A PRIVATE HOME

(Use of Architectural Elements as a means of Effective Communication)

By

HALADU, A. A.
B.Sc. - (ARCHITECTURE)

JUNE, 1986

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By

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B.Sc. ARCHITECTURE

Being a Thesis Submitted to the Post-Graduate School, Ahmadu Bello University, Zaria, in partial fulfilment of the requirement for the Award of a Master of Science degree in Architecture.

Department of Architecture
Faculty of Environmental Design,
Ahmadu Bello University,
Samaru - Zaria.

JUNE, 1986

D E C L A R A T I O N

I, Haladu Alhaji Abubakar of Department of Architect, Faculty of Environmental Design, Ahmadu Bello University hereby declare that this thesis work has been a personal academic undertaking executed under the supervision of my mentor, Arc. Dr. O. Solanke of the Department of Architecture, Faculty of Environmental Design, Ahmadu Bello University, and that all quotations and informations utilised and their sources have been duly acknowledged by means of reference.

.....
Student Signature

.....
Head of Department Signature

.....
Mentor's Signature

C E R T I F I C A T I O N

This thesis project report entitled - A Private Home..... (Use of Architectural Elements as a means of Effective Communication).
meets the regulations governing the award of the degree of Master of Science in Architecture (M.Sc.Arch) of Ahmadu Bello University, and is approved for its contributions to knowledge and literary presentation.

.....
Chairman, Supervisory Committee Date:.....

.....
Member, Supervisory Committee Date:.....

.....
Member, Supervisory Committee Date:.....

.....
Head of Department Date:.....

.....
Dean, Post=Graduate School Date:.....

Architecture is based on the past Build in the present to take care of the future:

The past is forgotten

The present is right now

The future is Unknown

No wonder Architecture is difficult.

- Eugene Raskin -

QUOTE FOR DIGEST

"For whatever profession, your inner devotion to the task you have set yourself must be so deep that you can never be deflected from your aims.
However, after the thread may be torn out of your hand, you must develop enough patience to wind it up again and again.
Act as if you were going to live forever and cast your plans way ahead.
By this I mean that you must feel respensible without time limitation and the consideration whether you may or may not be around to see the results should never enter your thoughts:.....
If your contribution has been vital there will always be somebody to pick up from where you left off, and that will be your claim to immortality.

Walter Gropious
Letter to a group of Student
14th January, 1964.

NEW PHILOSOPHY

ITS NOT YOUR APTITUDE BUT YOUR ATTITUDE

THAT DETERMINES YOUR LATITUDE.

= HALADU, A. A. =

D E D I C A T I O N

This work is dedicated to my father and Mother
You know what you have given and for that I am
very grateful.

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

Institution because of their complexity and impersonal nature exent both negative and positive influences but the net effect of three institution on me and on this project has been tranmendeously positive.

First the Kaduna Polytechnic for laying my academic foundation, Secondly Kent State University Kent Ohio, U.S.A. for chosen a career or profession and necessary exposure, and a conclusive environment for my academic pursuit and, Thirdly Ahmadu Bello University, Zaria for providing a space for completing and achieving my academic goals.

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valuable time for consultation.

I am obligated to the members of the Committee they are:- Dr. Solanke, Mr. E.A. Beeko, Mrs Mohammed, Mr. M.D. Folabit, with who I have a number of views and Dr. H.T. Sa'ad who help in the wisest approach to the project and the rest of the Faculty and Staff of the Department of Architecture.

In Zaria

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In Doma

I wish to express thanks to Isa Jaafaru who help with his Camera for the project his contribution towards the success of this report is quite acknowledged.

A B S T R A C T

A PRIVATE HOME

(Use of Architectural Element as a mean of Effective Communication)

Motivation

After so many years in school of Architecture pursuing a career, I began to look at building in different perspectives. The knowledge acquired in the discipline has provided me with the means to admire and to appreciate buildings. One is also exposed to some guiding principles in which some designs solutions are based. It has now become easier for one to react either negatively or positively to a piece of design.

Here is a Nigerian · 55 years and has spent about 20 ~ 30 years in service, he is a family man highly placed and culturally oriented who is going to go on voluntary retirement upon retirement, He wants to build himself a beautiful house where he will reside with his family, from the money he was saving and the gratuity he is going to recieve.

Goal:

The thesis is essentially to investigate and document some of these architectural elements provided by both traditional and modern architecture, with a view to

understanding their usage and examine their effectiveness in building, as a means of effective communication.

Objective:

The Thesis will attempt to clasify these Architectural elements and review their order, an attempt will be made to link the origin of these element to some Anthropometric and ergonomic Data that will provide major and minor dimension in order to provide a conducive space for human habilation.

Limitation:

The scope of the study will be limited to only residential buildings, but it could be extended to Institutional building. After a critical analysis of these elements, an attempt also will be made to ZERO-Out some element, and test their effect on the project, and I hope a considerable difference will be noticed.

INTRODUCTION

This is a study of the art of architecture, it is a morphological study of the essential elements in design. These elements of form in both interior and building facade are critical means of architecture. While utilitarian concerns of function aesthetical consideration is relatively important. Sybolic interpretation can vary from age to age, culture to culture, these elements characterise our homes and comprise their timeless and fundamental vocabulary of the architectural design.

This study emphasises the element under centain classification, the main elements was for the fact that most of elements under this category stand on their own or as an entity within this structure other primary elements servçes as a tool for all architectural design. In organizing space and their generic transformation in a typological manner it is altimately provide the individual designer to select, test and manupulate these elements into coherent, meaningful, and useful organizations of space, structure and enclosure.

The architectural elements used in this book are no mean a complete exhaustion or are they necessary the archetypes for the few discussed. The wide range of this elements vary from place to place and culture to culture. The w few selected are based on appropriate and clarity and serve simply to illustrate fundamental ideas. The idea transcended from the exposure to buildings and as a student of architecture

you are always in contact with building and you tend to react negatively or positively to a piece of design. The few elements selected, and reapplied to a wider range of architectural solution. The type of approach to my mind will help one better understand certain building and what elements were used to express develop your imagination while designing.

PROSE Requires The Use of Grammer

Poetry Requires an Understanding of Grammer

Building Requires The Use of Structure

Architecture Requires The Understanding of Structure

SHAEFFER

CHAPTER 1

In its steadfast forward movement the architecture of our time has made
few mistakes but in the final result will be created a powerful embodiment of
vision in spatial and volumetric forms.

On must create, one must manifest one's own creative capacities and
to creativity, those who are inert in order that life within the art of architecture sh
be in a state of maximum movement.

In response to these currents, we have attempted to discuss the special qualities advantages, and design consideration using architectural element in all kind of design - from the tiny studio apartment to the multiroom house, from the prefabricated modular unit to the custom - designed dwelling from the planned community home to the hand built cabin in the woods, from the brand new structure to the renovated treasure, from the city loft to the country form, from the mobile home to the huge megastructure, from the lepee to the geodesic dome.

Architecture is normally conceived (designed) and realized (built) in response to an existing set of conditions. These self condition may be purely functional in nature they may reflect in vevry degrees social economic, political even whimsical or symbolic intention.

In any case it is assumed that the existing set of condition the problem is less than satisfactory, and that a new set of condition a solution would be dorable. The act of creating architecture, then is a problem solving or design process.

As an art architecture is more than satisfying the purely functional requirement of a building problem. Fundamentally, the physical manifestation of architecture accommodate human activity. However the arrangement of elements and useage will determine the character of the building, the architecture might promote endeavours, elicit responses and communicate meaning. These element documented are therefore not as ends in themselves, but a building (home), with the element provided by both traditional and modern architecture, with a view of solving a problem in response to conditions of function purposes and context and that is architecture.

In all case, however these elements are systems which should be interrelated, interdependent, and mutually reinforcing to form an integrated whole Architectural Order is created when these elements and systems, as constitutuent parts make visible the relationships among themselves and the building as a whole when their relationships are perceived as constributing to the singular nature of the whole, than a conceptual order exist, that is perhaps, more enduring then just transcient perceptual visios. Some may convey images and meaning while others may serves as qualifiers or modifiers of of these images and meaning. Understanding of how they could be manupulated will help realise their visual, implication in the implementation of a good design.

Elemental Permutation

Definition:

Permutation is defined in most dictionaries as, the arrangement of things, number, letters etc in a certain order or the act of changing the order of things. Elemental permutation thus means possible interchange of parts within a particular system by this I mean purely reshuffling the parts (Element's) within a building.

At every instant there is more than the eye can see, more than the ear can g hear a setting or a view waiting to be explored. Nothing is experienced by itself, but alway in relation to its surroundings.

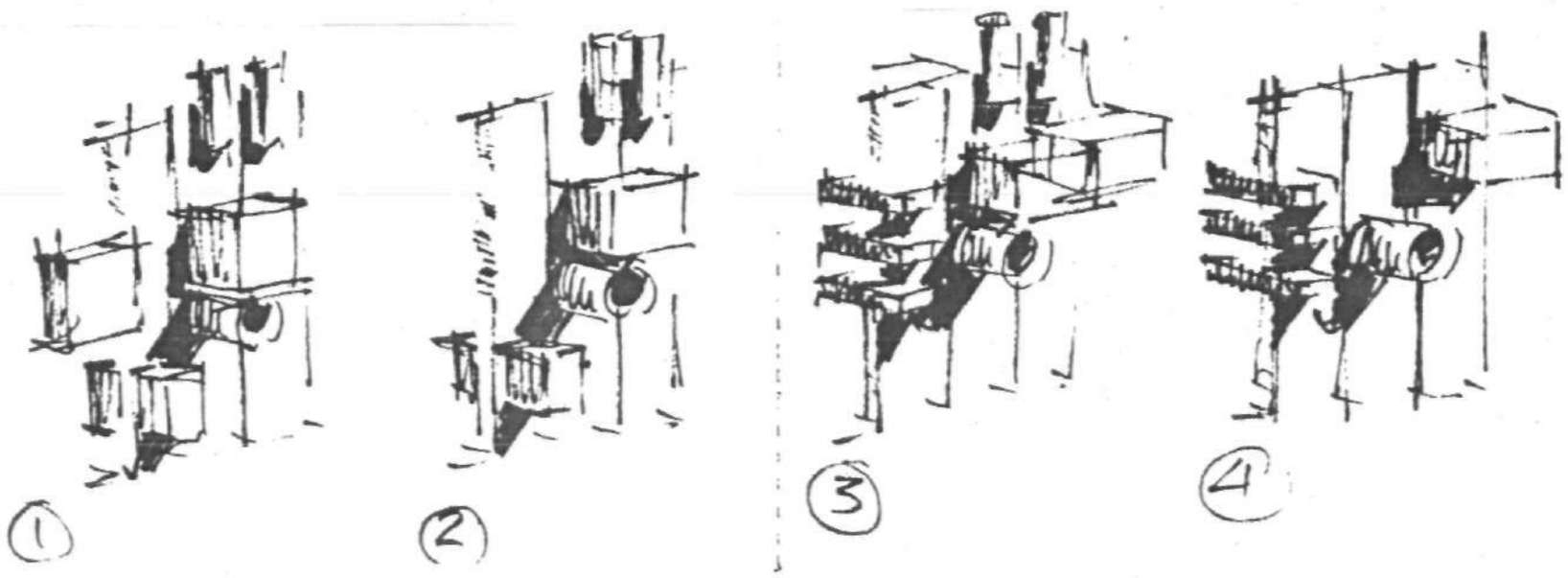
Elemental permutation is purely a concept or a near approach to design, its a way of creating a strong visual effects in buildings by means of elements arch has essentially three parts to it.

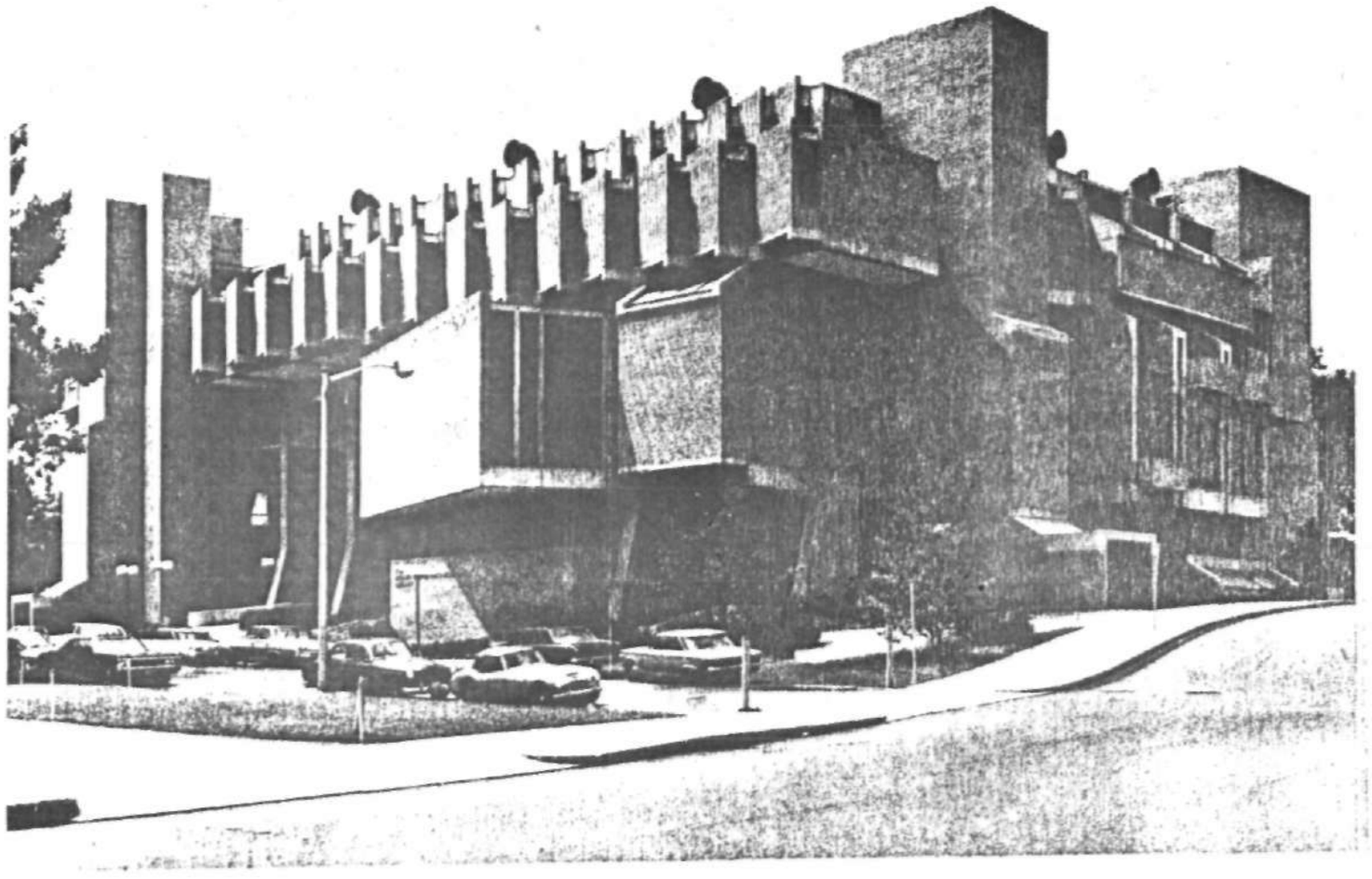
(i) Enclosures, generalized or specific, to accommodate function, which are static and contained.

(ii) Elements which serves as access, or circulation i.e Stairs, elevators, corridors mechanical distribution systems,

(iii) Then thirdly the structural elements which holds it all up,in some sort of mutually agreable disposition. These are the colume, beams walls.

Architecture after broken down to three major components, one can successfull permulate elements to obtain a uniquelly visually pleasing form.

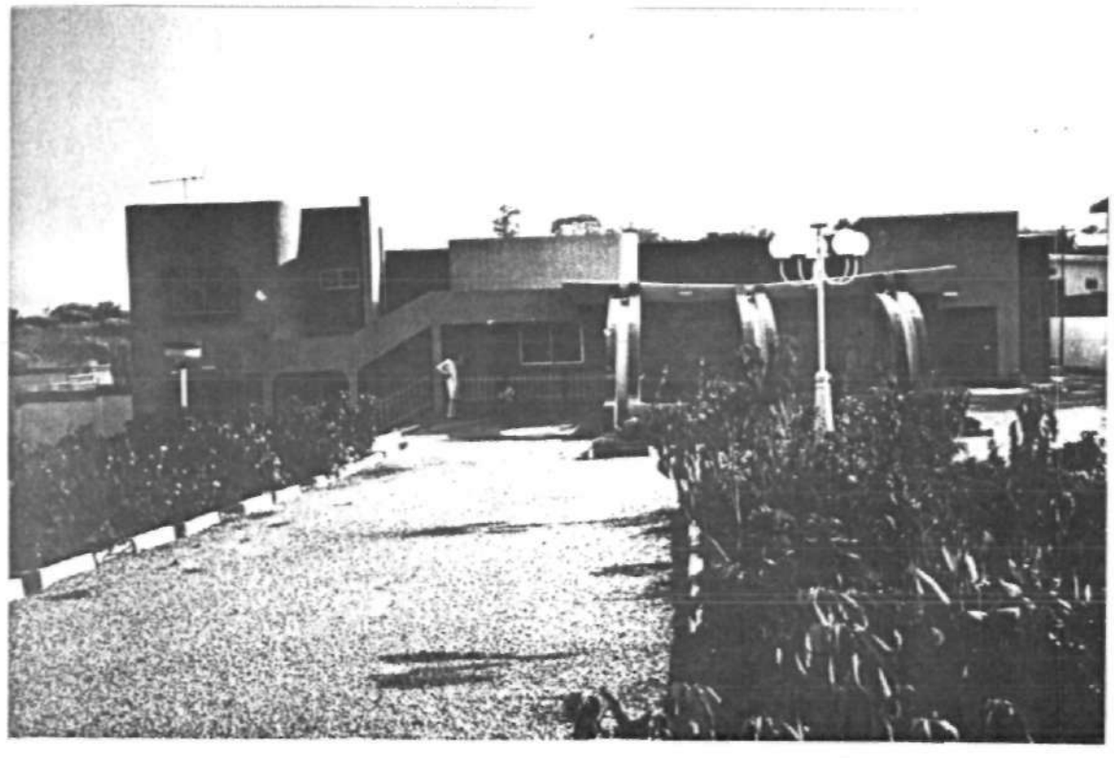




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LITERATURE REVIEW

For centuries architecture painting and Sculpture has been called fine Arts that is to say that art, which are concerned with "THE BEAUTIFUL" and appeal to the eye just as music appeals to the ear, and indeed most people judge architecture by its external appearance, just as books on the subject are usually illustrated with pictures of building exterior. When an architect judges a building its appearance is only one of several plans which interest him. He studies plans, section and elevations and maintains that, if it is to be a good building, they must harmonise with each other just what he means by this is not easy to explain.

Architectural elements are essential for the twenteth century architects, students, or layreaders who may be in someway involved in the process of architectural decision making which aims at counterbalancing the examples of bad architecture are find around.

Analysis are sets out in an easily comprehensive form, forming the basic elements principles function and rules of architectural composition with particular emphasis on the element, function and the components that make up a good relationship between the element and the resultant architectural, form analysis of the elements of

Architectural Element:

Definition:-

Are Architectural components used to define or express a functions or an activity.

Architecture is just more than satisfying the purely functional requirement of a building program. Fundamentally, the physical manifestation of architecture accommodate human activity architecture is purely, the arrangement and organisation of the elements to create a space or to define an activity or function. These elements are the essential tools used to communicate meaning.

An anology may be made that, one must know and understand the alhpabets before words can be formed and a vocabulary developed, one must understand the rules of grammer and syntax before sentences can be constructed, one must understand the principles of composition before essays, novels and the like can be written.

It should be useful, therefore, for the student, designers to recognise the basic elements of architecture understand how they can be manipulated in the development of a design concept and realise their visual implication in the implementation of a design solution.

space, interior facades, ground planned and printing form, are all incorperated.

There is an indepth study of the function which completes any architectural composition with their tentiary elements which are the enrichments. Which is an term classified into three sub-heading, the incidented, functional and decorative elements which constitute the major elements exposing a good architectures.

Author have written on this subject, but any attempt will results into unexhaustisle analysis of these elements.

Rob Brier

Rob Krier, born in Luxembourg in 1938 and emigrated to Austria attempt to classify these elements. and give a critical analysis of the element of space, structure and materials with chapters on the design of interior, facades and the plans and general building form.

Elements Rob Krier

Arch Element 1	Arch Element II	Arch element III
Interior	Facade	Ground plan
Ceiling	Entrance Ported	Building form=
Floor	Arcades	Square plan
Column/Pier	Bay Windows	T-Shaped
Door		X Shaped
Window		L Shaped
Stair case		V shaped
Attic Storey		O shaped
		Building Conner
		Interior Courtyard
		Outside stair
		Propect Tower
		Manuments

Merits

The classification given by Rob Kuier was quite intensive. It is also appreciate to include the classification of these elements under three broad headings interioors, facades, ground plan and buildings form. There was a general cognisance of certain element appearing twice.

Architectural Elements

Primary Element (Elements)			Secondary (Furniture)	Tertiary Element (Enrichment)	
Major	D.C.	Minor	Built Furniture	Inrelental	Functional	Decorative
Wall	Wardrobes		Bed	Door	Lamp	Plants
Stair case	Burglar proof		Sofas	Beams	Dishes	Flower
Door	Entrance canopy		Chair	Window	Flat wares	Painting
Floor	Arches		Table	Frame	Table wares	Drawing
Ceiling	Water Tank		Storage Unit	Column	Table setting	Photos
Windows			Carbinet	Wall panel	Table Covering	Sculptures
Column/Piers	Parapel wall		Occasional Table		Glass ware	Crafts
Roof	Cutter/spronts		Card table		Centre Pieces	Accessories
	Carport		Game table		Table Occa	
	Screen wall		Outdoor furniture		Bed Covering	
	Flower pots, Beds				Applience	
	Garages					
	Element					

Major Element

Definition:-

By definition major elements are those element that renders primary service to the building and are so prominent (conspicous) within the structure. These elemtnt are as follows:-

Column

Floors

Ceiling

Roof

Windows

Door

Stair Case

Fire Place

Wall

Demerit

In the faulkners classification there was complete omission element in interiors Facades, ground plan and Building for.

* **Omission of roof, loggies and Attic storey as architectural elements.**

Aftre understanding the basic approach by RobKrier and the faulkners, there is need to review the lassification. The two approaches were quite exhausting. But despite their analysis there were some shortcoming which I think were due to an oversight.

If is now necessary new to come up with a complete and more comprehensive approach and with a much easy cooling in terms of classification.

2.1 Sarah Faulkner and Ray Faulkner are authors of a book called "Inside Today Home" has a different approach to the analysis and classification of architectural elements. The authors has an exhaustible approach as follows:-

Faulkner

Major Element		(Enrichments)		
(Elements)	(Furniture)	(Incodental)	(Functional)	(Decorative)
Walls	Built furniture	Beams	Lamp	Plants/Flower
Stair case	Beds	Door	Dishes	Painting
Fire place	Sofas	Window	Flat wares	Drawings
Door	Chair	Frames	Table setting	Photos
Window	Table	Columns	Stair Ware	Sculpture
Floor	Storage unit	Wall panels	Center pieces	Craft

Faulkner Major Element	(Enrichment)	
Ceiling Brokshelve Carbinets Occasional Table Card tables Games table Out door Furniture	Bed Covering Appliances	Accessories

Merits

The Faulkners has an exhautible approach to the classification of these architectural elements especially the inclussion of furniture and enrichment. The approach to quite broad and has a large range, during classification since there was interior and building facade.

