EIN SHAMS UNIVERSITY

PSYCHOLOGY OF ARCHITECTURE

BASHAYER KHAIRY

PSYCHOLOGY OF ARCHITECTURE

An Annalytical Study of The Human Needs, Desires, Emotions
& Perception in The Process of Architectural Design.

By

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BASHAYER KHAIRY

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FOREWORD

For too long we have known architecture as dimensions and proportions, without determiing the behavioral effect of these dimensions and proportions on the individual; although every small line plays a major role on the general functions and behavior of a building which in turn serves the needs of the human being. "Architecture" says Geddes "is concerned with the social order not merely the physical, and the social order is merely derived from the study of man" the psychodinamic phenomenon.

The Psychologist is only interested in how man thinks and the Architect is only concerned with how man lives; if their work is both interrelated and integrated, they would achieve the utmost comfort or even enjoyment in co-operative designing for any architectural space.

The relation between the architect and the psychologist must be very strong and it would be better if the architect had sufficient knowledge of the psychological needs and the preferences of the human being.

[1]In recognizing the human being, the architect has to try to explore the human's aesthetic reactions to different architectural means through his physio-psychological structure. He also has to study man's reactions to space, form, structure, material, texture, colour, light and shadow; and this can be demonstrated in the Gestalt school of psychology which studied and analyzed the architectural means on which the visual perception in art work depends.

The visual aesthetical appreciation happens because of the association of the different objective qualities, which depend largely on the observer's physio-psychological structure.

[2]To some, it may be due to the physical reaction to these objective qualities and to other architectural appreciation which may result from the combination of light, colour, form, material and texture.

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1. Art and visual Perception. Gurnheim R.

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2. Perception of colour.

[3]That is why knowledge about man's immediate environment; (the interior space in which he lives); the hollows within his shelters that he calls home, office, classrooms, corridors and hospital wards is as important as knowledge about outer space.

For too long we have accepted physical forms and adminstrative arrangements based upon outdated views of human activities. We are told that classrooms should have straight rows of chairs so that children will face the teacher, prisoners should be kept in seperate jail cells, college students should have roommates and park benches should be heavy and undestructable so that vandals will not carry them away; with or without conscious philosophy or explicit recognition of the fact that in this case designers are shaping people as well as buildings.

It is possible to determine the size and the shape prefered by prisoners and guards, the best sort of lighting, the optimum distance between bars, the colours most suitable for prison walls and whether carpeting is sufficiently durable for cell interiors. There is a double irony in the situation:- First that such questions are asked so rarely and second that they ignore the superordinate questions about prisons as being related to society; but prisons are no longer built for the punishment of criminals, as the criminal now is considered as an ill person and our aims is to cure him and help him face the world again as a usefull, sane member.

If prisons fail to rahabiliate convicts it is probably not because the walls are grey rather than blue or the bars six inches apart rather than eight, but with the study of the different mental and social needs of the human being together we may reach our goal.

[4]The architect is in an impossible situation, which

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3. Personal Space. Robert Sommer.

4. Architect's Journal. 4 August 1971 p. 45.

is shared by educators, physicians and lawyers. Perhaps his situation is a little more difficult in that he must accomodate his activities to satisfy a miltitude of professionals, technicians and government officials, but the difference is in degree and not in quality. There is no guarantee that design proffessionals, city planners, landscape designers, architects, interior designers and industrial designers would benefit from college courses in sociology, but there is no doubt that they would gain by adopting a functionlism attitude based on user behavior as a guiding principle. The aim of this thesis is to show that any building may be designed and adapted according to the human being's needs and that is why we have to design according to a structure of knowledge, which enables us to predict the behavior of the human being after it e.g. window, ceiling and furniture arrangement are the main evaluations towards activity, harmony, friendliness. Psychologists have generally considered three main sources of influences for human behavior, (1) genetic endowment, (2) past experience of the person, (3) the imediate physical and social environment.

Suppose an architect designed a "sheltered workshop" for handicapped young workers,where such a design never existed before; they will be free to attend or not as they please, but the probability of their doing so, will have been raised to a degree that will depend partly on the siting of the building and partly on the design of the access. That is why we can say that behavior and environment enteractions are circular. [4]Winston Churchill "we shape our buildings and our buildings shape us" human behavior is not a response to, but an enteraction with the environment.

But we are not interested in predicting the effect of buildings on behavior than the effect of behavior on buildings after which we can lay down a guiding principle for architectural design to help us reach to the satisfactory effect of building on behavior.

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4. Architect's Journal. 4 August 1971 p. 45.

The effect of the building on behavior can promote either social enterrelation or privacy and either the former or the latter is needed in certain parts of the building e.g. The person in his home must have complete privacy from his neighbours, yet at the same time he must have social contact with them by way of a grouped-around court solution.

Man has evolved from small societies; it is therefore logic that human beings relate to each other socially effectively in small groups.

The grouping of the population into smaller biological derived units is thus essential in planning buildings for human use.

One of the best examples of this theory is the Moslim's house where the houses were all grouped together seperated by narrow crooked steets and almost stuck to each other yet each house seperately is completely isolated with windows looking inwards and a cool refreshing court in its midst with a lovely fountain.

But at the same time we can say that besides its benefit as a sudden quick private court for solitary and restful evenings after a hard days work; it is also the result of the influence of climate and religion, for, the fountain with a small pond around it reflects the sky giving a spiritual feeling, and also this fountain was due to the fact that the moslims washed five times per day and their religion stimulates cleanliness.

[5]Colour also must be put as a very important category as particular colours may give rise to particular emotional reactions; red to excitement or anger, blue to calm pleasure, black and grey to sadness or depression. But it is rather doubtful to what extent these emotional reactions are spontaneous or whether they are symbollically associated through cultural traditions.

However people with highly emotional or neurotic dispositions seem to give characteristic reactions to colour and every age has its own

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5. Plan Your Home. William Graham.

preferences, old, young and children.

Perhaps one of the best examples of highly emotional disposed people are the old aged, who, being unneeded by their own family and have no place to stay, are in every way dependant on "The Nursery home for the aged" for their psychological and health needs. The aim is to design a building which satisfies their need to belong and feel at home, workshops to fill their empty hours and at the same time put accomodations for their health without affecting their social life.

That is why we have to understand the psychology of the human element to design Architecture. The design does not have to be a master-piece but it should be possible to be made a workable shelter according to the previous terms.

This thesis is a trial to prove that psychology plays one of the main parts in the act of Architecture and the thesis begins by analysing the main psychological needs of the human being in any Architectural form beginning by "Need for Belonging". This can be demonstrated even in the small society of one's home where there is always a preferable chair and place that one is inclined to feel as his own, and, in big societies as in a Mental Hospital, there is always a special alcove, where, every Mental Defective isolates himself, naming the alcove as his own; yet of course the feeling of belonging may be created not by the building but by the system of life lived inside it; but by a good building designed to meet his personal needs, the person's life is accordingly adjusted.

The next item is "Need for Privacy". The importance of this need in man's life is very great for in the tension of this age of technology, every person must have at least one or two hours per day in complete seclusion, even from his own family, in an alcove, or in his office in the house. Privacy is in degrees, the master from the rest of his family and his family from the rest of the building and the building from the rest of the grouping and so on.

Besides our "need for

privacy", the human being is in an essential need for "social contact" for many of those who have reached in our time to the state of nervous breakdown, or any mental outbursts, have reached this case, usually, due to the continuous strain of one's isolation to himself. That is why people need to have an opportunity to see each other and converse and exchange ideas and that has been seen through many years in different architectures.

My last point in the needs of human being, is the "Need for Comfort", this need is satisfied through the control of certain factors namely; temperature, humidity, air movement, light, sound, the position of the objects with respect to the human being, colour. All these items when all conditioned to a satisfactory degree may make the human being in a peaceful state.

In the next chapter the thesis deals with Maladjusted behavior presented by phobias, which are normal fear of unaccostomed stimuli. In phobias the individual may be afraid of open places (agora phobia), closed places (claustrophobia), high places (acro phobia), dark places (Nycto-phobia).

Then the thesis passes on in the following chapter by analysing some of the main points related to how we percieve the external stimuli e.g. Proportion, composition, Scale, Rhythm, Space, Colour, Material and texture, Expression and Form. Our perception of external stimuli depends upon our internal state that means our; emotions, motives, needs and after all our whole personality. It is always said that we percieve the world not as it is but as we are. That is why every one percieves different images of the outer world and that is what we call the psychological environment of the individual. The application of all the theories in this thesis is demonstrated in the last chapter where two examples are explained in some detail, "Houses for the Old Aged" and "Building for the Mental Defective"; these two examples have been chosen especially as their occupants are human beings with special psychological needs which have to be satisfied.

[6]Dr. Osmond votes the collaboration of architect and psychiatrist so that the therapeutic possibilities of Architecture may be thoroughly explored.

"Perhaps by applying our measuring rods to the great needs of the mentally ill we may emerge with something valuable for the mentally well. We need here a module, derived not from the size of man's body, but from the way in which he disposes of that body in social relationship".

With these two examples, in which there is a trial to prove the theory of this thesis which is as Geddes says "Buildings canbe anthropogenic (that is alien to man) or anthropophilic (suitable for or attractive to man). Buildings can also be sociopetal, that is designed to draw people together and engender social relationship or sociofugal designed to disperse people", the thesis ends.

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6. Progressive Arch. April 1965.

CHAPTER :1_FACTORS RELATED TO PSXCHOLOGICAL BALANCE AND THEIR INFLUENCE UPON ARCHITECTURE

I-I NEEDS

1. NEEDS

1.1 NEED FOR BELONGING

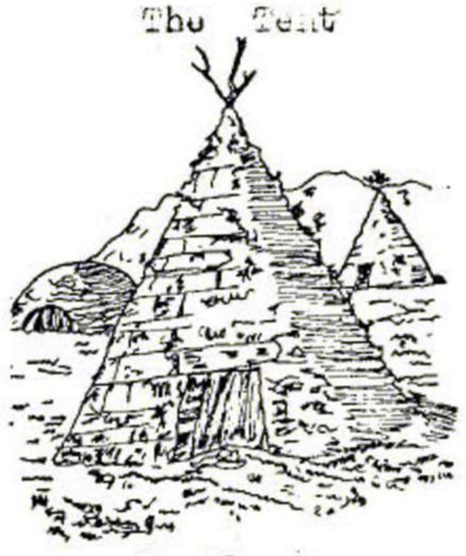
The Needs of the human being for complete psychological balance and comfort are numerous, but the main need, through which the other needs could be accordingly designed, is the need for shelter and belonging and since prehistoric ages many trials have been made to satisfy it.

[1]Architecture had a simple origin in the primitive endeavours of mankind to secure protection and shelter against the attack of savage animals by sheltering himself in rock caves, the earliest form of dwelling, and learnt to build huts of reeds, rushes and tents of saplings sheathed in bark, skins, turves or bushwood.

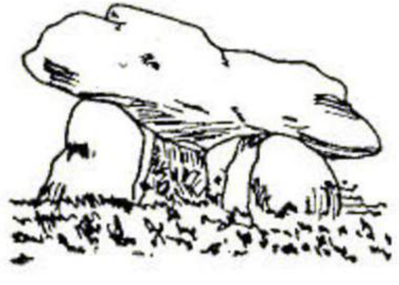
The counterparts of these can still be found in use today Fig. 1. Man, faced with the need of shelter for himself and for his gods, and confronted with natural building

The Hut

The Tent



Scotland



SAVOYE

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1. Banister Fletcher. The History of Architecture. The Comparative Method.

materials of various kinds, started at an extremely early period in his development to create buildings and to work out the structural problems they curtailed, along lines suggested to him by the materials with which he worked and by the conditions of the climate in which he built.

[2]The way of utility, towards the ideal of perfect adjustment of ways and means to pleasant living; the way of construction towards the ideal of a structure that should combine economy, efficient use of materials, and permanence; and the way of beauty, towards the ideal of creating an enviromment for life and belonging that should be satisfying to man's eternal longing for stability and shelter.

Architecture is a synthetic phenomenon covering practically all fields of human activity and during the past years Architecture had been satisfactory only from the technical side, putting only into consideration the economic aide of the building process. Such emphasis on the production of good shelters for the human being, neglected the fulfilment of some other human needs.

[3]"Technical functionalism cannot create definite Architecture". However modern Architecture could be analysed in two different trends; the one towards the geometrical and technical and the other towards the irrational and the organic.

Architecture is Organic when the spatial arrangement of room, house and city is planned for happiness, physically, psychologically and spiritually. The organic is based therefore on a social idea not a figurative idea. We can only call architecture organic when it aims at being human before it is humanist.

[4]The successful houses of Frank Lloyd Wright are apt to present, that, at a distance they look quite large (for houses) and this impression is reinforced by great feeling of bigness; as you approach them, they diminish somewhat;

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2. Architecture through the ages. Talbot Hamlin.

3. Towards an organic Architecture. Bruno Zevi.

4. Architectural Scale. Heath Licklider.

and standing before the entrance door you find that the eaves and the door above you are quite low and very small in size, as measured by the bricks, boards and your own eye height-giving a feeling for cosy shelter; the human animal comes back crouching to his sheltering cave, protected from rain, wind and light. There he may rest in complete security and relaxation Fig. 2.a, 2.b

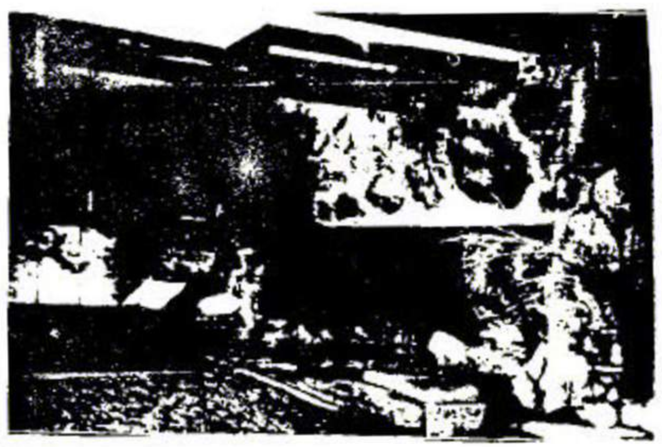


Fig. 2a Taliesin West, Arizona
Living Room

Fig. 2.b "Falling water" Kaufmann House, Bear Run, Penna., 1936

Frank Lloyd Wright Master-Pieces
Reff: Towards an Organic Architecture Bruno Zevi

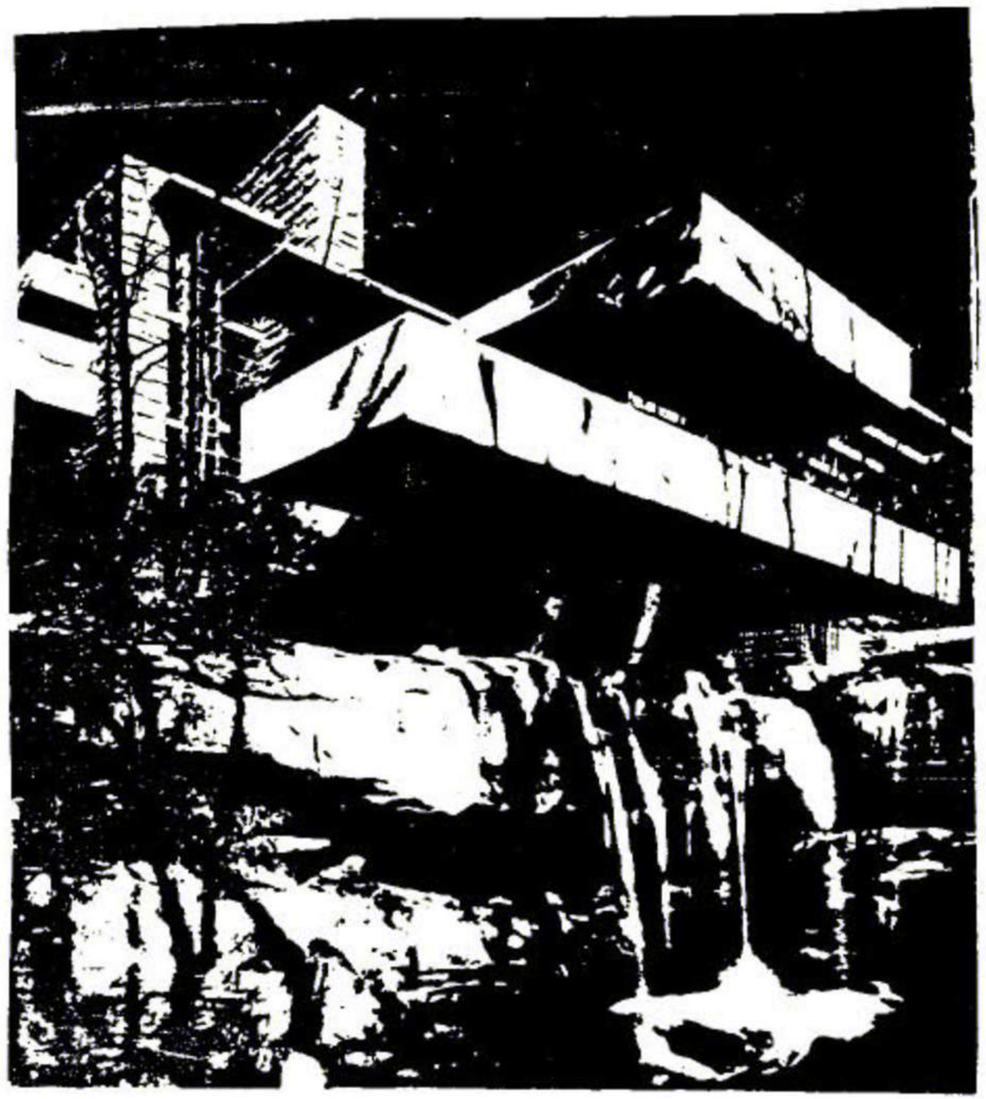


Fig. 2.b. "Falling Water" Frank Lloyd Wright.
Kaufmann House, Bear Run, Penna 1936.

