing good listening condition for both speech and music. Music rooms require the lowest tolerable noise levels and must be so designed.

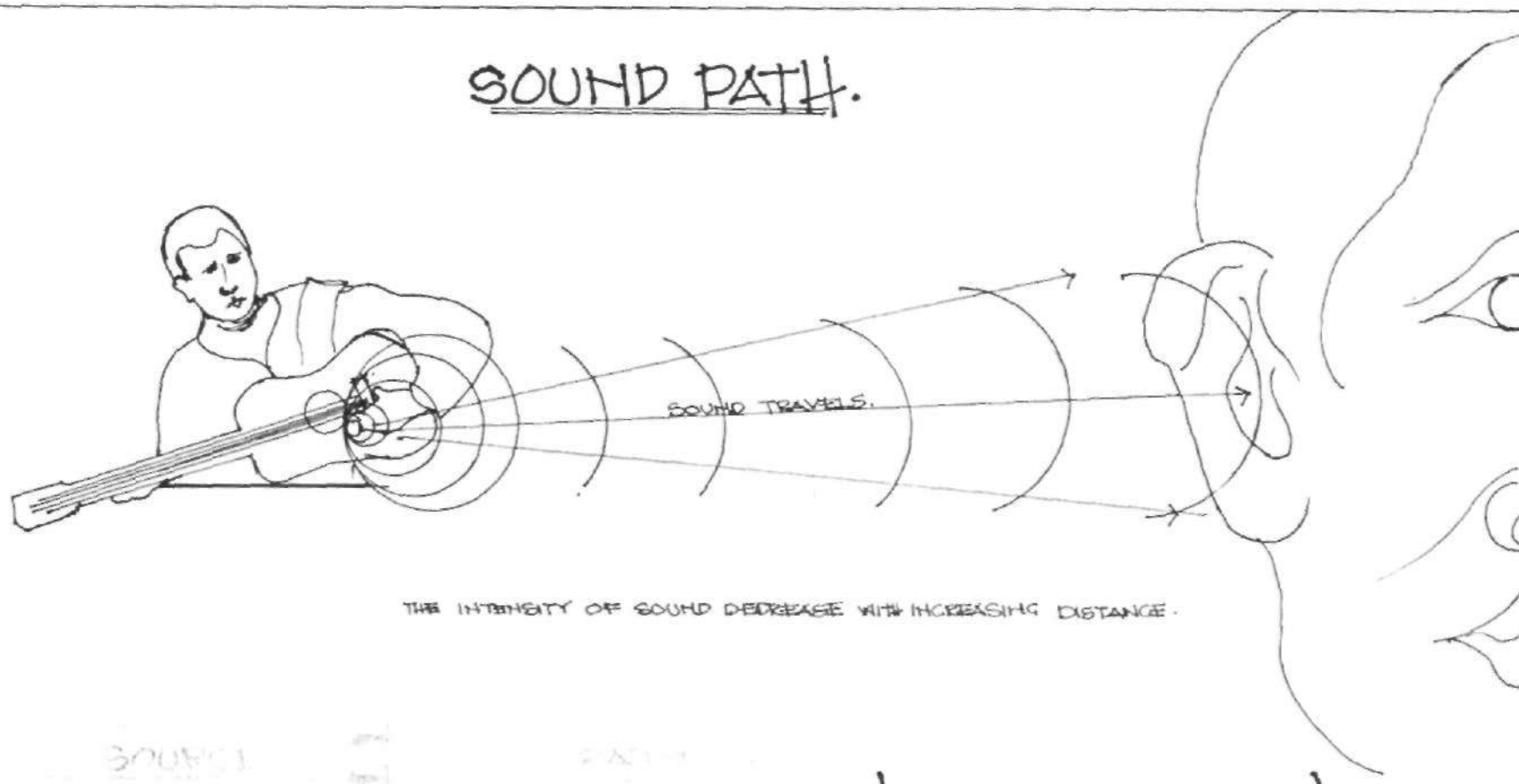
These shall be dealt with under various architectural acoustic considerations in the following texts.

4.2.1 Sound:

Sound is an everyday phenomenon which we hear or perceive around us. The chirping of birds in the morning, buzzing of bees, vehicular hustlings and so on are a few examples.

Sound is a product of the vibration from an object. When an object vibrates (eg. by striking the strings of a guitar), a resultant vibration of the surrounding air occurs. These vibrations due to sound energy produced, travel outward in all directions in a

SOUND PATH.



SOURCE → **PATH OR MEDIUM** → **RECEIVER**

STRUCK STRINGS OF A GUITAR PRODUCES VIBRATIONS IN FORM OF SOUND ENERGY

SOUND TRAVELS THROUGH AIR. OTHER MEDIA INCLUDE SOLIDS AND LIQUIDS.

HUMAN EAR RECIEVES SOUND IN THE FORM OF VIBRATIONS

fig 12

continuous expanding wave and on getting into our ears stimulate the auditory nerves there, which in turn transmit the message to the brain so we can interprete and recognize it as a particular sound or the other. Thus, sound needs a source, a medium and a receiver in the course of its travel. Other media apart from air through which sound travels include solids and liquids. The intensity of sound energy however decreases as it disperses over a wide area or mass.

There are desirable or pleasant sounds (e.g musical sounds) and there are also undesirable sounds or noise which are produced by vehicular traffic, mechanical devices, aircraft and so on.

Noise may enter a building in two distinct ways:

By transmission of air - bourne sounds which pass through door or windows openings cracks around walls, ventilating ducts, water pipes and so on. It may also be through certain parts of the building which themselves serve as diaphragms set in motion by incident sound waves on them. Air - bourne sound waves are deadened as they travel from room to room.

By transmission of structural vibrations noise can also enter a building. These vibrations are called structure, bourne sounds or impact noise from a parts of a building to the other. For instance from a floor above to one below or through wall or ceiling from a room to another. Furthermore, two noise sources: exterior and interior noise sources exist.

Exterior noise sources are usually air borne, and can be controlled in various ways. The first step to this is to locate building as far as possible from the noise sources. However where the site constraints do not permit it interiors or buildings may

be screened by: building mass or earth berms; locating or zoning parts of building which can tolerate noise, close to source (e.g utility areas); construct heavy exterior walls and roofs without cracks whilst locating, where possible, doors and windows array from noise source and make them well sealed; Dense trees shrubs and ground covers capable of effective diffusion of sound should be planted and made more than reflective surfaces as parmanents.

Interior noise sources could be airborne or structure borne. Their isolation or control is necessary and dealt with under, 4.2.3.

4.2.2 Room Acoustics

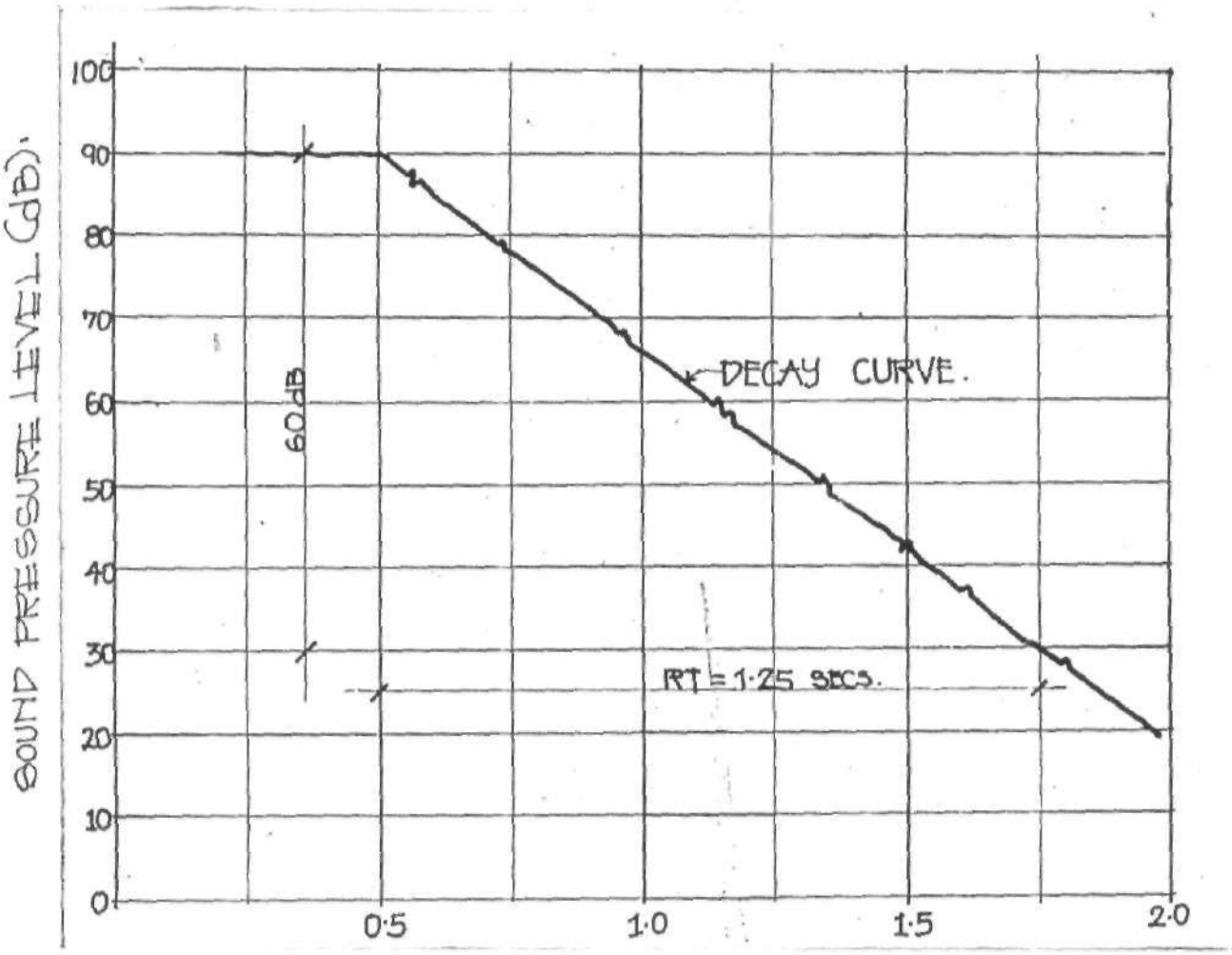
Generally, the acoustic quality of a rooms or space involves the reinforcement or enhancing of desirable sounds and the control or isolation of undesirable noise. It is dependent on or affected by: The size, shape or form of the room; The nature of the surfaces (walls, ceilings and floors) as well as their ability to exclude or isolate extraneous or unwanted sounds; and the use of furnishings made of sound absorbing materials.

i. Room form and shape:

Parallel surfaces as found with rectangular or square shapes reflect sound back and forth across a space and may cause excessive reverberation (or inter reflection of sound) and undesirable echoes or flutter.

Echoes often occur when parallel surfaces are more than 18m apart (in large rooms) while flutter may occur when the walls are relatively close (usually in small rooms)

Graph of: REVERBERATION TIME (RT).