Demerits

In the classification there are some misrepresentation and over sight as follow

* The classification will call for repetition or application of certain elements, since there are both found in Interior as well as Exterior of building.

* There is omission of element like roof, wall in his classifcation which to my mind constituted an primary element.

* There was also complete of omission of furniture as an element.

* Enrichment which forms the broader classification of architectural element was completely ignored or oversighted.

about **the importance of fire** to human kind.

2.1 Wall

Definition:

Is an upright **structure** of **definite** demensions of an enclosure.

Function:

Walls is an importance element in architecture. Walls govern the shape size, and character of room or spaces. They are "Used" as windows and doors for built instrorage and as supports for attached furnsihings. They are use to demonstrate the contemporary interest in geometrics cutouts, overlapping, and interpevetration.

* Wall serves as a fence
* for internal partitioning
* Devides internal and External space
* Used to support lintel centing roof.
* To create passage.

In some house wall centents will maintain their function of seperating of areas. They allow intriquing and half-views into the area beyond to give the space a fascinating molded quality. Walls sometime loose their indentities as passive, enclosing elements to become active, stimulating and liberating component in the total design, or sometimes provide a structurally dominant vertical foundation from which lighter living areas are centilevered reducing the need for expensive and desruptive grading of the rugged terrain. But most important wall give protection and privacy affecting light, heat and sound and at the same time they demacates areas and control our movements and vista.

2.2 Column/Piers

Definitions:-

Columns is an impcrtant element in a building. By definitions, a column is a shaft with abase capital engaged as one support.

Function:

Centuries of architectural culture have created an inexhaustible variety of form of columns piers. In Greek architectural epoch were nemed after orders Time and again the proportioning and decoration of a column or pier serves as an indication and characterisation of a certain architectural style.

Column and pier are used to hold together the walls. A column has a relationship with the ground and has to carry a load such as lintel floor slabs and the roof.

Components

The Column is an entity, it is make up of a base, capital; and has to the work of supporting.

2.3 Ceiling:=

Definition:

A ceiling is an interior sheathing of an overhead surface.

Function:

Although ceiling are rarely used in the same sense as other major element of the house. The ceiling terminates the space above our heads. Typical ceiling are the same size and shape as the floor, they are sometime paralled to each other. The ceiling do not only protect us but affect illumination acoustics, heating and cooling. A structurally unit, the ceiling makes an caharacter defining feature that produces changing

moods as our walks through the space it shelter.

Components

The ceiling as an element is an entity it peculiarity is it is supported by columns and walls.

Celing house the mechanical equipments and fans and light fixture incorporated.

2.4 Door

Definition:

Door is a hinged, pivoted or sliding member permitting., passage through a wall.

Function:

If One corridor the conception of interior space every opening whether door or window means vislation of the wall. A doorway allows us and our vision - as well as light sound smells breezes, warmth end cold to travel in and out of the home and from one room to the other. Door control this travel in varying degrees depending on the location,

design and material. Doors play a devesive role in this content becuase they prepare the visitor for the spatial event to come.

* Completes the geometry of space
* Terminate the space
* Seperate space
* Merge Space

Viewing and privacy are control by door location, light can come through door as well as window. Glass doors give a special pleasure in that they permit one both to look out and to go put. Maximum control of light admission, ventilation can be accomplished quickly by openning doors especially in opposite wall. There is nothing like, opening door to air out the house but ordinary door are not suitedto gentle controlled venting.

Component

To a simple member, it and has to be pivoted or hinged.

2.5 Floor Ground

Definition:

The floor or Ground are usually horizontal ground approximately on grade for a space.

Function:

Floor/grouds give flat horizontal surfaces meant to be walked on less often to be run jumped or danced on and something to be sat on they take a limited amount of wheel traffic such as vaccum cleaner service carts, children toys and occasionally wheel chair.

They support us and our furniture and provide insulation against the earth cold dampress. As we all know but sometimes firget floors gets the greater wear and the most don't if any part of the house.

The floors carries the column and walls that support the roof of a house.

2.6 Windows

Definition:

Is window is an opening in a wall for light and ventilation with its appurtnances.

Function:

From manifestly practical consideration such as the exclusion of rain and the restiction of air leakage, a window serves for the renewing of air in the room commonly called ventilation.

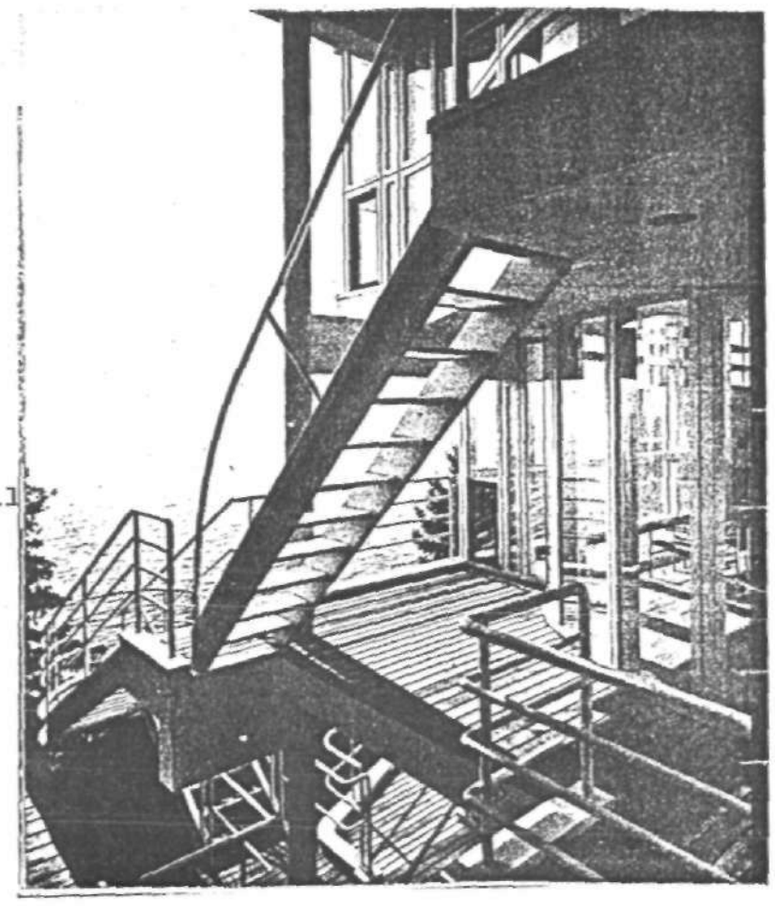
* For safe operation of heating appliance which depend on combustion.
* Protection against climate, rain temperature humidity, sun.
* Protection against heat and cold
* Protection against outside noise.
* Serves a means of escape
* Window meant essentially for light and admittance

2.7 Stair Case

A stair are series of steps with landing hand - rail, newel, to facilitate walking from one level to another.

Function:

Stair Case is the vertical element of access in a building which enables one to as cend and desend from one storey or level to the next. The primitive form of stair case is the ladder. It is the shortest connection between the places. By the phyeical entities they are series of steadil rising small pieces of flooring. The basic stair consists of a straight set of risers attached to a wall or one siden and supported by another wall opposite the latter may go to the ceiling or end in a simple baties trade for protection. In some dwelling stair cases acts as a focal point.





In addition to its aesthetical qualities the stair eliminate the feeling of insecurity and vertigo that often accompany spirits stair cases. In one storey dwelling stair are not usually a consideration except for an accassional one or two step drop or rise in floor level to different areas. of large space.

Component

The Stair consist of pieces of floor slabs, land rails inform of walking held hammoniously by structure.

2.8 Roof/Attic Storey

Definition

A roof is the weather proof top shell of a building.

Function:

Nowadays one apparently only comes across two types of roofs. The flat roof (the development and

assessment of which does not need to be described in detail and the normal pitabled roof which by now has become wide - spread as the embodiment of the 'alpine style' we should not engage ourselves in cliches but rather look at the variety of possibilities and meanings that this important part of the building has bearing in mind that it is a building termination towards the sky. In general the roof involves an ambiquous undefined space which nowadays is mostly sacrifical to a radical exploitation of the building volume.

Compoent:

The roof consist of the ceiling, roof trusses roofing materials of either, Allumium Asbestos sheets and thatch grass.

2.9 Fire Place

Definition

A fire place is an opening on a hearth by a chimnery flue. Where an open fire may be laid.

Function:

A fire place rarely function as the only source of heat today's home. Expect in the most gentle climate. A fire place becomes the facal of the room. It is there people gather even in sometime partly to be serve because furniture is typically group round a hearth. Obviously open fires are beautiful and far place even without fire can be substantial centre of interest. A fire warm constrantly changing beautifully shaped and coloured flames and embers produce a kind of lighting equaled only by sunrise and sunsets. Open fire are also probably deep buried feeling

Zanko (Pinacle)

Zanko a Hausa term meaning crown, in others wards called Pinacle. The Pinnacle (Crown) in traditional architectural develop from the combination of several forms. Zanko is the crowning of the corners of a building. Zanko was originally for climbing of roof by the mason while plastering. But with it is now being looked upon as a decorative or Aesthetical element to give a building a distinctive character. Its a symbol in Hausa Traditional architecture.

Rawani (Parapet Wall)

Rawani is the parapet which surrounds the roof functionally. It is use to conduct rain water to the point of discharge. This minimise the damage to the mud roof.

Dome

The Dome is traditional type of roof. It

It is made up of Awara and trees constructed in pattern Criss-Cross to construct a dome shape and latter covered with mud. It easily drain the water away from the roof top.

Indaroro (Sproots)

Indaroro are sprouts use to discharge water from the roof there are originally made of tubular ceramic about 150cm in diameter and nearly 60cm length sometimes a Hollow delepedated palm is used. But recent time shapes of materials out of gassoline tank and conogated iron sheets and even sometimes concrete material is now in use.

Baka (Arch)

Baka meaning arch is traditional element used in building. They are made in circular form and used in gate ways, doorways, and passages. They form transition from one part of the building to the other.

Jinka (Thatch Roof)

Thatch roof has been a longtime a traditional African. Its a roofing material throughout the black African. The thatch provide good insulating material against rain water for tropical weather in recent times. corrogated iron sheet are now widely used.

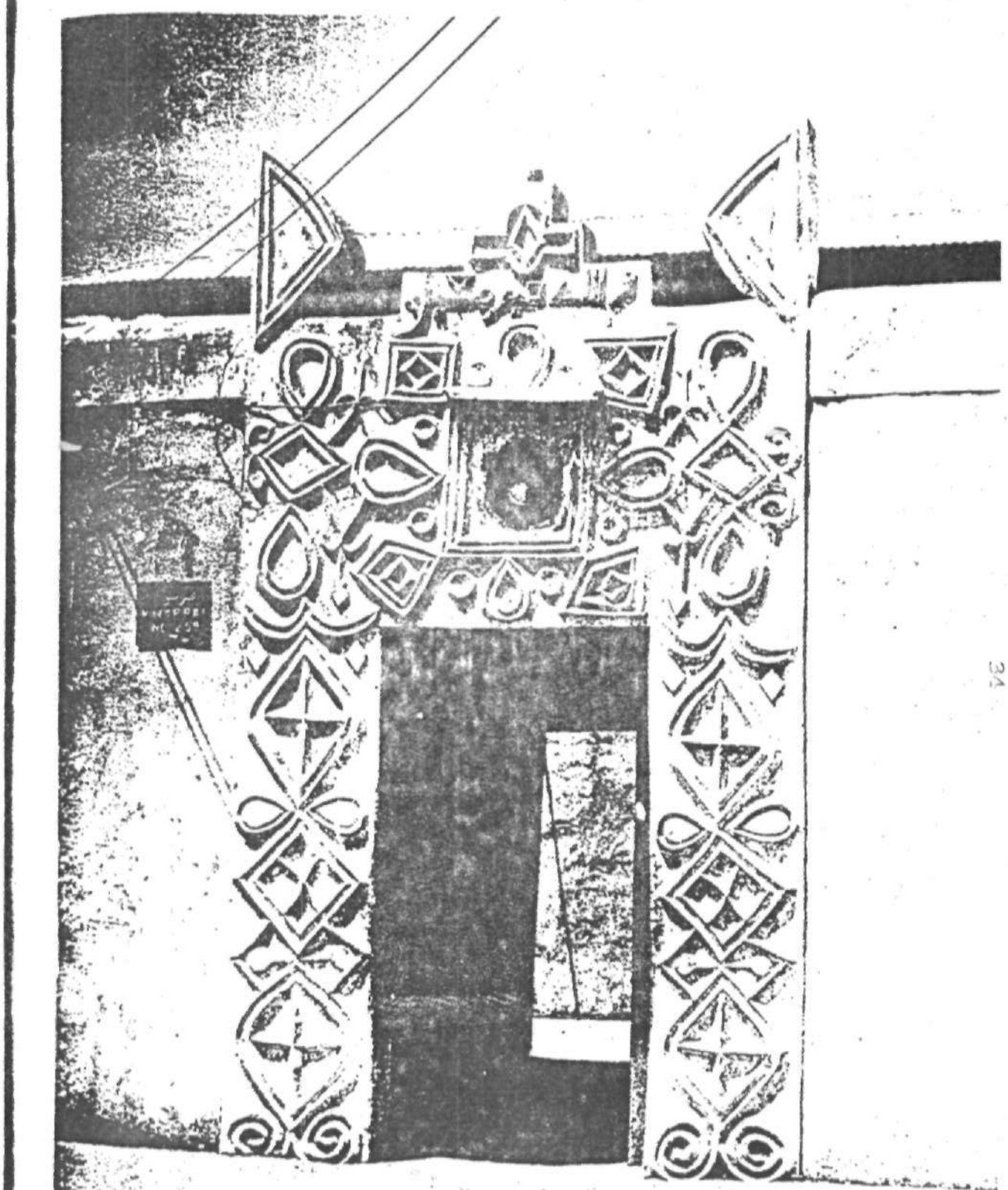
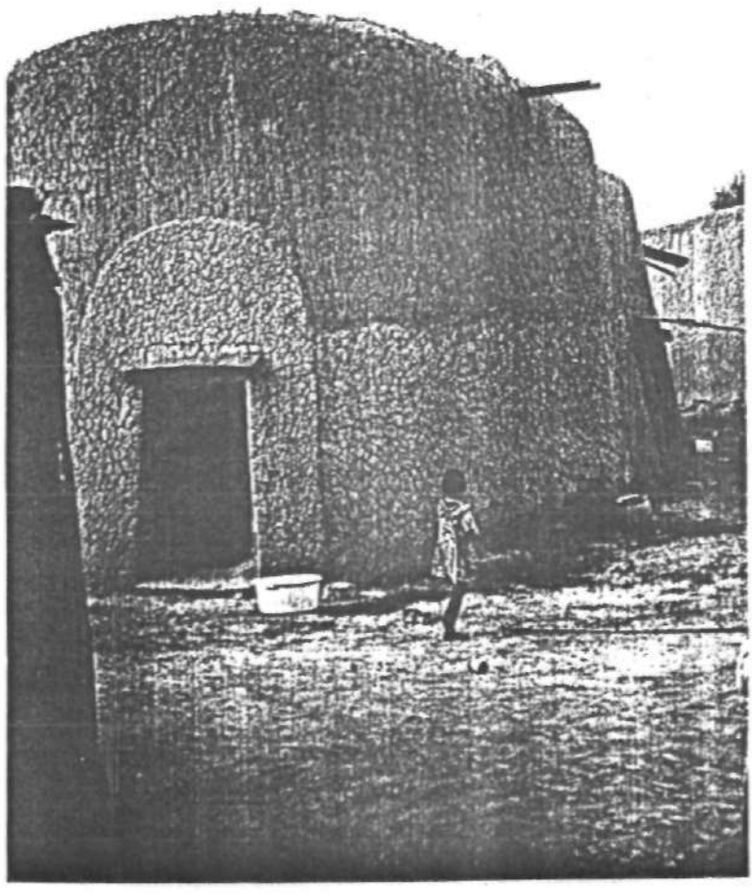


FIG: 23 - An example of an entrance decorated with various patterns & motifs.





CHAPTER 3

Secondary Element - (Furniture)

By my classification, the furniture falls unddr the secondary elements. Secondary elements by definition means element that provide, the major transition between architecture and people. In the most basis sense, it is tool relieving the stresses of gravity. It exists provide confort in the things we do, working eating, sleeping, and relaxing, we expect each piece of furniture to filfill the specific functions we require of it. An easy chain and a dinning chair for instance while meant basically for sitting, differ in design because, they serves us in different situations. Moroever furniture also performs as an architectural element by organizing the space within a room. Defining conversation areas and traffic paths suggesting seperation of areas and so forth.

Finally, furniture enables us to impress our personal tastes on our life spaces even when they are architecturally the same as those of our neighbours very much as an expression of our lifestyle, we choose furniture that allows us to use various rooms as we see fit, we manupulate the character of the furnishing and their arrangement, to define the type of living we expect a room to fosten. Furniture becomes almost part of the architectural shell. It is hard to tell where our ends the other begin.

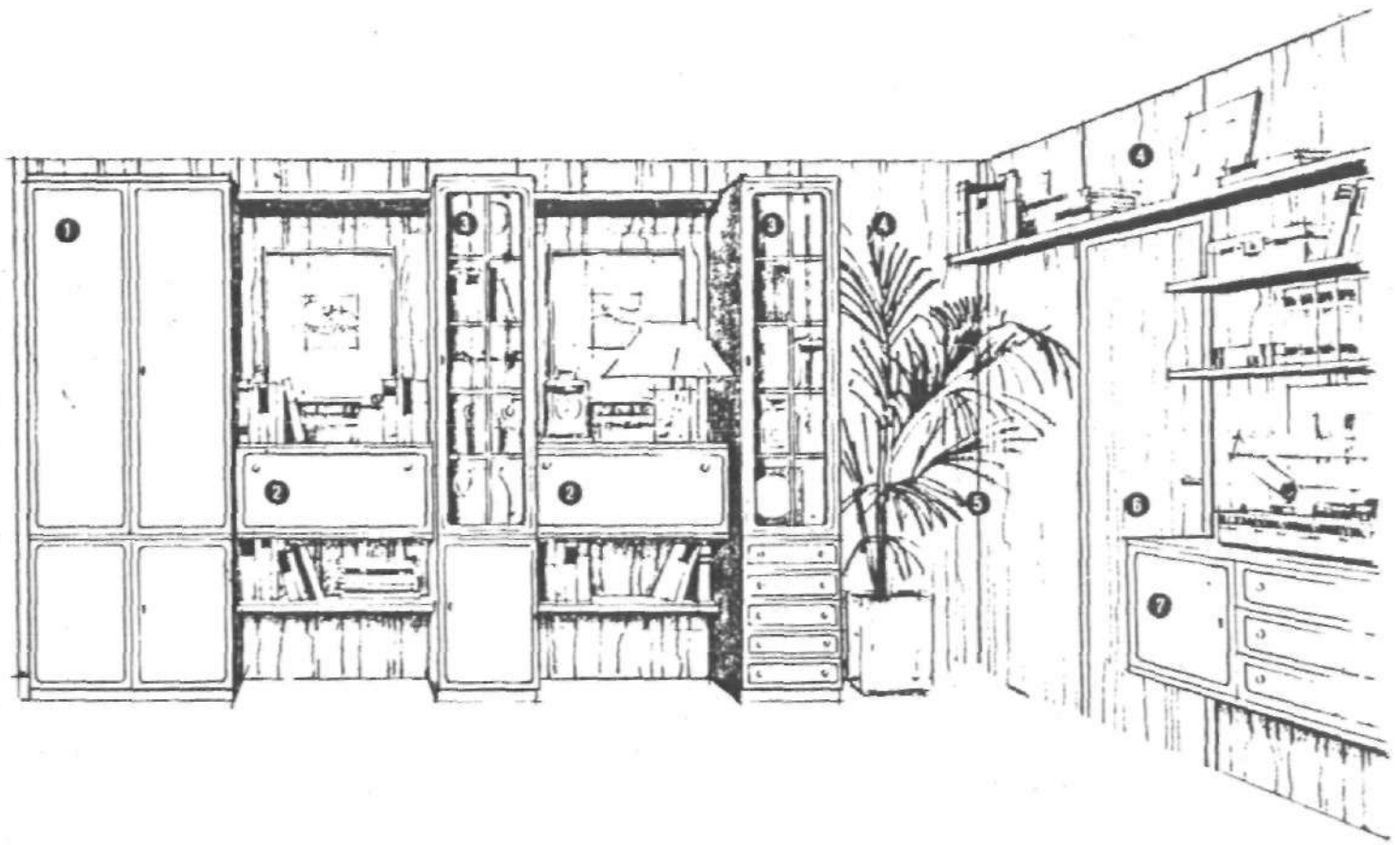
Built in eating units fitted with soft cushion function as a transition all element between walls and floor. The vast away of furniture currently available testiffies to a wide devergence in the way people live. These is mass produced furniture that reflects and entrance every patern and style of living. Furthermore, increasing numbers of people of people and finding satisfaction in constructing their own furnishing either freely or from components and in rehabilitating furniture others have discarded.

3.1 Furniture Type

The first furniture probably consisted off a natural rock ledge found in a protected sport and used for sitting or sleeping. Refinement of such existing surfaces led to recesses in the walls of the hut or cave occupied by primitive people In effect this was "built in" furniture - The prototype of units intergated with the architectural sheel that we are accustomed to today. Historian theories that the earlier individual pieces of furniture we harmocks and mats art for sleeping, which in colden climate would have be made of skins, in garment climates of grasses and needs from these ancestous all the myraid furniture articles we know evolved.

Once established the preference for isolated furniture prevailed well into the 19 century. Even clothes closets were unknown and people stored their garments in bulky

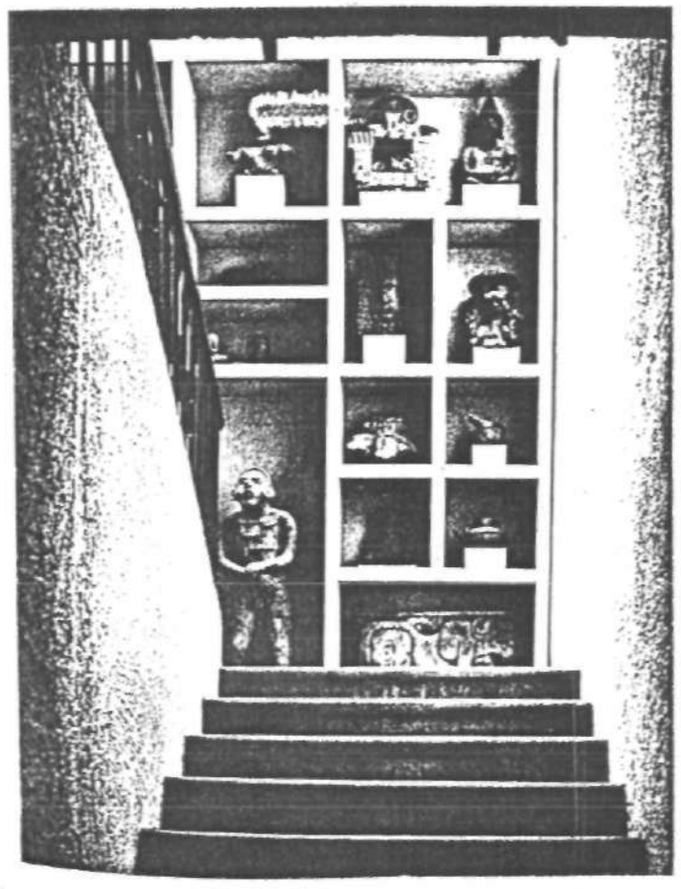
wardrobe or chests, then in the late 1000s home designer began to use walls more intensively and by the early 20 century omit in furniture had staged a that is still vigorous today. Combined with the interest in furniture that as at one with the architecture is the development of unit and component piece which is a sense offer a compromise but with built in and individual furnishing. Unit furniture Organizes a variety of furniture elements into a cohesive structure.