Reff: Towards an Organic Architecture

This characteristic of wright's building is partly to be explained, by the fact, that he builds in the vast expanses of the west (Pirairies) where man is in close contact with nature; in the town the modern house answers different psychological requirements and the quality of restfulness that the townsman seaks for, leads to a house having a more open character. e.g. Wright's Robie house Pirairie house Fig. 3. A house represents a human and a family centre, a place of rest and a place where the fruits of labour are harvested. It can be given a gay and cheerful character, it can be made more functional and easy to look after, but fundamentally it remains a centre of stability, essentially different from a machine.

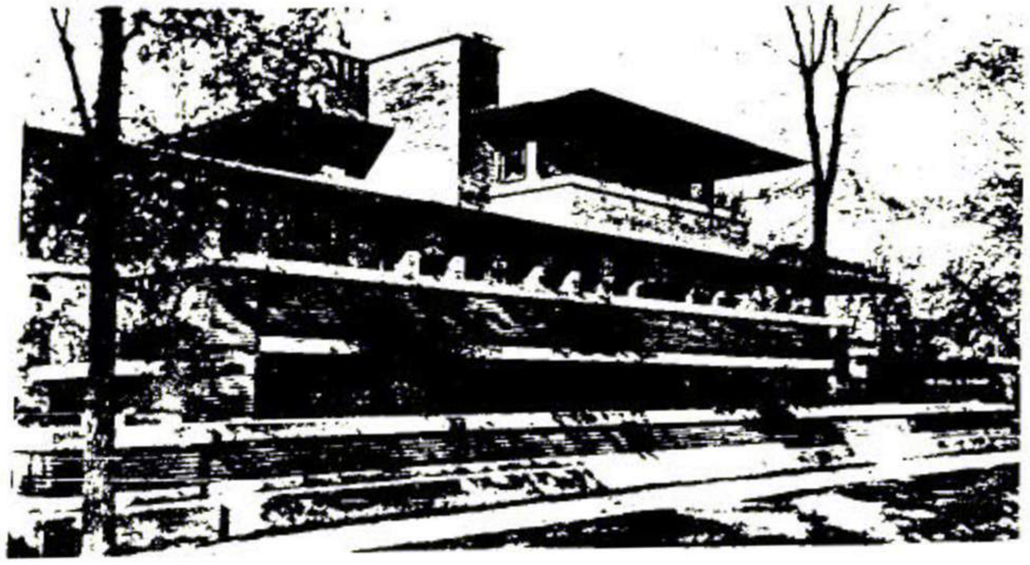
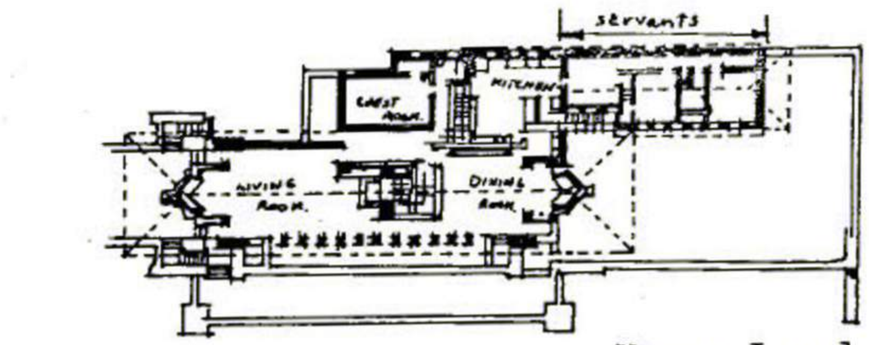
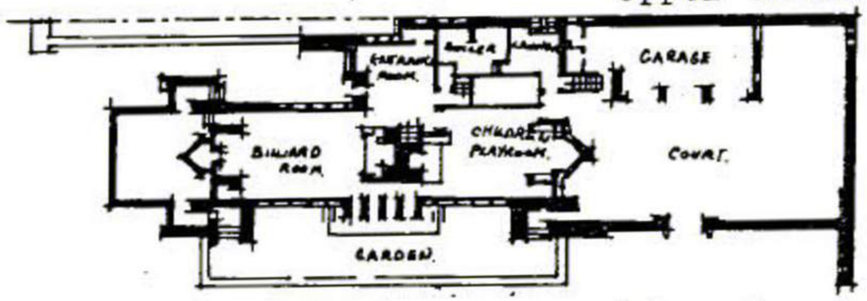


Fig. 3. Robie House Frank Lloyd Wright Woodlawn Avenue
Chicago 1908

Reff. Space, Time and Architecture S. Giedion



Upper Level



Lower Level

Frank Lloyd Wright. Robie House Plans.

Reff. Towards an Organic Architecture
Fruno Zevi

Returning bruised and tired from the office, it is relaxing to discover that, here, at home, everything is made to man's measure. It is what one expects of a small house. The effect is precious. Its intimacy easily disintegrates into preciosity.

Not only in one's home has the arcnitect to put in mind, as much as possible, to design according to social values and that which satisfies human needs and necessities but also in public buildings such as homes for the aged.

Here every patient or occupant should be given complete freedom to furnish his own room for almost the majority of these old folks have certain parts of their own old furniture which mean dearly to them and where they would feel much happier in finding this piece of furniture near them wherever they go. They are a sensitive couple and the need for feeling at home and the need for belonging is so great that they are apt to chose certain corners and claim their favorite.

[5]An example of this fact can be seen in seventeen British old folk's homes, Lipman found that most of the patients had favorite chairs that they considered theirs. Their title to these chairs was supported by the behavior of both patients and staff. A newly admitted inmate had great difficulty in finding a chair that was not owned by anyone. Typically he occupied one seat and then another untill he found one that was "unowned".

Such situations illustrate the importance of how people mark out and personalize spaces.

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5. Building Design and Social Interaction. The Architect's Journal, CXLVII (1968) 23-30.

1.2. NEED FOR PRIVACY

The urgent need for social contact in a human's life is balanced and contrasted by his urgent need for privacy and that can be seen by the presence of a private place or secluded corner in one's home where one could retreat at his ease to spend a part of his time in meditation.

In different periods through history, Architectural devices have been used to design spaces which establish privacy, and in some architectures such as Islamic Architecture the importance of privacy could be indicated in seeing that the main domestic architectural features were those architectural devices for privacy.

In speaking about privacy it would be appropriate first to define the different degrees of privacy:-

Begining with the seclusion of the territories from the whole region; we give the Islamic Ribats as an example.

The Ribats were special dwelling units built to cater soldiers for religion and were usually located in the outskirts in defensive sites, such as tops of mountains and on the country's borders.

The purpose of the Ribat was to provide a fortified stronghold for soldiers, and at the same time, to provide them with special spaces to carry on their ritual religious and worshipping services.

An example to be seen is Ribat-El-Sultan Einal built during the thirteenth Century Fig. (1).

The Ribat's design of cells permitted them all looking inwards on an internal open court. This community's need for seclusion and privacy resulted in its being built on the boundaries of thecity away from all human pleasures and here the soldiers stayed secluded for months praying and preparing for war.

The second degree of privacy is the complete isolation of one community from the whole city such as theprisons, lunatic asylums, monastries e.g. the Deir Al Serian Monastry at Wadi-El-Natroun Egypt. Fig. 2

Here a community, with certain psychological needs, required total privacy so that

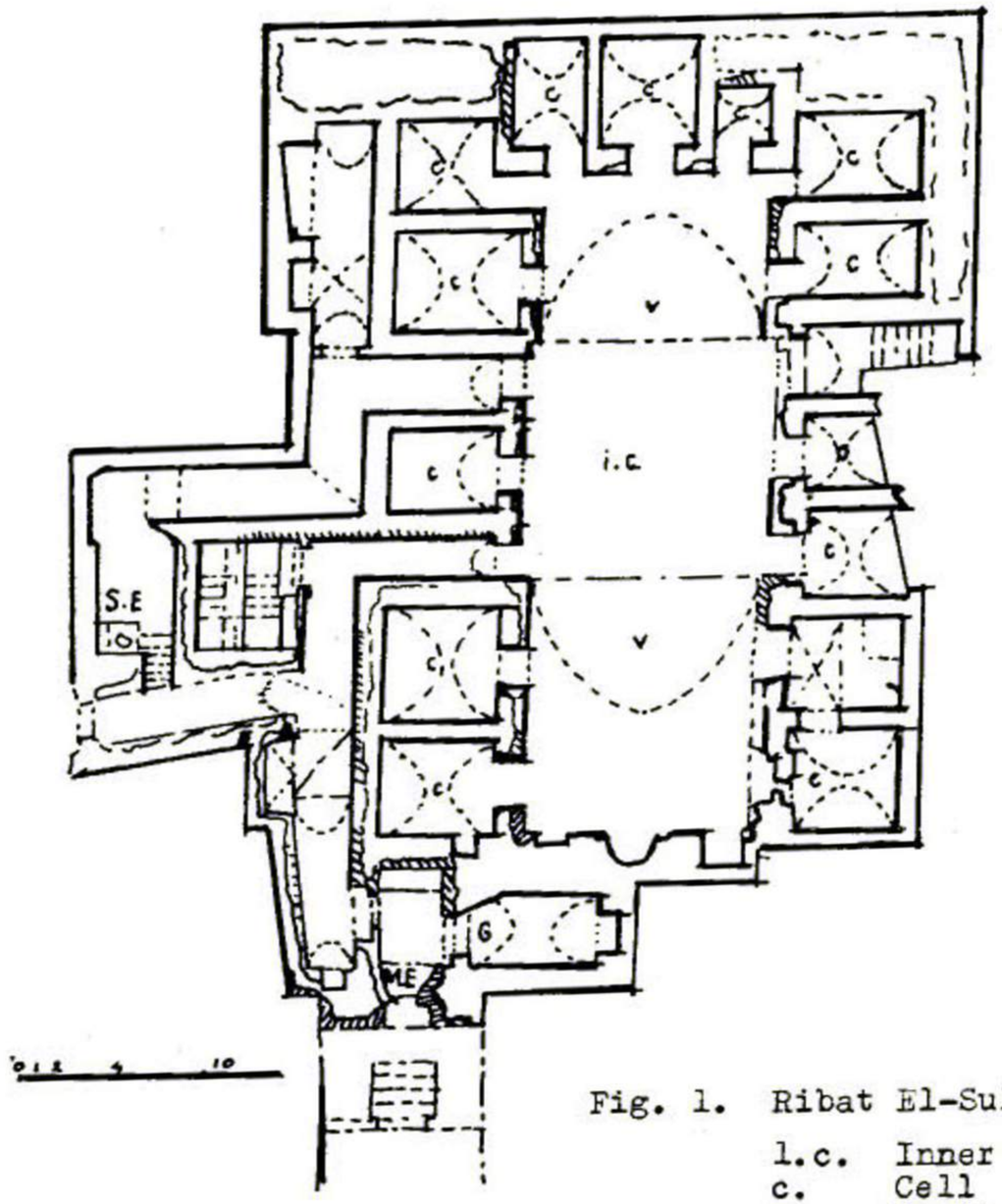


Fig. 1. Ribat El-Sultan Einal (13th C).

l.c.	Inner court
c.	Cell
v.	Vault
ME	Main Entrance
S.E.	Secondary Entrance
G.	Guards.

Reff.: Arab antiquities. Conservation commitee.

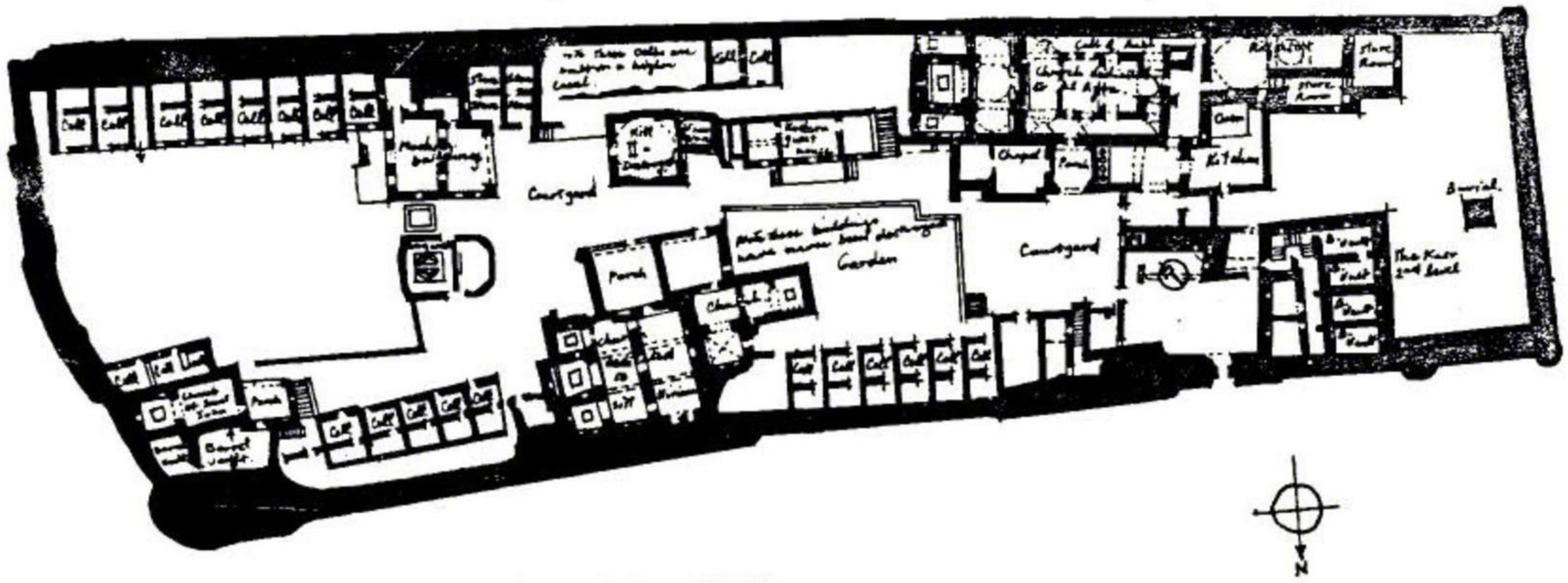


Fig. 2. The Deir Al Serian Monastry
(Wadi-El-Natroun) Egypt.
(Reff. Whight)

they could wholly devote their time and thoughts towards serving the Divine Power. Their quarters needed to be designed as seperate small cells all looking inwards towards an open inner court so that no intruder from the outside community could interfere with their personal life. Their external walls were high to give the utmost security and they went on their daily religious duties within these walls with no fear of an impudent observer. The need for privacy in this case is mainly derived from the occupant's aim of life and from their religious philosophy.