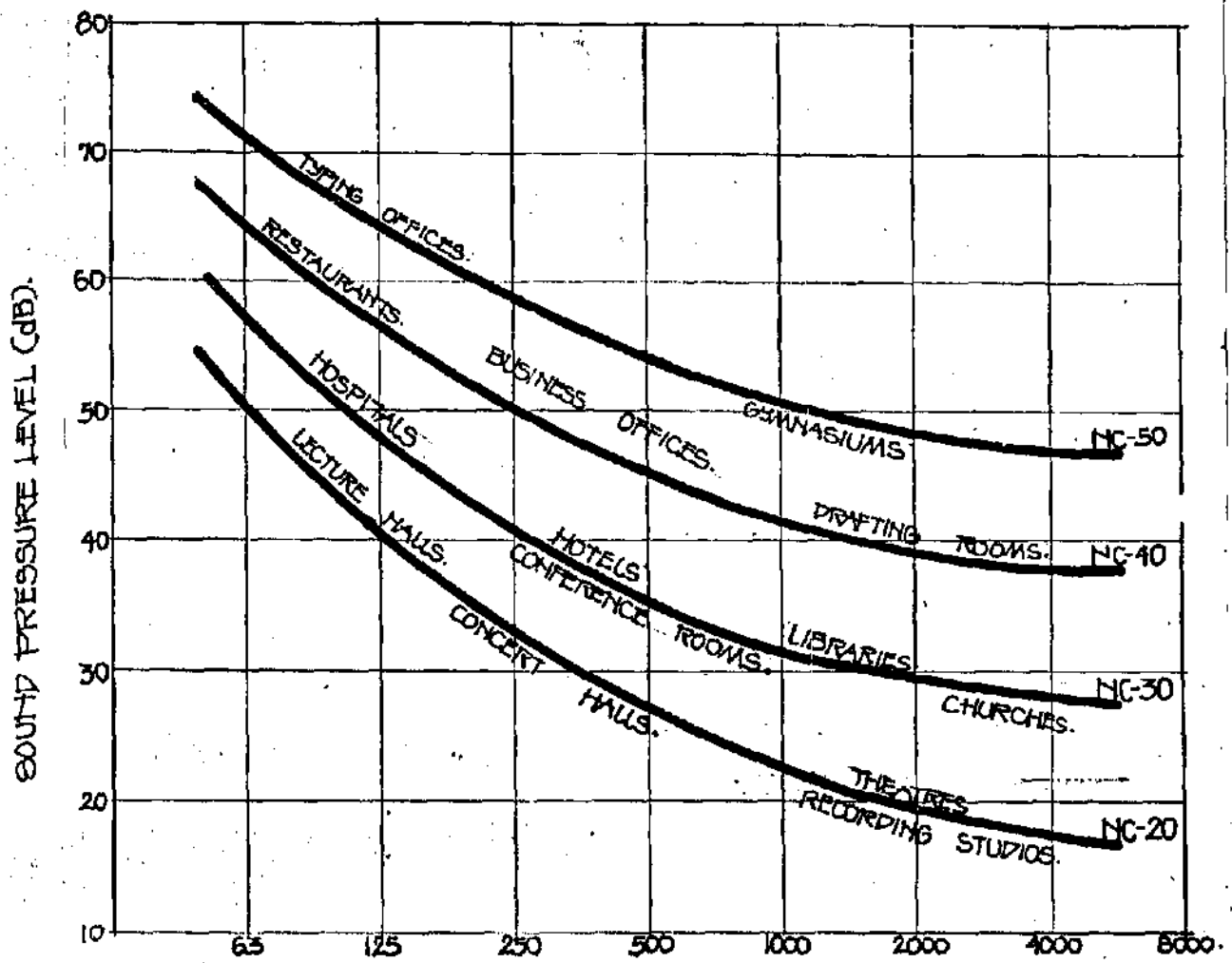
REVERBERATION TIME OF A ROOM IS THE TIME REQUIRED FOR A SOUND SUDDENLY CUT OFF TO DECREASE BY 60dB.

$$RT = \frac{0.16V}{A + xV}$$

WHERE: RT = REVERBERATION TIME IN SECS,
V = VOLUME OF ROOM IN M^3
x = AIR ABSORPTION COEFFICIENT.
A = TOTAL ROOM ABSORPTION IN M^2 SABINS.
$= S_1\alpha_1 + S_2\alpha_2 \ldots S_n\alpha_n$ (where S_1 TO S_n = INDIVIDUAL AREAS)
(and α_1 TO α_n = INDIVIDUAL ABSORPTION COEFFICIENTS).

fig 13.

Graph of : RECOMMENDED BACKGROUND NOISE CRITERIA.



ACTIVITY	NOISE CRITERIA
RADIO AND RECORDING STUDIO	NC 15 - 20
MUSIC ROOM AND T.V. STUDIO	NC 20 - 25
MOTION PICTURE STUDIO	NC 25
CONFERENCE ROOMS	NC 25 - 30
LIBRARIES	NC 30 - 35.

fig 14

The solutions to these include Reshape the structure to avoid parallels surfaces: Break up surfaces with splayed sound reflecting elements; treat surfaces with sound absorbing elements. (Fig.15)

Furthermore, concave surfaces as formed within cylindrical or circular shapes create undesirable focusing problems of echo, flutter or creep.

Solution to these include: Undulate surface of circular shapes; provide sound absorbing treatment. (Fig.16)

Convex surfaces however diffuse sounds and this is desirable in listening areas. (Fig.16)

ii. Nature of Surfaces:

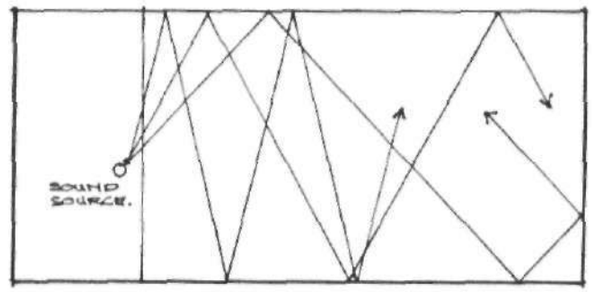
Building surfaces include walls, ceilings and floors. Generally speaking hard smooth surfaces are known to reflect sound while soft porous ones are good absorbers (Fig 4.2.2.) The disposition and area of hard and or soft surfaces required in a music room is determined by the sound level, reverberation time and resonance, desired for the particular use of the room.

The sound level in music rooms is the lowest tolerable for the human environment. It however differs in music rooms depending on the size as well as the intended use of the room. The recommended tolerable level of intruding sound is stated in terms of Noise criteria (NC) rating. For music rooms such as auditoria it is NC 25.

Reverberation time on the other hand refers to the time taken for sound to reduce in intensity or decay and become inaudible in a music room. More

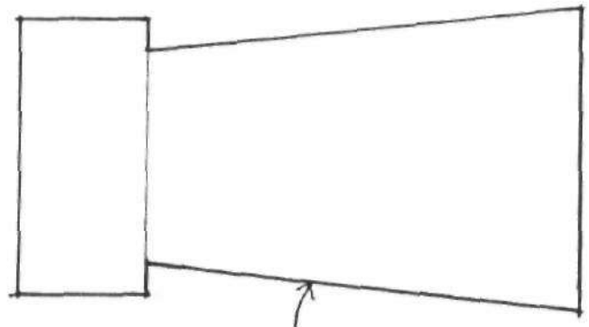
Fig 15 TREATMENT OF ACOUSTIC ROOMS.

PROBLEM.

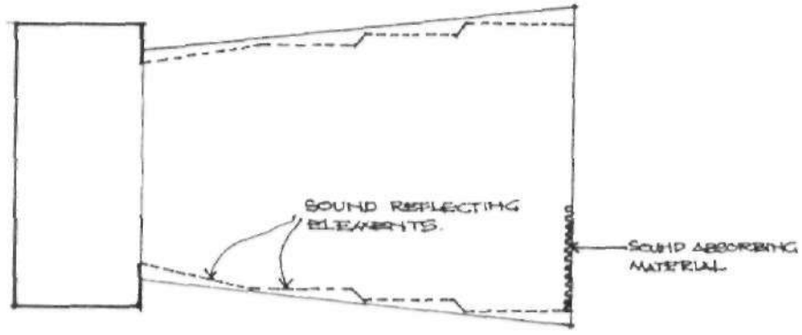


ECHOES MAY OCCUR WHEN PARALLEL SURFACES ARE MORE THAN 18m. APART WHILE FLUTTER OCCURS WHEN SURFACES ARE RELATIVELY CLOSE.

SOLUTIONS



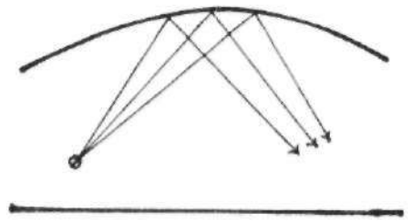
✣ RE-SHAPED OR RE-ORIENTED WALLS TO AVOID PARALLEL SURFACES AND PROVIDE BETTER DISTRIBUTION TOWARDS REAR OF ROOM.



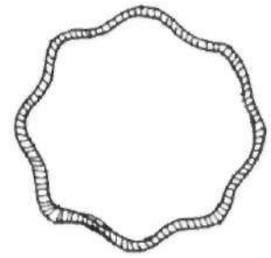
✣ BREAK UP SURFACES WITH SPLAYED SOUND REFLECTING ELEMENTS.

PROBLEMS

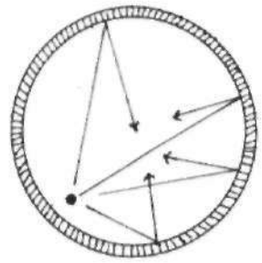
SOLUTIONS.



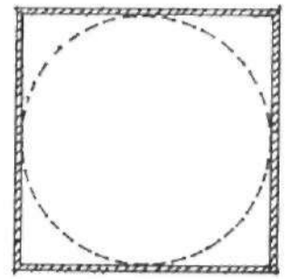
CONCAVE SURFACES FOCUS SOUND AND CREATE UNDESIRABLE HOT SPOTS OF SOUND.



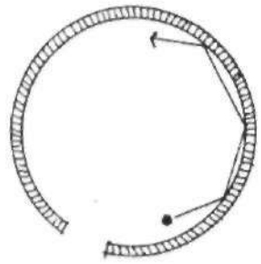
UNDULATE CIRCULAR SURFACES BY RANDOM SIZED LARGE SCALE UNDULATIONS TO PROVIDE DIFFUSION AND MINIMIZE FOCUSING OF REFLECTED SOUND.



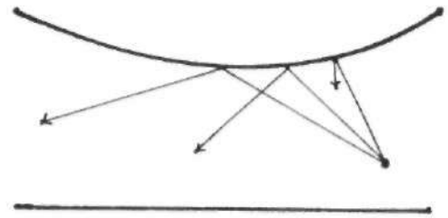
CIRCULAR SURFACES FOCUS SOUND.



USE ACOUSTICALLY TRANSPARENT MATERIAL AS WOOD TO CONCEAL ACTUAL ENCLOSURE WHICH IS THEN TREATED WITH SOUND ABSORBING MATERIAL.



CIRCULAR SURFACES CREATES CREEP.



CONVEX SURFACES DIFFUSE SOUND WHICH IS DESIRABLE IN LISTENING AREAS.

fig 16

precisely, it can be defined as the time in seconds for sound of 60dB intensity to become inaudible. In speech rooms it is about one second while in music rooms, requiring much longer time, it is two seconds.

Resonance is a phenomenon that occurs when a rooms (B) is vibrated as a result of the vibration of an adjacent room (A) due to frequency of sound from a source in the room (A). Thus it is necessary to reduce as much as possible the resonance nature of room B, to avoid interference in its interior.