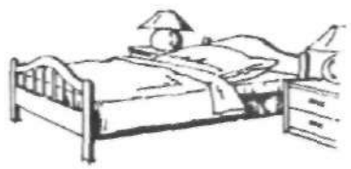


3.2 Built In Furniture

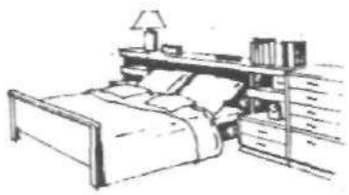
More often than not, built in furniture promotes flexible living although this may seen like a contradiction. Because the furnishings take less room than movable pieces. The leave a maximum amount of free space around and between them.

Omit in furniture can also minimize dust - catching crevices, give a feeling ofermanence and security and break up the boxiness of typical rooms. At the same time it reduces the visual clutter brought by many isolated pieces of furniture which have an irrilating tendency to get out of their best positions. Many people trace the current interest in built in furniture to Frank Lloyd Wright,





who early in his career began thinking of the house an a unified whole with storage seating, and table forming an integral part of the furniture. Overall it is impossible to tell where the furnishing begin and the architecture leaves off, so thoroughly are the two integrated This concept of total unified design appeals to our sense of harmony and order.



3.3 Bed:

Reducing physical strain to a minimum is the major purpose of beds. Individuals may in their specific ideas about sleeping confort so the only real way to find out whether a bed is right for you is to try it. We have been conditioned to believe that a bed should have a spring foundation and a resident mattress. The typical foundation consists of neither inexpensive lightweight flat springs or more bulky expensive coil springs.





but a flat plywood foundation can also comfortable if the mattress is thick enough, particularlly for people who enjoy a very firm surface. Mattress have been filled with just about everything from straw to hair even air and water. Today the least experience are this pads of polyurethane foam. The better graded have 4ft in cares of polyurethane or latex foam or innersprings covered with padding. Innerspring mattress are still the most popular even if finds are low good beds should be a priority in funrishing the home for safety's sake each mattress should carry a label stating that it conformo to the flamma. Bility standard established by the consumer products safety commission (CPSC). They are different type of beds varying from the old fashion type to a more luxirous type such as bunk becks sofar bed, fold down beds, and trendle beds can be excellent space saver have there adherents their confert may or may

not outweight certain disadvatages.

The new types of Beds - water bed and built in b beds have their adherent their comforts and may or may not outweight certain disadvantages.

Children especially small ones; require different kinds of sleeping furniture. Bult beds are popular because children posses both the necessary agility to get into an upper bunk and the spirit of adventure that delights in climbing up and down.

3.4 Sofas

We have chosen the inclusive term Sofa to refer to a set for two or more people, but may other names are or have been applied to such pieces of furniture. Some are used interdengeably but the various terms may convey shades of meaning.

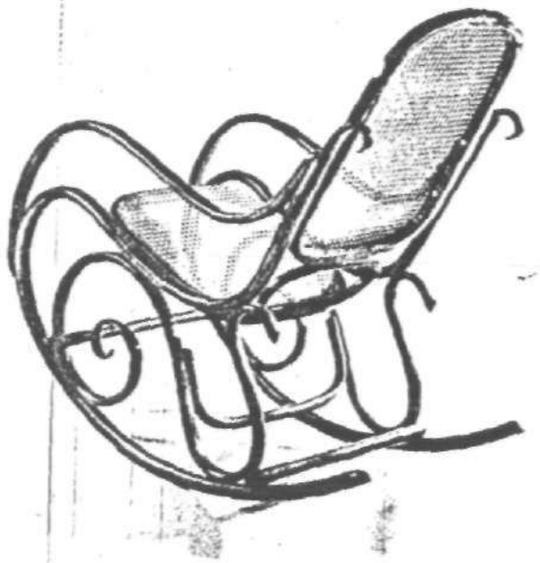
. Chesterfied refers to an **overstuffed sofa with** elpholstered ends.

- Couch originally meant a sofa with a low back and one raised end, nowadays the name is dynanymous with sofa.
- Davenport is used in the United State to describe an upholstered sofa often convertible into bed, but originally the word designated a small writing desk named after its maker.
- Divass is a Turkish term for large, low couches without cover or backs that develop from piles of rugs for reclining.
- Loenge once refer to a type of couch with no back but with one high end for recining. Today the term indicates either a flat paddles surface on which to stretch out or any super confortable seeting unit that invites the laxation.
- Loveseat means a small sofa or "double chair" for two people.

* Settic refere to a light double seat with a back and sometimes with arms othe upholstered.
* Settles are all - wood swities used in colonial days before a fine to trap heat.
* Sofar comes from a Arabic word. in the United States it describes any long upholstered seat for mere than one person.

3.5 Chairs

For most people today. the greater part of our working hours are spent sitting down. We work study, relax eat and travel in a seated position. Leading such seclentary lives we should be expect sitters. But are not because until recently no serious studies of setting had been made now, however we know that the maximum confort results when weight and pressure could contributed and trusion eased by having:-



* The hieght of the seat some what less than the lenght of the sitters lower legs, so that the feet rest on the floor and the leg be relaxed.
* The depth of the seat a bit less than the lenght of the upper leg to avoid putting a pressure point under the knee.
* The seat shape or resilient so that pressure is not concentrated on the small weight bearing edge of the chair.
* Both seat and back titted backward slightly to buttress the weight.
* The angle between seat and back is 95 degrees or more.
* The chair back is a position to support the small of the sitters back adjustable for different persons (as in typist chair) or for different ways of relaxing (as in the old fashioned Morris chairs and some of the new recling chairs).

* A place to rest the head and relax the neck plus supports for arms. The wing chair was one of the first types of seating devised for comfort. Over the years many variations have appeared contemporary design by Charles Rames (Fig: 52) resulted from a thorough exploration of new and old material and a detailed study of sitting comfort, which showed that flexibility is essential the Rames version has been so successful and has achieved such wide popularity that inumerable copiers have appeared over the years.

3.6 Tables

The essence of table design call for supporting a flat slab of the floor. This is reduced to its lowest common denominator when a home craftsmen balances a piece of plywood or a flush door on prefabricated, easy to attach metal or wood legs or

sometimes on a pair of saw horses which incidentally, is an inexpensive way to get a sticking table. There are problems, however, in all table design, and these include providing for:-

* Necessary strength and stability
* Supports out of the way of feet and legs
* The right height, sieze, and shape for its use
* Durable materials

As with chair each home needs a variety of table that differs in function and therefore in size,height and materials.

3.7 Dinning Table

Dinning table require a table that is study enough not to be jarred by the unpredictable movements of children or the force of someone carving meat, that has a top large enough to give each person at least 2 feet of elbow room and high enough to allow leg room between the chair and the lower surface, that



keeps supports out of the way of sitter's feet and knees, and that can be extended in size if necessary.

The surface of a dinning table will be an important feature in its selection, because this covered or uncovered - will form a background for China Crystal. Silver, and linens. Plates 55 (p 419) show a unique solution to the question of table coverings. Here the entire surface of the source of the plastic table has been illuminated with a hidden light source. The quality of light shining through the table depends upon the colour and degree of oparcity of the table covering in this instance a thin yellow plastic table cloths have become increasing rare for daily meals, often being replaced by mats, so it pays to took closely at the durability, ease of maintenance, and beauty of the top surface.

Shapes is the other major consideration in choosing a dining table. Most are rectangular, because a basically squared shape harmonizes with rectangular rooms, can be pushed snugly against a wall or into a corners, and is slightly less costly to make (hence to buy).

In the right place, however, a round or oral table will give an immitable friendly feeling. Many kinds of rectangular round, or oral tables can be extened with leaves (Fig: 539) - The round thus becoming an oral. A polygonal or odd-shape table makes a refreshing change and gives a handcrafted quality (Fig: 540) Drop-leaf table, in use since Elizabethan days, expand or contract with ease (Fig: 541). Some contemporary folding tables can be compacted to 110 inches, which latter dimension provides spaces for fourteen people.

It is important to check dining chairs and tables together, because often their legs interfere with each other, the height of the two are not coordinate, or the space between chair and table is insufficient for the sitters comfort.

3.8 Coffee Table:

We have come to think that no sofa is complete unless faced with a long, low table on which ashtrays, book magazines,newspapers, accessories, plants, flowers, and snacks abound. Most coffee tables, though, seen to have been designed only for the long low, open look; they have no storage space for the little things needed in a conversation area are too low to be reached comfortbaly from the Sofa and to give foot room, and if in scale with the Sofa usually block traffic.

The most useful coffee tables are about 20 inches - high and offer some storage space (Fig: 542). Their tops are durable and their supports strong so they cannot be tipped easily.

3.9 Occassional Tables:

It might be said that the old-fashioned living room table that once sat in the middle of the room disintegrated into many little tables; convenience now seems to demand a horizontal surface, however, small within reach of every seat. Thus we often find a table at each end of the sofa and one for each group of chairs. Unlike coffee tables occassional tables seldom interfere with the legs of sitters and may provides shelves or drawers for supplementary of upholstered sofas and chairs but a somewhat lower or higher level makes for greater convenience and dinnishes spillage of beverages. Occassional tables often hold lamps, although strictly speaking a lamp table should be a little higher. Nests of tables the top one acting as an end or coffee table, greatly simplify entertaining as do stacking tables (Fig: 513) clusters of cubes not only serve the same purpose but double as extra seating.

3.10 Card And Game Tables:

Although rarely handsome, the folding or break-down Card table is a wonderful invention (Fig: 544). Most people find it more comfortable to play cards and other games at tables several inches lower than those meant for sating collapsible card tables are ideal for occassional games, bridge luncheons, buffet, suppers, and supplementary serving at festive dinners. Sapce parmitting, a parmanent card table - with a least two chairs always handy could be a fixture in any household where games or casual sating occur frequently.

3.10.1 Kitchen Tables:

Once banished in the drive for compact effiency tables in kitchens or adjacent alcoves have again found popularity. Since they often serve for sating and meal preparation, they differ from dining tables only in having greater strength and durability.

3.10.2 Desks:

An efficient desk has two essential properties a suitable writing surface and convenience and accessible storage for papers and supplies. It should be obvious that every household needs at least one good writing place, but the size complexity, and location of the unit will depend on individual propensities.
A desk can be a table with only one or two drawers (Fig: 511), a compartment in

a modular unit (Fig: 512), or a piece of furniture designed for serious work (Fig: 77). Space saving devices include writing surfaces that fold or slide out of the a way. A vertical file drawer or two is the most sensible place to store compactly all the pieces of paper related to household operation. The file can be part of a desk or purchased separately unit makes a good padestal for an instant desk, with a piece of plywood for the top and a support of some kind at the other end.

3.10.3 Storage Units:

Storage is a major problem today. Living quarters have steadily become smaller while attics spare rooms, basements, barns, and shed have all but disappeared. More people have more things to put away and apparently less time in which to do it. Yet many favour the unclutted, deam - timed look, and having the proverbial "place for everything" does simplify house keeping. This suggests the following measures:

* Discard things that are either used nor enjoyed.
* Cut down on purchases of unnecessary articles, especially bulky ones
* Plan active storage in terms of the criteria listed on page 72

* Provide as much dead - storage space as needed for seasonal objects of all sizes and shapes. Typical house holds can use space equivalent to that of a one car garage (10 by 20 feets), but greater convenience results when the space is distributed - where it is needed, rather than concentrated in one spot.

All of this means giving atleast as much thought to storage in all parts of the home as is typically devoted to the kitchen convenience, visibility, accessibility, - flexibility, and maintenance are just as important in group spaces and bedrooms. Examples of the ideal to be sought - include tapes and records near the player, books convenient to reading chairs toys where children play.

A total concept of household storage goes beyond what most of us call furniture, because efficient storage is part of overall home design. The minimum that one should expect is empty space for cupboards and chests, for suitcases, strollers, bicycles, outdoors furniture, and the like. These facilities can be built into the house or added as modular units.

We store things by standing these on floors or shelves, by hanging them on the walls or the backs of doors, by suspending them from ceilings, or by putting them in drawers or chests, which of these solutions is best depends upon the use.

size, shape, fragility, and value of the object to stored.

3.10.4 Book Shelves:

The simplest pieces of storage furniture are bookshelves. Despite the fact books come in many different sizes and shapes, easily adjustable shelves can store them efficiently. Books on open shelves do get dusty, but they make a handsome display and also absorb noise. Nowadays, book cases generally double as display space for all sorts of objects that have aesthetic value of interest nearly every room can profit by some book and magazine storage. In the kitchen a single shelf may store all the family's cookbooks, while a book case or materials. The principla center for the households collection of books could be (the living room, dinning area (pl. 6, p. 41) study (Fig: 77), family rooms, or even a separate lidrary or gallery (pi.45, p.317). Low book cases double as tables and - if sufficiently long and well planned - can unify a wall. A book case that reaches to the ceiling often becomes a forceful - architectural element. Shelves can frame and relate doors and windows or serve as freestanding partial or complete dividers between two rooms or parts of a single room.

3.10.5 Drawers

Although we takes sliding drawers for granted, they were not widely used until the 17th century. Chests of drawers work best when they have strongly joined, dustproof drawers that slide easily and handles that can be grasped without difficulty. Shallow drawers at the top are great - convenience, and flexible dividers for them a well jsutify their cost. Relatively small units that fit together increase - flexibility of placement. Drawers combined with shelves and or cabinets of different sizes can store a multitude of variously shaped items (Fig: 545).

3.10.6 Cabinets:

Although they appear frequently outside kitchens, dinning space, and bathrooms, cabinets with doors and adjustable shelves or vertical dividers are welcome in every room. The family room illustrated in Fig: 546 has a cobination unit incorporating cabinets, drawers, and open shelves, which not only serves for storage and display but act as a partial room divider between sections of the space.

Doors on cabinets present at the same problems as doors betweent rooms. swinging doors work easily and accept narrow storage racks on the back, but they get in the way when open. Sliding doors open only part of the cabinet at a time and allow for no door - back shelves. When space in front of cabinets is at a premium - or when doors are left open while people move about - sliding doors after a good solution, but in other places swinging doors have distinct advantages.

Cabinets for radios, stereo components, and television sets have no historical precedents; hance the early ones were overly conspicous. Nowadays, audio-visual equipment is often integrated with cabinets and book shelves (Fig: 37) or is built into the wall, where it may - become a striking design element (Fig:547). Perhpas because they are highly engineered pieces of technology that lend themselves to visual expression of function, stereo components emerged quite early from the dark ages of pseudo - style. Television sets with their unfortunate bulk and blank faces when not operating, lingered longer wither in cabinets that tried to disguise their identities or in the plainest of black boxes. Designers are now attempting to develop more imaginative solutions (Fig: 181,582).

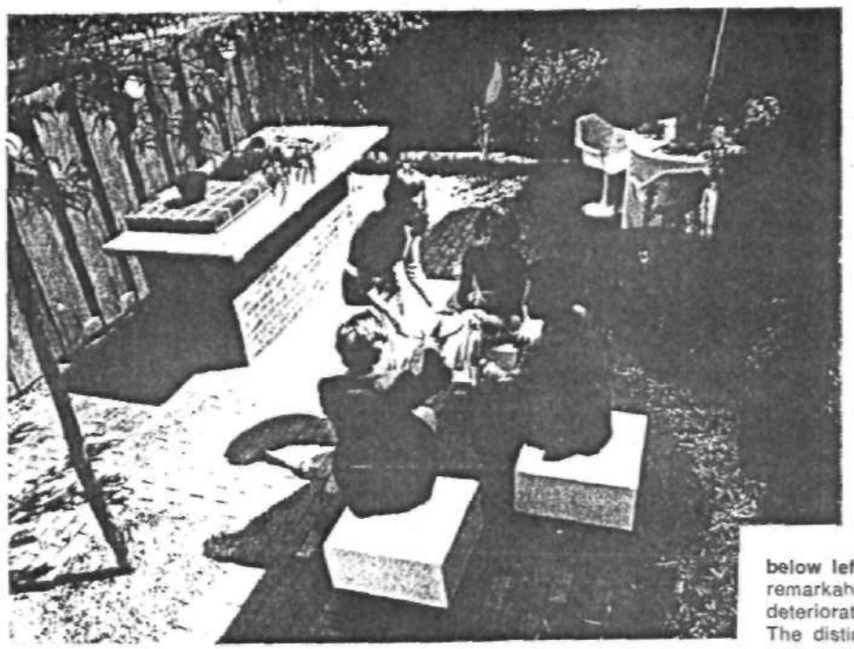
Too, we are growing less aware of the unlighted screen, just as we accept the unlit fine place.

3.10.7 Outdoor Furniture:

Interest in outdoor living has led to many kinds of wheather resistant furniture in a suprisingly wide rabge of materials.

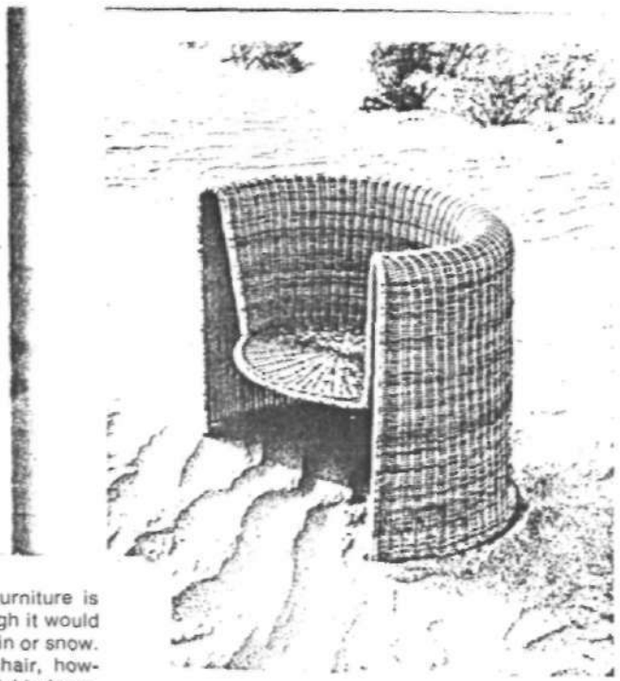
Redwoods, Cedar, and Cypress are long lasting and attractive (Fig: 548). Aluminum never rusts, stays cool in the sun, and is light in weight (Fig: 331). Wicker and rattan bring the charm of natural materials to an outdoor living area (Fig: 549). Some of the newer plastics stand whethering quite well and are a good solution for use either indoors or outdoor (Fig: 550).

Tables present no special problems, nor do the frames of chairs but it is not easy to make upholstery both weatherproof and resilicent. Few springs cushions, and pads remain unharmed by alot of water, although some plastic materials can take moderate amounts. The seating most nearly approaching carefree comfort has metal framers with synthetic - webbing seats and backs (Fig: 331). The come the wood plastic, or metal chairs and lounges with cushions, which should not be left out in the rain, for the latter, it is advisable to gave a roofed outdoor living area or wheathertight storage nearby.

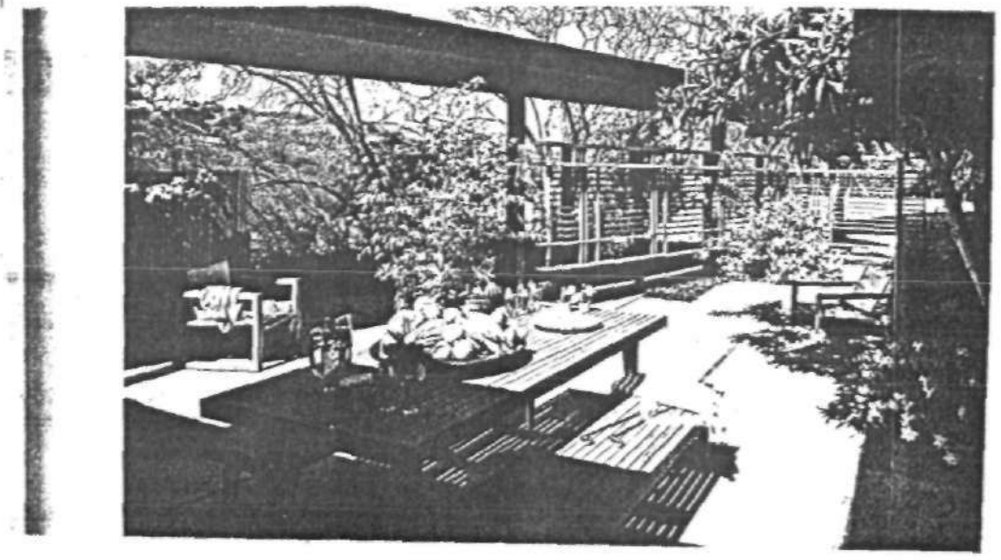


below right: 550. Fiberglass furniture withstands weathering and can be left outdoors even in severe climates. Its new forms add interest to the garden scene. This version is by Homecrest Designs. (*Courtesy Owens/Corning Fiberglass*)

left: 548. Chairs, benches, and a table of weather-resistant redwood require little maintenance. A fence, screen, and overhead protection define the outdoor living area, give it privacy and shade. Henry Hill, architect. (*Photograph: Morley Baer*)



below left: 549. Woven rattan furniture is remarkahly weatherproof, although it would deteriorate if exposed to much rain or snow. The distinctive design of this chair, however, would render it equally useful indoors. Danny Ho Fong, designer. (*Photograph: Richard Gross*)



C H A P T E R 4

TERTTIARY ELEMENTS ENRICHMENTS

That human being have an inherent desire for aesthetic enrichment can scarely be refuted. Almost as soon as primitives people learned to build shelters, to fabricate tools and useful objects they were impelled to add purely decorated touches. This of course is ornament no different from the embellishments we are accustomed to seeing on a Sofa or chair or even a wall. In a sense enrichment does mean ornament - something that heigtens the visual or textual interest of a pieces possibly a piece of furniture. But in the context of bome designed enrichment usually is considered from another point of view. Our home abound with objects that are either purely decorated and serve no function purposes, of if they are utilitarian have been designed in such a way that they provide enrichment against a contrasting or simpler background.

These are the elements with which we will concern ourselves primarily in this chapter; the design arrangements, embellishment, and objects that contribute a quality of richness to our daily lives and our personal lifespaces.

Depending upon one's interest and taste enrichment can be approached in at least two ways; objects may serve as enhancement of the total design in architecture and

4.1 INCIDENTAL ENRICHMENT

The most obvious enrichment in my home is the one we are most likely to forget about ourselves. No two people look alike or dress alike. Their varying personalities changing moods, and different activities all affect the background against which they move. We can recall what a different quality the room shown in chapter 16 has when it populated and when it not like actors bringing to life a stage setting people enrich the lifespaces they inhabit.

Another basic form of enrichment may be provided by the architecture of the home 588, where the patterns of ceiling beams and wall panels enrich the column planner surfaces. Small details are kept very simple, while art works and other incidental decoration have been held to a minimum.

Patterns in draperies and upholstery, in floor covering and wall treatments, in finishing and lighting fixtures all can provide a measure of enrichment. So too night the implements and materials of one's profession or hobby, especially when they involve the visual arts. No space could be visually richer than the inside of a wearing studio, with its profusion of multicolored yarns, the satisfying form of the

loom, and works in progress scattered about; a painting sculpture, or creamic studio creates the same kind of delightful image .