These monks are certain specimens of human beings who having lived normally between people till the age of duty, were contented to leave all human pleasures and spend the rest of their lives in seclusion and prayers.

Another example of the complete isolation of one community from the whole city could be seen in the city of Baghdad Fig. 3 where the city was designed with two main walls; the outside walls built for the defense of the city against outside enemies and the second inner wall and Rahaba to protect the Royal Family and Nobility from the populace.

The third degree of privacy is the seperation of one

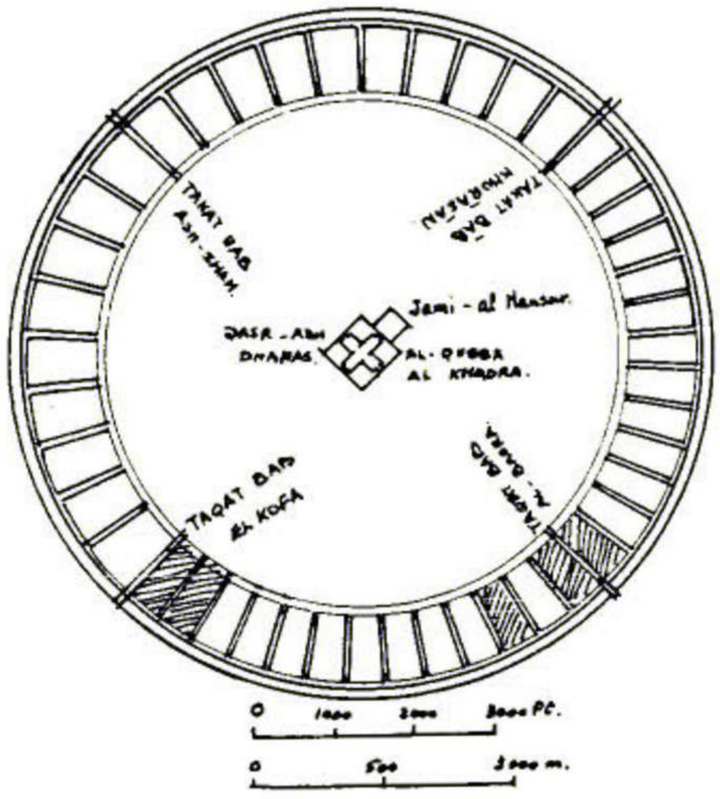


Fig. 3. Baghdad
The Round city of al-Mansur

Reff: A short Account of the Early Muslim Architecture. Creswell.

neighbourhood from another and that could also be seen in the city of Baghdad where the region between the two walls was sectored into neighbourhoods with each neighbourhood having its own main street reachable only through its own private gate. All the neighbourhood population were either of the same tribe or profession.

Another example also was in the Egyptian Architecture, in the Mamluk period where each neighbourhood, known as the "hara", was almost self-dependant containing a small market (sowequah), a small mosque (Zawyah) and a small public bath. This small grouping has its own gate the guarding of which was the responsibility of that neighbourhood's special guards.

The fourth degree of privacy; that is the complete seclusion of one neighbour from another could be seen in the Egyptian Moslim dwellings particularly the Mamluk Period. Here the Moslim's urgent need for privacy made him design different Architectural degrees to maintain his privacy.

The bent entrance being bent more than one time, left and right, gave no probability of any by-passer's seeing the inside of the house and at the same time, provided a transition between the street and the privacy of the house. [1] A special entrance with a private staircase was designed for women to reach their private quarters "hareem" without being observed by the guests in the reception hall and the women's quarter's had windows opening to the inner court through wooden latticed openings, or mashrabeeyeh to be able to see all that was going on in the court without being seen. Fig. 4, 5, 6.

The fifth and last degree of privacy is the seperation of internal quarters of a residential unit, that is the quarters of the adults from the quarters of the children.

We can begin by defining the parts of any residential unit to four parts; the adults private region, the children's region, the family work-room and the family comunity.

Here the adults private region means their domestic domains, used to encourage concentration, contemplation, and self-reliance in the integrity of the bedroom and its services. Privacy here is needed mostly to fulfill their need for solitude, rest and peace far from the intrusion of the children.

The children's private region needed for the child is also entitled to give space:- firstly for play and movement, secondly for retreat and study and thirdly for sleep.

But the seperation of the two previous regions should still be complemented by the combination of those two different groups (in age, sex and interest) in one medium space where combined work and ritual communal activities take place.

1. The word "Hareem" which signifies women is related to the "Haram" sacred which denotes the family living quarter in the arab house. "Fathy. H., Gourna, A Tale of Two Villeges.

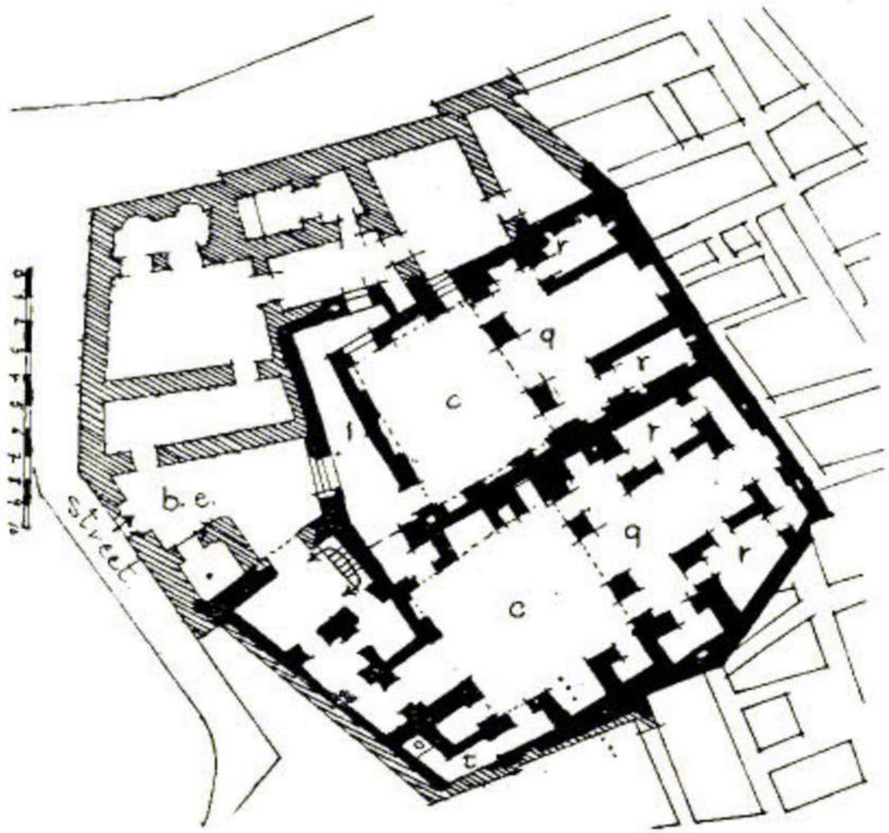
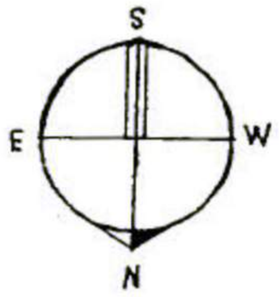


Fig. 4. A House at Fustat (12th C).

q qaa
r room
b.e. bent entrance
c court
t toilet



Reff.: Les fouiles d'd foustat by, Bahgat, A. & Gabriel, A. Cairo

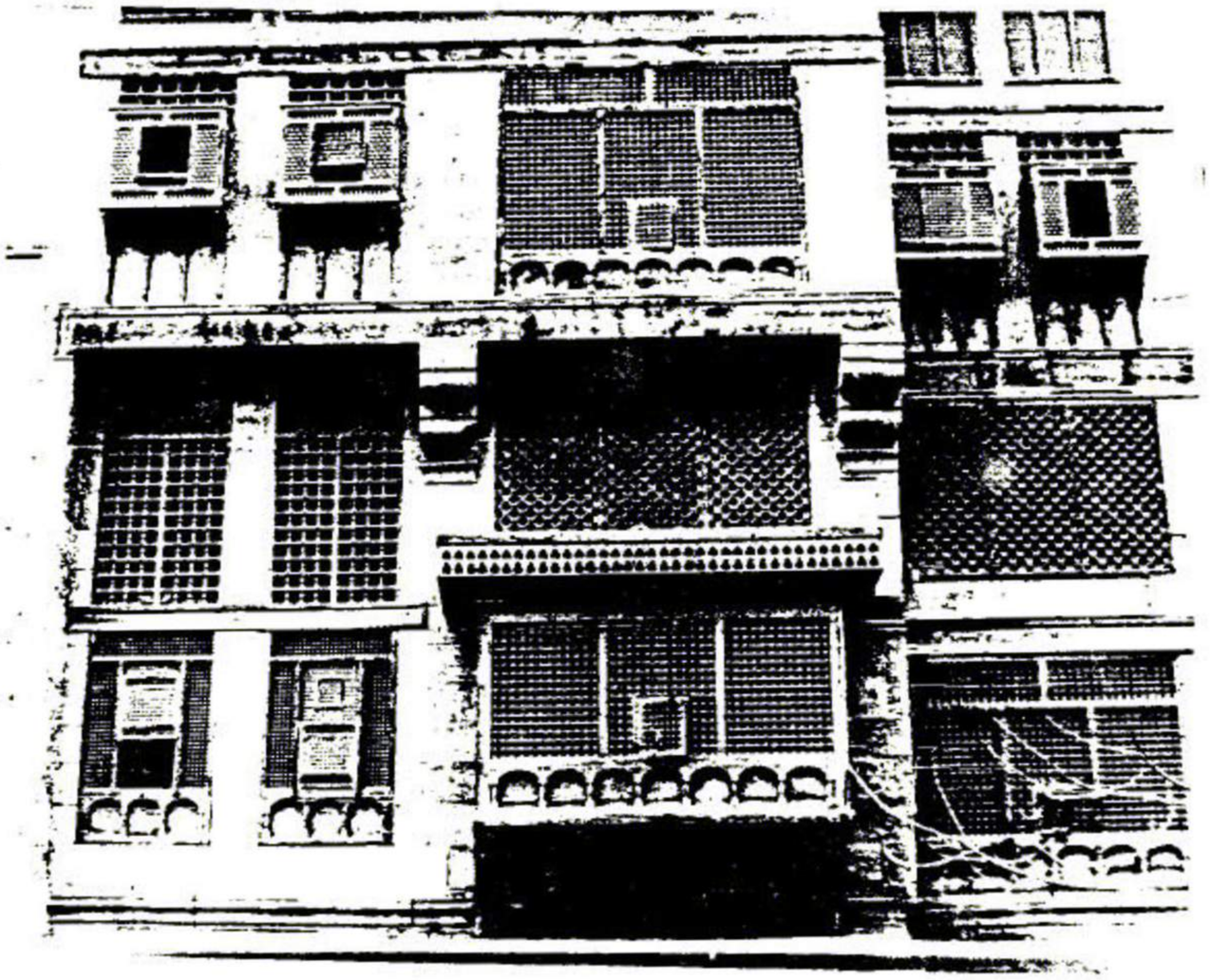


Fig. 5. The Mashrabeeyah is used everywhere to induce Privacy in the Egyptian Moslim dwelling

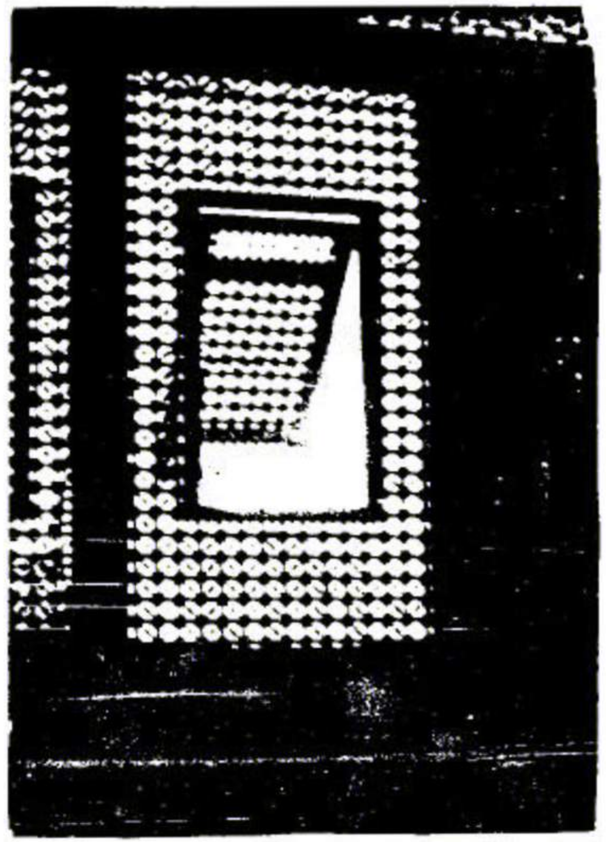


Fig. 5. A Mashrabeeyah
(Photo taken from inside of the room of an early Moslim House)

B. First Floor plan.
p.a. principal qaa
m. maqad.
L Leewan
Lb Lobby
t toilet
h.a hareem apartment

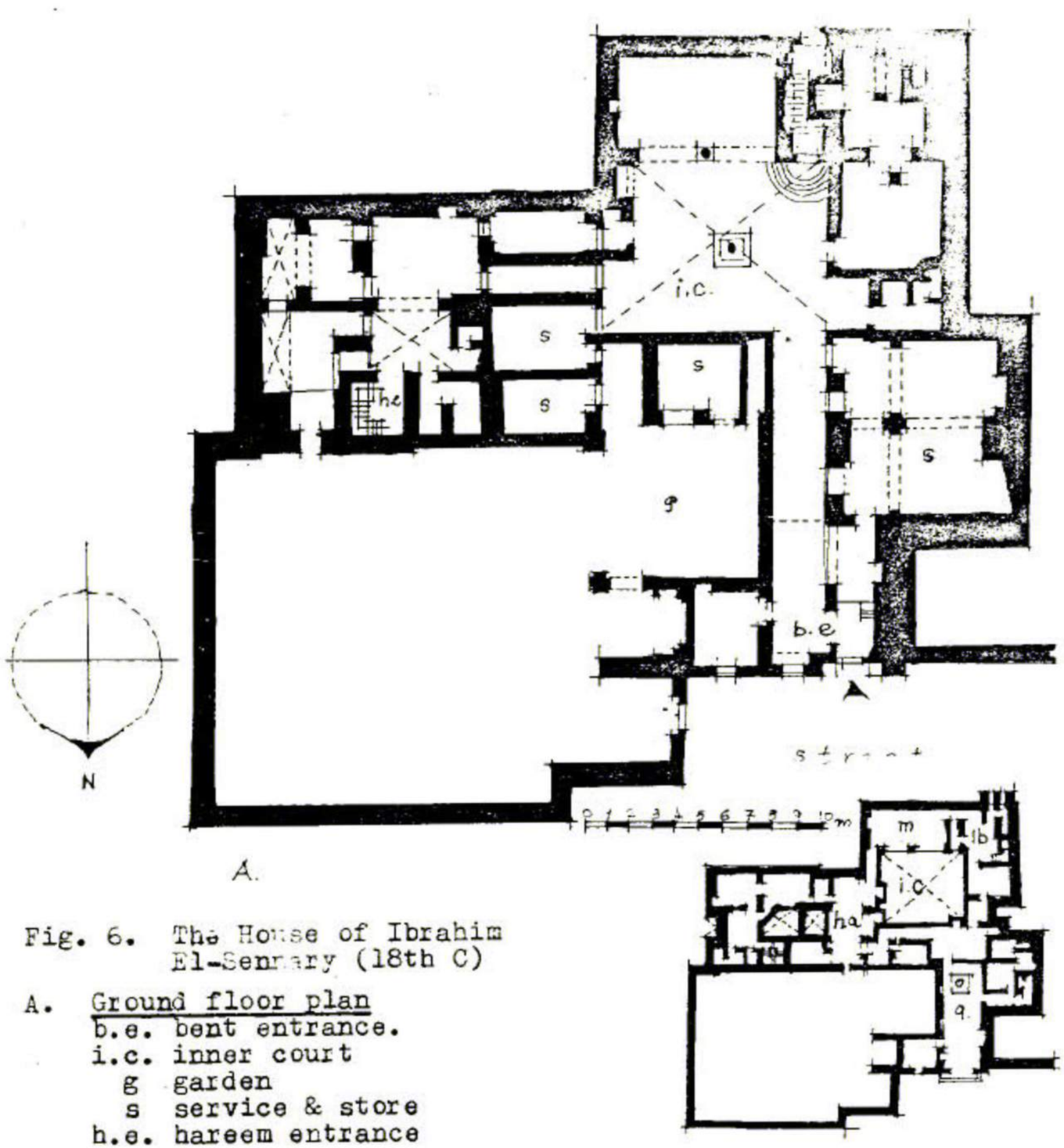


Fig. 6. The House of Ibrahim El-Sennary (18th C)

A. Ground floor plan
b.e. bent entrance.
i.c. inner court
g garden
s service & store
h.e. hareem entrance

Reff.: Arab antiquities conservation committe. Cairo.