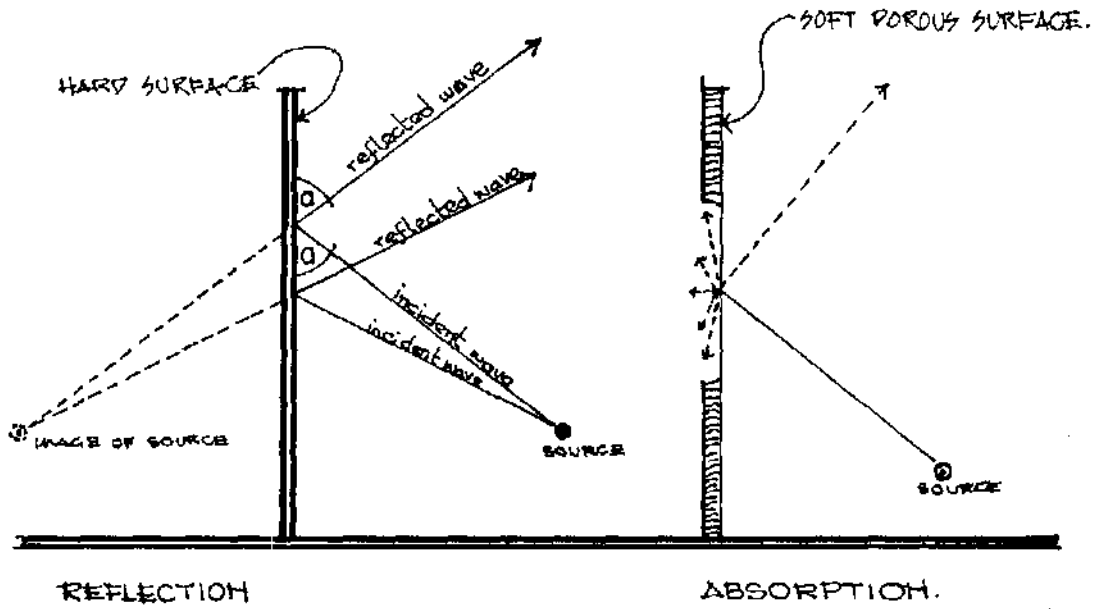
In large music rooms like auditoria, the side walls which may cause echo due to reflections in them amy be oriented to splay so as to provide for better reflections (fig 15). The back walls of these auditoria however may be treated with sound absorbing materials, or may also be splayed (fig 18) or modulated. (Fig. 18).

iii. Use of Furnishings:

It ia usually required that room furnishings (in a music room) as chairs wardrobes and so on, be made of sound absorbing materials so as to control reflections in the room. To this end auditorium chairs are usually found to be upholstered. Other sound absorbing furnishing in music rooms include acoustic tiles, carpets, curtains and so on. Their absorption coefficients is shown in Fig ( )

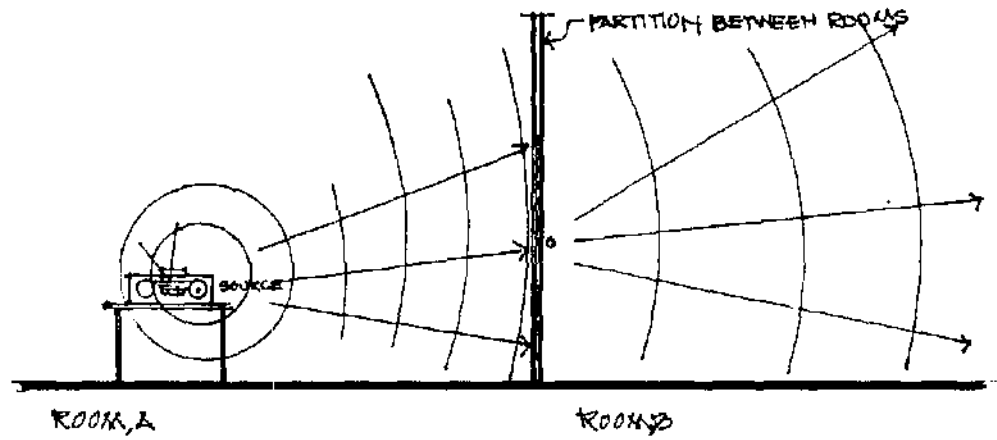
4.2.3 Sound Isolation

Sound isolation in music rooms involves increasing its path's resistance to both airborne and structure bourne sounds. The extent of resistance (or noise reduction) required in a room is dependent upon the noise level of the sound source as well as the



HARD SMOOTH BUILDING SURFACES ARE KNOWN TO REFLECT SOUND WHILE SOFT POROUS SURFACES ARE GOOD SOUND ABSORBERS.

RESONANCE



RESONANCE OCCURS IN ROOM B AS A RESULT OF SOUND ENERGY VIBRATIONS FROM A SOURCE IN ROOM A.

fig17

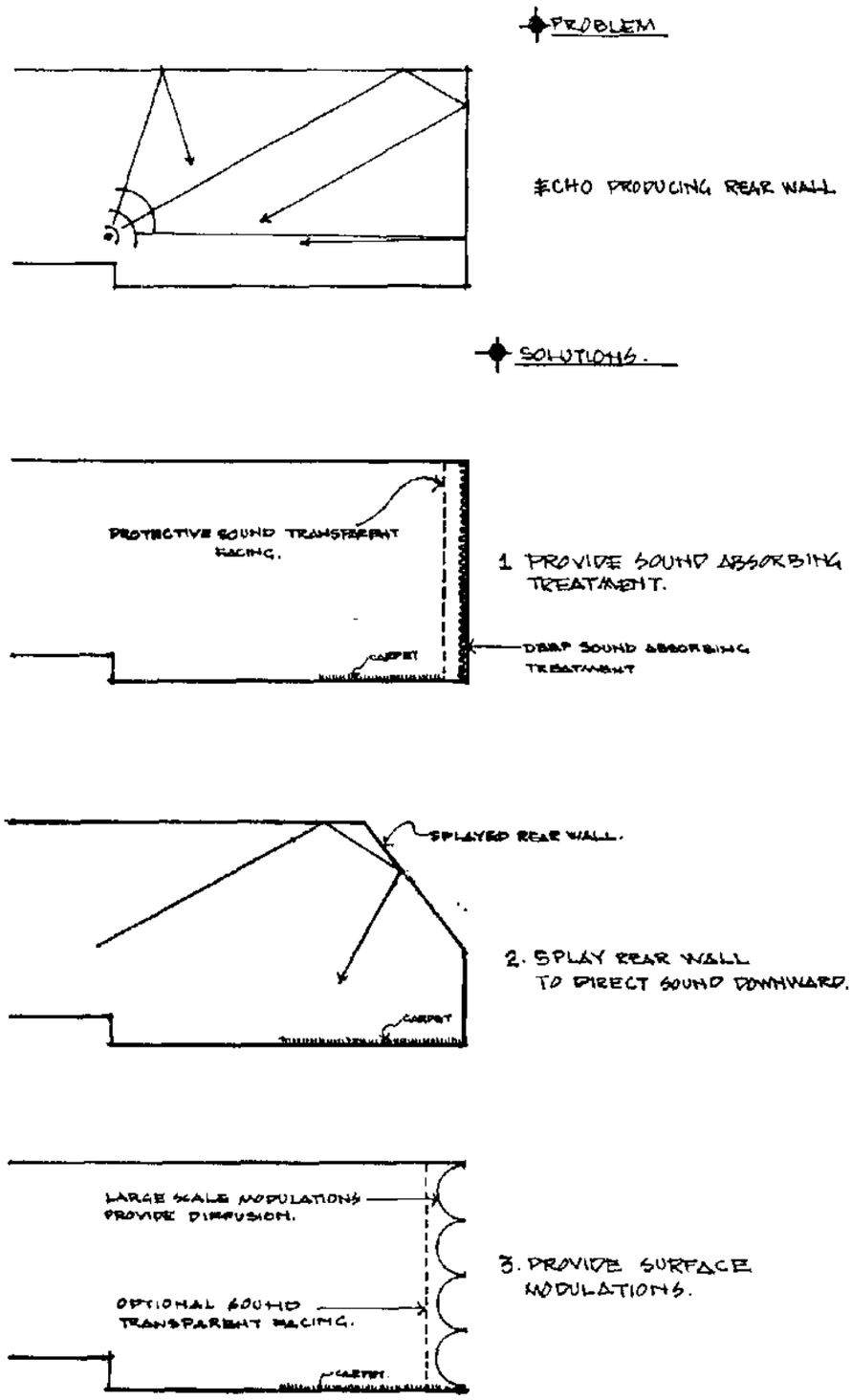

PROBLEM
ECHO PRODUCING REAR WALL
SOLUTIONS.
PROTECTIVE SOUND TRANSPARENT FACING.
1. PROVIDE SOUND ABSORBING TREATMENT.
DEEP SOUND ABSORBING TREATMENT
CARPET
SPLAYED REAR WALL.
2. SPLAY REAR WALL TO DIRECT SOUND DOWNWARD.
CARPET
LARGE SCALE MODULATIONS PROVIDE DIFFUSION.
OPTIONAL SOUND TRANSPARENT FACING.
3. PROVIDE SURFACE MODULATIONS.
CARPET

fig 18.

tolerable noise level expected within the listening room.

In the case of air bourne sounds from around site, the current sound level of site as well as future estimate of it, should be made so as to know the expected noise intrusion into a music room. While in the case of structure bourne sound the noise level of the source room should be measured and compared with the expected noise level for the music room in question. Generally, noise levels are measured by an acoustical expert according to expected noise critical (NC) curves (fig 14) which takes into consideration the sensitivity of the human ears to relatively low frequency noise level, according to a particular octave band rating.

Furthermore, the sound level perceived or apparent in a music room is dependent on:

i. Transmission loss through walls floors and ceilings. This further depends on the frequency of the sound from source and the mass resilience and area of surface construction. Walls, floors and ceilings are rated according to their sound transmission class (S.T.C.) values, which refer to a set of weighted curves that take into consideration the relative insentivity of the ear to low frequency sounds at low levels. (Fig.). It is an index of a partitions resistance to the passage of sound. Generally the higher the S.T.C value, the better the sound transmission loss and therefore sound isolation quality of a wall, floor or ceiling. Some methods of achieving sound transmission loss of walls floors and ceilings are shown in Fig. ( ).

ii. The absorptive qualities of the receiving space. Sound absorption is particularly necessary (to reduce noise) in rooms which themselves are potential noise sources or at least accommodate a sound source.

Porous or fibrous materials or panel resonators such as mineral wool. insulating fibre board. felt sound proof fibre and light weight concrete panels are used to face the interior surfaces of music rooms as to attenuate sounds in noisy rooms. The absorptive qualities of these materials depends upon their thickness. density. porosity exposure and constructional methods.

Other sound absorbing material includes carpets. heavy drapes or curtain and upholstered furnishings. An acoustical expert is needed to determine the absorption requirement in a music room.

4.2.4 Sound Reinforcement Systems

Sound reinforcement systems refer to special devices meant to aid the production and quality of sounds. They include:

i. Microphone, which is a device used in converting sound waves to electric signals corresponding to the wave patterns.

ii. Speaker, which converts the electric signals from the microphone to back sound

iii. Amplifier, used to strengthen the electric signals and make them powerful enough to operate the speaker to produce audible filtered and pleasant sounds.

So many other sound reinforcement systems like the synthesizers exist. Their compactibility with a room's acoustics, as well as their placements and positioning determined by function of room, are important factors to be considered in their use. They are mostly use in large auditoria or theatre where sound re-enforcement is required due to room size.

4.2.5 Mechanical Systems Noise Control

Mechanical noise sources include plumbing times, air conditioning and other service systems. They may not necessarily be excessively loud noise source but could certainly be a nuisance producing embarrassing sounds.

The best treatment of these is to abate the noise at its source so as to prevent its transmission to music rooms.