4.2 Enrichment In Functional Objects

With one or two possible exceptions, the object to be considered in this section are relatively inexpensive, The typical household, over the years, will accumulate several, or several sets - of each, so that the possibility arises for altering the effect of enrichment from day to day. All have a very specific utilitarian purpose, but all come in a vast rabge of designs, so that one can exercise a great deal of personal taste in selection.

4.2.1 Bed Coverings

Like table settings, the linens blankets comforters, and spread used on a bed bring the potential for very flexible enrichment. Since they are relatively inexpensive and easy to change. It seems hard to believe that until roughly a qua quarter Century ago cloured and patterned sheets were almost unknown, purely white the absolute standard for bed linens. The extent of this revolution in design can be realized when we see world-famous fabric and clothing designers applying their talents to sheets and pillowcases.

Since the bed or beds will nearly always be the focus of any bedroom, the bed coverings that dominated the surface must strongly effect the - room overall design. Moreover, bedspreads and quilts allow an immediate kind of personal expression, for they are often the products of widely popular crafts and hobbies. We have see a number of examples of patchwork quilts, both old and new. In Figure 610 a handwoven spread with a long macrame fringe serves as a neutral but lush background for brightly coloured scatter pillows - another form of enrichment.

Cascading down off the bed and onto the floor, the fringe blend with a high-pile rug to give an overall sense of warmth and comfort to the room.

Bed covering can also act to unify a room, as figure 611 demonstrates. Here a graphic print by Victor Vasarely was the inspiration for a hand-crocheted bedspread that picks up the colors and overall motif of the print without duplicating it excatly. An even simpler method of unifying a room depends on petterned sheets Sheeting fabrics used on the bed can also cover a table .. or a scattering of pillows, can become window curtains, canopies, or dropes, can even run up the wall to make a self headboard.

Pillow covered in bright colours and patterns represent one of the most pervasive and versatile forms of enrichment (Fig 613). They are easy to make lending themselves to all kinds of fabric arts. We mention them here under bed coverings, but pillows can just as easily migrate to other parts of the house

While nominally useful in providing comfort pillows of the sort we have been discussing, often take on a primarily decorative role, especially when intricately worked or heavily ornamented. This leads us directly to consideration of objects that have no function whatsoever except just to be for the seasous delight they give us.

4.3 Enrichment In Decorative Objects

In saying that the objects discussed below plants and flowers paintings, prints, and

sculplurs, handcrafted items and accessories serve no useful purpose we are severely limiting our definition of useful to a rigid almost pu·ition standard. Works of art, wether fabricated by nature or by human beings, play a very important role in enrichment, for they enrich the very essence of ourselves. Our minds, our spirits, our sensibilities. A world - or a home - devoid of objects that exist purely for the joy of existing would be almost like a world without sounds.

4.4 Plant And Flowers

Live Plants - Live plants are so much a fixture in today's homes that its seems difficult to imagine doing without them. A glance through the pages of this book will show that few rooms banish plants altogether and many enlist them as important design elements. Several factors explain this penchant for bringing part of

the out doors inside. The first is of course, the widespread desire to introduce a nature touch in a synthetic environment, this could be considered a psychological gaal - to maintain touch with what has traditionally been an aggrarian culture. In purely visual terms, plants contribute colours textures, and ungoverned gorms that contrast pleasantly with the human controlled parts of an interior environment. Lastly there remains the emotional satisfactinn of watching something grow and change and develop. The degree to which individual or families will want to get involved in historical process is a question of personal interest. However, we could point to the incontrovertible fact that, with reasonable care plants do get larger and in some cases may bloom (thus altering their physical appearances) which distinguishes them from any other elements of home design.

Each type of plant has its own requirement of light, heat, soil, water and humidity for best growth, Almost none like dark hot, poorly ventilated rooms any more than humans do, but a few will survive under such unfavourable conditions.

* Hot Sunny Windows -

Suggest cactus and other succulents. Colers and similar plants with colourful goliage also thrive with many hours of Sunshine a day, as do geraniums and cirtrus trees.

* Moderately Cool

East or North windows will support a variety of plants, begonias which range from a few inches to several g feet tall, African violets, many kind of ivy, plain or variegated which can be trained around a window or up a wall, all the philodendrons, and even some

varieties of orchids.

* Low Light

Areas not directly adjacent to a window call for such goliage plants as philodendrons, rubber trees, and ferns.

* Bath Rooms

Which typically are warm and many tropical plants..

The containers in which plants are kept have much to do with both their ornamental value and their, physical health. However once the requirements for proper drainage, roof spread, and soil acration have been met almost not container can be reledout the materials ranging from the classic unglazed pottery through glazed ceramics, metals, glass, and plastics (Fig: 346). (Wood, unless lined will split and rot from contant watering).

4.5 Fresh Flowers

Raised to the level of an eloquent art by the nature - loving Japanese, and assiduously practiced by many in the United States, flower arrangement can mean anything from stuffing some blossoms into a raise to a fasecination art. The= effects that can be produced are limitless. There are as many steps between synmetrical, strict formality and casual, spontaneous grouping as there are kinds of blossoms. For someflower arranging begins with a walk down a country road to find the most colourful wild flowers and leaves, for other it means a visit to the florist to select the most perfect specimens to enhance a crystal bowl (Fig 616). Whether imgenuous or sophisticated, fresh flowers in the home bring a special kind of enrichment that cannot be duplicated with anything else.

The flowers, branches, and leaves obtainable play a decisive part in determining the kind of arrangement that is possible, because each plant has its own character and habit of growth. Some flowers, such as irises, grow tall and upright and lend themselves to vertical arrangment poppies and tulips have flexible stems and tend to curve into spreading designs that can be basically either horizontal or vertical vines give natural horizontal compositions, although many materials can be deliberately modified to give a low spreading effect when this is indicated. Flowers will cooperate up to a point, but little is gained by pushing them beyond it. Arrangements that emphasize the distinctive personalities of the blossoms used are likely to be most successful.

The relation of flowers to their containers

is important also but not dictated by rules. In figure 616, the brilliance of the crystal bowl is match by the sparking perfection of roses. But any degree of similarity or disinilarity between flowers and containers can be effective. Usually the containers is subordinate to it contants and simple gloss, creamic or metal bowls or vases will happily hold varied flowers. Sometimes, though, a distinctive slom cernucopia, or vase is almost as important as what it holds.

Those who enjoy arranging flowers appreciate having varied containers, because it is slimulating to be able to call upon a vase or bowl just right in size, shape, colour, and texture.

Dry Arrangements

Dry arrangements can be divided into the "semidry" compositions of fruits and vegetables

that last from a few days to several months and the "bonedry" compositions of everlasting flowers, weeds and seedponds, leaves and bare branches, driftwood and rocks. They cost little or nothing and require no care other than the same what Tudious job of removing dust. The principles are the same as those from which pleasing arrangements of fresh flowers develop.

Often, though not always, dried flowers and weeds are subservient to the containers they occupy, acting a more as enchancement or complements rather than statements in their own right. Such in the case in figure 317: we can be sure the clay pot takes precedence and the weeds were chosen because their angular, spindly shapes complement the solid round form of the pot. In figure 617 a bunch of feathery weeds contrasts with the heavy masonry walls of the house and strict rectangularity of the window

frame to create a striking tablean in the window.

Painting, Drawings, Prints And Photographs

For many households, the very next step in home design after choosing major pieces of furniture will be deciding what "pictures" to put on the wall. Ofcause, there is really no reason why any pictures at all must be put on the wall. If the purpose in hanging a painting or print is simply to fill a void or carry out the colour scheme, there is not much point in bothering. Works of art are as personal and emotionally charged as the books we read, the music we enjoy, the types of entertainment we pursue. Most of us, however, either have some objects of visual arts that give us particular pleasure, or we are eager to seek them out. In terms of home enrichment, then, three factors must be considered:

- Chosing works that evoke a special response, framing them appropriately, - deciding where

and how to display them to best advange.

Chosing Works of Art

The several categories listed at the head of this section differ substantially in medium effect, content, and naturally, in cost to purchase.

4.7 Paintings:.. are originally, one of a kind works done in oil, tempera, water colour acrylics, or other pigment bases on canvas or similar backing. Along with original sculptures, they are the most expensive works of art one can by, fwe of us are in a position to purchase master works of a caliber visible in meseums, but it lost be remembered that the vast majority of paintings that today command prices in the hundred of thousands - or millions- of dollars initially were sold to discerming collectors for a tiny fraction of their current value.

Local art shows and galleries, art schools, even - auctions can be the source of treasures that awaken particular responses and may incidentally, have instrinsic value.

4.8 Drawings:- In pencil, crayon, chacoal, or ink on paper - tend to the much less expensive than paintings, even when done by recognised artists. Because they are pften preliminary sketches for other works drawing may be more relaxed than paintings, a more direct revelation of the artists concept; but they can also be precise delineations or full - bodied statements, as - developed as a painting.

4.9 Prints: Often known as multiple, are impressions on paper resulting from such processes as woodcut, etching, drypoint, lithography and sickscreen. They are considered to be original works of art when struck - directly from plates made or supervised by the

artist, numbered according to which impression in sequence each is from the initial print; signed or authorised by the artist, prints are much less expensive than paintings ar drawings; even works by established artists are within the range of average collectors and could represent a sound investment.

4.10 Photographs:- are self evident - a medium expression uniquely of the 20th century (although its principles were - developed somewhat ealier). The content of a photograph can vary from the "art" subject - indistinguisable from that of paintings, drawings, or prints - to the picture that has only personal significance - asnapshot of family and friends. Each is valid as an image for home enrichment, as long as it means something important to the individual.

Reproductions:- of art works have no direct connection with the artist. They inexpensive impressions on paper made photographically or by a commercial printing process, such reproductions do not give the total impact of= original works; for they lack the full range and brilliance of colour, the special interests of texture and materials, still, if one has particular empathy with a certain painting or drawing, and repreductions are all that one can afford, they should not be scarned. High quality reproduction s, especially of drawings, are sometimes quite faithful to the - originals.

4.10.1 Frames Mats And Glass

Frame visually enclose pictures and contribute to their importance and effectiveness. Also, they form a boundary or transition

between the free, intense expressiveness of - pictures and the architectural backgrounds. Lastly they safeguard the edges, may hold protective glass and facilities moving and hanging. Their first duty is to enhance the picture their second to establish some kind of relation relationship with the setting. Generally this means that frames should either supplement the size, scale, character, and colour of what they enclose or simply be unobtrustive bands. Occassionally, marked contrast can accentrate the qualities of a painting only - exceptionally, should the frame dominate the picture. The wide heavily carved and gilded frames of the past or any that project at the outer edges "set off" pictures from their backgrounds.

Those of moderate width and simple - design hamonious in colour with the walls and either

flat or stepped back, relate pictures to walls. Today, many pain ings are meant to be hing without frames, the inpact of the boundary of a painting against its background being part of the total concept.

Mats and glass are typical accompaniment of water colour, photographs, and graphic prints Mats enlarge small pictures and surround them with rest space as foil, especially important if the picture is delicate or if the background is competitive. In colour, mats are usually of white or palelined paper, because this tones concentrate attention on the picture. For special effects, mats can be of pronounced colour and of textiles or patterned paper, cork, or metal.

4.10.2 Hanging Pictures

Both aethetic and prosaically physical considerations come into play in hanging a picture. Once the latter are dealt with and mastered, the former can be given free rain.

* Nails and hooks can be driven
- securely into some types of walls, in frame houses with interior walls of plaster or wallboards, it is necessary to find the wooden stud (or upright post) to anchor the nail (studs most often are 16 inches aprat).

* Some surfaces - and some landlords - will not permit nails to be driven in for this purpose there exist picture hooks on - super-heavy tape that can be affixed to the wall.

* Concrete and similar walls may demand special plugs that expand on the other side to create a permanent, immovable projectile for the picture.

* In general, picture should be hung flat against the wall, with no wires or hooks showing although sometimes the wires are decorative.

Locating paintings, drawings, photographs, and prints so that they interact happily with each other and their setting is an art since pictures help placed over something a sofa or group of chairs, a desk a tbale, a bookcase, a piano, or a fireplace keeping pictures at eye level lets them be viewed comfortably, relates them tc furnishings, and emphasizes the rooms horizontally. From time to time though, it is refreshing to have a painting stand for what it is worth on an otherwise blank wall. Large,dominant paintings by their forceful presence, almost - demand this kind of

treatment (Fig: 618). Smaller, more modest work can be grouped successfully, provided each is in a - position invite leisurely study (Fig 619).

4.10.3 SCulpture

Bringing into three dimensions the intersity and expressiveness found in painting can have serious impact on this home. An important piece of sculpture, regardless of its size commands a place of important and becomes the focus of attentions.

Large pieces that are freestanding can - from a purely organizational point of view - be treated as articles of furniture. That they will gather an of specialness about them depends as much upon their vicual integrity. as upon placement. Smaller pieces many occupy prominent positions on a shelf or table (Fig 228).

On the wall in a niche or possibly suspeneded from the ceiling. The collection whc is fortunate or deligent enough to amass many piece of related sculpture will certainly want to create a display area particulaıly for them (Fig 620).

4.10.4 Crafts

Poteery, glassblowing, wearing woodcaaft, metalwork, basketry - all have experienced a tremedous surge of popularity in the last several years. As collections have inceasingly Turned their attention away from the fine arts toward an appreciation of the socalled applied arts, crafts have begun to throw off their "homey" image and assume their rightful place as serious expressive works. A beautiful ceramic objects may be no less significant than an offical piece of sculpture, a handwoven tapestry no less important than an oil painting

Happily, craft objects are still much less expensive and much more readily accessible to the public than paintings and sculpture. In many homes such precious architect have begun to replaced the traditional picture - on - the - wall as prized objects of enrichment. For example, the suspended seclusion balcony shown in Fig 622 has as its major adornments the arts fabrics on two walls and a beautiful handmade basket, plants hanging from the three-storey ceiling complete the traquil picture.

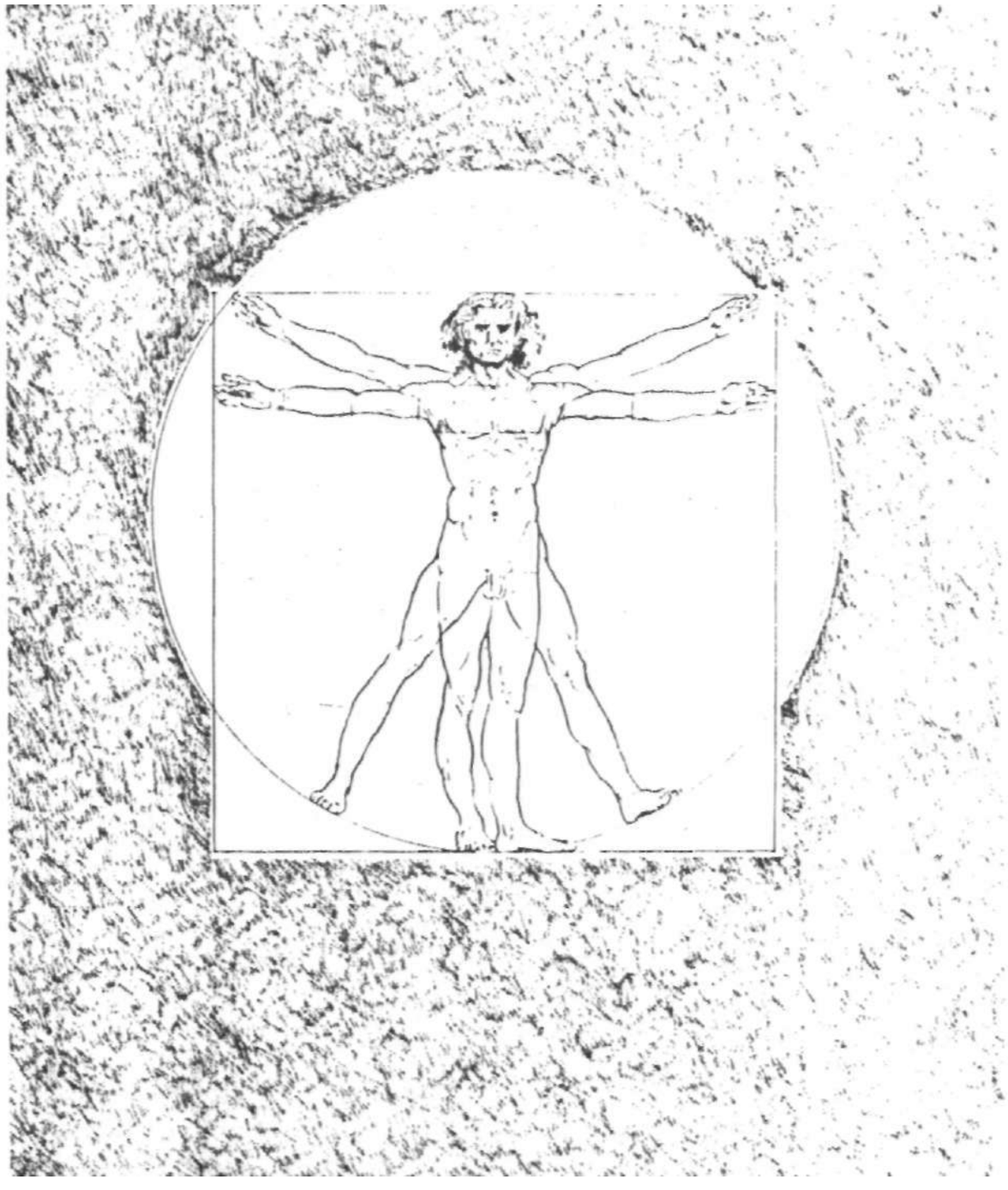
Throughout this book we have shown many examples of the potters and glassblowers art enriching contemporary interiors. Baskets, when their design is sensitive and closely adapted to the materials, take the place of sculpture and make apure aesthetic statement (Fig 623) while often divorced from their original

utilitarian functions such object retain the suggestion of sturaly serviceability that relates them to the basic architects of everyday living.

4.10.5 Accessories

We have not yet touched upon one major category: objects that are not quite works of arts on craft (since they are mass - produced) and not quite utilitarian (although they may perform some marginal task), but are simply kept about because they delight the eye or hand or intellect. Figure 642 illustrates a collection of such article - brass candlesticks, heavy glass forms, whinsical ceramic goose, a globe. If we try to imagine this same room stripped of these little island of enrichment, it seems very dull indeed. That is because they, together with books and plants scattered about

delineate the very character of the room. Without them, the space would be impersonal and bland. In a sense, this sums up the underlying nature of enrichment - that which personalize a home, gives it its particular quality, and makes it peculiarly one's own.



CHAPTER 5

PROPORTION AND SCALE IN ARCHITECTURE

Proportion by definition means the relation in size, number, amount, degree of a thing or part as compared with other things or parts proportioning system go beyond the functional and technical determinants of architectural form and space to provide an aesthetic rationale for their dimension. They can usually unite the multiplicity of elements in an architectural design by having all of its parts belong to the same family of proportions. They can provide a sense of order in, and heighten the continuity of a sequences of spaces. They can established relationships between the exterior and interior of a building.

All building materials in Architecture have distinct properties of stiffness, hardness and durability. They have rational proportion that are dictected by their inherent strengths and weakness,mansory units like brick for example, are strong in compression and depend on their mess for strength and are, therefore volumetric in form. Steel are strong in both compression and tension, and can therefore be formed into kinear column and beams as well as planner sheet material.

Wood being a flexible and fairly elastic material can be used as linear psots and beam planner boards and as a volumetric element in log cabin construction.

Other structural forms such as bearing walls, floor, and roof, slab, vaults domes also give us visual clues with their proportion as to their role in a structural system as well as the nature of their material.

Types of Proportion

1. Geometric $\frac{c-b}{b-a} = \frac{c}{b}$ (eg 1,2,4) 4,6,9

2. Arithmetic $\frac{c-b}{b-a} = \frac{c}{c}$ (eg 1,2,3) 6,9,12

3 Harmonic $\frac{c-b}{a-b} = \frac{c}{a}$ (eg 2,3,6) 6,8,12

Theories of Proportion

a) The golden section

b) The orders

c) Renaissance theories

d) The Modular

e) The Kein

f) Anthropomorphic proportion

Golden Section

The Golden section can be defined geometrically as a line that is divided such that the lesser portions is to the greater as the greater is to the whole. It can be expressed algebraccally by the equation of two ratio:

$$= a/b = \frac{b}{a + b}$$

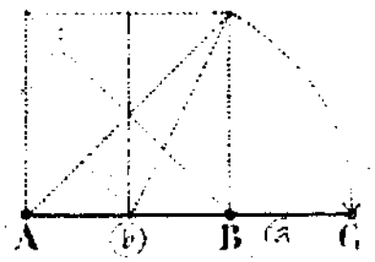
AB = b

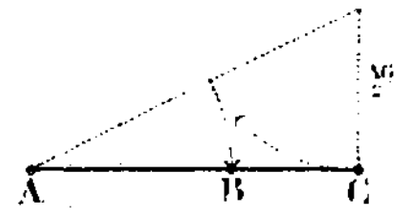
BC = a

ϕ = Golden Section

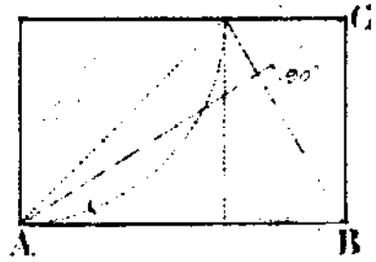
$$\phi = \frac{a}{b} = \frac{b}{a + b} = 1,6,18\cdots\cdots$$

THE GOLDEN SECTION





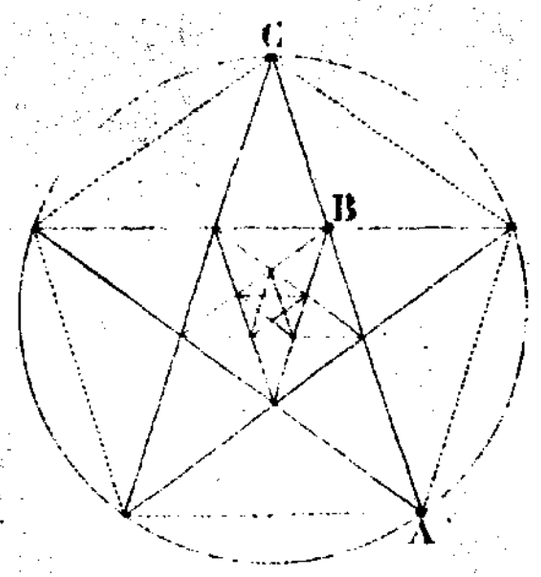
Geometrically construction for golden section, first by extension and then by division.