Many examples could be seen which fulfilled those needs where if we put them in form are:

a) Seperate adult's access.
b) Seperate children's access.
c) Medium zone between parents and children.
d) Private access to parent's bedroom.
e) Isolated living room.
f) Private outdoor spaces.

e.g. Fig. 1) House in Lousiana. Colbert and Lowry Fig.7

2) Court House for a Cluster. Frank Sweet and Charmayeff. Fig. 8

3) Court House, Harvard. Robert Reynolds and Chermayeff. Fig. 9

Similarly if we return back to the Moslim's house at Fustat (12th C) Fig. 10. We will find that this division

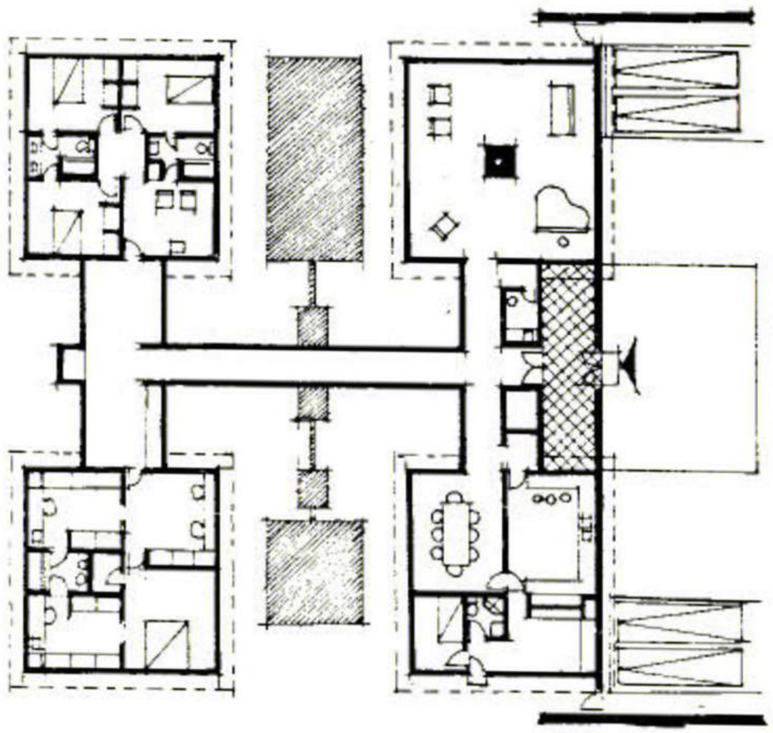


Fig. 7. House in Lousiana. . Colbert & Lowry.

Reff.: Community & Privacy

Towards a New Architecture of Humanism

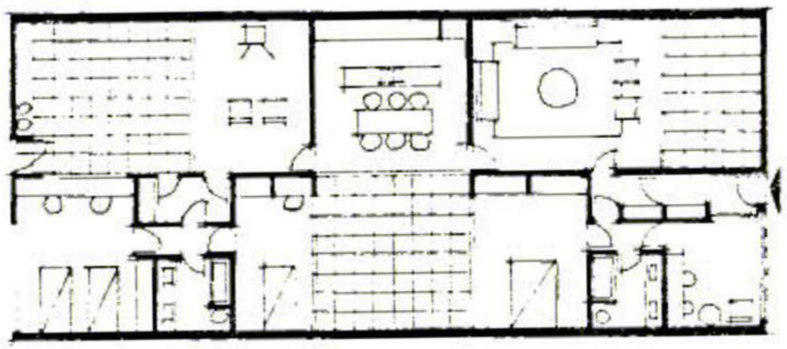
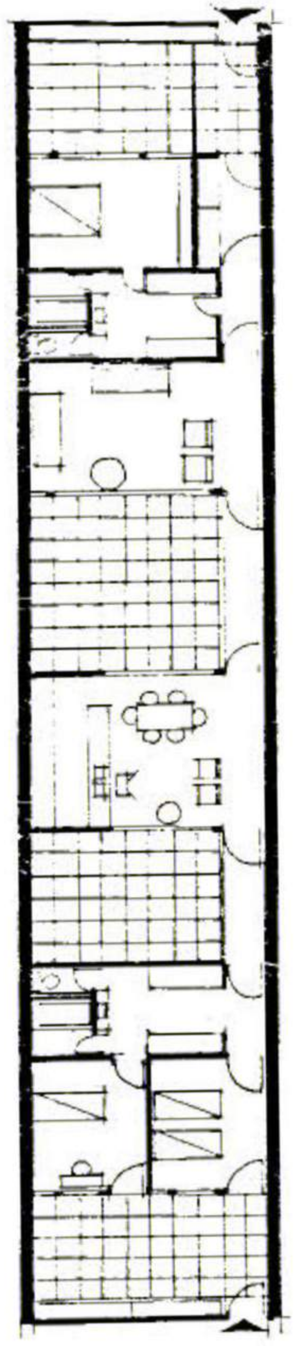


Fig. 8. Court House For a Cluster.
Frank Sweet & Chermayeff.

Reff. Comunity & Privacy

Towards a New Architecture of Humanism SERGE Chermayeff and Christopher Alexander



adults

family

children

Fig. 9. Court House. Harvard.

Robert Reynolds. &

Chermayeff

Reff. Community and Privacy
Towards a New Architecture of Humanism.

SERGE Chermayeff and Christopher Alexander.

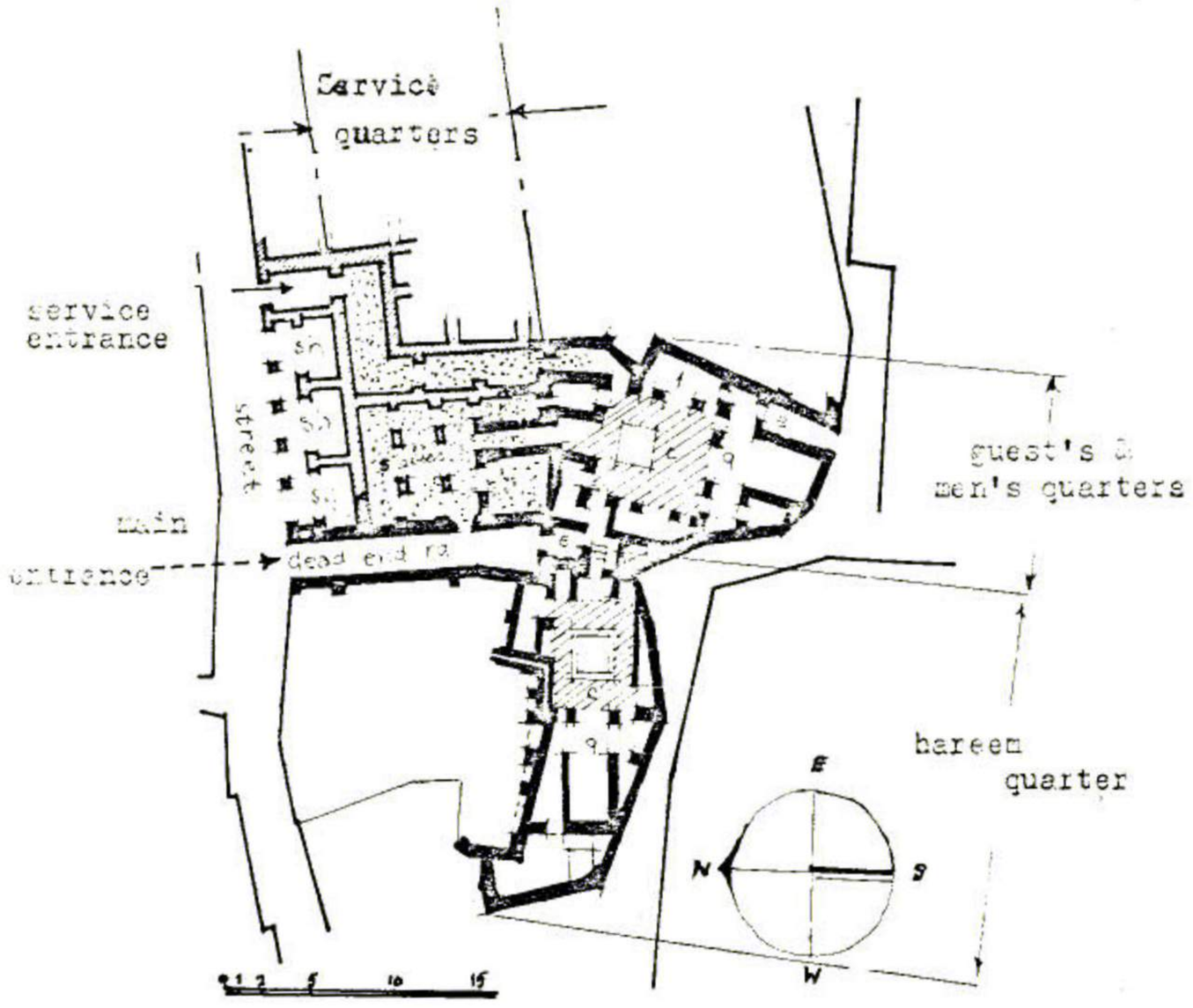


Fig. 10. House No. 1 At Fustat (12th C).
Excavations of Fustat.

q.	qaa	r.	room	Reff. Les fouiles d'al fustat. By: Bahgat A. G. Gabriel, A. Cairo.
e.	entrance	c.	court	
t.	toilet	L.	Leewan	
sh.	shop.			

of quarters had been acquired for a long time due to their traditions and their great love of privacy. Here the house was divided into three main divisions:-

Haramlek: The main quarters of the women of the house.

Salamlek: The main quarters of the men and the visitors of the house.

Khan: The private quarters of the servants.

The entrance led to a main lobby leading on one side to the men's quarters and where he could meet his guests, without fear of his family being observed and on the other side of the lobby was a side entrance to the women's appartment and the seperation was even emphasized by difference

in level; two or three steps higher for the woman's entrance.

The master of the house had a special entrance to the stables which in turn had a direct pathway to the internal court of the men's apartment. Fig. 10

[2]Other examples could be presented, the traditional Koreanhouse had a space for the master of the house called "Munbang" which differs from study in western sense. The Munbang differs in its location in the house and in the arrangement of furniture, according to the user. It was a bright, quiet and clean room. It had no extravagent decoration; it was a plain room. To this space, even the family members were seldom allowed to enter.

The Munbang of the Y. Dynasty house was not large in size, it was usually furnished with two small tables, one or two stationary boxes and a bookstand.

The simplicity of room arrangement was very much in the spirit of the designs of the shakers in America.

The Munbang, the sacred place, was for contemplation, placidity and creative work in harmony with involvement with nature.

The design was to include the sense of time, bearing, smell and touch of space; the sound of rain, birds, wind through the translucent paper-window, that is an attempt to form a happy whole of man and nature.

Thus to sum up we can say that all mentalities, big or old, from different countries and who persue life from different angles all are in great need for privacy, at certain times of the day, and who have discovered and designed architectural devices to satisfy this need.

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2. J. A. March 1972; Contemporary South Korean Architecture.

1.3. NEED FOR SOCIAL CONTACT

More than ever, man will depend on man-made shelter to offer him a haven in times of social stress and at the same time means of communication and social activities when help and understanding from others are required.

From so far in the past man used to live in small communities, it is therefore logic that human beings relate to each other socially; effectively in small groups. The grouping of the population into smaller biologically derived units is thus essential in planing buildings for human use and thus can be identified by analysing different historical periods.

Architecture can wilfully encourage or discourage social group formations, according to the understanding between the architect and the psychologist.

[1]The history of Architecture compromises inumerable examples of architectural spaces that have been consciously manipulated to draw people together or to disperse them.

Ancient rulers have emphasized the distance between themselves and their subjects by long ceremonial passages and by differences in elevation.

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1. Progressive Architecture April 1965.

Modern dictators have used similar architectural devices to establish their dominance visually.

Architecture in its knowledge of such effects can have a great influence for the good or for the bad on the daily life of man. It can foster or discourage social contact among people.

This chapter deals with each period seperately dealing with men's social need to contact each other and live together and demonstrating this need by different architectural examples. The character of the government, with respect to religion, affected greatly in the way through which they carried on

their social life and that can be seen in the early Egyptian Architecture where social conditions were largely determined by the rule of an imposing strong government, with Pharon at its head, who was supposed to be at the same time their god.

Old Egyptians were extremely religious. Their deep belief in the 2nd life after death was always behind their intimate relation to their Gods and King-Gods. They loved, feared and worshiped them in order that the latter would help them to attain a happy eternal second life. The major part of the Egyptian's social communal life took part in their temples among their god-Kings and priests. The spaces of the cult temple catered for all classes Fig. 1. A vast open space (the court) for the numerous common people, a lesser covered space (the 1st Hypostyle Hall) for the middle class, a still lesser space (the 2nd Hypostyle Hall) for the dignitaries and at last the forbidden mysterious multi-room sanctuory space to be entered only by the pharon and the priests. Fig. 1

The Festivals were religous and celebrated in temples during the year, some of which might last for days; at times shrines of the gods were carried by land or water, to other temples or sacred sites in the neighbourhood; for example, at the feast of the Good Union the Godess Hathor used to leave Dandara in her magnificent lark for Edfu; meanwhile the God Horus of

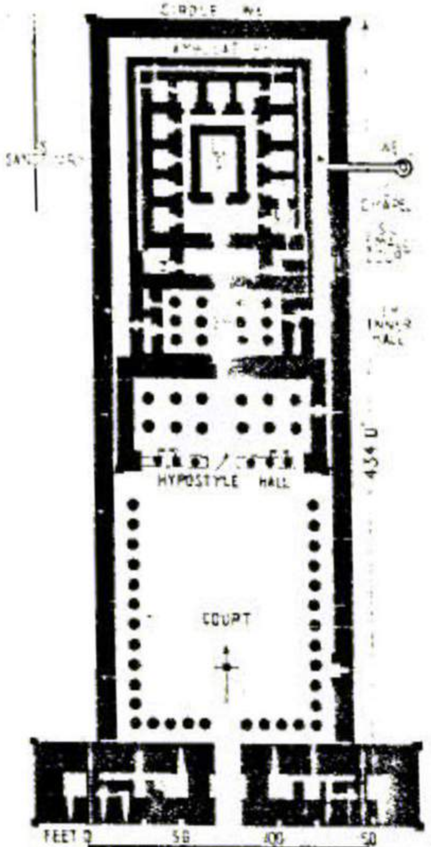

Fig. 1 TEMPLE OF HORUS : EDFU

Reff: A History of Architecture
Sir Banister Fletcher

Edfu sailed to meet her. On arrival at Edfu with their attendants, they were recieved with great pomp and rejoicings. Priests chanted, offerings and bouquets were presented, and tambourines were beaten. The feast continued for 13 days.