In the case of water supply and drainage systems, expansion valves and flexible loop connections like rubber fabric or plastic may be fixed between source and metal pipes to prevent or rattling and noise transmission along pipes, Moreso, pipes passing though partitions as floor slabs and walls should be sealed or insulated with flexible packing like felt, mineral wool or rubber neoprene.

On the other hand, in the case of mechanical equipment and supply systems such as air conditioning. Selection of quiet equipment is essential. For instance use of a sound proof generator. Further, resilient mountings like a floating or anti-vibration foundation may be built to isolate vibrations from source to music rooms. Also transmission through ducts can be treated by bringing the duets internally with glass fiber using alternating mufflers or smooth duct turns, bends or elbows.

However, where control of noise from source proves difficult, then a complete absorption or isolation of mechanical noise source to rooms or floors should be made, possibly by locating them in basements or in separate buildings.

4.2.6 Ventilation Consideration

Music rooms require sound proofing and it therefore might be difficult to provide natural ventilation particularly in the topic where it is most needed. It thus might be

CHA PTER FI VE

5.0 DESIGN REPORT

In this chapter just as the title implies, what shall be discussed is a view of the application of the research data compiled, analysed and synthesized in order to achieve the main objective of this proposal.

The chapter discusses the design in general, from the brief or user requirement to *cr* achieving a symphony of architectural forms". The plan, sections and elevations documented and explained with details as, the planning, structural and services systems recommended for adoption.

It is basically the chapter upon which the entire write-up and proposal lie.

5.1 Brief Requirement

The Brief requirement implies the list of functional spaces needed or required in a proposed project, in this case, the propose Music Academy. However, the adopted Brief resulted from a synthesis and review of Briefs from case studies made and from that given by the International Worship Commission (I.WC.).

5. 1. 1. Brief from case Studies

This is a summary of the briefs found in the case studies made and it contains the essentials of a music school:

i. Concert hall to sit an average of 500
ii. Recording studio
iii. Practice Rooms
iv. Lecturers' office (or office studio)
v. Regular classrooms
vi. Singing or choral rehearsal rooms
vii. Library
viii. Seminar room
ix. Changing rooms
x. Recital Hall
xi. Green room

xii. Instrument store

xiii. Listening room

xiv. Director's room

xv. Secretaries

xvi. Electronics/Maintenance room

xvii. Plant room

xviii. Amphi-theatre and or garden

5.1.2 Brief from I.W.C.

This Brief was given by the Kaduna Chapter of the I.W.C. and meant for a student capacity of one hundred (100) and lecturer strength of ten. It is a long term project expected to be embarked upon sometime in the future.

i. Concert Hall to sit 1,000 people

ii. 16 Practice rooms

iii. 6 regular classrooms

iv. 2 Instrument rehearsal rooms

v. Library

vi. 10 lecturers' office

vii. Changing rooms

viii. Stores for instruments

ix. Recording studio

x. Prayer rooms

xi. Repair Workshop

xii. Admin. Block to accommodate. Director of Music, Director of worship, Director of outreach Secretaries, Receptionist and other supporting staff.

xiii. Music shop

xiv. Generator or Plant room.

5.1.3 Modified/Adopted Brief

This is a modification the IWC brief, influenced by that of the case studies as well as other relevant considerations much more to suit the purpose and intention of this proposal. Furthermore, the status of the IWC is one which should elicit an equally, standard, adequately functional structure and facility much more in this rather challenging and dynamic modern day.

Moreso, there is a rather astonishing proliferation of churches which consequently lays a greater demand for the training of music ministers, therefore adequate provision is needed to be made so as to cope with increasing number of ministers and music types.

i. Concert Hall or theatre to sit 500
ii. Recording and control studio
iii. Green room/changing
iv. Instrument storage rooms
v. Choral rehearsal
vi. Drama rehearsal
vii. Generator/Plant room
viii. Seminar/Conference room
ix. Instrumental rehearsal room
x. Band rooms
xi. Lecturers' office/studio
xii. Instrument instructional room
xiii. Listening room
xiv. Special Music Libraries
xv. General Music Library
xvi. Maintenance
xvii. Regular/choral classrooms
xviii. Lecture theatre
xix. Admin. Block to accommodate Director, Ass. Director, Secretaries, workrooms, Computer/Archive room, Meeting room, bursar, tea/meeting, reception, foyer, public relations and other supporting stall.
xx. Restaurant
xxi. Common room
xxii. Garden/outdoor meditation

5.2 Accommodation Schedule

The accommodation schedule refers to a list of dimensions of floor areas of the various functional spaces required in this proposal.

These floor areas were adopted from standards laid down in the Times Savers Standards for architects as well as dimensions from case studies, still some of these dimensions were derived from areas occupied by properly arranged furniture and fixture as well as circulation spaces needed for some particular rooms.

In the case of this proposal, for the ease of understanding and order, each functional space with its dimension or floor area shall be treated under one of the three (3) major classifications of the academy namely:- Administrative area, Instructional or School area, and Theater area.

It is worthy of note that utmost care was taken in the allocation of these floor areas in order to avoid waste of space or give room to unutilised functional spaces.

5.2.1	**Administrative Area**		
i.	Parking (50 spaces)	-	12.5 m^2 each
ii.	Main Lobby/Enquiry	-	108m^2
iii.	Library	-	207m^2
a.	Librarian Office	-	13.5m^2
b.	Library Store	-	24.5m^2
c.	Store Keeper	-	9m^2
d.	Enquiry	-	13.5m^2
e.	Tape Store	-	10.9m^2
f.	Tape Office	-	10.8m^2
g.	Two Shops (Tapes and Books)	-	13.5m^2 each
iv.	1 Instrument Shop	-	27m^2
v.	Restaurant	-	162m^2
vi.	Kitchen	-	26.6m^2
vii.	Kitchen store	-	6.6m^2
viii.	Reception	-	3 1.5m^2
ix.	Display	-	63m^2
x.	Archive	-	31.5m^2
xi.	Director's office	-	36.75m^2
xii.	Waiting/Secretary	-	16.2m^2
xiii.	Toilets	-	6.0m^2

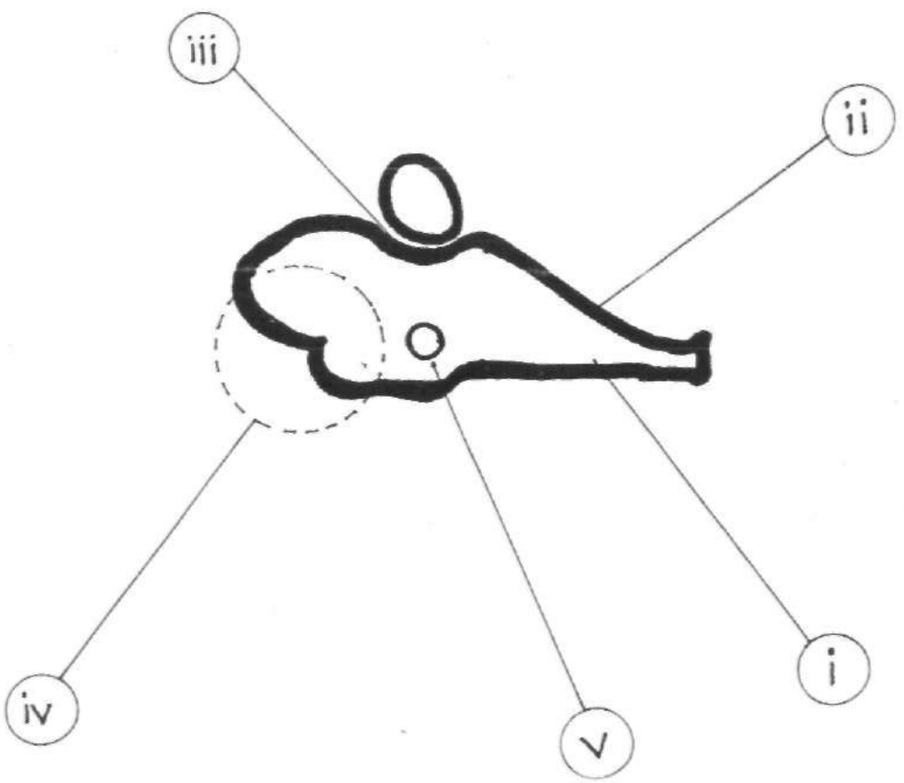
xiv.	Pre-conference	-	$9.0m^2$
xv.	Tea Room	-	$9.0m^2$
xvi.	Conference Room	-	$48.6m^2$
xvii.	Staff Room	-	$24.3m^2$
xviii.	P.R.O.	-	$15.3m^2$
xix.	Sec.	-	$9.0m^2$
xx.	Bursar	-	$15.3m^2$
xxi.	Sec.	-	$9.0m^2$
xxii.	Accounts Room	-	$22.5m^2$
xxiii.	Workroom	-	$22.5m^2$
xxiv.	Store	-	$11.7m^2$
xxv.	Supervisor	-	$12.6m^2$
xxvi.	General office	-	$24.3m^2$
xxvii.	Assistant Director	-	$20.25m^2$
xxviii.	Secretary	-	$11.7m^2$
xxix.	Lavatory	-	$22.5m^2$

5.2.2. **School or Instructional Area**

i.	2	2 Choral classroom	- 66.4m2 each
ii.	2	2 Regular classrooms	- 74.65m2 each
iii.	1	1 Lecture theatre	- $136.8m^2$
iv.	6	6 Lecturer's office	- $20.25m^2$ each
V.	1	General store	- $32.4m^2$
vi.	1	Lavatory (staff & students)	- $45m^2$
vii.	24	24 individual practice Rooms	- $8m^2$ each
viii.	1	Instrument instruction room	- $97.2m^2$
ix.	1	Instrument Repair Workshop	- $85.3m^2$
x.	1	Instrument store	- $40.5m^2$
xi.	2	2 Band rooms	- $20.25m^2$ each
xii.	1	Instrument Rehearsal Hall	-$97.2m^2$
xiii.	1	Common Room	-$32.4m^2$
xiv.	1	Special Music Library	-$182.52m^2$

fig 20. STAGE ONE.

DESIGN CONCEPT.



v. The front rounded, hollow part of the guitar.

5.3.2 Stage Two

This is the evolutionary and modification stage where the various parts mentioned in stage one are expressed as basic geometric shapes.

5.3.3 Stage Three

This stage is the final evolutionary process and it expresses an organised transformation of the various geometric shapes derived in stage two. Thus a careful observation and arrangement of these parts in stage two as they are related in stage one may give or reveal a unique structure as shown below. This is the adopted design concept of the proposed academy and it is achieved on plan.

5.4 Site Structure Concept

The site structure concept refers to the considerations and methods adopted in the choosing of the structure and planning order of activities on site. It is a strong basis for planning and arrangement of the various units of the Music Academy as it involves a careful analysis of the characteristics of the site with the view to having a proper placing of the various functional spaces.

Two major processes are involved. They include Zoning and Concepts based on zoning.