$AB = b$
$BC = a$

ϕ = GOLDEN SECTION

$\phi = \frac{a}{b} = \frac{b}{a} = 1.618\ldots\ldots$



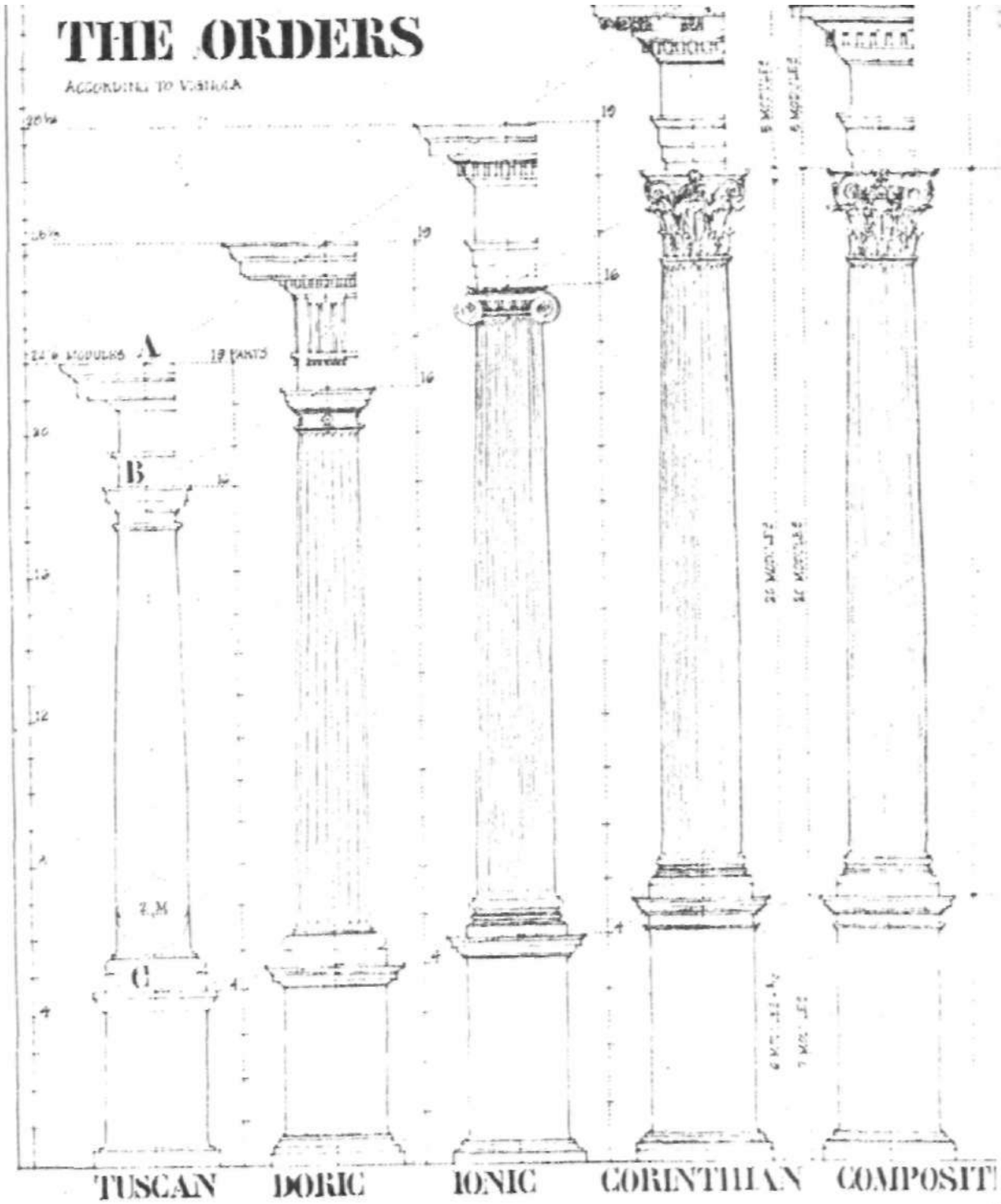
5.1 The Orders

To the Greeks and Romans of classical the Order represented in their proportioning of elements the perfect expression of beauty and harmony. The basic unit of dimension was the diameter of the column. From the module were derived the diemension of the shaft the capital as well as the pedestal below. The entablature above down to the smallest detail, intercolumnation, the spacing between the column was also based on the diameter of the column.

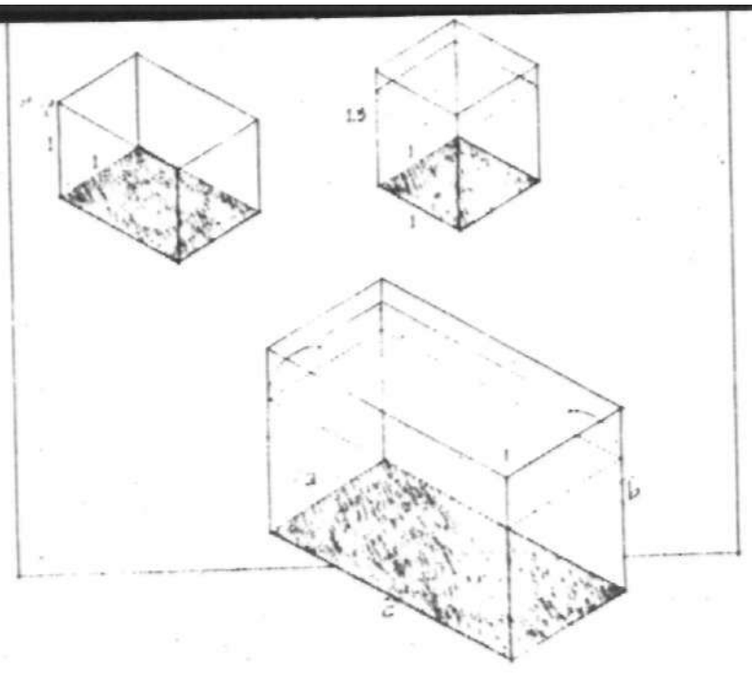
5.2 The Renaissance

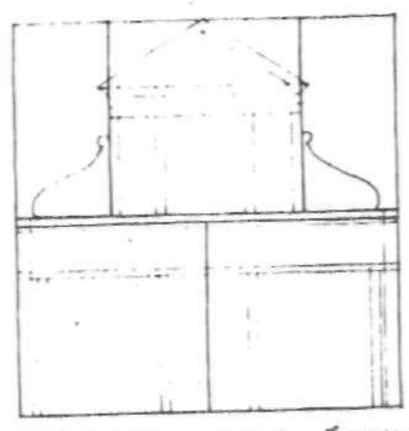
Pythagoras discovered that the consonance of the Greek Musical system could be expressed by the simple numerical progressive, 1: 2: 3: 4: and their ratio 1: 2: 3: , 2: 3 and , 3: 4.

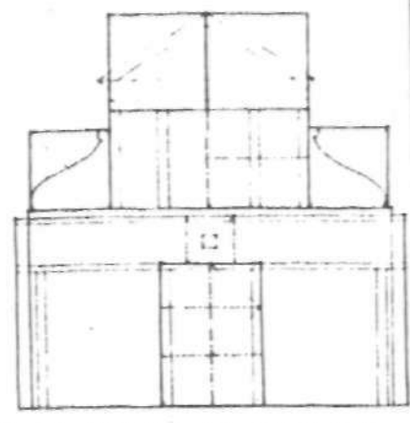
Pythagoras and Greek was: "Everything is arranged according to numbers" Plato later developed the Pythagoras aesthetic of numbers into an aesthetic of proportion. He squared and cubed the simple numerical progression to produce the double and the triple progression 1,2,4,8 and 1,3,9, 27 for plato these numbers and their ratios not only contained the consonances of the Greek musical scale but also expressed the harmonic structure of the universe.


THE ORDERS
ACCORDING TO VIGNOLA
A
B
C
TUSCAN
DORIC
IONIC
CORINTHIAN
COMPOSIT

RENAISSANCE THEORIES







S. MARIA NOVELLA, Florence. Renaissance façade (1456-70) was designed by Alberti to complete a Gothic church (13th-1360)

DETERMINING THE HEIGHTS OF ROOMS

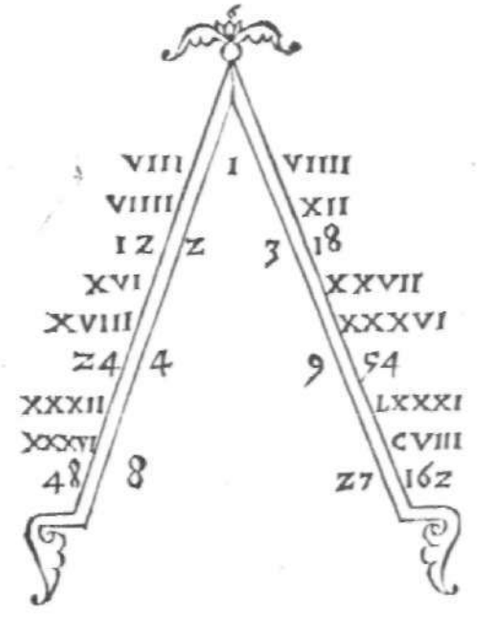
Palladio also proposed several methods for determining the proper height of a room so that it would be in proper proportion to the room's width and length. For rooms with flat ceilings, their height would be equal to their width. For square rooms with vaulted ceilings, their height would be one-third greater than their width. For other rooms, Palladio used Pythagoras' theory of means to determine their heights. Accordingly, there were three types of means: arithmetic, geometric, and harmonic.

1. ARITHMETIC : $\frac{c-b}{b-a} = \frac{c}{c}$ eg. 1, 2, 3 . . or 6, 9, 12.

2. GEOMETRIC : $\frac{c-b}{b-a} = \frac{c}{b}$ eg. 1, 2, 4 . . or 4, 6, 9.

3. HARMONIC : $\frac{c-b}{b-a} = \frac{c}{a}$ eg. 2, 3, 6 . . or 6, 8, 12.

In each, the mean (b) between the two extremes of the room's width (a) and length (c) was the room's height.



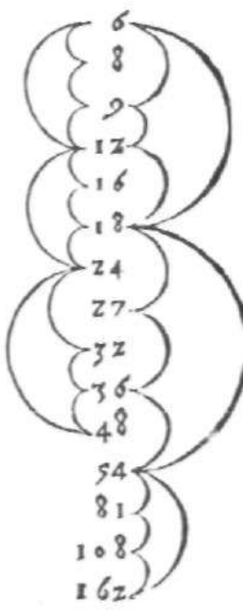


DIAGRAM BY FRANCESCO GIORGI, 1525, illustrating the series of intervals in nature that results from using Pythagoras' theory of means to determine the intervals of the Greek musical scale.

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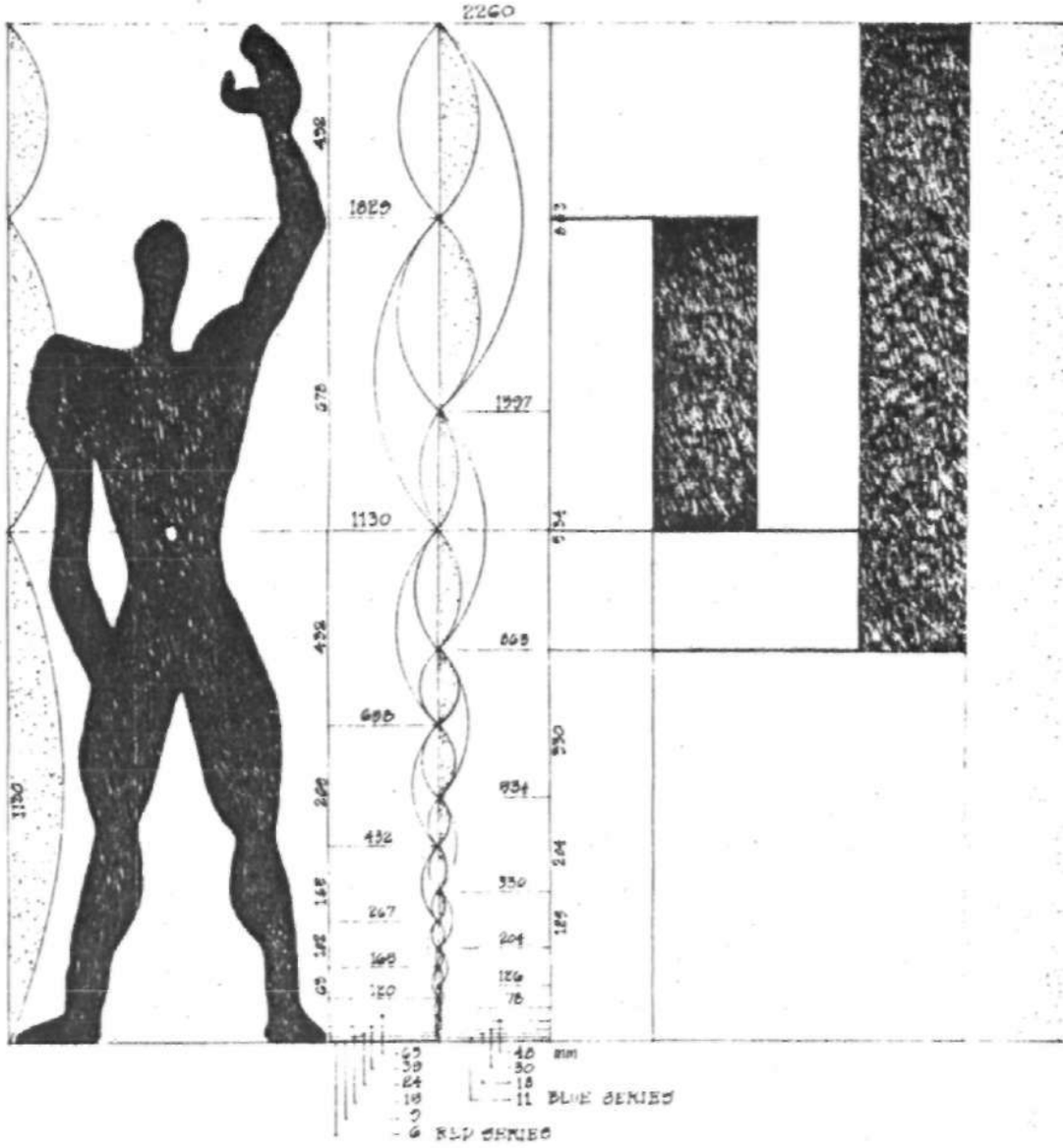
5.3 The Modulor

Le Corbusier developed his proportion system. The modular the order "the demensions of that which contains and that which is contianed".
Le Corbusier saw the modulor not merely as a series of numbers with an inherent harmony but as a system of measurement that could govern lengths, surfaces and volumns and "maintain the human scale everywhere it could "lend itself to an infinity of combination, it ensure unity with diversity:.... The miracle of numbers.

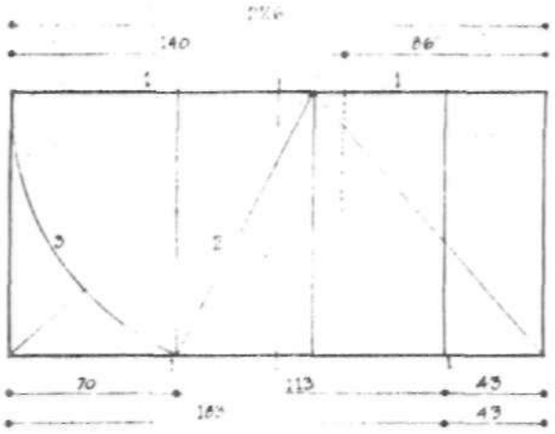
The basic grid consists of three measures 113, 70, 43 (cm) proportion according to the golden section.

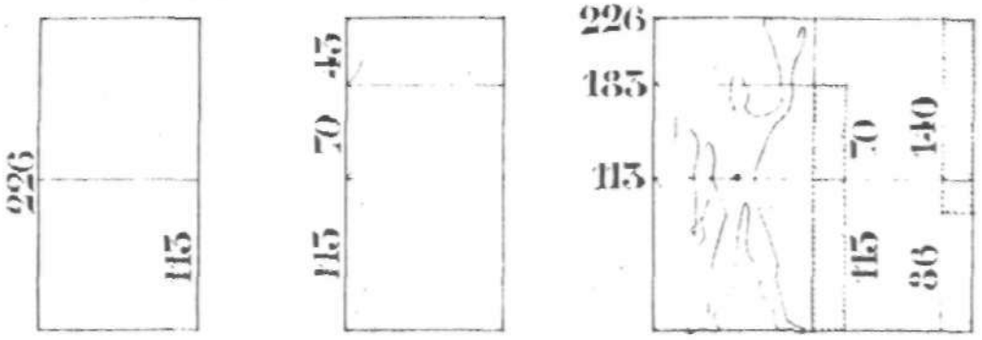
$$43 + 70 = 113$$
$$113 \times 70 = 183$$
$$113 + 70 \times 43 = 226 \quad (2x\ 113)$$

113, 183, 226 define the space occupied by the human figure from 113 and 226, Le Corbusier develop the real and blue series, diminishing scales of dimensions that were related to the scatare of the human figure.


2260
1829
1227
1130
698
432
267
169
150
113
86
70
54
43
33
27
21
16
13
8
6
mm
BLUE SERIES
RED SERIES

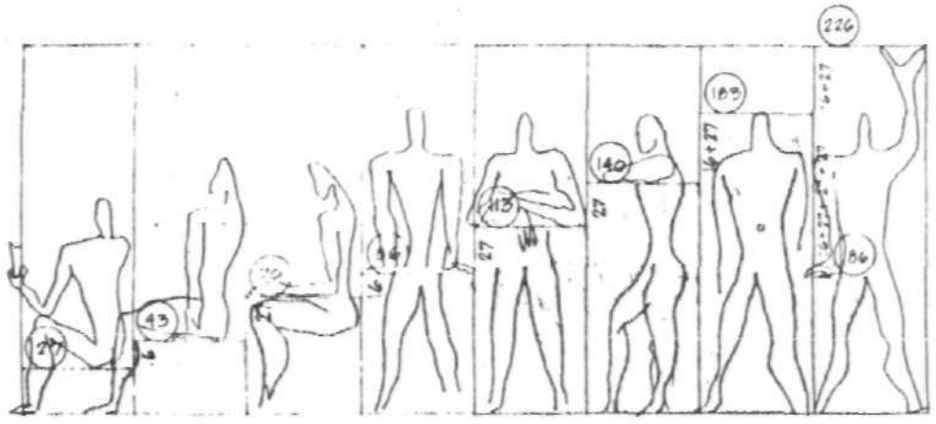
THE MODULOR





Le Corbusier developed his proportioning system, the Modulor, to order "the dimensions of that which contains and that which is contained." He saw the measuring tools of the Greeks, Egyptians, and other high civilizations as being "infinitely rich and subtle because they formed part of the mathematics of the human body, gracious, elegant, and firm, the source of that harmony which moves us, beauty." He therefore based his measuring tool, the Modulor, on both mathematics (the aesthetic dimensions of the Golden Section and the Fibonacci Series), and the proportions of the humany body (functional dimensions).

Le Corbusier began his study in 1942, and published The Modulor: A Harmonious Measure to the Human Scale Universally Applicable to Architecture and Mechanics in 1948. A second volume, Modulor II, was published in 1954.



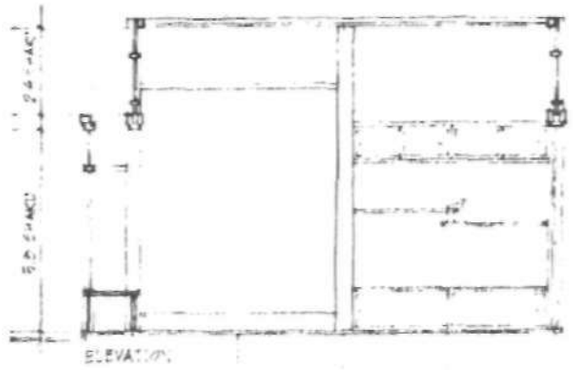
5.4 The Ken

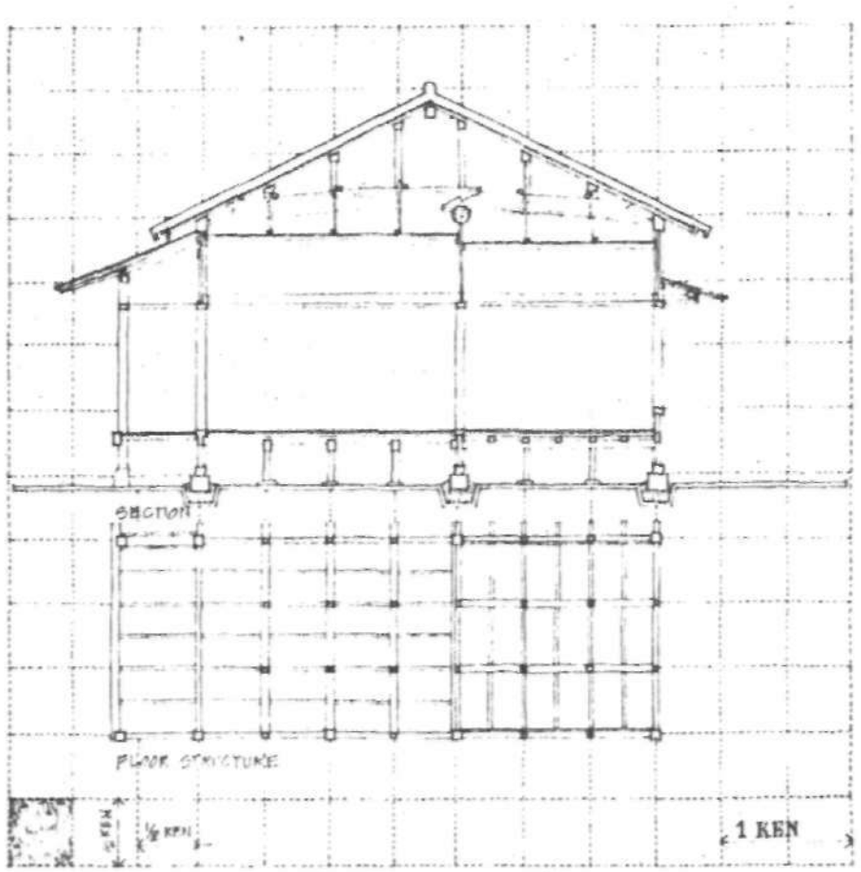
The traditional Japanese unit of measure. The Shaku was originally imported from China. It is almost equivalent to the English foot, and into decimal unit. The Ken was introduced in the latter half of Japan's middles ages. Although, it was originally used simply to design at the internal between two columns the Ken was soon standardize for residential architecture.

Two methods of designing with the Ken modulor grid developed that affected its elemension. In the Inaka - ma method the Ken grid (6 Shaku) determined the centre to centre spacing of column. The standard tatami floor mat , (3 x 6 shaku or ½ x 1 Ken) Therefore varied slightly to allow for the thickness of columns.

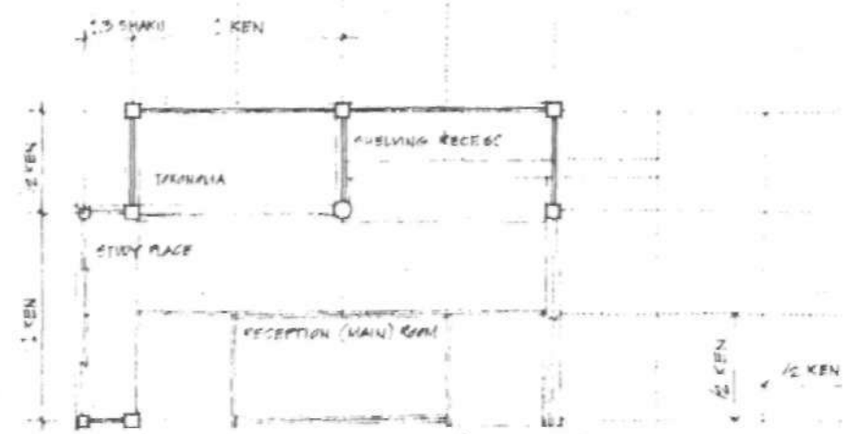
In the Kyo-ma method, the floor mat remained constant (3 x 15 x 6.30 shaku) and the column spacing (Ken module) varied according to the size of the room, and ranged from 6.4 to 6.7 shaku.