While on the contrary in the Greek Architecture both the temples and the public buildings were the main Architectural Greek features. Greece being a democratic city, palaces scarcely appeared.

The Greeks shared in all the affairs of the state that is why their whole life was an entertaining busy social life dedicated wholly for this world, having no belief in 2nd life. The busy social life was manifested in music and dancing, wrestling, boxing, gymnastics and bull leaping often in a religious connection. While in Early Egyptian Architecture their main social life took place in temples, here in the Greek Architecture, they had various building for different social assemblies.

[2]Agora:

The town square, was the centre of their social and business life, around which were stoas (shops) or columnaded porticoes, temples, adminstrative and public buildings, markets, places of entertainment, monuments and shrines. Fig. 2.

Assembly Hall (Poly):

Was a covered assembly Hall to cater for 400 representive arranged in seating in a U-form for debate and discussions.

It was a direct reflection of the democratic Greek life and love for discussions.

The Odeion:

A building in which musicians performed their works for the approval of the public and competed for prizes e.g. The odeion of Herodes Atticus. It resembled a theatre in plan and was not wholly roofed over. Fig. 3.

The Stadium:

The foot race course in cities where games were celebrated. The oldest stadium in Greece is that at olympia, the other at Epidauros, Ephesus and Athens.

The Hippoderm:

Was a similar, though longer type of building for

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2. A History of Architecture Banister Fletcher.

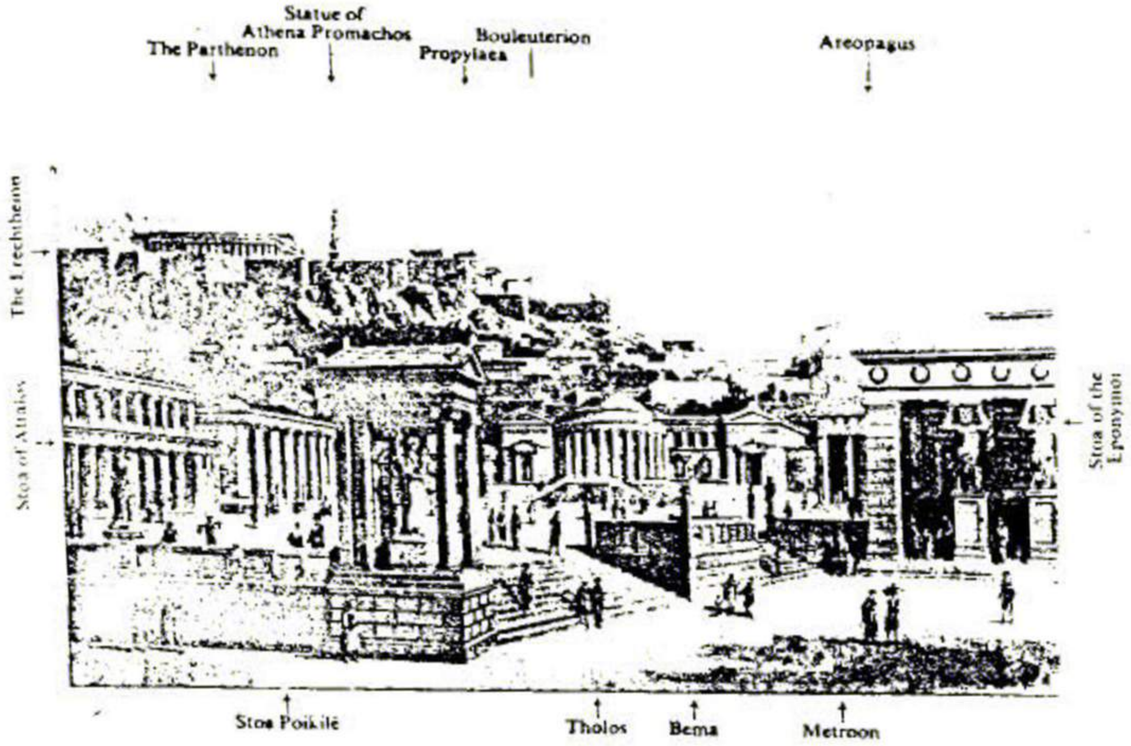
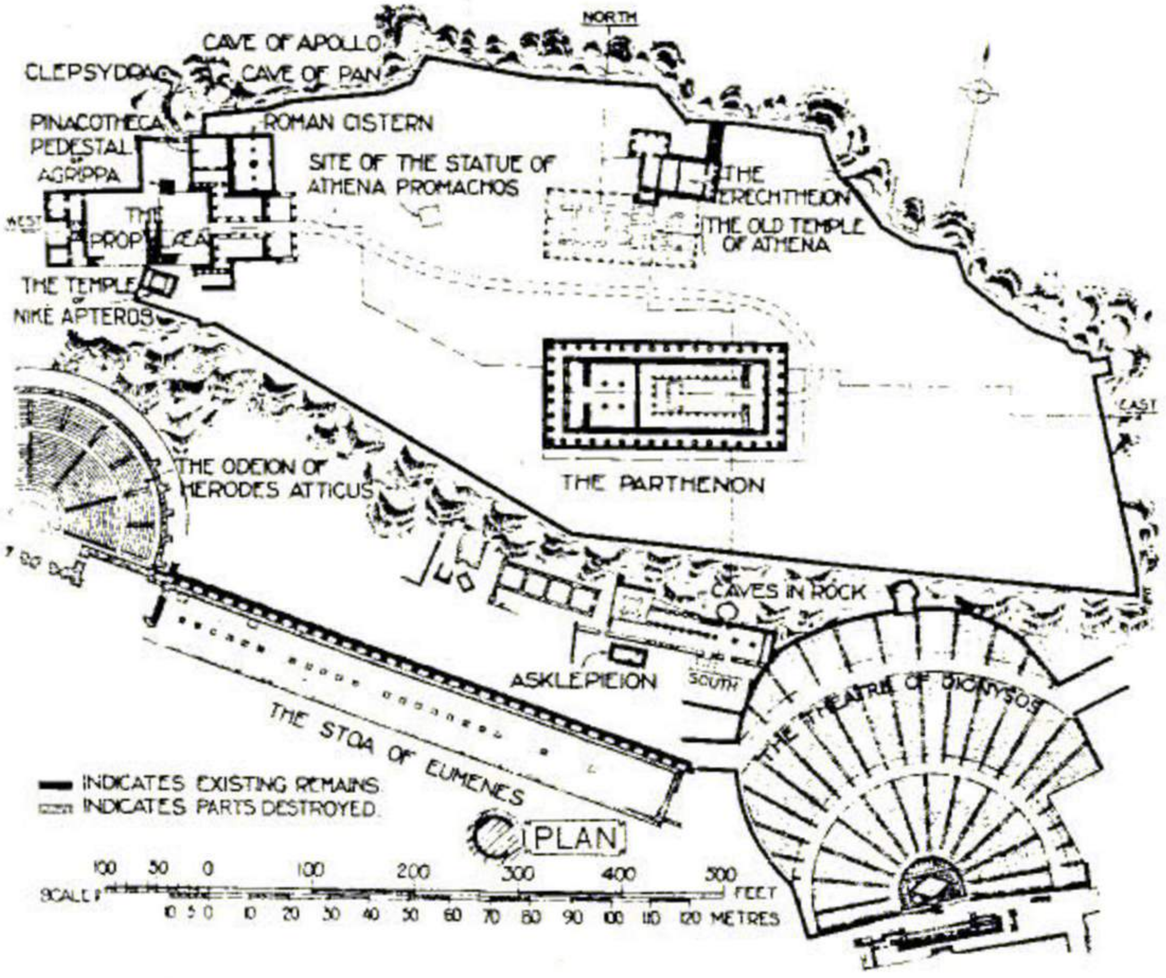


Fig. 2. The Agora (Market Place) at Athens



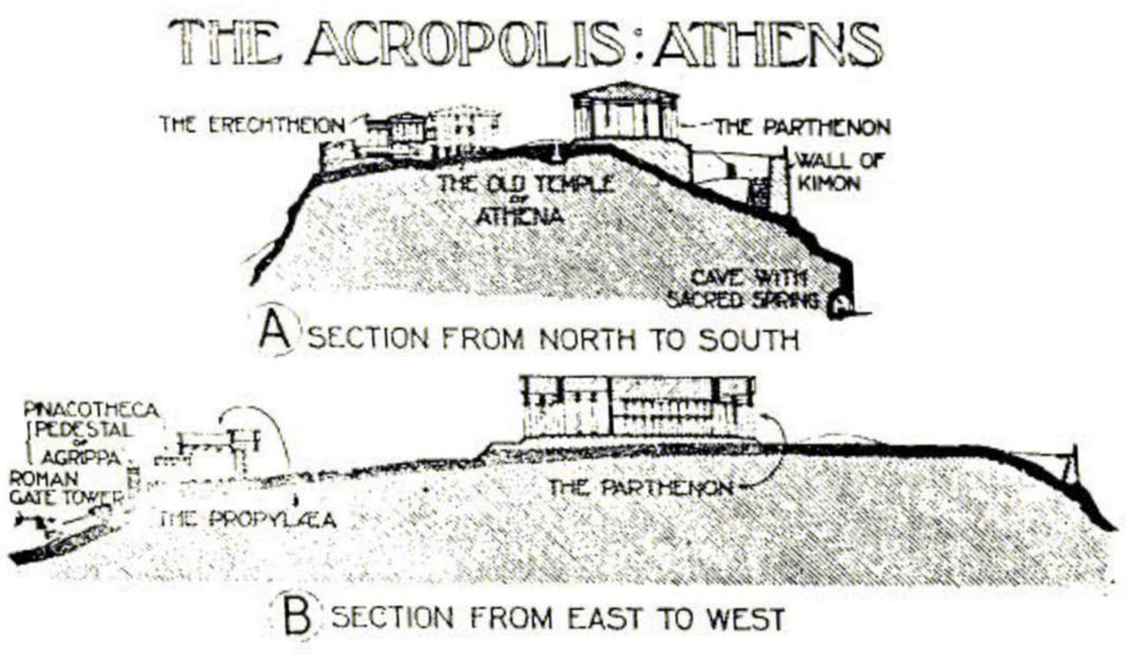


Fig. 3. The Acropolis,

a) Section From North to South

b) Section From East to West

c) Plan

Reff. The History of Architecture
Sir Banister Fletcher.

horse and chariot racing.

The Palaestra:

A wrestling school, a place for physical exercises of all kinds as: athletes, pools for bathers, rooms for dressing and toilet, places for rest and conversation, exedrae and other seats for spectators, scores and an ephebeum or club-room which served for lectures. See Fig. 4

Due to their spending most of their time in social life they built big amounts of the previous kinds of public buildings yet their size and scope did not reach the scope size of the public buildings which were built in the Roman Architecture, social life being very important while here religion was of the least importance.

Fig. 4. The Altis, Olympia

Reff: A History of Architecture Sir Banister Fletcher

The Roman Architecture, Rome being a universal city, needed gigantic spaces and big masses that is why the need to find a span, to cover an enormous space in which the social contact took place, was the main problem.

Their life was spent in leisure and entertainment. Enormous building were erected for the entertainment of the people, being composed of

large masses of stone "puzzolana concrete" and enormous quantities of white and coloured marble which were imported from all parts of the empire.

To kill the time they spent their leisure in fierce combats in which the Roman were so interested.

Although in Greek Architecture social public buildings were considered important yet in Roman Architecture their importance increased and that can be proved in the great difference in size and the capacity of Roman public social buildings to shelter vast numbers of people e.g. The Roman Basilicas, which were used as halls of Justice and commercial exchanges, indicate clearly by their central position and their size, their importance in their social life.

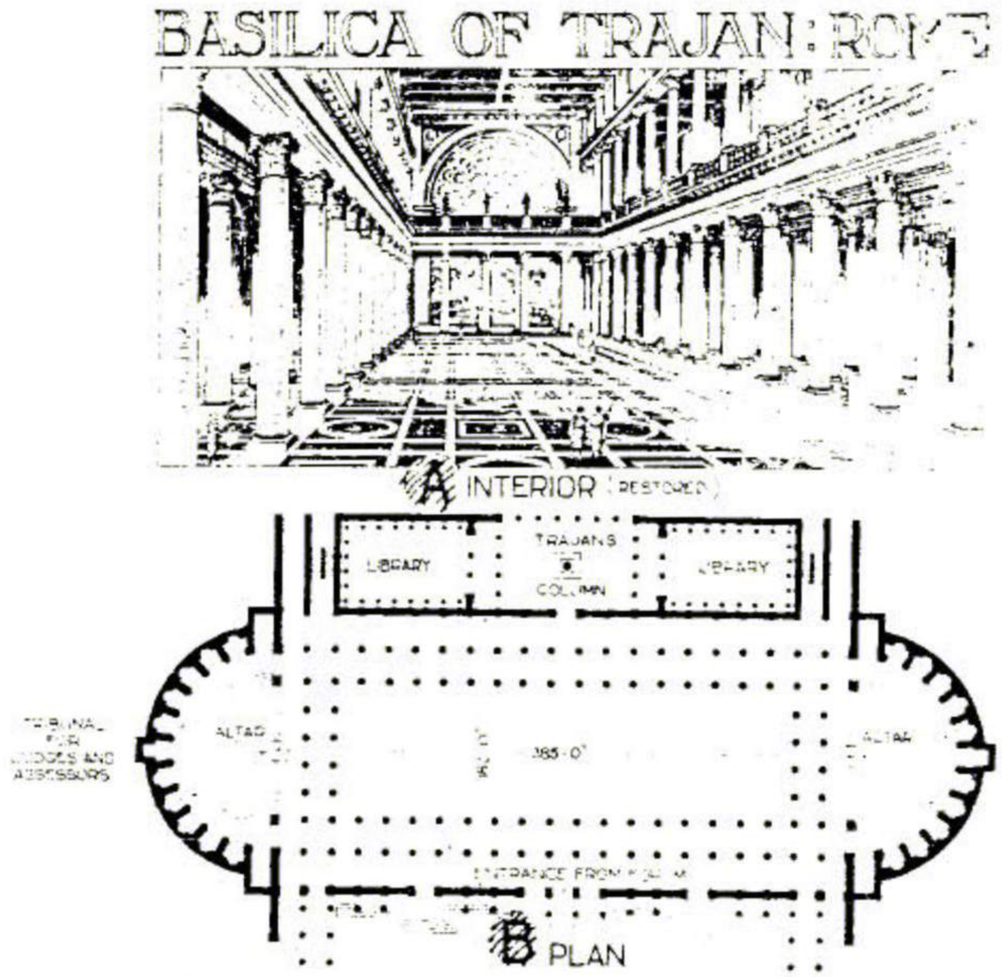


Fig. 5. Basilica of Trajan
Reff: A History in Architecture

Basilica of Trajan: the central Hall being Fig. (5)
182' x 385'

Basilica of Constantine: The central hall being Fig.(6).
265' x 215'

Another example demonstrating the importance of the presence of enormous sheltered areas can be seen in the thermea or palatial public baths of Imperial Rome, which was