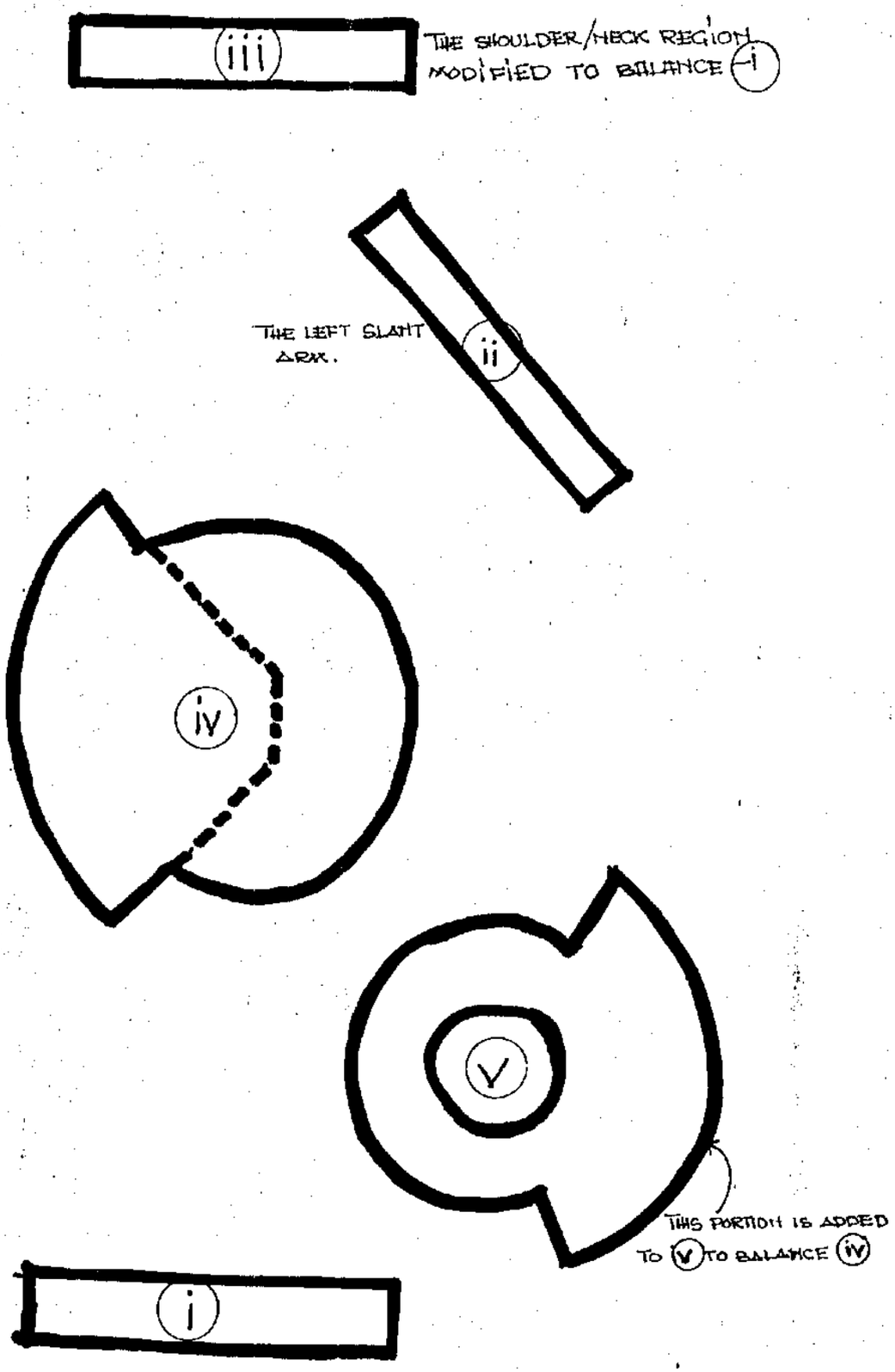
5.4.1 Zoning

Zoning is a process of analysis of various site characteristics as well as functional inter-relationships of the various building units with the view to helping to arrange and organise various components of a building as affected by these characteristics on site.

Thus, we have zoning based on. Noise, accessibility; views; topography; vegetation; climate; functional inter-relationships and so on. In the case of this proposal however, zoning is based on: Noise accessibility and functional inter-relationship of units. This is because these characteristics are basic of all that affect the planning of the academy. Furthermore, a synthesis of these zoning is done to obtain the site structure concept.

fig 21 STAGE TWO

DESIGN CONCEPT.



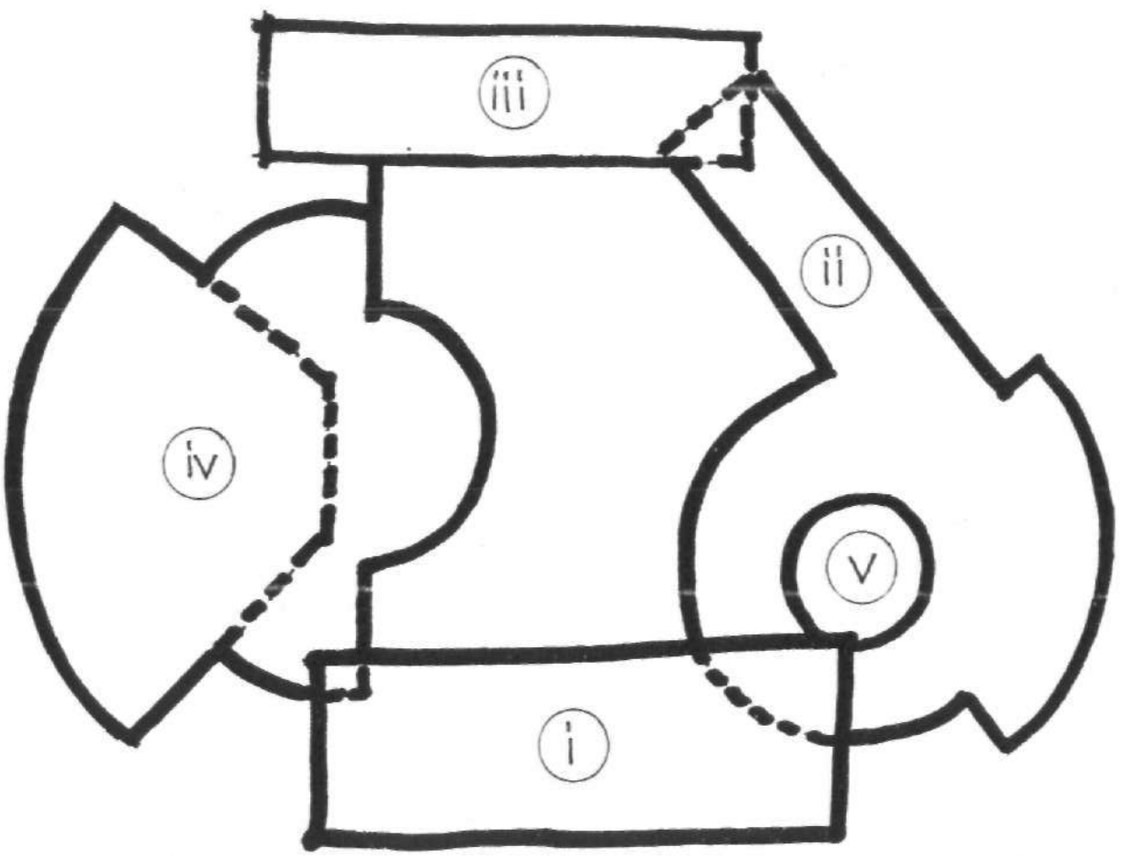


fig 22. STAGE THREE.
DESIGN CONCEPT.

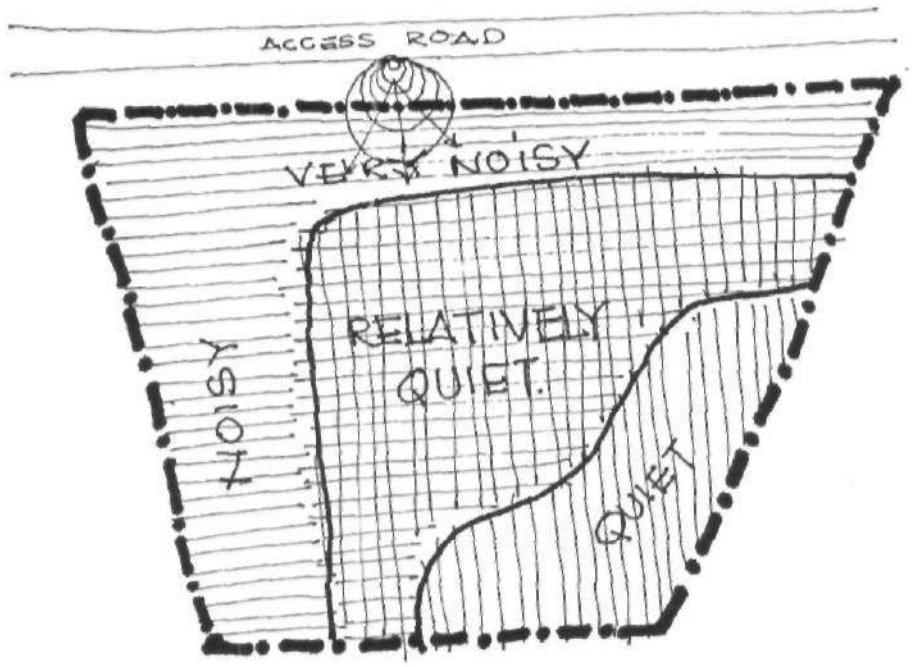


fig 23i SITE ZONING BASED ON NOISE.

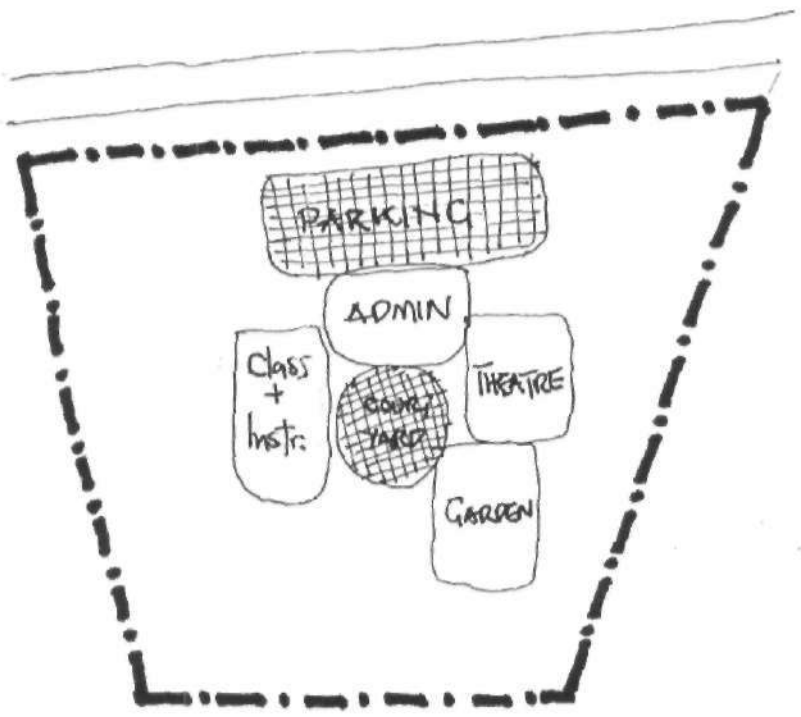


fig 23ii SITE STRUCTURE BASED ON NOISE.