THE 'KEN'



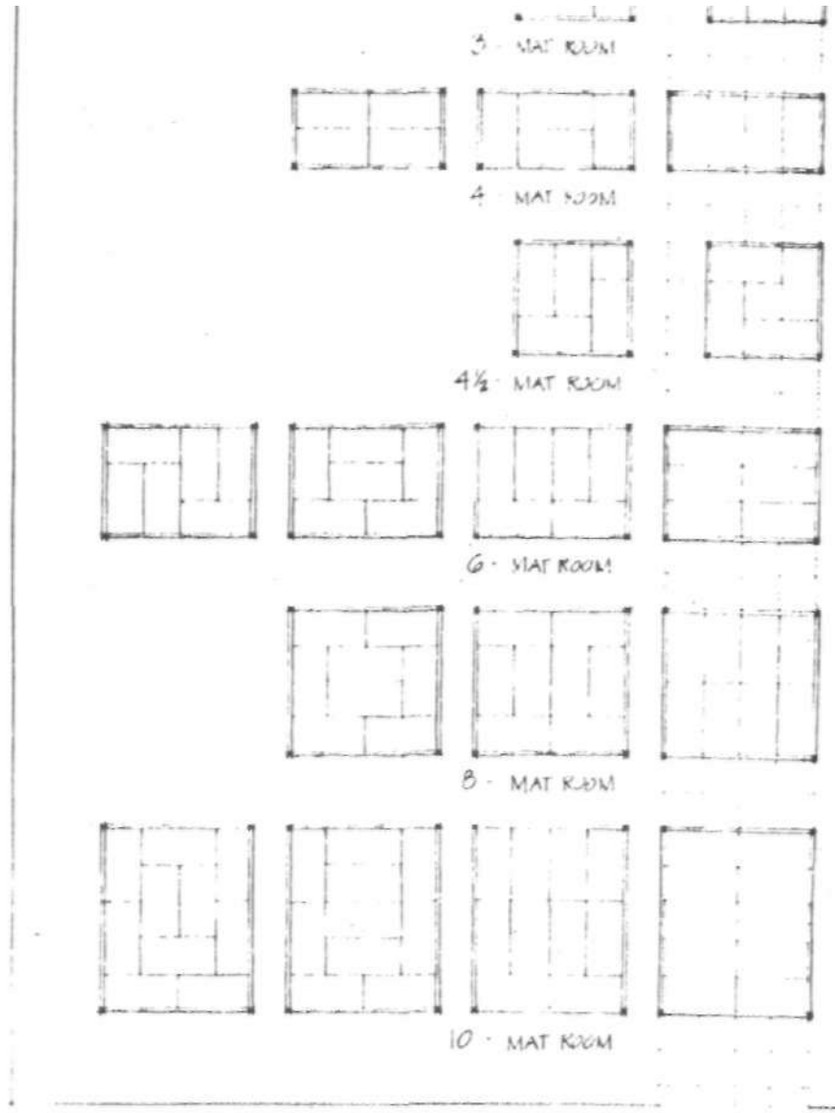


TYPICAL JAPANESE HOUSE



PART PLAN: PICTURE RECESS or "TOKONOMA"

The Ken, however, was not only a measurement for the construction of buildings. It evolved into an aesthetic module that ordered the structure, materials, and space of Japanese architecture.


3 · MAT ROOM
4 · MAT ROOM
4½ · MAT ROOM
6 · MAT ROOM
8 · MAT ROOM
10 · MAT ROOM

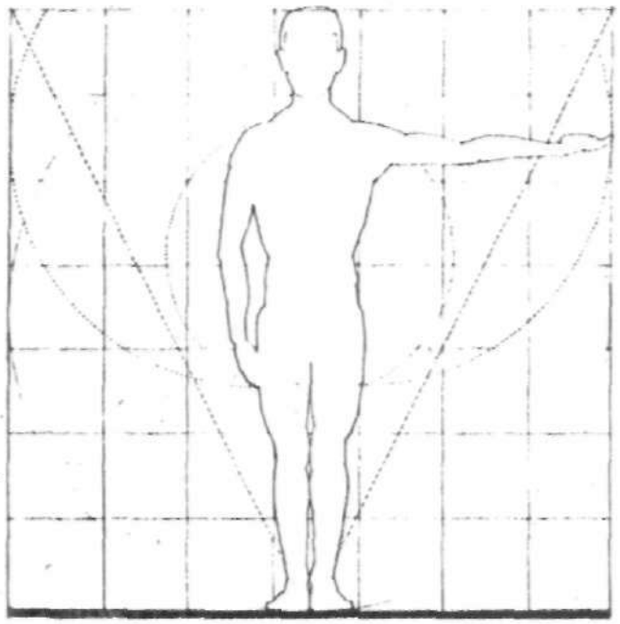
5.5 Anthropomorphic Proportion

Anthropomorphic proportioning systems are based on the dimensions and proportion of the human body, Anthromorphic proportioning methods seek not abstract or symbolic ratios but function ones. They are predicted on the theory that forms and spaces in architecture are either containers or extensions of the human body and should therefore be determined by its dimensions.

The difficulty with Anthropomorphic "propertioning is the nature of the data required for its use for example the dimensions given here is mm, are average measurements and are merely guidelines . Average dimensions must always be threated with caution since the actual dimension of the people to be served will vary according to age sex and race.

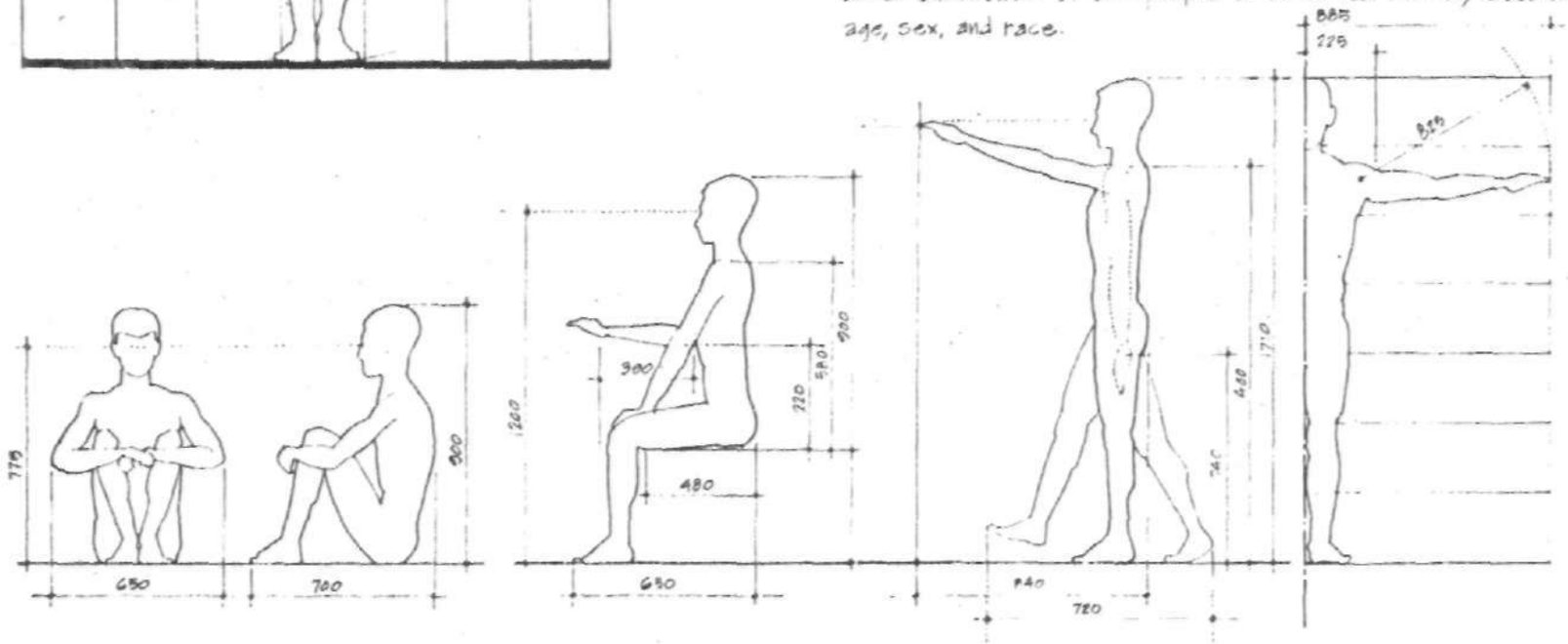
The dimensions and proportion of the human body affect the proportion of things we handles, the height and distance of things we reach the dimensions of the furniture we use for sitting , working, eating and sleeping.

ANTHROPOMORPHIC PROPORTIONS

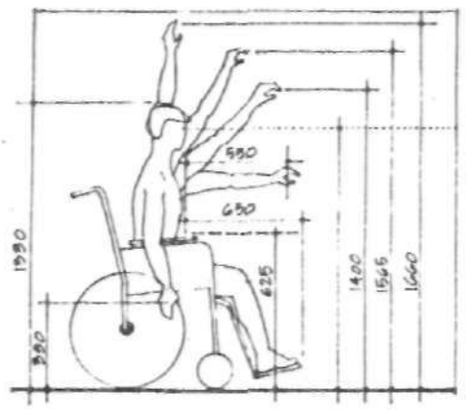


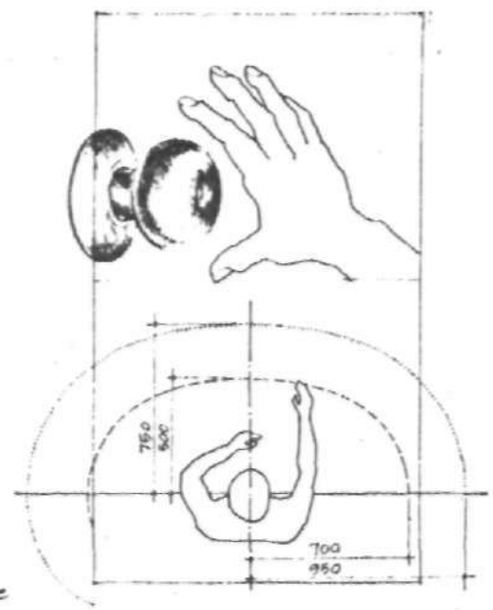
Anthropomorphic proportioning systems are based on the dimensions and proportions of the human body. While the architects of the Renaissance saw the proportions of the human figure as a reaffirmation that certain mathematical ratios reflected the harmony of their universe, anthropomorphic proportioning methods seek not abstract or symbolic ratios, but functional ones. They are predicated on the theory that forms and spaces in architecture are either containers or extensions of the human body and should, therefore, be determined by its dimensions.

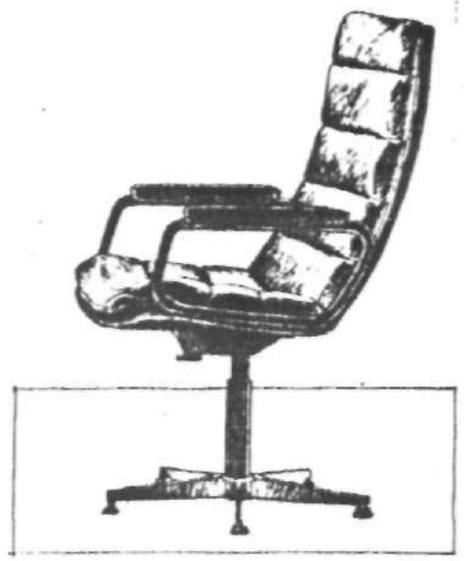
The difficulty with anthropomorphic proportioning is the nature of the data required for its use. For example, the dimensions given here, in millimeters, are average measurements and are merely guidelines. Average dimensions must always be treated with caution since the actual dimensions of the people to be served will vary according to age, sex, and race.



ANTHROPOMORPHIC PROPORTIONS

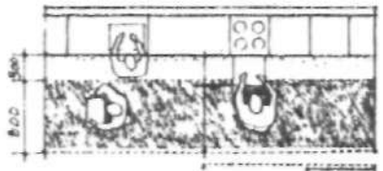


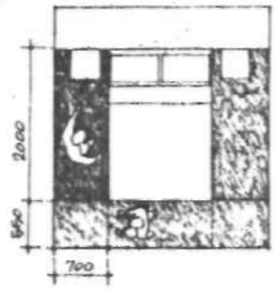


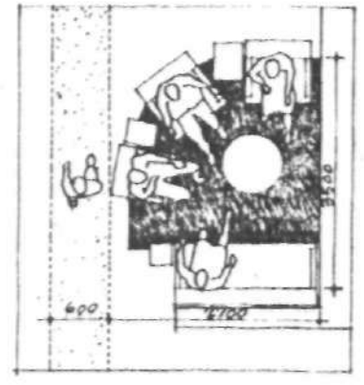


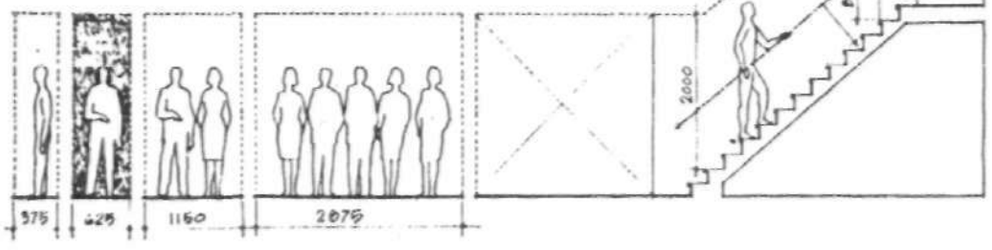
The dimensions and proportions of the human body affect the proportion of things we handle, the height and distance of things we must reach, the dimensions of the furniture we use for sitting, working, eating, and sleeping.

In addition to these elements that we use in a building, the dimensions of the human body also affect the volume of space we require for movement, activity, and rest.









In addition, the dimension of the figure affect the volumn of space we rquire for movement. A fixed proportion used in determining measurement and dimensions activity and rest.

5.6 Scale

By definition scale means:- while proportion refers to the mathematical relationships among the real dimensions of a form or space scale refers to how we perceive the size of a building element or space relative to other forms. In visually measuring the size of an element, we lend to use other elements of known-size in their context as measuring devices. These are known as scale giving elements, and fell into two general categories. Building elements whose size and characteristic are familiar to us through experience, and the human figure in architecture types of scale:-

1. General Scale

   The size of a building element relative to other forms in its context.

2. Human Scale

   The size of a building elements or space relative to the dimension and proportions of the human body.

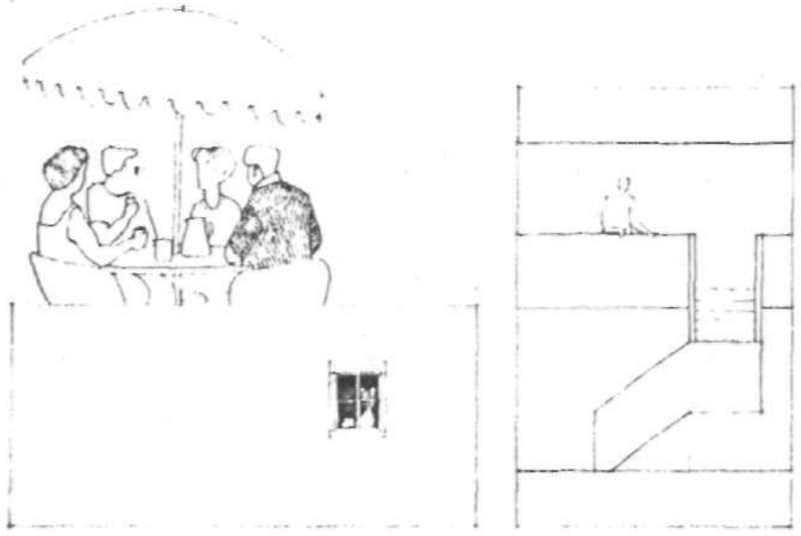
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SCALE



Vitruvian figure by Francesco di Giorgio, 16th Century



Human scale in architecture is based on the dimensions and proportions of the human body. It has already been mentioned in the section on anthropomorphic proportioning that our dimensions vary from individual to individual and, therefore, cannot be used as an absolute measuring device. We can, however, measure a space whose width is such that we can reach out and touch its walls. Similarly, we can measure its height if we can reach up and touch the ceiling plane overhead. Once we can no longer do these things, we must rely on other visual rather than tactile clues to give us a sense of the scale of a space.

For these clues we can use elements that have human meaning, and whose dimensions are related to our own dimensions. Such elements as furnishings - a table, sofa, or chair - or stairs, a window or a doorway, not only help us judge the size of a space but also give it a human scale or feeling.

Intimate settings of tables and lounge chairs in a large hotel lobby will tell us something about the expansiveness of the space as well as define comfortable, human-scale areas within it. A stairway leading up to a second-story balcony or loft will give us an idea of the vertical dimension of a room as well as suggest a human presence. A window in a blank wall can tell us something about the space behind it as well as leave the impression that it is inhabited.

Nevertheless, the size of each element is perceived relative to the size of other element around it. For example the size and proportion of windows in a building facdde are usually related to one another as well as to the spaces between them and the overall dimensions of the facade. Such elements as residential window unit and doorways can give us an idea of how large a building and how many stories it has, stairs and handrails can help us measure the scale of a space because of their familiarity, these elements can also be used to deliberately alter our perception of the size of a building form or space.

Human scale, in architecture is based on the dimensions and proportions of the human body. We can y then use elements that have human and whose dimensions are related to our own dimensions, such as furnishings, a table sofa or chair or stair, a window or a doorway, not only help us judge the size of a space but also give it a human scale and feeling.

In addition to the vertical dimensing of a space other factor that will effect scale are:-

* The shape colour, and pattern of its bounding surface.
* The step and disposition of its openings.
* The nature and scale of the elements placed within it.

CHAPTER 6

CASE STUDIES

Architecture, rightly or wrongly, has been classified as an art, and architects were considered as artist. The general assumption is that the main aim of the architect is to produces beautiful buildings. He is expected to produce objects which evoke some aesthetic experience and arouse some aesthetic feeling and possibly aesthetic satisfaction to the observer.

However Paul Weiss points out, untills other aesthetic objects architecture is bound by the demands of utility as well as the itentions of the architect; in architecture the criterial of expression be it stone paint, concrete steel, aluminor brick, has a very important role to play in the aesthetic experience of the observer. The architecture must be utiliteria and architect has a plethora of stringent town planning laws, building bye-laws and regulations with which to contend. If depends on technological changes and growth and it must also meet human needs and respond to social evolution.

Although it may be simplistic to differenciate between "Architecture" and Building" Bush-Brown (1968) has noted that a building may fail to qualify as architecture on three Basic counts.

These are:-

(a) Structural failures

(b) Functional failures

(c) *Defectiveness in form*

The six basic aesthetic philosophical school in architecture are recognised in the history of "Modern Western Architecture" (Sa'ad 1984) are:-

(a) Architecture as art

(b) Architecture as space

(c) Architecture as structures (or form)

(d) Functionalist architecture

(e) Humanist architecture and

(f) architecture engage'

6.1 Architecture as Art

This school insists on ornamentation as the sole criterion for jodging architecturalmerit. It reasons that although "a lot of what goes on in the creation of a work ofarchitecture is analytical and logical, the crucial aspect of architectural conception is artistic and depends purely on insight and subjective hunch that belongs to a creative that the architect "cannot depend solely on reasons, calculations graphs and tests like the engineer and other technical designers; he must go beyond these and engage in creativity". Hence the rejection, by this sect, of what is seen as the "increasing intellectualisation and depersonalisation of the design operation" and the mass production of building components on the one hand, and the attempt to distingush between "architecture" and "mere building"



vizored helmets. It is rather like a parody of all other churches, though Gaudi, an obsessively religious man, certainly did not

Above: Gaudi's Casa Mila is his most celebrated secular building, an apart- shaped and whose appearance again recalls a variety of strange,

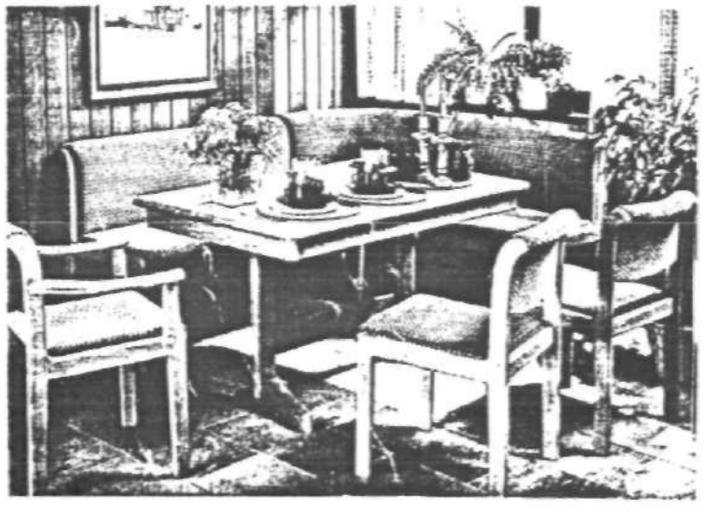
on the other. Architecture, it is persistently maintained, is nothing more or less than the art of ornamented and ornamental construction" (Gauldie 1966:3) and its creation should be totally independent of the complexity and rigidity of legislation, building regulation economic and political considerations and so on.



however, Art Nouveau exploited the machine and revelled in the decorative possibilities of tiles and wrought iron

6.2 Architecture as Space

The central position of this school may be summarised as follows (Zevi, 1957; Gideon 1971'ad, 1984);



* It is not the plans, the sections, the elevations, decorations or the mouldings that make architecture but the "void created to enclose man and his activities". It is therefore the internal space which merits appreciation.

* Objects that do not envelope space do not qualify as architecture.

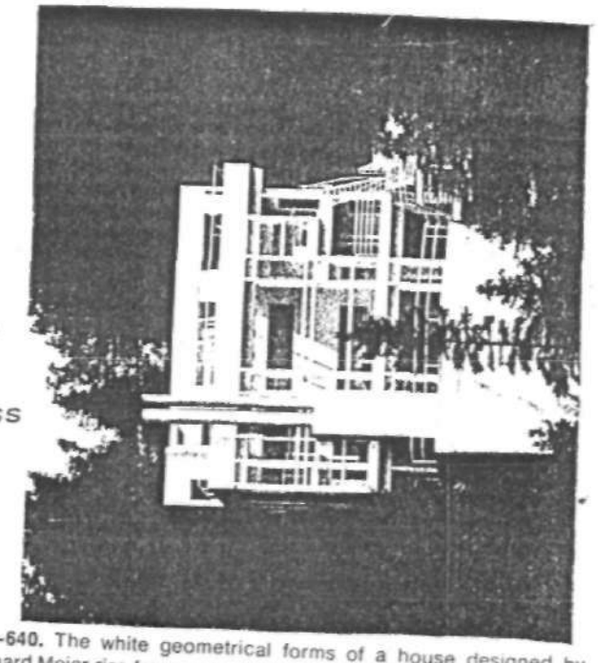
* Considerations such as economics social requirements ornamentation and technical considerations must be set

aside infavour of "Space".