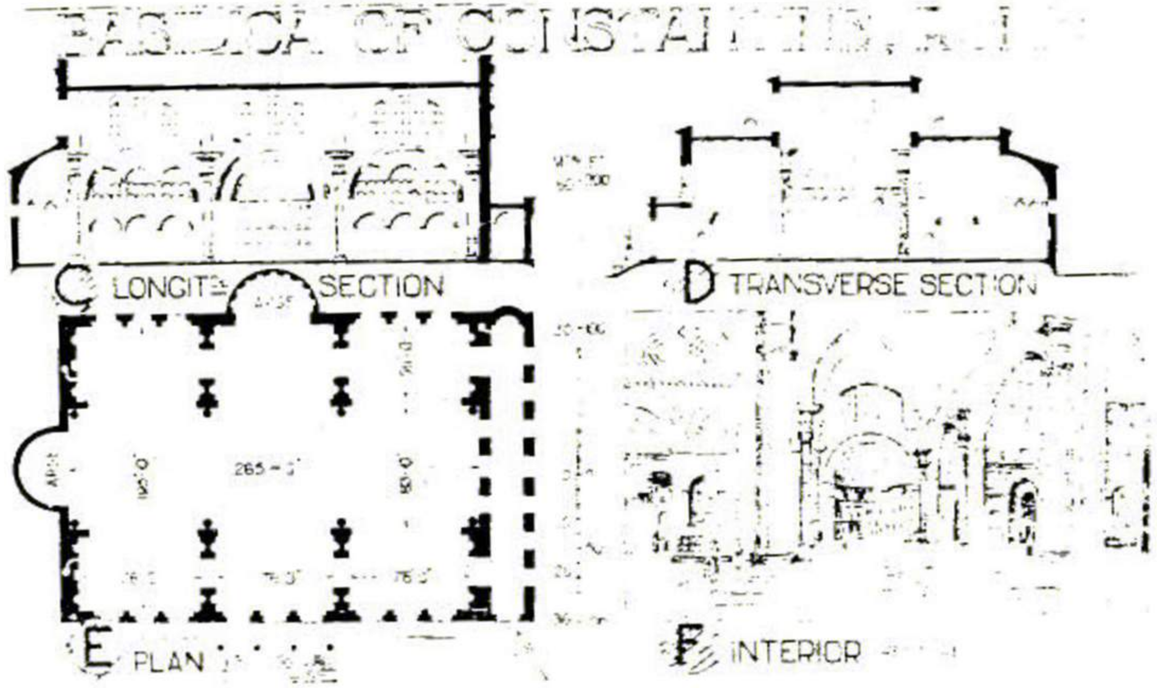


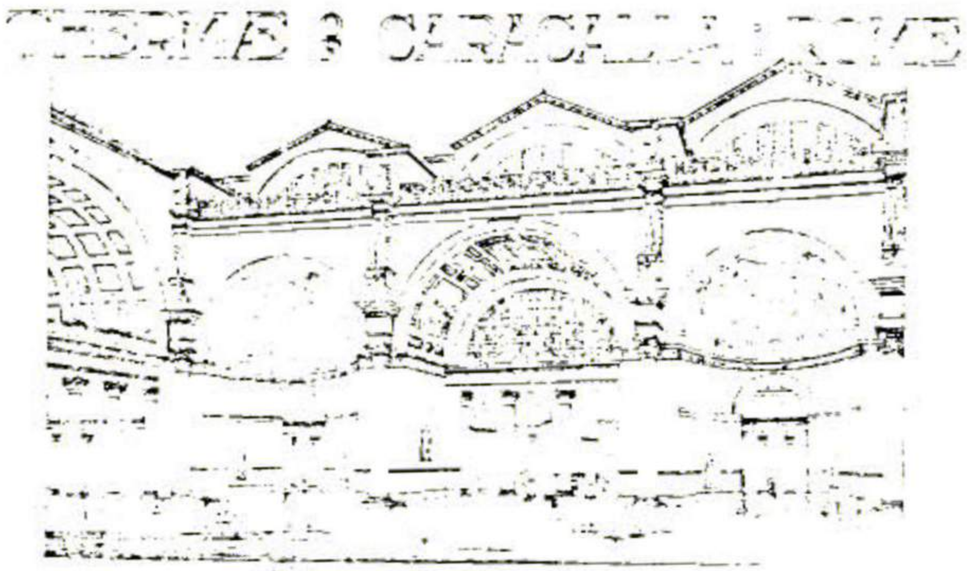
Fig. 6. Basilica of Constaintine
Reff. A History of Architecture

probably derived from the Greek Gymnasia and show, even in their ruins, the manners and customs of the pleasure-loving populace, and are characteristic of Roman civilization as are the ampitheatres. The principal ruins of thermes in Italy are at Rome and Pompei. The thermes were not only designed for luxurious batling, but were resorted to for news and gossip and served like a modern club, as a rendezvous for social life, besides being used for lectures and athletic sports and entered largely into the daily life of the Imperial city. The entrance was opened free to the populace by emperors in search of popularity.

e.g. Thermea of Caracella: accomodated 1,600 bathers. It stood on a platform nigh and the main building measured thus covering an area of Fig. (7). 282,000 sq. ft.

Thermes of Diocletian: accomodated 3,000 bathers Fig.(8) The great central hall. 200'x80'

The ampitheatres are characteristically roman building found in very important settlement and are good exponents for the character and life of Romans, who preferred displays of mortal combats which were considered to be a good training for a ration of wariors. The Ampitheatre is an arena theatre. They were also used for naval exhibitions and water pipes for flooding some of the arenas still exist. The arena a latin word meaning sand or



A THE FRIGIDARIUM RESTORED

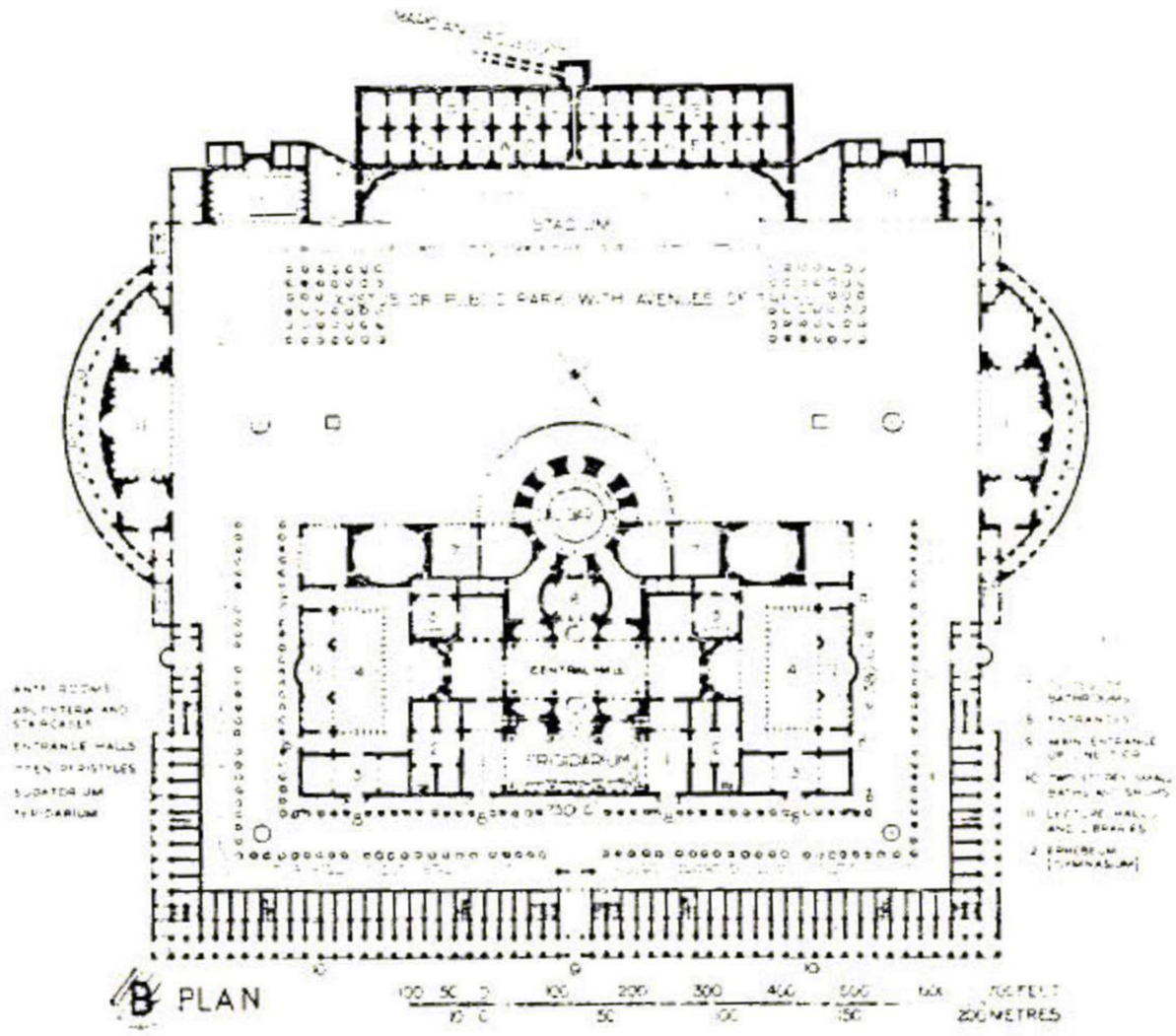


Fig. 7. Thermea of Caracalla

Reff: A history of Architecture
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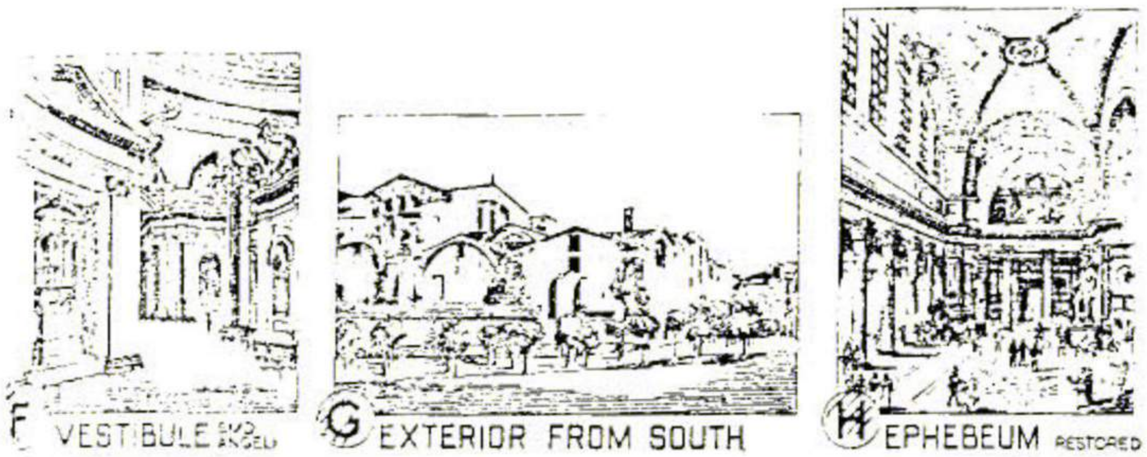

Fig. 8. Thermea of Diocletion : Rome

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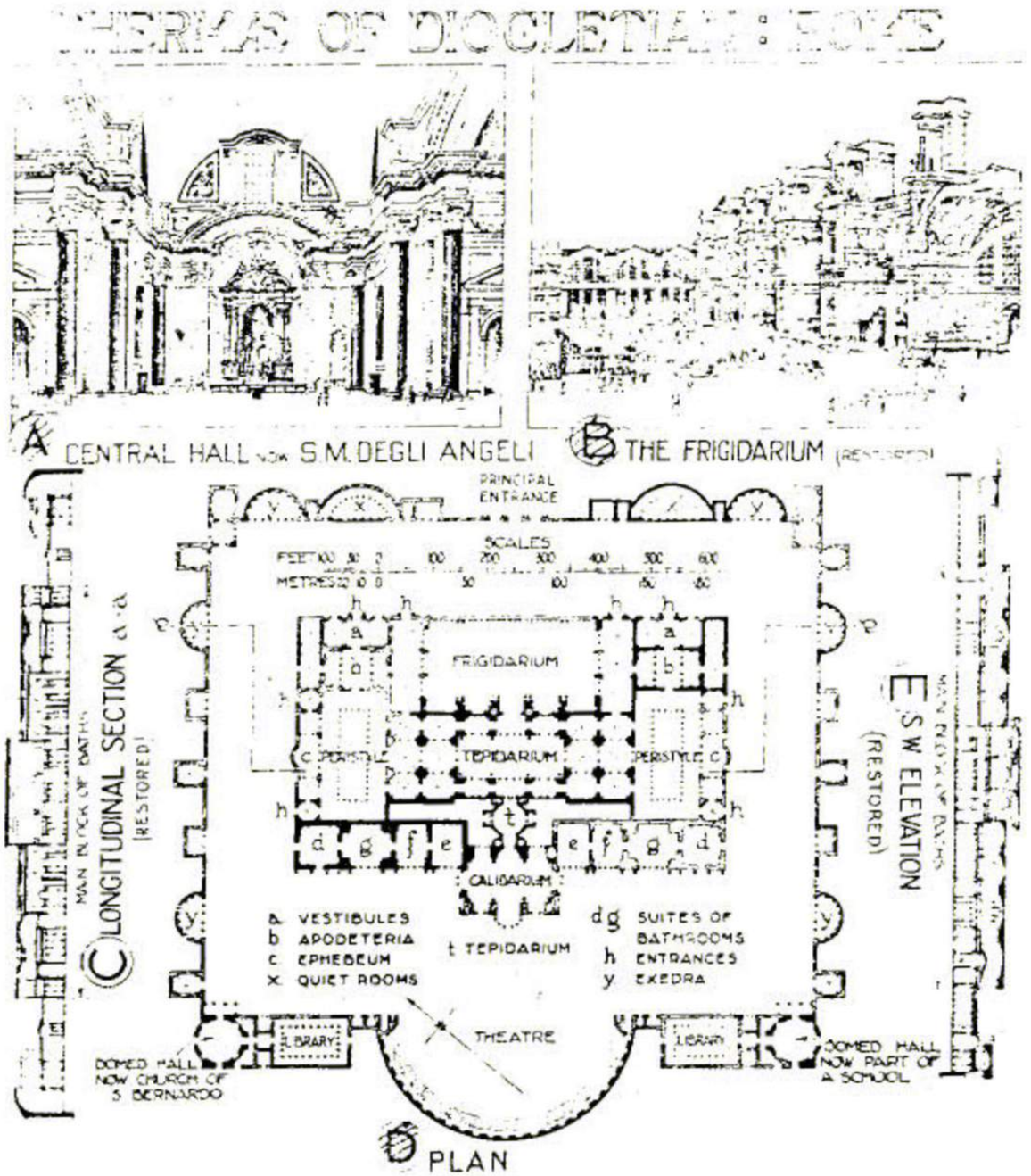

beach, was so called because of the sand strewn to absorb the blood of the combats. One of the most unique ampithetres, whose structure was so great in strength in the form of a concrete mass and so big that it had the capacity to shelter the whole city if the opportunity happened to gather them, was the Colosseum. "When falls the colosseum, Rome shall fall". The span being almost. Fig.(9)

620' x 513'

The Roman Circus, for horse and chariot racing, was derived from the Greek Hippodrome, and attained great magnificence. Chariot racing was enormously popular and vast sums were spent on the training and selection of man and horses. Famous charioteers were the idols of the day and reaped rich rewards.

Heavy betting gave intensity to the popular interest. Two of the most important circuses are:

The circus Maximus, Rome about Fig. (10)

The Circus Maxentius also about Fig. (11)

2000' x 650'

Roman theatres were also another of the open-air social buildings and each one was a semi-circle and held spectator and due to their magnificance some of the theatres are in an unusual state of preservation e.g. The theatre Orange in south of France almost. Fig. (12). 340 diameter

Lastly there is the most important central open place in Roman Architecture, the Forum, corresponding to the Agora in a Greek city and was used as a meeting place, market or rendezvous for political demonstrations. In small conintries only one forum was needed but in bigger countries several were needed with one of principal importance. All were designed to meet the requirements of Roman citizens of Roman citizens and reflect religion, law and commerce and also the budy corporate life of the city.

One of the most importa-nt examples is the Forum Romaneum, in Rome, at the begining it was used for almost everything like shops, contests and displays, but later on these were removed to other buildings and the Forum Romancum was surrounded by the chief public buildings. Fig. (13).