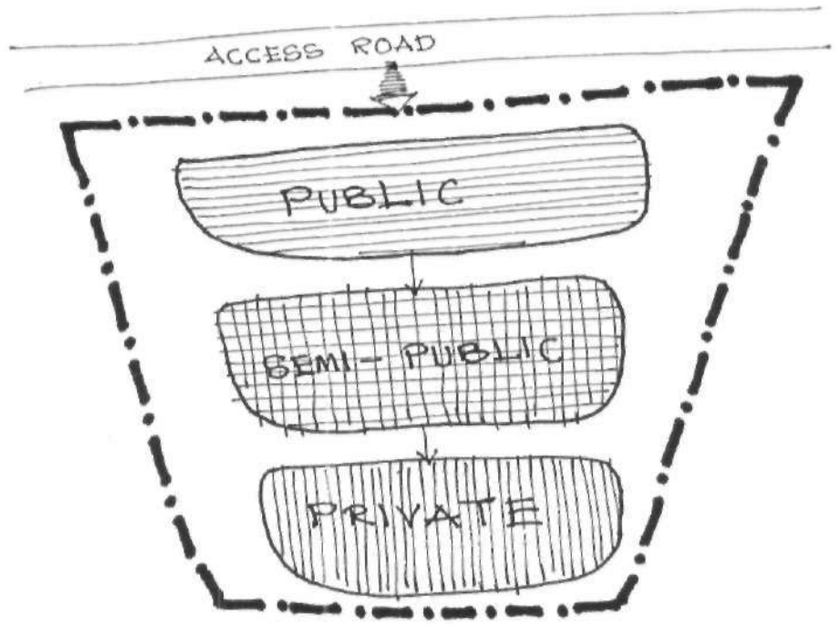


fig 24i SITE ZONING BASED ON ACCESS

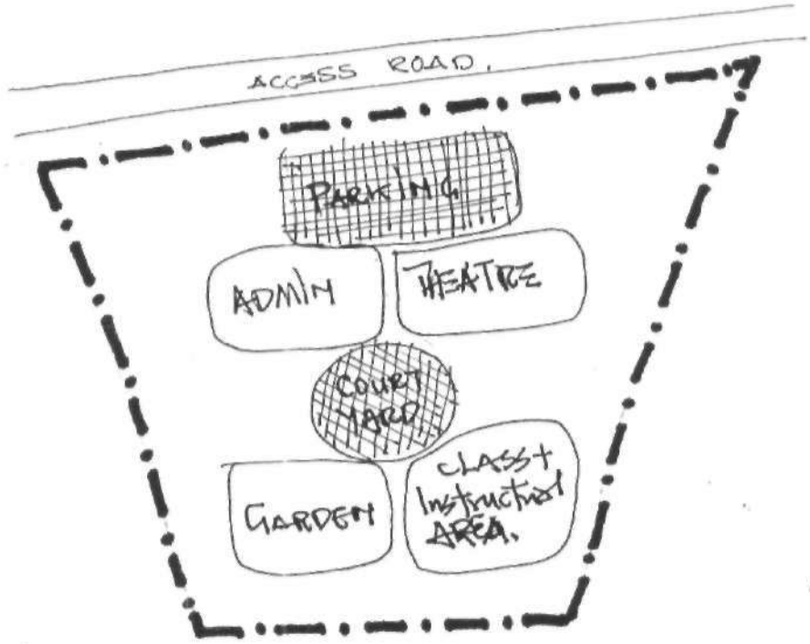


fig 24ii, SITE STRUCTURE BASED ON ACCESS

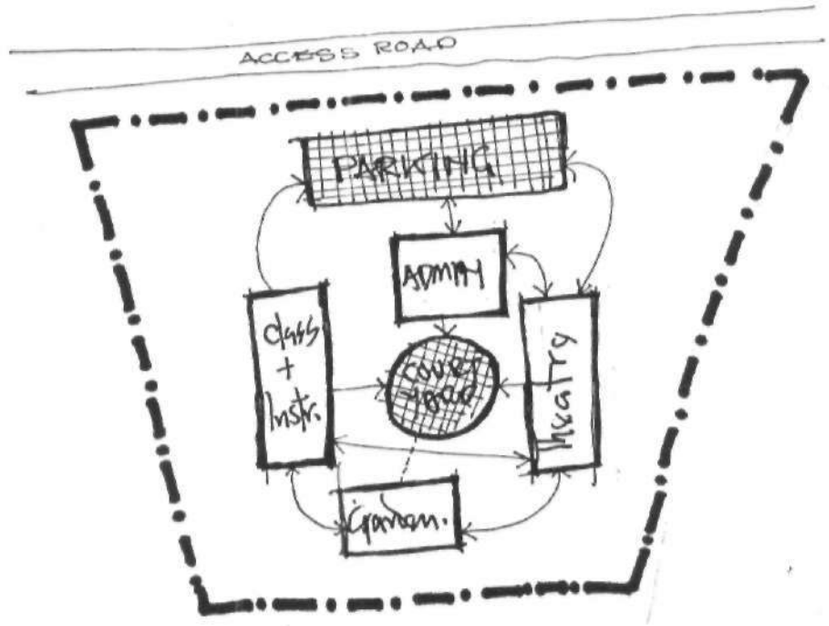


fig 25i FUNCTIONAL ZONING.

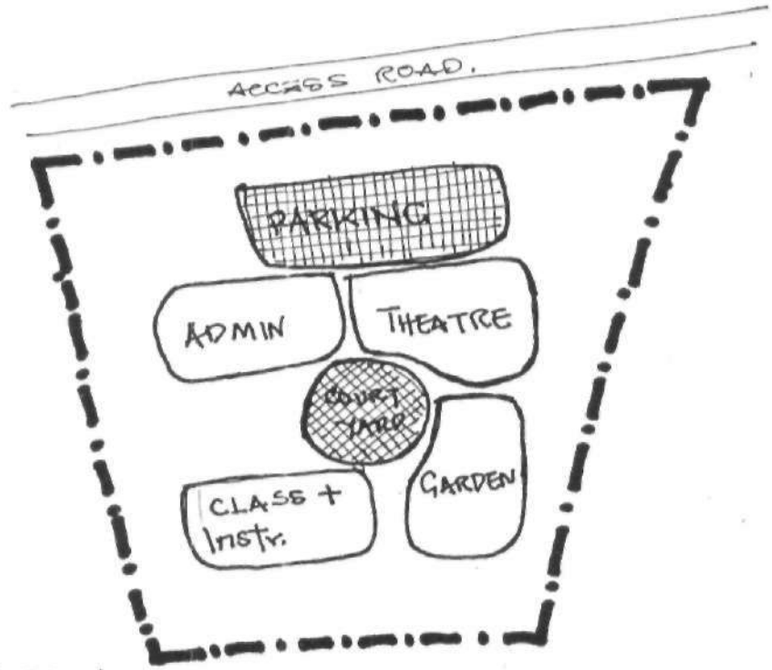


fig 25ii ADOPTED SITE STRUCTURE CONCEPT.

5.5 PLANNING

Planning is a process which involves outlining of the building structure showing the size and positions of the various functional spaces in relation to each other. In this proposal, planning is aimed towards creating an environment conducive for inspiration, learning; research and performance of music as well as providing sufficient articulate and rhythmic humus equipment and vehicle circulation pattern. Thus the relationship and arrangements of the various functional spaces and units determine the success of this goal.

From text 4.2, the basic functional units include: The Administrative area; The school or Instructional area; and the theatre area; Consequently, a cyclic operational pattern can be derived from the functions of these units, as follows.

The Administrative area is meant to manage, proffer and cater for the entire complex. It is the five wire of the complex, where the basic dispensing activities of the complex are discharged to. The school or instructional area where knowledge is taught acquired, enhanced and harnessed to. The theatre or performing area which climaxes the entire learning process. The result of which is further assessed by the Administration for proper appraisal to begin a new or improved operational cycle.

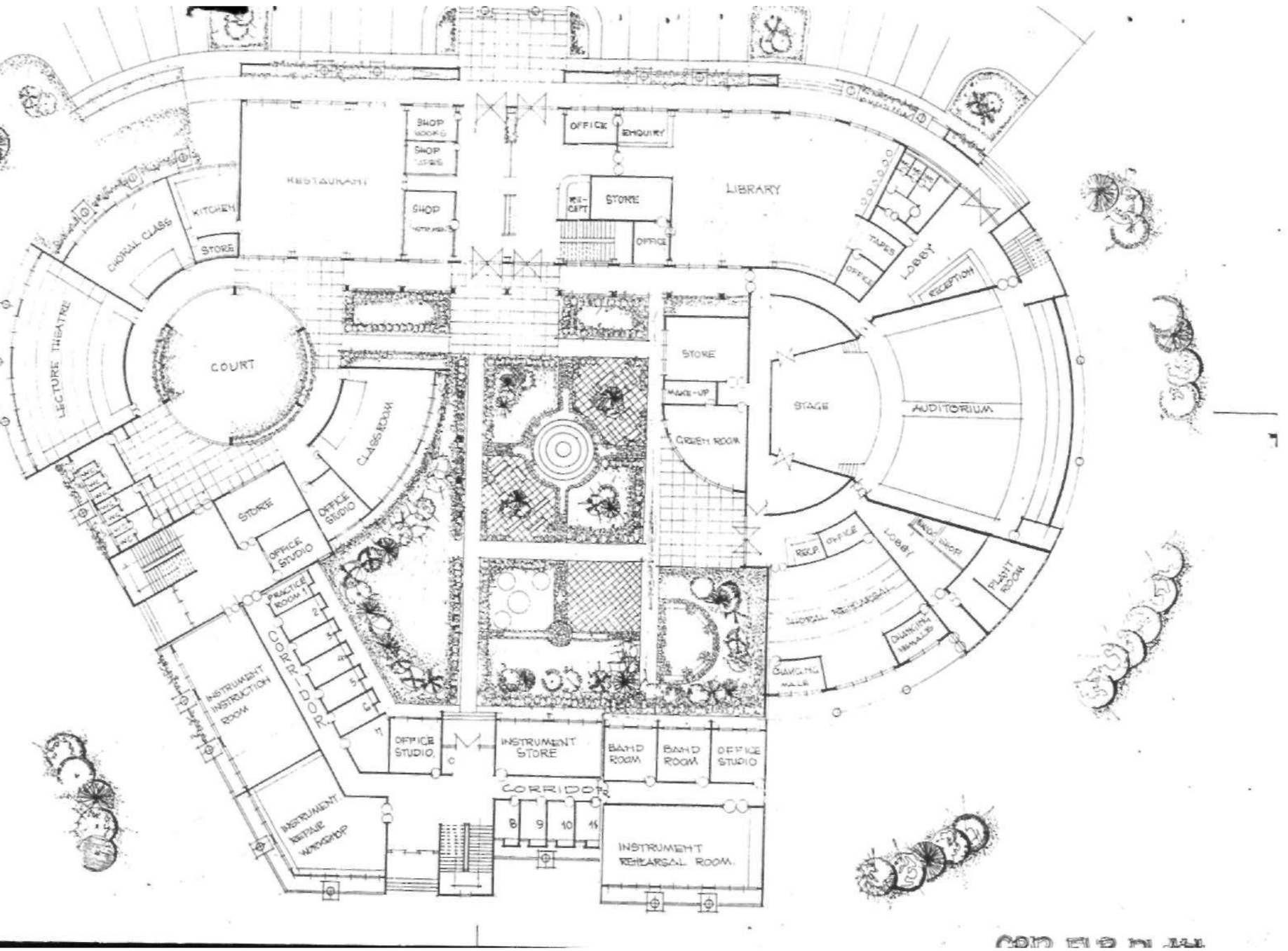
To this end, the various functional units are accorded adequate floor areas and proper forms or shapes to enhance their operational values.