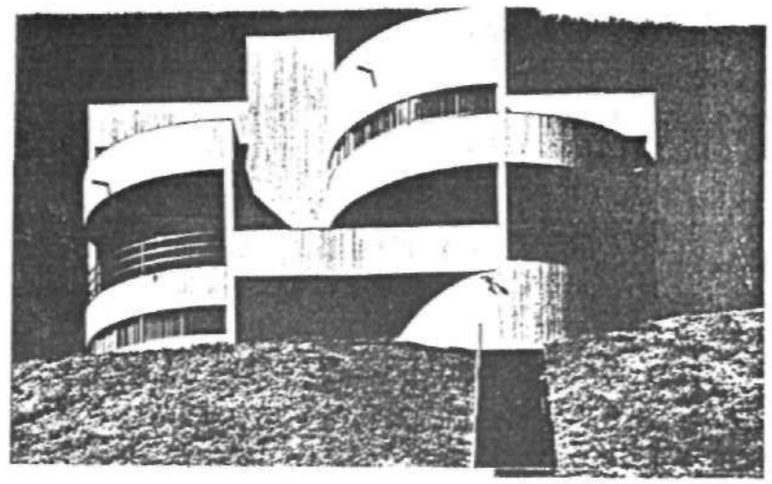
* Such concepts as rhythm, scale, balance, proportions and so on which the arachitecture is an atr* school uses as criteria are of no relevance as these only succeed in reducing architecture to the level of sculpture or painting.

6.3 Architecture as Structure (or Form)

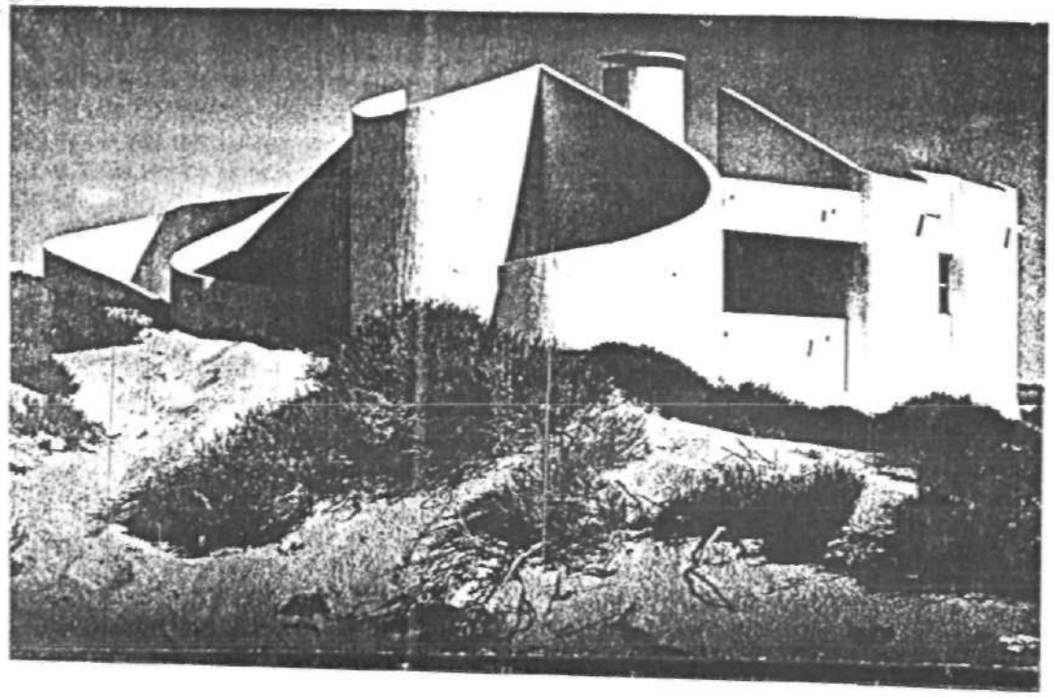
This school bases its philosophical conception of architecture primarily on structures and form, the latter being defined as the relationship of three dimensional bodies in spaces as perceived by a moving observer". It emphasises the role of reason in architectural design; views architecture as a logical art; and attempt to blend engineering logic based on structural principles with the aesthetic requirements of the work of art. Concepts and terms such as the virtical wholeness and completeness of the column, the "tension expressed by cantilevers", symmetry assymmetry, direction, axiality solids and voids, light and shades, opaque and transparent, smooth and textured are those freely used to decribe and

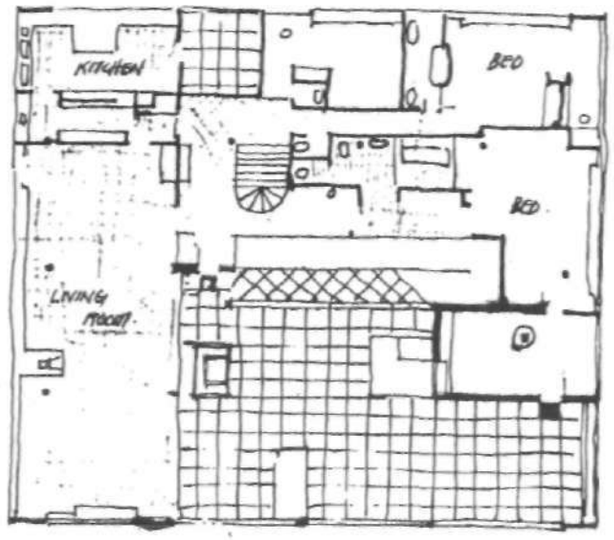


639-640. The white geometrical forms of a house designed by Richard Meier rise from a steep waterside slope at Harbor Springs, Michigan. See also Fig. 176; Plate 48, p. 335.



above left: 638. Sharp-edged sculptural forms dramatize the emphatic orientation of a Long Island home by architect Myron Goldfinger. (*Photograph: Maris/Semel*)



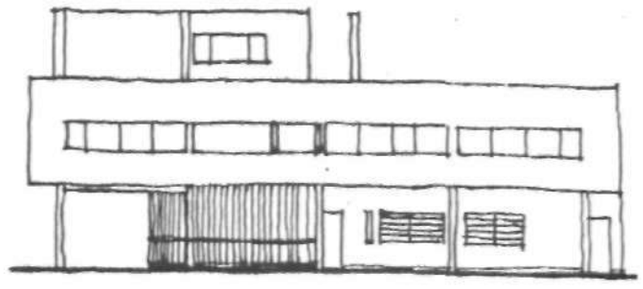


emblazon beyond space, if it is to qualify as an object deserving of aesthetic appraisement.

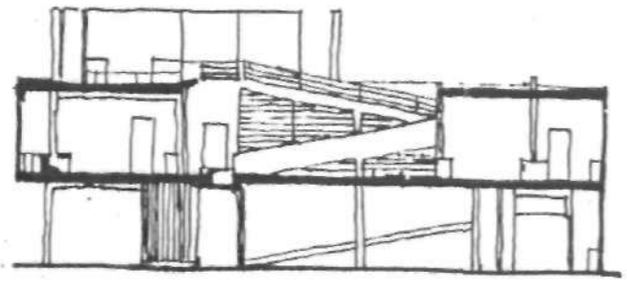
6.4 Functionalist Architecture

The four main essential elements of modern functionalism are:-

a. A building "should not be ridden with irrelevant ornamentation or superflouus structural gimmicks all in the name of aesthethics". Rather, what should count most is the match between the building and the purpose for which it was designed.



b. Since buildings are constructed to perform certain functions and "belong in the public domain", the personal, (aesthetic) priorities or predilection of the architectu should be of no consequence.



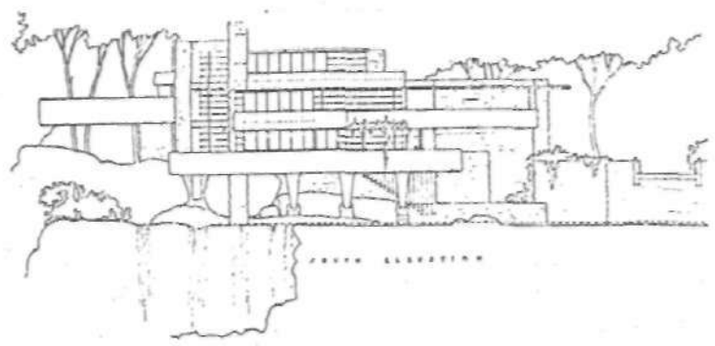
c. Architecture is a group activity (collaboration in design) and not "th realisation of the dream of any individual artist". It must be the result of interaction of multifarious endowments working in concordance.

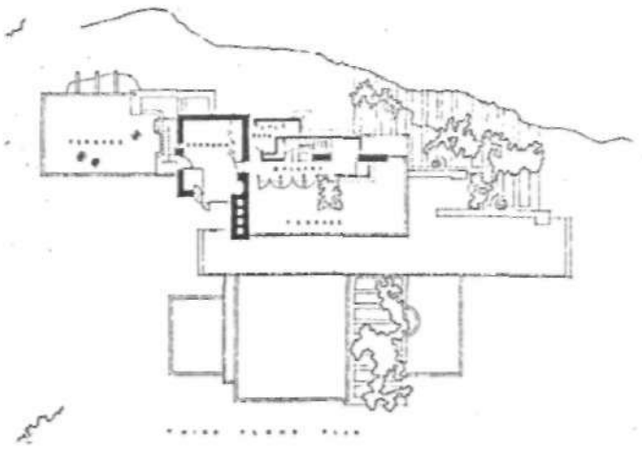


d. The structure of building should not "only support the load but should be seen supporting it". A building which hoodwinks us as to its proper performance is in poor taste.

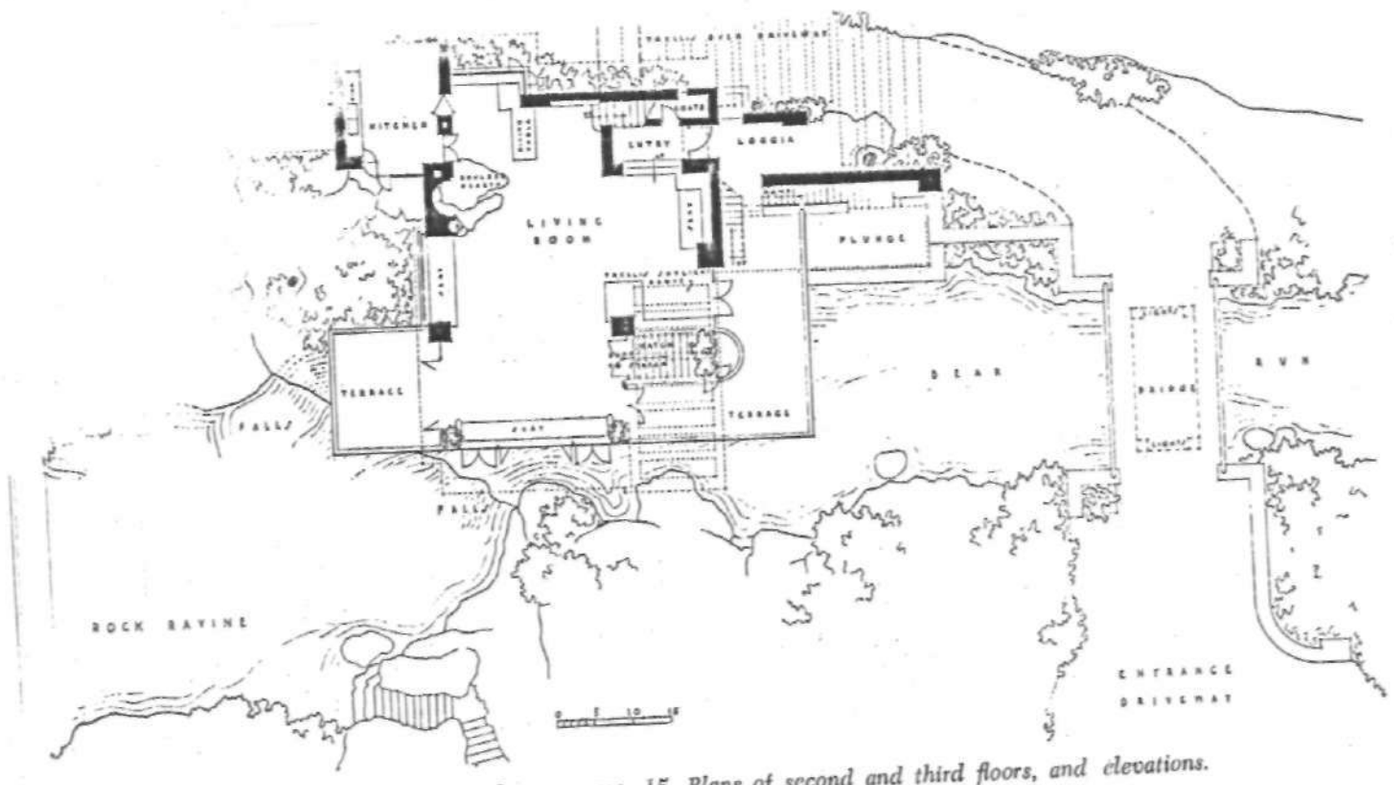
6.5 Architecture of Humanism

A building quantifies as work of architecture only when it consist of commodity (space and the practical utility aspect). Firmness (the requirements of structure stability - statistics dynamics and mechanics), and delight (the disinterested desire for beauty). The rich vocabulary employed by Humanists to celebrate the architecture they create include the f following (Zevi, 1957): truth, movement, force vitality, sense of outline, harmony, grace, breadth scale, balance, proportions, light and shade, solid and void symmetry and asymmetry,









ABOVE: *14. Plan of first floor.* BELOW: *15. Plans of second and third floors, and elevations.*

rhythm, mass, volume, emphasis, character, spirit, nature, essence, personality, contrast, confussion, analogy, unity and disunity, and so on.

Humanists call for an architecture which uses natural materials as marble, stone wood and metals in congruity with their inner nature" while simultaneously being in congeniality with the natural landscape.

6.6 Architecture Engagé

This school consists of those often reffered to as political or constructivist architects. Constructivism in architecture has been submitted to various expansions. Essentially, it is a philosophy predominantly concerned with the function of architecture as a social catalyst: form must accommodate or respond to social evolution. The design approach of constructivist architects was premised in the marxist philosophy. To them "the progressive social tast of architecture was always paralleled.

by the technical task of building rationally on the basis of the latest achievements of technology" (Cooke,1983). They contend that architecture is aesthetically valid only when it satisfies the "collective ethics" of human society. Hence they argue that rather than fostering and nourishing "the bourgeois society and individualism by the design of single family house" architects should only design "those buildings that served the society as a whole. Hence the works left by the early railway stations, underground rail systems, post offices, hospitals, hotels and schools" (Sa'ad, 1984). This school scorns traditional architecture as a lively representation of an inequitable and cruel social disposition.

CHAPTER 7

LANDSCAPE DESIGN

Designing the landscape surrounding a home is an important and itegral aspect of tatal design for living. The careful placement of a house in relation to its site can be supplemented by adjustments to the landscape in order to increase the integration of indoor and outdoor spaces.

Individual living and patterns often call for specific design features in the graden or yard, just as they do in the organization of the house interior House holds with young childrens need out-door amenities different from those required by swimming enthusiasts or amateur - gardeners. Similarly, problems of access and privacy are often best met by altering the terrian or planting new trees and shrubs. A homeowner may choose to plant a lawn around the house, install large concrete terraces, or leave the site as much as possible in its natural state: each choice offer distinct advantages in term of the amount of maintenance required and the extent to which the garden can serve as an extension of the house. Everyone appreciate the beauty of natures but the dissimilarity of human tastes ensures an endless variety even in gardens intended purely for

visual enjoyement. In all of its aspect, landscape design allows the natural setting to become an itegral component of personal life - space one individual prefers an expanse of open ground for active sports and games, another farous a shady retreal or a gramel view from the house. Formal or informal carefully planned or left in natural condition requiring ,inimal or constant attention the home landscape can be designed to fit personal needs and tastes.

7.1 Function of Landscape Design

In na idea situation both outdoor and indoor spaces are planned at the same time as a single unified concept. Usually however, the garden environment must be designed around an existing home. Either way, the role of landscape design in relation to architectured is to strengthen the relationship of the house to its site and second to provide usable outdoor spaces for living and recreational purposes other considerations might include:-

(1) A prefered level of maintenance requirement

(2) Privacy from and or integration with surrounding areas

(3) Attractive " garden picture" from window or terraces.

(4) Provision for active outdoor play for both children and adults

(5) Room for growing flowers, fruits or vegetables and perhaps a potting shed.

(6) Storage space for garden equipment outdoor furnitures,games.

7.2 Access

The functional aspect of the house site relationship centres on the provision for access and movement between the house and its grounds. The means by which we enter a house are important for endering functional reasons and because of the basic emotions evoked by the experience of coming home or visiting others contemporary architects generally avoid the traditional imposing facade with a prominent central doorway directed toward the public street functionally conceived with an emphasis on privacy today's exteriors often to he puble domain only through a driveway or walk leading to a relatively modest entrance.

Approaches can be concealed or given twisting routes a preserve privacys or conspicuously as a welcoming gesture.

Each site prevents special problems especially for motorized access. Hilly cities are often treated by leading the driveway in level, the pedestrain path to another. The driveway in figure 673 is carried on a bridge which provides a direct level approach while articulating the seperation of the house from the public road.

Thanks to the greater maneuverability human beings pedestrian access offers the opportunity for more variety in terms and levelm changes than is possible in the placement of driveways. In one examples a wide pasement of wood framed concrete slabs, placed alongside the house and protected by overhanging eaves, leads the visitors through lush foliage up a few steps to landing at the (fig 674) the resulting impression combines invitations and security.

7.3 Indoor - Outdoor Communication

One of the chief advantages of low-density land settlement is the opportunity it afford for outdoor as well as indoor living. Given a suitable climates comtemporary homes offer free communication between the two areas. Doors opening off interior living spaces provided direct access to the outdoors and encourages fluid movement sliding glass doors are especially useful, since they maintain visual communication even when closed, but nonsupporting walls can be opened up in more inventive ways as well (Fig 422).

One of the most popular and efficient means of linking house and landscape is through the use of decks and terraces - open to the sky, but convenient for most of the activities that normally take place indoor (Fig 675,46)

Such elements can be carefully arranged to make a gradual transition from house to landscape, combining maximum convenience with a sense of living in the middle of a natural setting (G Fig; 676) Immediate access to outdoor recreation pursuits is another important consideration for some families (Pl 49, P.336)

7.4 Outdoor Living Areas

For the owners of a house on a restricted suburban plot, with neighbours on three sides, privacy is usually the first landscape requirement. Some from of fence or hedge generally serves to define boundaries and cut off the view toward and from the surrounding houses. The suburban back yards in Figure 678 and 679 are fairly typical in size and nearness to neighbours and both are enclosed by fences. Each yard also has an itermediate zone that serves as an easily maintained transition between the house and garden. In figure 678 a broad wooden deck allows rain to pass through the spaced boards - a pattern repeated in the enclosing wooden fence. In figure 679 shallow platforms or engawas lead from the house floor to the Japanese - style gravel garden with its carefully placed rock and plants. The hightly joined boards of the engawas echo the solid design of the privacy fence.

7.5 Play Areas

Provisions for outdoor play depend on the kinds of activities enjoyed and the ages of the participants. An open spaces of Lawn often suffices for a variety of games from football to Croquet. If swimming is a favourite sport a pool and parhaps dressing rooms can be provided, even on small lots. In a concrete terrace besides the pool gives space for drying out lounging, and eating snacks. Flowering shrubs arpund the pool cut the f glare from concrete and ater and make the pool seem a natural part of the garden. Dressing rooms under a low shed roof from a visual and functional transition to the house proper

Swimming served as the focus of exterion design in a house whose living areas radiate from a circular pool and shield it from the street suspended among the trees on a steep slope, the swimming area achieves a high degree of privacy in an open, natural setting.

When young children are part of a household a swimming pool can be harzardous and must be fenced off or covered for safety.

A play yard will be move to the point, with plenty of room for the children's constantly - Changing games and activities, play equipment can range from the usual slides swings and stan pile to elaborate tree houses or simple climbing sculpuure. The equipment need not be elaborate, however for children often have more firm with a pile of sand and a collection of boards that they can use inventively in their play. Some hard ground surfacing is helpful for riding wheeled toys jumping rope, and bouncing balls. If play space is visually screened from other areas adult standards of neatness can be relaxed, but easy accessibility to the kitchen and children's rooms is an important asset.

7.6 Service Spaces

As food becomes more expensive while its quality suffers from industrialized processing many households today grow them own fruits and vegetables, to be eaten fresh or preserved for later use. The placement of a working garden depends less on visual effect than on gavorable soil light and drainage conditions. Plants most have ample sunlights and protecting from wind tools and supplies should be readily accessible.

Every home requires storage space for tools recreational equipments, Trash can, and the inevitable accumulation of things with nowhere else to go. An outdoor shed for garden tools and supplies can also serve as a studio for home craft. Usually located near the kitchen and carpark a suitably designed storage facility relieves the house and yard of much unneccessary chitter.

7.7 Materials Of Landscape Design

A knowledge of Materials is as necessary in landscape design as it is in house planning or interior design - parhaps even more so for the materials are primarily natural ones with very specific temparaments and needs. Because living materials grow and die, the anticipation of natural changes is important. Designing in tune with nature produces the best results.

7.8 Ground Surfacings

Like floor coverings, ground surfacings are either hard such as stone and brick or soft such as lawns and ground covers.

7.9 Hard Ground Surfacings:- More than any other single factors, make gardens livable Once installed, they require almost no maintenance and keep the design of the garden clearly defined.

Hard pavements also help related the house to the land. STONE can be tightly joined and mortaved to provide a continous surface or laid in flagstones to bring a rustic informal look to garden paving. BRICK ranges in texture from rough to smooth, and in solour from rust to a dark chocolate brown. This versatile materials can be set in many patterns and used for walls and steps as well as pavements. Concrete offers great durability and moderate installation costs. EXPOSED AGGREGATE in the concrete provides and attractive surface for gardens, because the exposed pebbles add colour and texture to an otherwise cold materials. BLACKTOP or ASPHALT makes a good surface for games. Flexible and easily patched or resurfaced, it also lends itself to meandering gardens pathways. GRAVEL an inexpensive material, come in a wide variety of colour and textures WOOD when raised as decking above the decay - producing moisture of the soil also serves as an excellent ground cover.

7.10 Soft Ground Surfacings:- serve a double purposes to prevent erosion from wind and rain, and to unify the garden design. Some soft covers with stand considerable trampling, but others are too delicate for pedestrian traffic.

A lawn of grass or dicondra is the most popular method of achieving a regular gree surface. Soft but durable coverings are SHREDDED BARK, often used for children's playgrounds and outdoor carp ting installed over a concrete base. Soft ground covers unsuitable for heavy traffic include wild strawberry, ivy creeping juniper, pachysandra, and many carpetweeds such as iceplant.

7.11 Fences,Wall, And Hedges

Comparable to the walls of a room outdoor fences walls and hedges give privacy lessen wind penetration, and create a background for plants' and embellishments. Architecturally they delimate the three dimensional space of the landscape. Walls and fences require little maintenance and can be squeezed along a property line, leaving the ground free for other uses.
Given sufficient space and a patient gardener, a hedge provides both privacy and a backdrop of natural beauty and fragrance.

7.12 OverHead Protection

The comfort of outdoor spaces often depends on tempering the impact of NATURAL forces. Various types of overhead protection can reduce the impact of the sun's heat and glare, deflect the force of wind and protect living and storage spaces from rain and snow.

Eaves projecting beyond the walls of the house shelter outdoor areas and enchance the livability of a home. Arbors, trellises and sun shades utilizing vines, canvas, or wooden slats help to create confortable outdoor spaces entrevened by changing patterns of lights and shadow. An inventive arrangement of trellises add privacy as well as comfort to a city garden. Horizontally branching trees, such as mulberry, evergreen,elm, and oak, provide the most natural means of overhead protection.