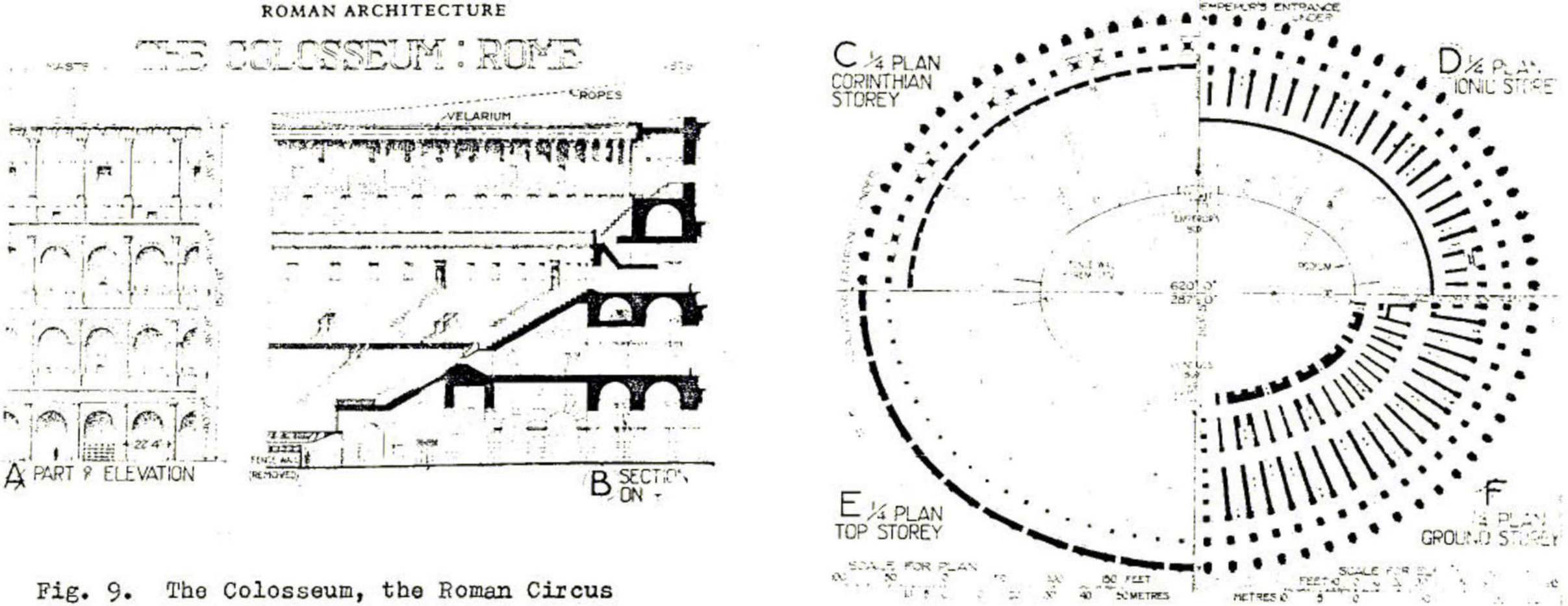

Fig. 9. The Colosseum, the Roman Circus

Reff: A History of Architecture
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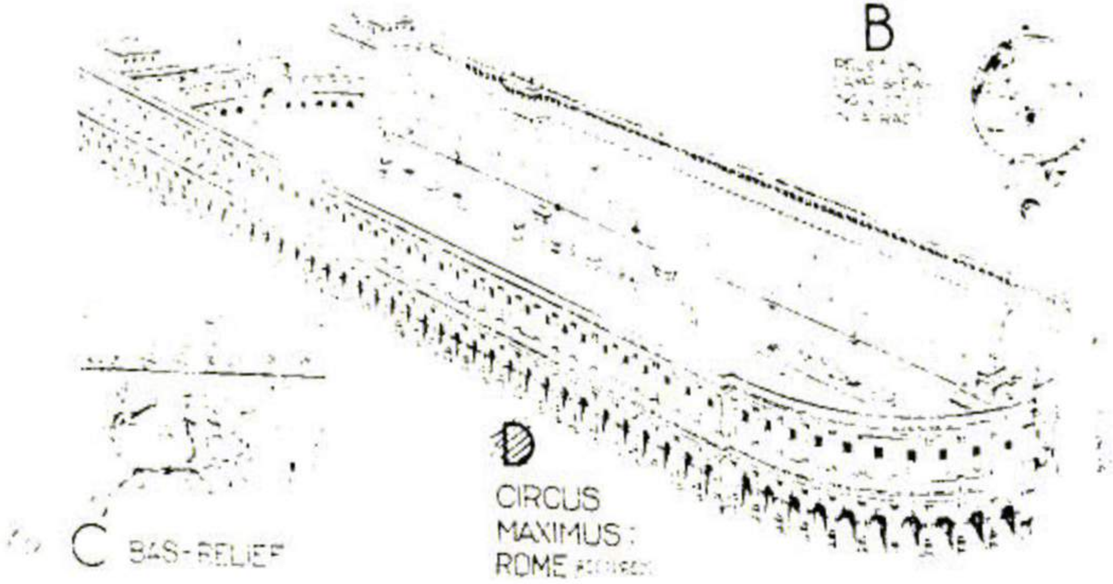


Fig. 10. Circus Maximus

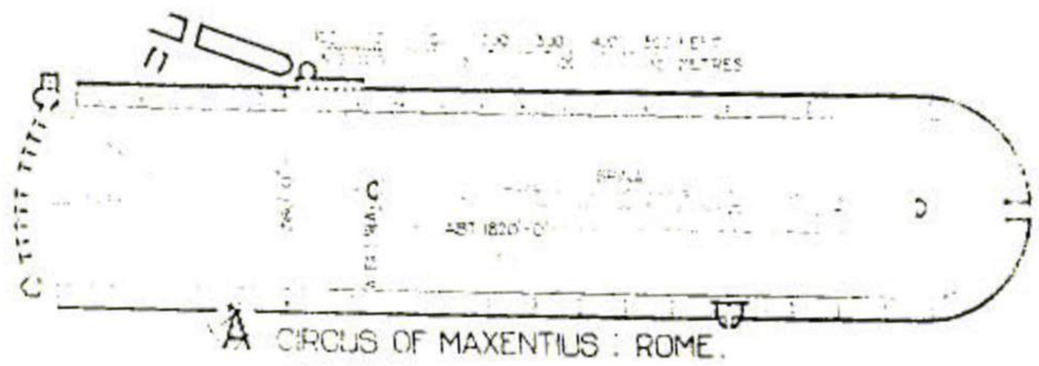


Fig. 11. Circus of Maxentius: Rome

Reff: A History of Architecture
Sir Banister Fletcher

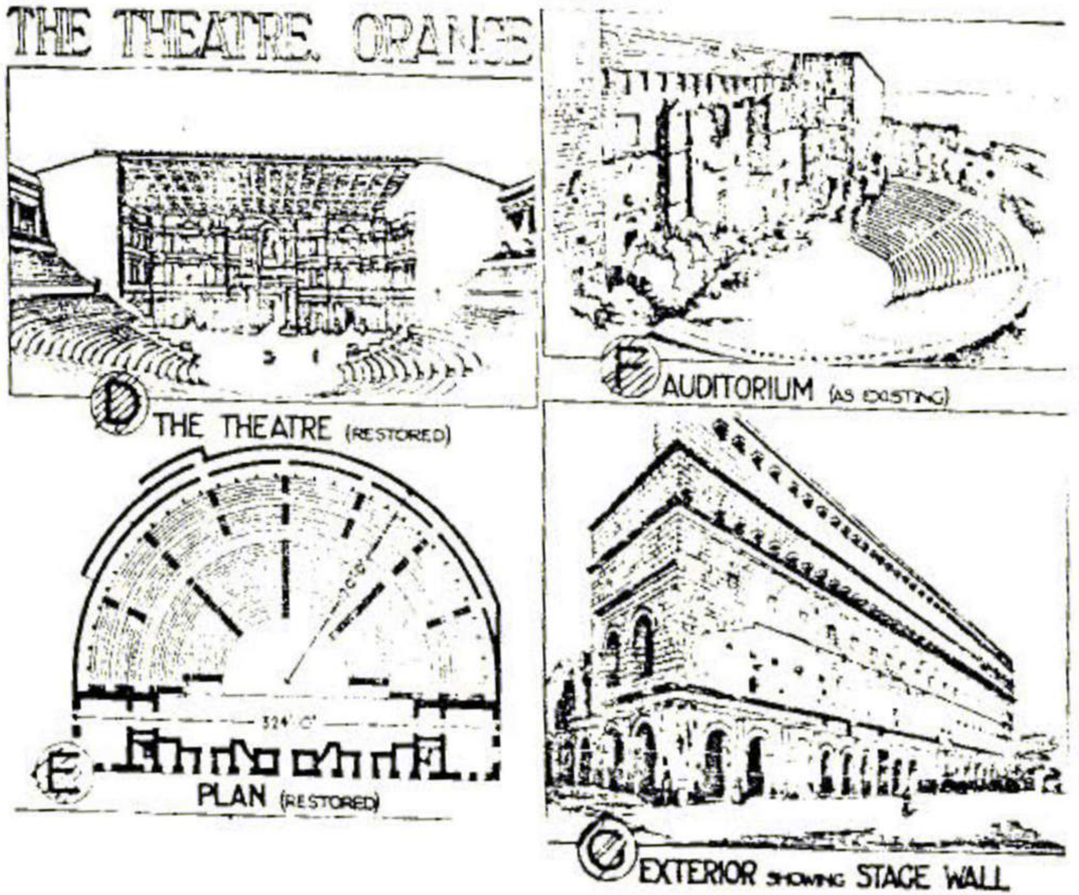
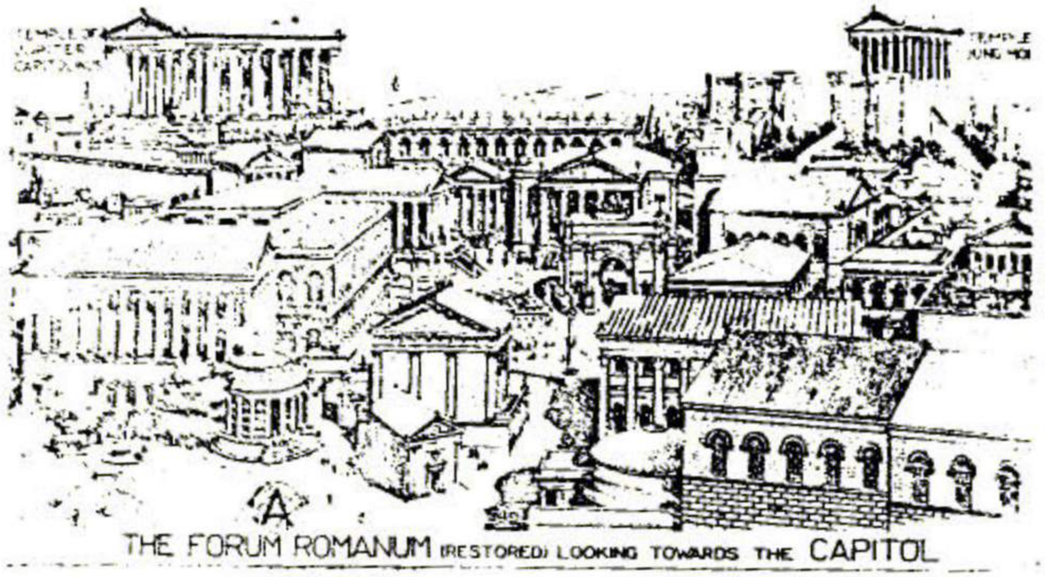
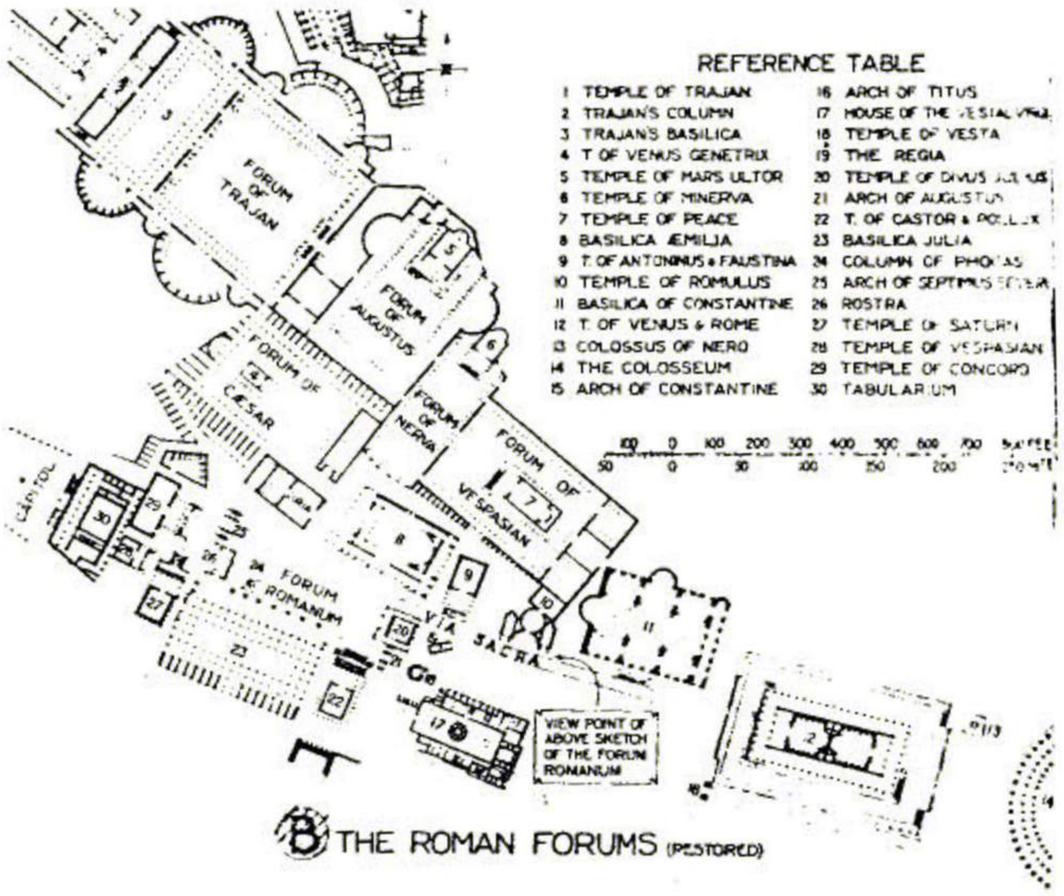


Fig. 12. The Theatre Orange 324' diameter



A THE FORUM ROMANUM (RESTORED) LOOKING TOWARDS THE CAPITOL



B THE ROMAN FORUMS (RESTORED)

Fig. 13. The Forum Romanum

Reff: A History of Architecture
Sir Banister Fletcher

Thus one may conclude, that social life, in any period, either normally in social public buildings, in a medium range as in Greek Architecture and in a wide universal range as in the Roman Architecture or social life in temples and religious buildings as in the Egyptian Architecture, had to be found; and later on in other Architectures developed in other forms and ways; for example in the Egyptian Architecture, in the mamluk period, social life could be demonstrated in the people's Hospitality, being a virtue for which the natives of the east in general are highly admired, this led them to offer generous treatment to their guests in their dwellings.

Architecturally, this was reflected in the manipulation of different spaces for meeting their guests according to their rank, the tactabouch (for less prestigious persons such as servants and working classes) was on the ground floor, and the maqad for meeting his ordinary guests and his relatives during daytime was on the first floor. The qaa was kept for the most important persons and strangers of non-relative visitors, used in the evenings and nights and is supposed to be the most important, the most luxurius part of his house.

[3]House of Zeinab Khatoun (18th C) Fig. (14) there was also another qaa for feminine seating and no man was to enter it.

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3. Arab Antiquities Conservation Comittee. Cairo Majestaire.