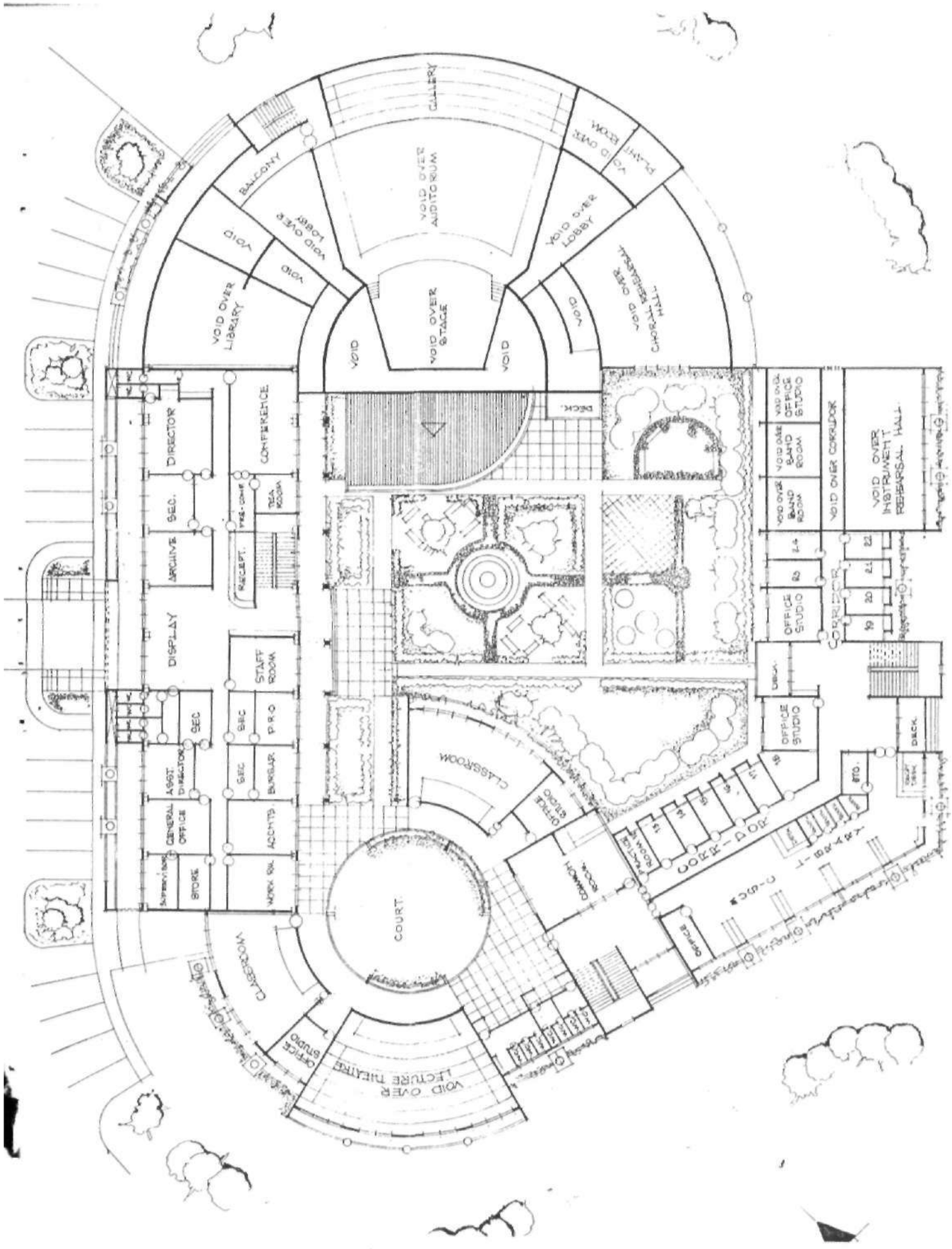
5.5.1 The Plan

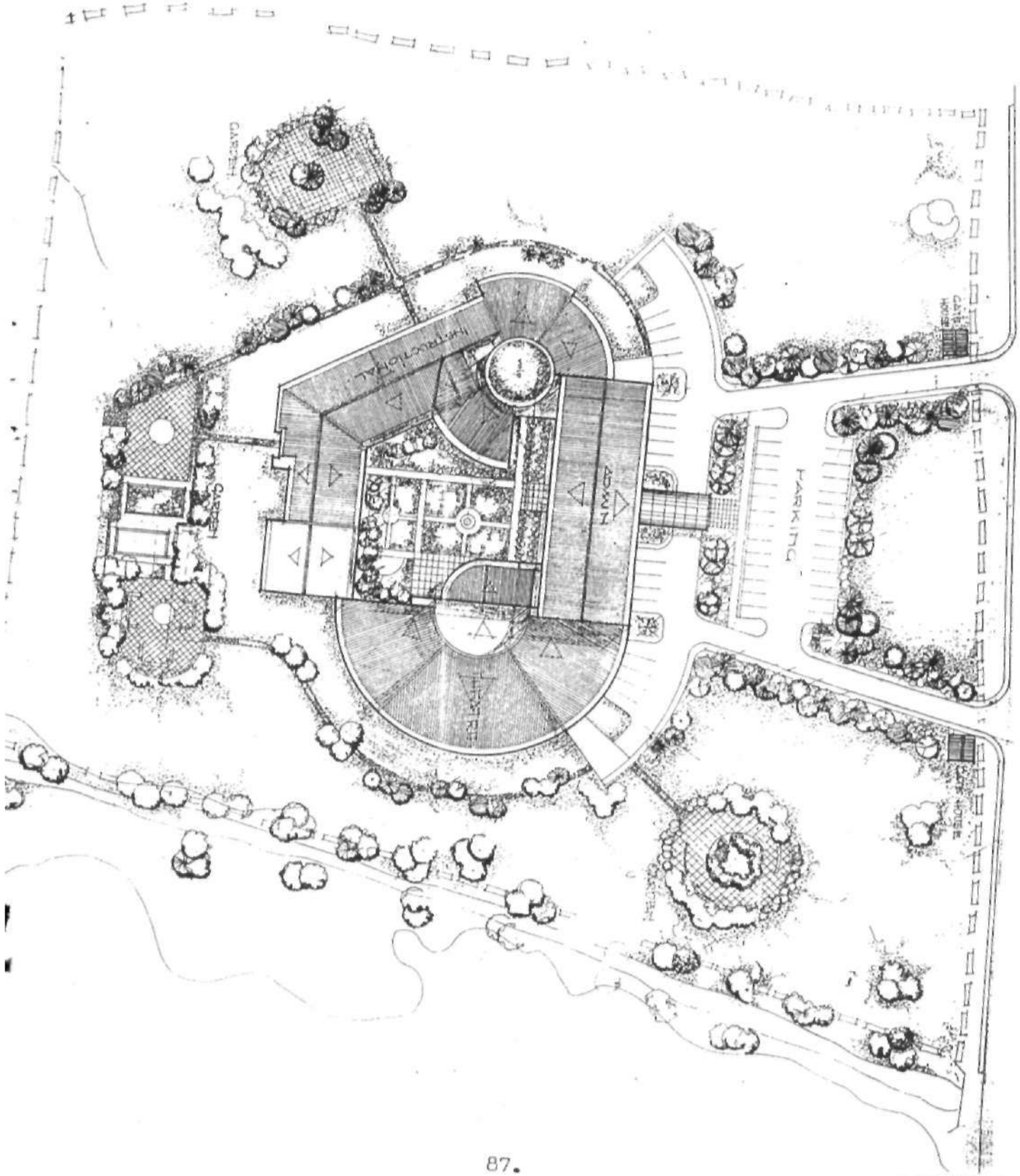
The entire structure or plan consists basically of a ground floor and an upper floor at the administrative and instructional areas (which are almost typical except in peculiar cases.) The theatre area is basically a double volume system.

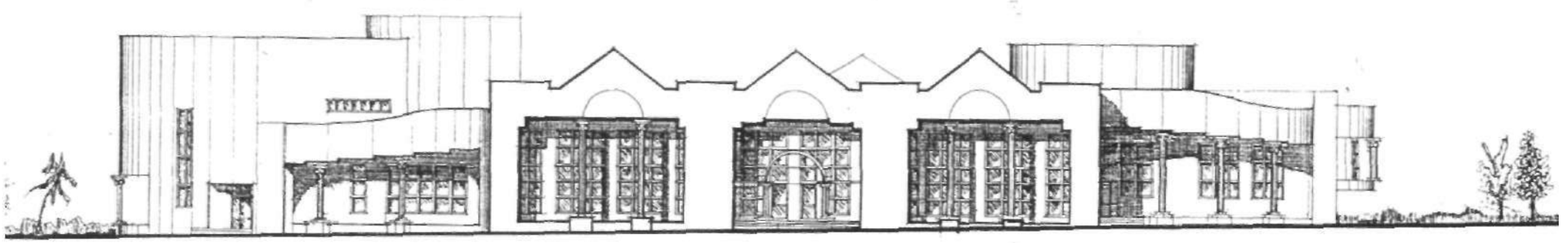
The Administrative area consists of a ground floor which accommodates a large reception hall, library facility, shops and restaurant while the upper floor accommodates the Admin. stall offices, display, archive, conference and workrooms.

The school or instructional area consists of a ground floor that accommodates classrooms, lecturers' offices, lecture theatre, individual practice rooms and repair workshop while the upper


RESTAURANT
KITCHEN
STORE
CHORAL CLASS
LECTURE THEATRE
SHOP
SHOP
SHOP
OFFICE
ENQUIRY
LIBRARY
STORE
OFFICE
COURT
CLASS ROOM
STORE
OFFICE STUDIO
OFFICE STUDIO
PRACTICE ROOM 1
2
3
4
5
6
CORRIDOR
INSTRUMENT INSTRUCTION ROOM
INSTRUMENT REPAIR WORKSHOP
OFFICE STUDIO
INSTRUMENT STORE
BAND ROOM
BAND ROOM
OFFICE STUDIO
CORRIDOR
8
9
10
11
INSTRUMENT REHEARSAL ROOM.
STORE
MAKE-UP
GREEN ROOM
STAGE
AUDITORIUM
TAPES
OFFICE
LOBBY
RECEPTION
RECP.
OFFICE
LOBBY
BAND SHOP
PLANT ROOM
CHORAL REHEARSAL
DUPLICATING
GAMELAN


VOID OVER AUDITORIUM
GALLERY
BALCONY
VOID OVER LOBBY
VOID OVER LIBRARY
VOID OVER STAGE
VOID
VOID OVER LOBBY
VOID OVER CHORAL REHEARSAL HALL
VOID OVER INSTRUMENTAL REHEARSAL HALL
VOID OVER CORRIDOR
DIRECTOR
SEC.
ARCHIVE
CONFERENCE
TEA ROOM
RECEPT.
DISPLAY
STAFF ROOM
SEC
P.R.O
BURSAR
ACCTS
GENERAL OFFICE
ASST DIRECTOR
STORE
COURT
CLASSROOM
LECTURE THEATRE
OFFICE STUDIO
COMMON ROOM
OFFICE
DECK
CORRIDOR


INSTRUCTIONAL
ADMIN
PARKING



APPROACH (NORTH) ELEVATION

APPROACH (NORTH) ELEVATION



REAR (SOUTH) ELEVATION.