7.13 Plants

The large vocabulary of plant forms available for garden design increase each season with new specimens introduced by growers, The selectinn of particular plants depends on factors. Such as size, nature and density of folliage rate of growth climatic adaptability, as well as intended placement and final effect. Low-growing plants that serve as ground covers have already been mentioned. Shrubs, low - to moderate height woody plants with multiple stems, are used as backdrops, screens and decisive accents. Evergreens offer year-round colours, while annuals and pernnials mark changing seasons. Trees of course are the biggest plant forms in the garden and must be choosen and planted with the ultimate size and shape in mind. Many a movice gardener has made the mistale of planting trees too close together neglecting to cOnsider their maturing bulk.

Trees are natures own device for tempering climate conditions. In addition to providing shade colour and shelter, they cool the air bt the moisture, from= leaves. It is the lucky householder who has some mature trees for natural protection and delight flowers, both perennials and annuals, enliven garden with brilliant colours and delightful fraggrances, The are also a practical source of interior enrichment.

7.14 Water

For centuries water has formed an important element of garden design. The garden of ancient persia Italy, and other Medittarranean countries made extensive use of pools, cascades and fountains. No single element brings more delight to the outdoor setting of a home. A pool of standing water extends the vista reflects the changing moods of the sky overhead, and responds to the slightest ripple of breeze. The gurgles and splashes of jets and fountains delight the ear as well as the eye. While the use of water introduces special problems of pumping, drainage and safety, this important element should not be neglected by the garden planner.

7.15 Enrichment

The final touch of garden design is the inclusion of special features purely for the pleasure they afford. Object such as rocks, ceramics, and sculpture require little maintenance but can add decisive personality to the garden environment. Free - Standing sculpture exploited fully in the gardens of the Baroque period, appears occassionally in today's homes.

More common is the sensitive detailing of functional feature as in the drain little filled with concrete that form the rhythmic curving edge of a pool in ceramic pots and urns with or without plants provide visual accents. Given a site of sufficient size and appropriate character, a gazebo serves as the picturesque focus of a rambling landscape.

Here is the golden rule:..... with colour your accentuate you classify you disentangle.

With black you get stuck in the mud and you are lost always say to yourself. Drawings must be easy to read. Colour will come to your rescue.

- Le Corbusier

CHAPTER 8

8.1 COLOUR IN ARCHITECTURE

A Basic understanding of colour and its combinations is important. But some Architects seem to be ingnorant of the versetility of colour probably because most of their drawings are produced in black and white medium.

Mans response to colour can be very variable. They are deeply affected by climate cultural background by his state of mind or by the incidence of natural or artificial light. Colour can be used in a number of ways to make objects look heavier (or lighter) Space to seem warmer (or colour) planes to advance or recede, even sounds to seem louder or softer. Colour can also be used decoratively symbolically or therapertically.

Merleau Ponty speaks of the essence behind colour as "a sumber power which radiate from the object, even when it is overlaid with reflective light"

8.2 THE SCIENCE AND THEORY OF COLOUR

There are many names for different colours but often they specifically relate to a meaning or a colour perception peculiar to an individual.

Yellow-green to Mr. A. Might represent whitish-green to Mr. B. and it might represent a strong green to Mr. C. The need for a unified colour notation system is thus necessary to solve the difficulties of colour communication.

The natural colour system (NCS) was therefore devised in Sweden as a solution for universal descriptive colour language. The (NSC) is aided by a colour Atlas comprising of approximately, 1,400 colour samples and cover every tenth step within a range based on todays available pigment. Some other colour systems are the Munsell system and the Osfwald model.

A simple artists colour chart has its starting point the three primary colours (Yellow, Red, Blue) which are considered purest. They are placed equidistantly on the rim of circle with yellow at the top blue on the left and red on the right. These generally referred to as the three primary colours of the Pigment because a mixture of two other colours cannot produced them.

But mixing yellow and red orange is produced. Yellow and blue make green, and blue and red make violet. These new colours are placed half way between those that produced them, making a total of six, if adjancent pairs of colours

By drawing a vertical line through yellow and violet the chart can be divided into cool colours (to the left) and warm colour (to the right).

Pure yellow and violet are half way between; but one can also have a warm or cool yellow and a warm or cool violet depending on which side of the chart they favour. For example, a yellow with a slight greenish hue as in ripening paw-paw or lemon is cool. One that is mixed with a little red becomes orangey-yellow and has a warm effect. Architect and interior Designers should know the three properties called the dimensions of colour. These colour dimensions are:-

(a) Its Hue: i.e its basic colour: whether it is red, green or blue.

(b) Its PURITY - otherwise called degree of greyness.

(c) Its TONE - also called brightness, this refers to its lightness or darkness; the degree to which it approaches white or black.

Below is an example of gradually decending scale for the warm-colour dimension.

8.3 PSYCHO-PHYSIOCOLOGICAL EFFECTS OF COLOUR

The Architect in modifying the natural environment for human comfort must address himself to the psycho-physiological effects of colours on people.

Research has shown that our response to colour is total; affecting our emotions and the whole of our organism. Different colour elicit different responses related to both subjective feelings and objective physical behaviour.

The colour treatment of any architectural space should be a function of the purpose of that space. In some rooms we need to be soothed and rested, in others we want to be stimulated and entertained. Some rooms must provide a middle course being neither too restful nor too exciting.

Have you ever had the experience of visiting a friend when you are tired and depressed and, after sitting in her room for a while finding that your depressed had lifted and that your are not as tired as you thought you were ? of course, it may have been the company, but it could also have been because the colour patterns and textures in the room were harmonious and soothing in effect, watch your own reactions to every room you enter and then analyse the visual effect in order to understand how you react to different appearances.

It is a widely held belief amongst designers that blue make things seem farther away and red makes them seem nearer.

These two colours can thus be used (in varying proportions) in any interior Space depending on what the designer and user want to achieve.

The duration of time spent in a particular interior space should influence the planning of its decoration in terms of colour. Most people can enjoy an occasional hour or so in a strikingly decorated restuarant of bar and find it brilliant colours and restless patterns rather exciting. For rooms in whcih long period of time are spent we need quiet background colour with, as a general rule only small accents of rich colour.

Since the bedroom serves for sleeping and resting, bedroom colours should be soothing, cooling and restful. But remember that we also make up in the same room, and then want to feel cheerful and optimistic.

The curative value of certain colours has already been discovered in the adranced nations. This is why in modern Hospitals, instead of the stark white usually associated with hospital interior, space, clear colours are ofter used. The effect of a light, cheerful colour on the patients outlook is said to be quite noticeable.

In school childs reaction to coloured surroundings has been closely watched by psychologists, and in many European schools, coloured black boards have been substituted for the usual black ones.

Although individual likes and dislikes often contradict generalizations about colour, and certain colours will delight some and Irritate others most people will appreciate that light cool x colours such as blue, turquoise, lavender and light foliage green suggest freshness and repose and that light warm colours - cream, yellow and apricoft, suggest cheer Bright warm colours such as Orange; Vermillion and Scarlet suggest excitment and exhilaration.

8.4 Architectural Character and Size Perception

The exterior volume of an architecture, its sensitive weight, its distance, can be reduced or increased as a result of the colour adopted.

Table 1 Effect of Hue

Effect	Hue	Contrast
Exciting	Bright red Bright Orange	High

Table 1 - (Contd)

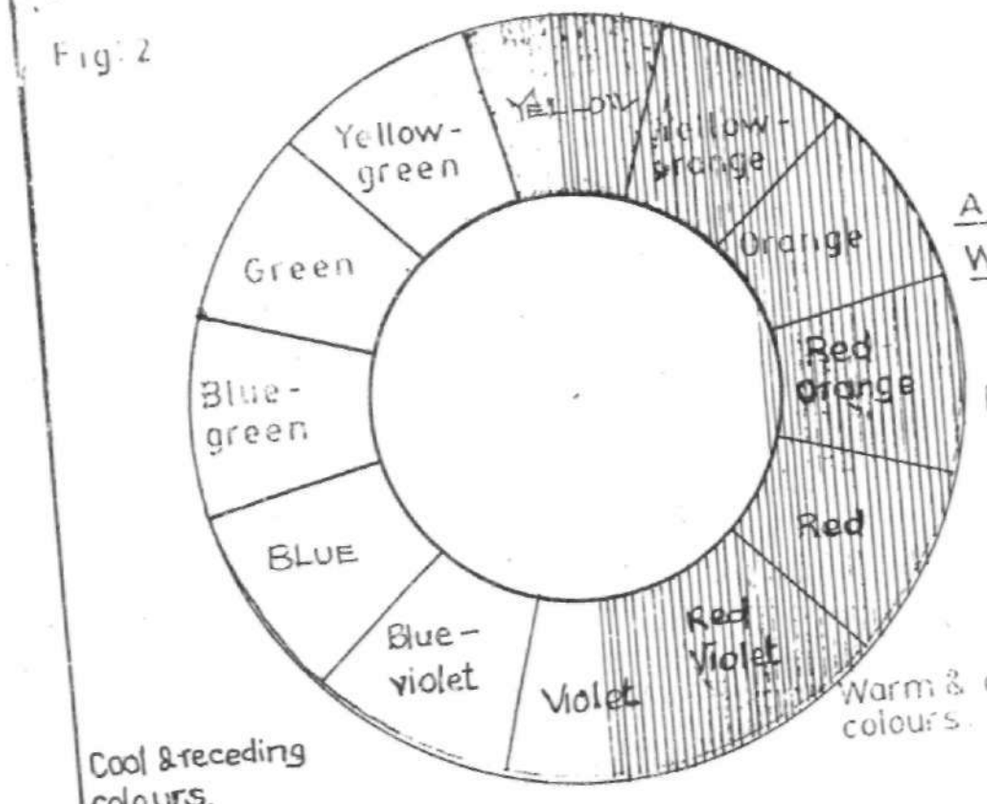
Effect	Hue	Contrast
Stimulating	Red Orange	Moderate
Cheering	Light Orange Yellow warm grey	Moderate
Neutralizing	Grey White/off white	Low
Returning	Cool grey light green Light Blue	Low
Relaxing	Blue Green	Low
Subding	Purple	Moderate
Depressing	Black	Low

Table II Colour Effect on Perception of Time, Size, Weight and Volume

Colour Effect on Perception of Time	Size	Weight	Volume
'WARM'Time is over estimated use. Warm colours for areas where time in apparent slow motions might be more pleasurable (eating and recreation).	Things seem longer and Bigger	Weights seem heavier	Deseases apparent size of rooms
'COOL' Time is under estimated, use cool colours for areas where routine or monotonous task are perfdrmed.	Things seem shorter and smaller	Weight seem lighter	Increases apparent size of rooms

'A lot of relationship have been seem to exist between colour and perception of time, depth, volume, temperature, sound and brightness. There are examples of waiting areas and toilets which after complaints by users and without the addition of any heating installation, generate one illusions of wartn as a result of the simple application of warm paint.

Fig. 2

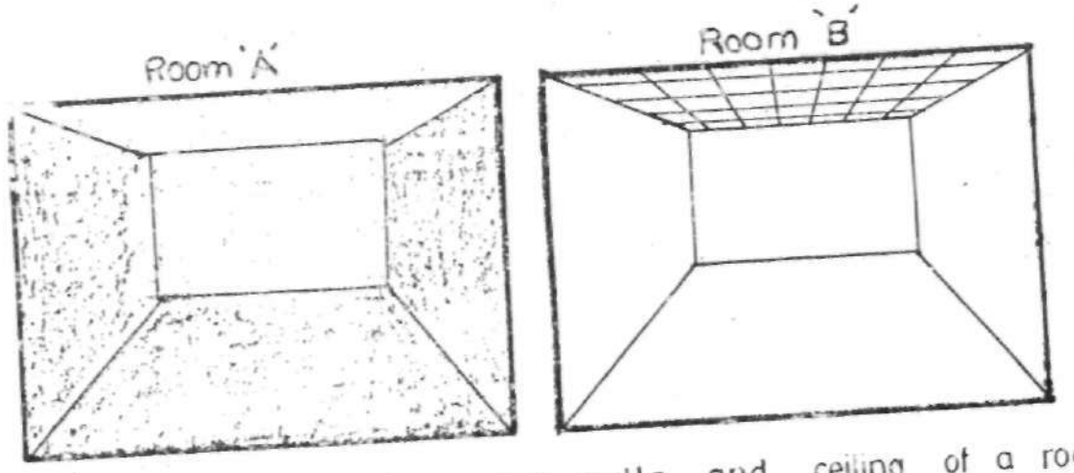


A CHART SHOWING
WARM & COOL COLOURS

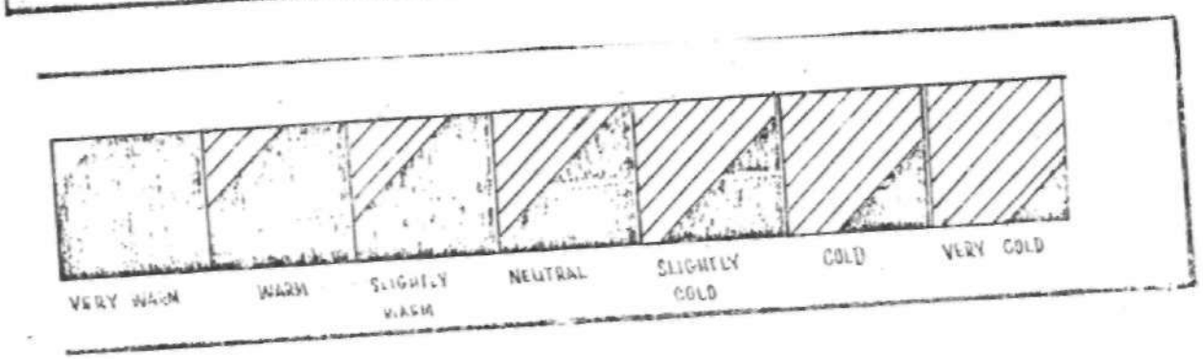
Note:
complimentary colours lie opposite one — another.

Warm & approaching colours.

Cool & receding colours.



The colours and tones used on the walls and ceiling of a room can appear to change its proportions. If one wall is treated with a warm deep-toned colour it will seem nearer (as in room 'A' above). Conversely, the light cool colour used in room 'B' wall makes the room seem longer.



Fully saturated hues like orange and yellow appear to be ideal colours for incorporation into dynamic spaces where bodily locomotion, physical task or circulation are involved, such as corridors, stairways entrance halls, bathrooms, indeed street concourses and pedestrain ways.

In general room can be made to seem larger if the walls floors and ceilings are painted white. In the same way, dark colours will have the effect of making a room seem smaller.

You can add height to a room whose ceiling is tool low by keeping it at lighter and cooler colour than the walls. This is why, although walls may be coloured, white ceilings, are usually seen in flats and small houses where ceiling are the allowed minimum height.

Some rooms are too long in proportion to their width you feel as if you are in a hallway rather than a room in this case it sometimes helps to treat the distant wall as you would a ceiling that is too high.

The five points which a designer must know when planning a colour scheme for a room are:-

(a) Its size and general architectural character

are also intermixed and placed between the colours that produced them, there will be twelve colour on that chart all as different from one another as possible

In theory, by further mixing, it should be possible to produced any colour wanted: but in actuality this is not true because any mixing of colours results in a certain amount of greyness or neutralization. A spectrum produced in this way would contain only three colours all other being greyed to some degree.

Colour that lie opposite to one another on the circle are called contrast or complementary colours, because they are of maximum difference from one another. It should be noted at this junction that the theory and science of colour is still a very controversial subject on which expert hold diverse opinions.

8.5 WARM AND COOL COLOUR

Daily visual contract with colours readily shows that some have a warm effect while others seem cold. Since red is the warmest colour on the chart it follows that all colours with red in them are to some degree warm while others containing blue tend to be cool.

(b) The purpose of the room

(c) Its aspect - whether it is sunny or dull cold or warm

(d) Existing furnishings and accesories, paintings and art objects

(e) Personal colour preferences of the room user.

8.6 THREE FUNCTIONS OF COLOUR

The approach to colouring takes as its basis three broad functions, not because they are the only ones because but with them they control character and serve to "break the black" of colour problems giving firm lines of guidence which can be refined and adjusted for particular cases.

They are:-

(i) to introduce an appropriate colour stimulus:

(ii) to assist good lighting and vision;

(iii) to express form or breakdown of surfaces

8.7 COLOUR STIMULUS

Most people will have experienced colouring which was "analmic" and perhaps also colouring which was "overpowering". These descriptions extremes and if we consider them objectively as colour stimuli we should say that the stimulus produced

by the colouring in the first case was too small and in the second two great. For normal purposes of course, we would want a degree of stimulus in between these extremes, the scope in each case being limited by the form and arrangement of surfaces, the lighting and the colours used.

The problem in practice is to determine what degree of stimulus is appropriate, and this is in turn will be suggested by the purposes for which the environment is being designed. It is here incidentally, that evidence about emotional reactions to colours would be useful, but firm data so far available is very scarce compared with the quality of speculation on this subject, we have to rely on experience and observation for the time being.

The obvious way of achieving a powerful stimulus is to use strong colours. It has to be remembered, however, that strong colours are also rather dark, and that if they become dominant in the surroundings, and if they meet each other without any relieving break both with them, the potential stimulus is liable to be counteracted by sombreness. The key to successful creation of a powerful stimulus is not merely to use colours of greater strenght, but to aim of sharp clarity and freshness in the colouring as a whole.

To point the signment we may be forgiven, perhaps, if we cite a painting by piet mondrian as an example of a powerful colour stimulus especially relevant because it is expressed as an abstract rectilinear pattern remimiscent of architectural settings. In the painting reproduced diagrammatically (Fig: 1), mondrian has composed his pattern with primary colours of full strength, together with white and black. Thus his palette consists of every distinct contrasts of colour: and it is to be noted that clarity is consistent in the unambiguous rectangular shapes of the primary colours and their decisive seperation by the white of the background and by the black bands. The contrasts so created are vivid, particularly where the black bands themselves are separated by only a narrow strip of white. The white background is of special interest because it is sufficiently dominant to make the picture as whole seem bright and because it gives sharp definition to the edges o the back bands and their contained rectangles of colour.

The example serves to Identify the factors which seem of prime importance as stimuli namely strength or purity of colour and clarity of pattern: Clarity being influenced by the extent to which the colours are seperated from each other by

white on neutral and the degree of contrast between the hues and lightness of the colours themselves. Hence at the other end of the scale a gentle stimulus would require colours with low strength, small contrasts of lightness, and closely neighbouring or mono-chromatic hues (Fig: 2). In buildings it may be necessary to add some white or near-white, if suitable surfaces are available, to act as divisions or breaks in the main colouring this time to countcract any danger of "lifelessness" or anaemia".

A technique for the handling of colour which has gained favour in recent years is that of picking out certain surfaces in stronger or darker colour in contrast with soft or neutral colours on the ge eral background. This form of expression no doubt owes much to the examples of mondriaan, Le Corbusier (Fig: 3) and Ozenfant (Fig: 4) who pioneered and refined it to be in keeping with their philosophies of design.

This technique of "articulation", as we will call it, has much in its favour as a means of gaining flexibility in the colour treatment, provided that the surfaces to be coloured lend themselves for their part to changes of colour.

By means of it the colour can be more closely related to variations of lighting and to visual requirement and there is greater opportunity to develop spatial effects. As we have already implied, however, it does not follow that the colour stimulus must be powerful or strong. The methods lend itself equally well to subtlety or to schemes based essentially on changes of value onlys as they would be for example, if the colours were restricted (to quote from BS 2660) to the left-hand columns of Cards 3 or 4, or to the greys on card 9.

One point deserving mention here is the danger and unreality of relying on a very small fixed palette of two or three colours chosen for its own merits rather than it appropriateness for particular environments. Such small fixed palettes have tended to crop up from time to time, and two of them, creams and green or creams and brown, certainly have their uses in architectural colouring if well-handled, but do not deserve to be treated as panaceas, if only because as a universal recipe they cramp imagination and lead to monotony.

It will be noted that the discussion has been limited to the application of plain painted colour with little reference to surface patterning.

This omission is deliberate because surface patterning adds to the designer's vocabulary, but does not alter the main principles.

8.8 LIGHTING

The function of colour in answering requirements of good lighting and vision is controlled chiefly through the value of the colours and this has been taken into account in the design of BS 2660 by keeping the colours, as far as was possible, to even steps of calue. From this aspect, therefore, with a few exceptions, the range presents alternatives of Hue and chroma at each of nine steps of value, from lightest to darkest (value 9.25 to 2) see Fig: 5. The process of choosing colours to fit lighting and visual needs thus becomes mainly a matter of thinking in terms of these nime steps.

The functions itself can be summarized as

(a) controlling the level and distribution of reflected light, and

(b) controlling the brightness of surfaces.

For good vision there must be a sufficient amount of light, and specific levels to meet the demands of most categories of work are given in the code published by the

illuminating Engineering Society. Methods of estimating the levels and distribution of light within buildings both direct from the sky,and reflection from internal surfaces, have been developed and are fully described else where if methods for working out the combined direct and reflected light from artificial sources also exist. The importance of indirect or reflected daylight is only now beginning to be appreciated in a systematic sense in the design of buildings. The control of brightnesses is less readily codified and depend on practice on three general rules. The first concerns elimination of - glare sources of light, sky or artifial, and is to aviod strong contrasts of brightness between the cources and their surroundings as seen from angles of view. If requires care in the positioning and design of windows and light- fittings together with the use of local colours of high value to grade the sources into their surrounds.

The second rule is that objects or surfaces demanding attention, especially prolonged attention, such as chalk board in a school or work-points in a factory, should be treated in the design of the lighting, colouring and where possible, the form to make visual attention easy and natural. The eye is drawn authomatically to the brightest and most contrasty parts of the view and this characteristics should

be develop to give preference to the object itself combined with an attempt to eliminate distractions in the near vicinity. This second rule can be answered chiefly - through control of the values of the colours used, but Hues and chromas should also be chosen with thought to the contrsts they create with the object of attention.

The third rule concerns control of brightnesses in the general environment, and this is a matter of balancing or adjusting the natural highlights and shadings to aviod harsliness or gloom and to achieve a general sense of good lighting (see Fig: 6).

8.9 Form Or Break Down of Surfaces

The function of colour under this head can be discussed briefly here because it will be reffered to in the course of dealing with the examples treated in second article if the colouring is to be expressed, as it generally should be, as an interplay of differently coloured surfaces, whether powerful or very gentle, and if it is to fulfil its function in relation to good lighting and vision, the design of the form and surfaces themselves must be in sympathy.

For example, if string colours are needed clearly defined surfaces are also needed, of the right size and in the right place. (see fig: 7). Similarly, if glare and visual attention are to be controlled, the disposition of the surfaces in relation to the light, and their breakdown or division, must be considered no less carefully than the colouring. We have emphasize the demands of colour upon form rather than of form upon colour because in our experience the demands of colour are more often neglected on the assumption that they can always be fitted in afterwards.

8.10 Three Characteristic Petrol Problems

In this part we apply our approach to three types of interior: a living room, afctory based and the entrance of an office building. In each case we follows the same pattern of analysis and development as in the approach, but it should be noted that this is done for the sake of clarity in setting down the arguments; not because we are proposing that the sequence should be always be rigidly followed, like a recipe or formula, at the expense of imagination.

Our object is to report progress towards a more reasoned and less arbitrary basis for the choice of colours, and to show how the new BS range of paint colours, BS 2660, can assist this aim. Far from being stifled, imagination should become more effective and purposely if it is harnessed to definite objectives.

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