I.W.C. MUSIC ACADEMY KADUNA

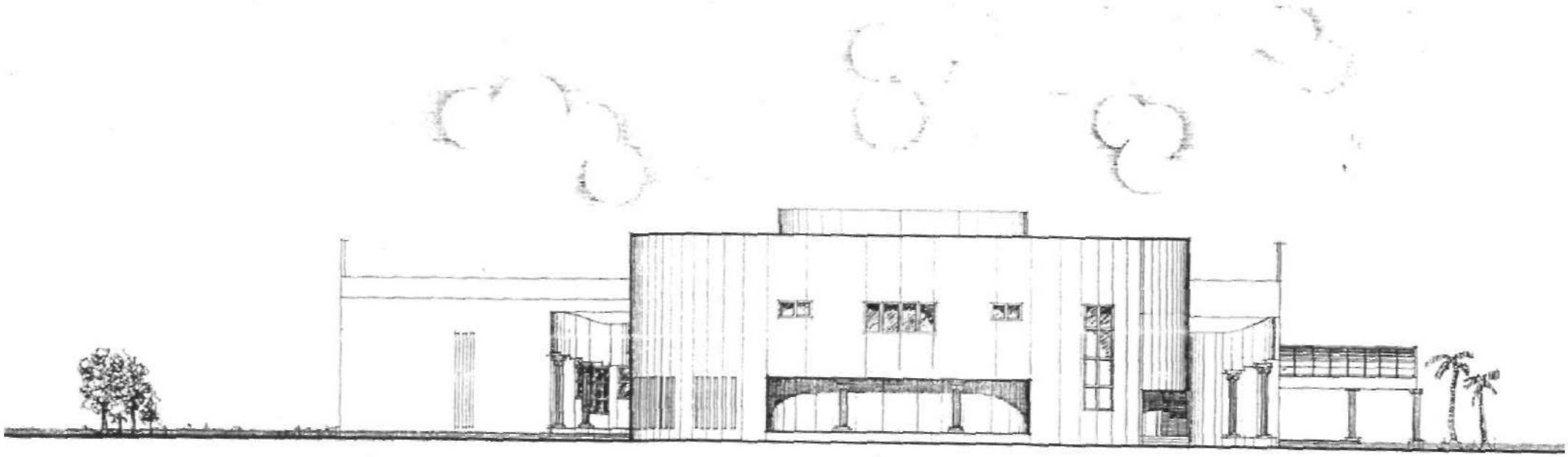
NAME	OBAFEMI O.T.A
REG NO	93A1/1015.
DATE	OCT. 95.

DRWG TITLE.
ELEVATIONS

SHT. NO

SCALE 1:2

WEST SIDE ELEVATION.



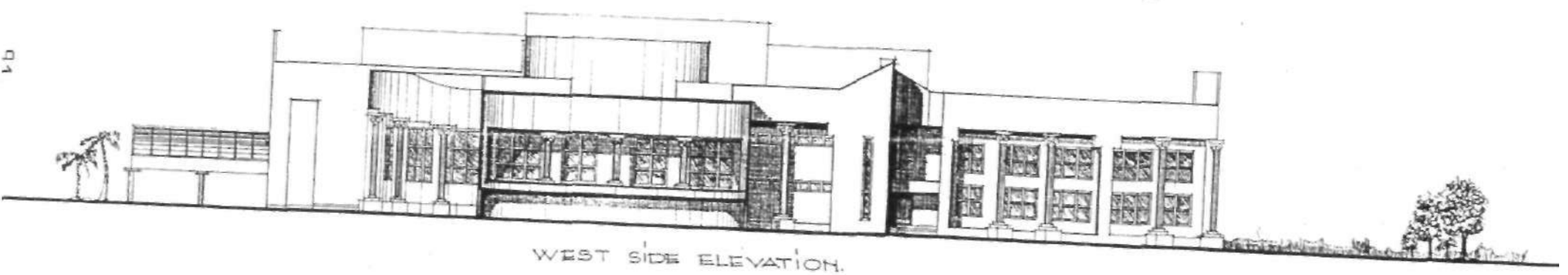
EAST SIDE ELEVATION.

I.W.C. MUSIC ACADEMY KADUNA

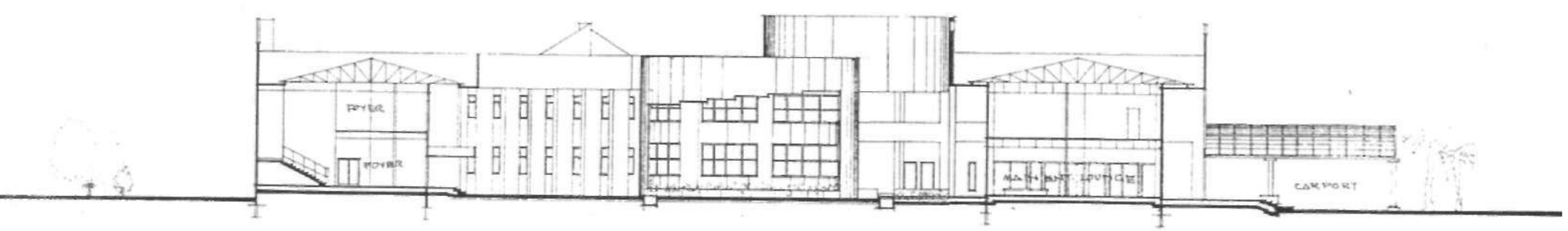
NAME	OBANEWO T.A
REG NO	C93AT/1015.
DATE	OCT. 98

DRWG. TITLE.
ELEVATIONS.

SHT. NO



WEST SIDE ELEVATION.



SECTION **A-A** THROUGH GYM, LOBBY, OFFICES AND MAIN ENTRANCE, LOUNGE & CARPORT.



SECTION T-T THROUGH THEATRE COURT YARDS AND LECTURE THEATRE

I.W.C. MUSIC ACADEMY KADUNA

NAME	OBANEWO T A
REG NO	G93AT/1015
DATE	OCT. 98,

DRWG. TITLE:
SECTIONS
MENTOR: ARCH. W.B. GUKUK

SHT NO

floor accommodates still some of these functional areas plus a music library. It will be discovered that the basic fan shape obtained by an almost regular division of the circle is employed in the class area which apart from providing proper acoustic nature of the rooms also enhances concentration during learning periods. The instrument rehearsal hall and band rooms are a basic double volume structure.

The theatre area has a stage that can accommodate at least 30 performers and auditorium for between 400 - 450 audience capacity with a gallery, control room and recording studio. Two basic entrance lobbies fan the entire structure and just adjacent the instrumental rehearsal room is a choral rehearsal room. The plant and air conditioning rooms are provided at the curved rear part of the theatre.

5.5.2 Site Plan

The site plan is derived from the site structure concept (5.4) and it reveals a major vehicular ingress point on the North West of the site and similar egress point to the north East of the site, both connected to the only major access road within the area.

There are about 50 parking spaces in all with a drive-in leading directly to the main

entrance of the complex. The staff parking spaces line the front the complex. Three gardens or outdoor relaxation points well landscaped and shaded align the site on the West North East and south east of the site. The one on the south is expected (due to its location in a rather airy, cool and guitar region) to serve as an out door meditation garden.

The site has a slope of less than 111 to the North East of the site towards the gully.

5.5.3 The Elevations

The Elevations are the out look or outward appearances of the building. In this case, the elevations are derived from the definition of symphony. That is:

A large musical composition which contains other smaller individual compositions called movements which posses varying pace, tempo and rhythm producing different emotional effects on the listener.

The three major divisions of the academy namely Admin, Instructional and theatre areas can be said to be the smaller individual "movements" in this visual symphony that together combine together to form a whole large composition that is called the academy.

The recessed portions of the structure represent these smaller individual movements encased in the outer protruding surfaces representing the large symphony. Curved and triangular inflections (shapes) are used to accentuate the structure as in music while the prominent domineering caricatures of the Greek Ionic order represent the dominance of the stringed instruments, over other instruments used in the symphony orchestra. Furthermore, these columns reflect the past thus calling to mind the legacy of symphony.

The main entrance is greatly celebrated serving as an introduction to the symphonic structure.

5.5.4 Sections

The section of a building reveals the structural nature of the building. Basically acoustic influences have necessitated the choices of structural systems used in this proposal.

At the Admin area, column and beam with ribbed flooring contruction is used over a large span of about 15m. This is done to avoid intermediate supports thus providing large usable spaces meant to be partitioned as desired by client or users. The large glazed areas should provide adequate natural lighting and ventilation over the span of spaces created. The roofing structure is of corrugated aluminum roof sheet on steel trusses.

The Instructional or school areas implores the use of 150mm solid or concrete blockwalls which terminate (from the ground floor) at the upper floor concrete slab or roof level to aid acoustics.

Corrugated long span Aluminium roofing sheet on steel trusses are used as roofing systems here. At the rehearsal Hall +Band Room, reinforced concrete slab is doubld pitched on concrete portal frames.

The theatre area implores the same roof system as in most areas of the Admin and Instructional areas. The stage area, the hightest height of the structure is roofed in simple mono pitch reinforced concrete slab system.

Generally, concrete roof gutter meant to provide adequate rain water roof drinage is provided. Suspended ceiling is used in all cases to further aid acoustics and provide space for electrical and mechnanical conduiting.

All music room walls are to be acoustical treated according to Acoustic Engineer's details.

5.5.5. Services

The services involved include mechanical and electrical services.

Electricity and water supply to the site will be connected from the munipal mains. The water supply will be augmented by overhead water storage tanks while an F. G. Wilson's 1000KVA Sound proof generator is recommended to augment electricity supply.

Ventilation is an important aspect of this proposal and through design method, natural and artifical ventilation systems are provided for. The large fenstration + courtyard effect is expected to help in natural ventilation while artificial ventilation shall be provided by air-

a modern day Architecture. By proper construction and control of sound in the various units a conducive environment for inspiration learning research and performance of music can be achieved.

Furthermore, symphony of Architectural forms has been aided by metaphorical concern. That is, introducing similes such as hands, strings, guitar and so on into the architectural language by geometric abstraction of the metaphor.

The erection of this structure is expected to make real the constructed thoughts in the expression of "sound in sight" or Music in Architecture.

conditioning units, which are to be used in the various sections of the academy: The small single unit type at the Admin and Instructional areas and the larger multi-zone type at the theatre area.

5.5.6. Maintenance

The major points for consideration and emphasy for maintainance include the concrete roof areas and all the roof gutters. Treatments of these will include use of bitumenous felt and aluminum flashing and must be properly and regularly monitored even from construction stage.

CHAPTER SIX

6.0 SUMMARY AND CONCLUSION

One of the most celebrated Architects of the twentieth century was Louis Khan. According to him, Architecture is the product of human thought and construction. Buildings, Locomotives, playgrounds and so on, all grow as a result of the desire by man to express. In Architecture, the result of that desire to express is made real in buildings which are results of constructed thoughts. In other words, a constructive thought is needed to put in reality a desire to express or a desired expression.

In this proposal, the desired express aimed at, is symphony of Architectural forms, which to a large extent can be said to have been achieved both on the floor plan and outlook of the designed structure, much more within the context of the definition of symphony and Architectural forms made in this write-up.

On the floor plan a harmony of internal structural form (2. 6. 1 (i)) has been achieved by geometric shapes which enclose the various functional units. Each major unit of the academy (4.1.1.) requiring its specific shape and dimension and treated thus represents a movement of a symphony. Together, the various units or movements make up the symphony.

On the out-look (Elevations) an equal harmony of visible shape form is achieved by the use of the 3 dimensional projections of the shapes used on the floor plan. Moreso a third geometric shape (the triangle) is employed to give the structure accents or emphasy as is the case with music.

The entire structure thus express a new order of forms (Architectural forms) possessing qualities (aided by constructional materials, glazing, columns and so on) of

a modern day Architecture. By proper construction and control of sound in the various units a conducive environment for inspiration learning research and performance of music can be achieved.

Furthermore, symphony of Architectural forms has been aided by metaphorical concern. That is, introducing similes such as hands, strings, guitar and so on into the architectural language by geometric abstraction of the metaphor.

The erection of this structure is expected to make real the constructed thoughts in the expression of "sound in sight" or Music in Architecture.

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