In the middle-age Islamic city there was a certain day for their market where they all meet and exchanged bargains and at the same time exchanged their news, that is why they prepared before-hand for that day and put on their best attire. At the same time their homes were so close together that, in the evenings, the women sat at the door of their houses talking to each other as if in one room and that enabled them all to know each other and even each neighbourhood known as the " hara" was almost self-dependant containing a small market (sowequah), a small mosque (Zawyah) and a small public bath. This small grouping has its own gate the gaurding, of which, was the responsibility of that neighbouhoods special sheikh. Nowadays due to the

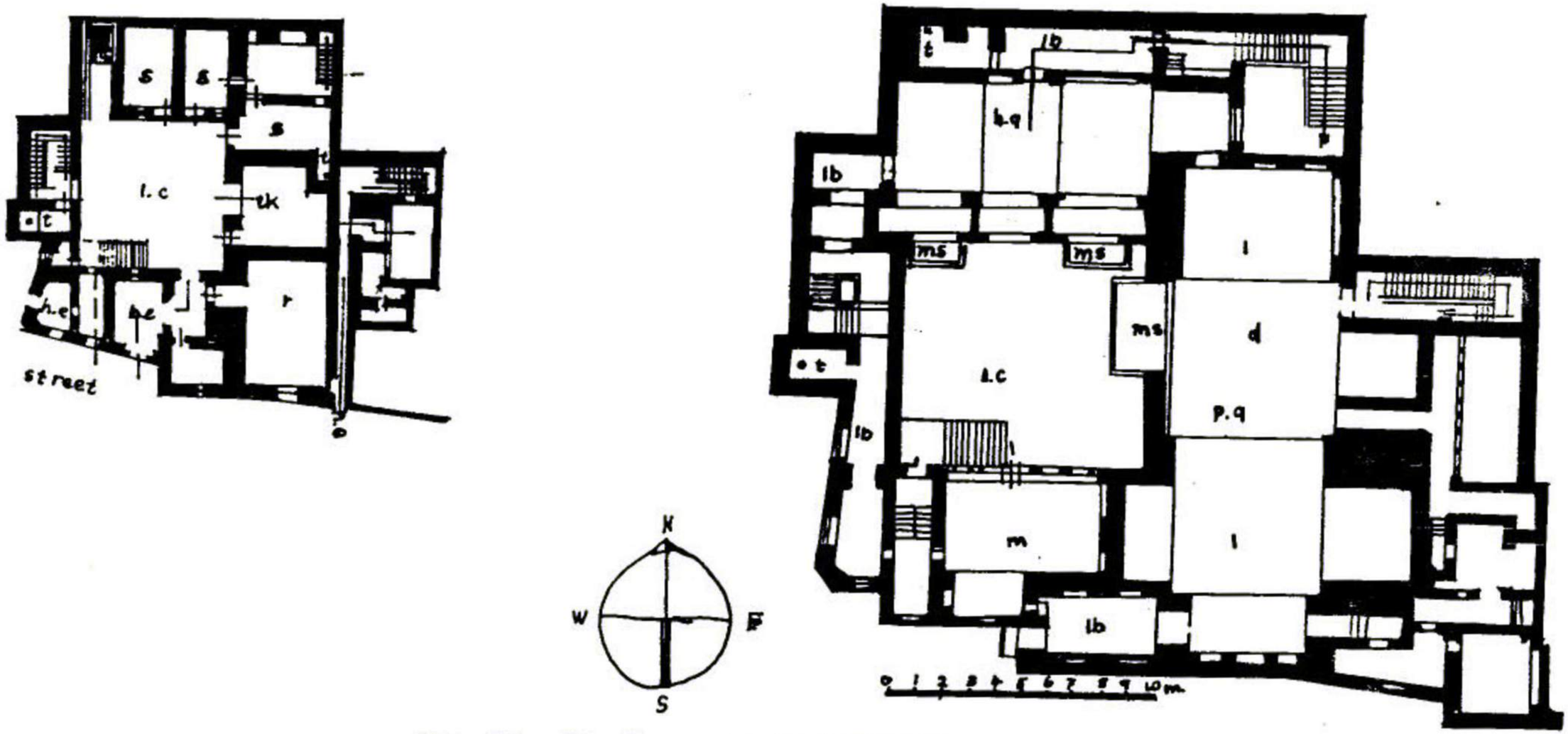

Fig. 14. The House of Zeinab Khatoun

Ground floor plan.

b.e	bent entrance
h.e	hareem entrance
tk	takhṭaboush
s	service & store
r	reception
g	garden

Reff: Arab antiquities conservation committee, Cairo

First floor plan

l.c	Inner court
pq.	principal qaa
h.q	hareem qaa
m	maqad
l	leewan
d	dur qaa
ms	mashrabeeyeh
lb	Lobby
t	tollet.

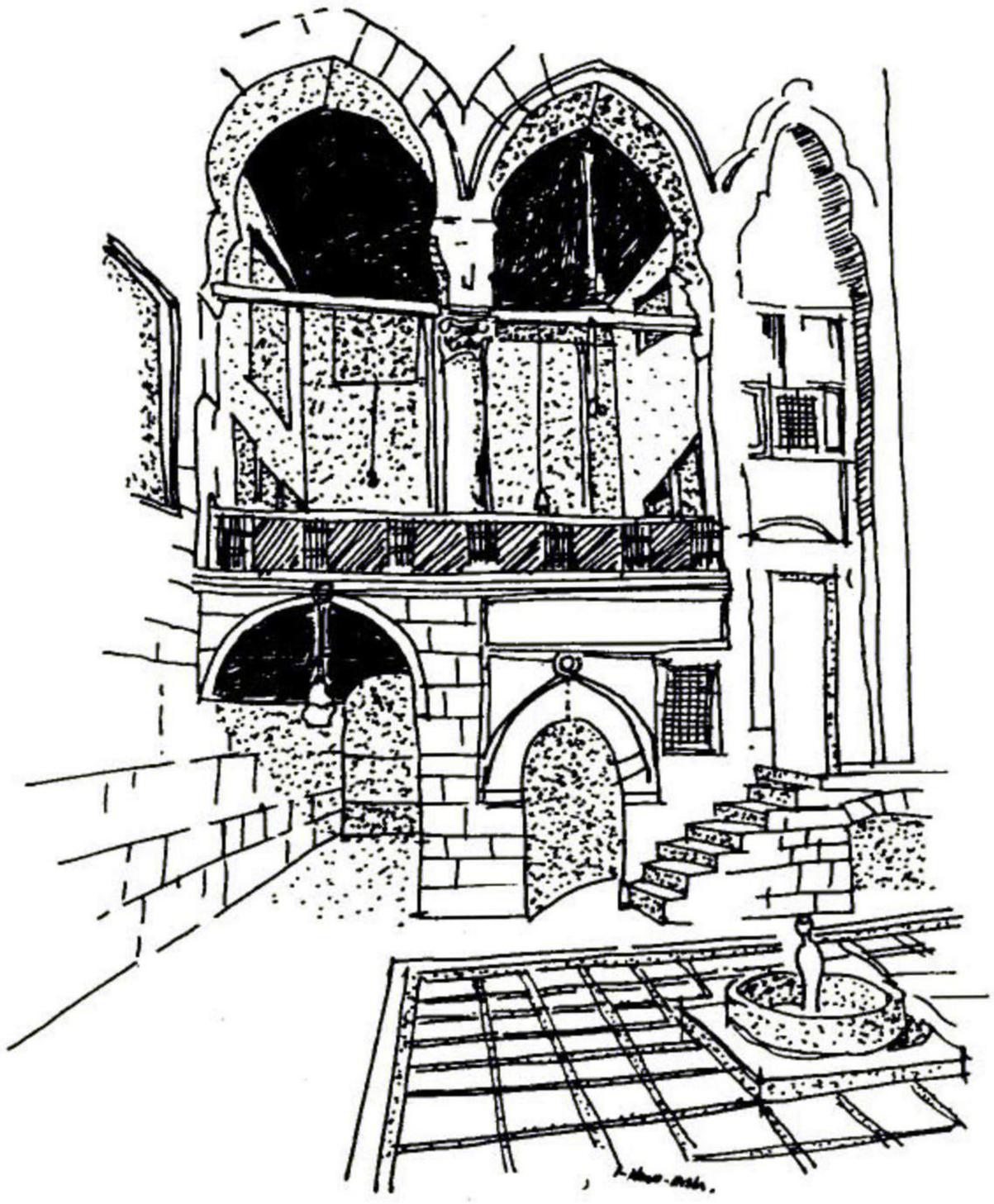

Fig. 15. The maqad facing the imer court House of Zeinab Khatoun (18th C)

complication of life and the increase of population, social life is rarely realized and with every passing day high-rise buildings rise in the Egyptian sky and at the same time green areas are minimized.

Every person is shut up in his own flat with rooms like boxes and social life degraced to the unsocial grouping of the family around the television. Members of the same family may go on weeks and months having no social gossip or discussion understanding each other. Neighbours have no time to know each other and tons of miles seperates between the relatives.

On comparing with the mamluk period we find that every person lived in a piece of land where he built his own house with rooms looking in-wards onto an open court containing a fountain Fig. (15) and perhaps greenery and a special room (qaa) for guests, sometimes the house contained two courts one at the entrence for the master of the house and his guests and the other for the harem of the house and usually when a son grew up and married he built a room on the roof and a succession of rooms was built with each growing son.

Thus, after having analysed these four periods, one may conclude that without these architectural devices and plans, which were designed with certain intentions to create a social centre in the middle of the city or a recreative green area between the devellings, individuals would have acquired repeatedly, period after period, psychological cases which are the result from the lack of social contact giving forth an unhealthy evironment in which each person had to keep to himself most of his daily life.

1.4. NEED FOR COMFORT

We can define the word "Comfort" as the natural response to different subjective & objective stimuli and which can not be accurately determined due to the fact that in each case, the intensity of one's response depends on one's subjective level of adaptation.

The subjective stimuli concerns the visual sensation; personal space, color atomosphere, perferrences, background and habitual environment.

The objective stimuli concerns the physical comfort which is the result of the luminous environment, the sonic Environment, The thermal environment, arrangement of furniture according to human scale and human confort.

In the subjective stimuli we can begin by dealing with the visual sensation; the perception of each person differs according to his past history & environment.

Visual sensation, concerning personal space, is mostly derived from the personality of the person. [1]Journalist Herbert Jacobs concluded that people in dense crowds (to feel comfort) need to have six to eight square feet each, while in loose crowds, with people moving in & out, there is an average of ten square feet per person.

1. Robert Sommer, "Studies in Personal Space", Sociometry, XXII (1959), 247-60 Magazine.

Yet spatial invasions are not uncommon during police interrogations. One police textbook recommends that the interrogator should sit close to the suspect, with no table or desk between them, since "an obstruction of any sort affords the subject a certain degree of relief and confidence not otherwise obtainable".

[2]Generally in normal conditions it was found that introverted and anxious individuals sat further away than extroverted individuals with a lower anxiety level and that is why most Schizophranics generally kept greater distance between themselves and others than did non patients. But

2. William E. Leipold "Psychological Distance in a Dyadic Interview" (Ph. D. Thesis, University of North Dakota, 1963).

another study showed that some schizophrenic patients sat "too close" and made other people nervous by doing this. However it was more often the case that schizophrenics maintained excessive physical distance to reduce the prospects of unwanted social intercourse.

Another example are the library patrons, some like to chat while they read and prefer to have refreshments close by, and new libraries often contain special rooms to satisfy the needs of gregarious readers as well as to get them out of the way of people who prefer quiet and solitude.

[3]Anthropologist Edward Hall has described how people from different countries may differ in the sense of comfort in the language of space; what Americans experience as crowded, Latin Americans may perceive as spacious. Furniture in the American's home is placed around the edges, but the japanese family gather in the middle of the room.

Even in classes, the design of personal space to induce comfort is important for example, a large majority in the small classrooms complained that their rooms were too crowded, noisy, cramped, inflexible, and unsuited for a variety of activities. [4]According to Howard Rolfe all of the teachers in the large classrooms expressed satisfaction at room size, and the majority expressed enthusiasm for the total classrooms enviroment. In their opinion, the large rooms with portable chairs made teaching easier and gave them a feeling they could do more. "They appreciated their classrooms as comfortable, inspirational places to teach. Their classrooms made them feel there was no limit to what they could do if they desired. They said there was space for large and small group work, for dancing & for project work."

We can thus reach the conclusion that every person according to his personality and background, and in different circumstances, feels comfortable by enjoying the personal space he requires (among other factors).

Secondly we can mention the colour atmosphere. Colour

3. Robert Sommer "Personal Space" The behavioral Basis of design (1969). Book

4. Robert Sommer, "Studies in Personal Space," Sociometry, XXIII (1959) 246-60 Magazine

atmosphere. Colour is the most subjective element in the individual's choice of decoration, no two individuals have quite the same colour preferences, however generally the starting point is to decide on the general style or character of the decorations which depends on the existing character of the architecture, and the personal artistic preferences of the occupants, and the way in which they propose to live in the house.

Even every room should have its own personality. For example in the bedroom the element of restfulness is the main aim. That could be achieved by deep, rich hues giving them full decorative value with well designed artifical lighting.

In the children's room to obtain the maximum comfort and successful decoration, we may choose bright colours & natural textures. To dominate the colour schemes in children's room and to be quite sure that each child, according to his own personality, will like it and feel comfortable in this kind of decoration it would be preferable to leave large plain areas within the child's reach, where he can draw the childish patterns & vivid colours of his own design. Given such a background, children will create their own environment of fantasy & decoration, with a vitality & imagination which is often lacking in adult decoration.

However Colour Atmosphere & preferences is more widely discussed in the chapter (Colour).

Thirdly the Background and Habitual Environment; by Backgound & Habitual Environment we mean that in the house of country people, according to the way they have been reared and due to the atmosphere of open air and greenness of land, they will feel comfortable in mellow, low tones complemented by comfortable pattern rather than colour, with restful lighting with the combination of rough earthenware tiles & every ornament in its natural colour & texture; while a modern apartment for young people living a mechanical life & hard work, would choose light tones and high modern furniture to induce a feeling

Task Surface Illumination Levels (Typical Recommendations)

		Casual Visual Activity 0-30 ft-c	Moderate Visual Activity 30-75 ft-c	Extended Visual Activity 75-150 ft-c	Difficult Visual Activity 150-250 ft-c
GENERAL					
Circulation:	Corridors, escalators, elevators, stairways	———	○		
	Lobbies	———	———	○	
	Locker-, toilet-, and wash-rooms	———	———	○	
Storage:	Inactive; active (rough, bulky items)	———	———	○	
	Active (medium-sized items)	———	———	———	○
	Active (small-sized items)	———	———	———	———
OFFICE					
Office work:	Reading, transcribing, filing	———	———	———	○
	Accounting, auditing, tabulating, business machine operation	———	———	———	○
	Cartography, design, drafting	———	———	———	———
Conference:		———	———	○	
SCHOOL					
Classrooms:	Classroom work, library, study	———	———	○	
	Manual arts, drafting	———	———	———	○
	Sewing rooms, laboratory benches	———	———	———	———
Assembly:	Auditoriums, cafeteria, gymnasiums (exercise)	———	———	———	○
	Gymnasiums (exhibition games)	———	———	———	———
STORE					
Service areas:	Merchandising areas	———	———	———	○
	Showcases, displays	———	———	———	———
INDUSTRY					
Inspection:	General inspection	———	———	○	
	Difficult inspection	———	———	———	○
	Very difficult inspection	———	———	———	———
Assembly:	Medium assembly	———	———	———	○
	Fine assembly	———	———	———	———
Woodworking:	Sizing, planing, rough sanding, medium machine and bench work, glueing	———	———	———	○
	Fine sanding and finishing	———	———	———	———
Printing:	Composing room, font assembly, sorting, machine composition	———	———	———	○
	Proofing, proof-reading, routing, macking, finishing, tint-laying	———	———	———	———
Wrapping, packing, labeling:		———	———	———	○

of comfort and relaxation.

Another example is people from different countries & different habitual environment, these will adapt, each different standards by which he evaluates the comfort he desires; for example in the early years of 20th C for many years, the Egyptians insisted upon having in each one's apartment three & four rooms for their different utilities; a dining room, a living room (salon) for visitors & another living room for the occupants of the house so that the female occupants were not seen by the visitors and privacy could be obtained at need and in addition to these rooms there also two or three bedrooms according to the number of children present.

While at the same time in European countries the design of most houses was one big living area with different alcoves of different spaces for quick and active action, due to the fact that all members of the family were working & spent the least possible time in these utility alcoves, their leisure time being very limited.

As for the objective stimuli we can begin by dealing with the luminous enviroment; perception of the luminous background is interpreted largely through the dominent brightness relationships yet excessive brightness(contrast) or excessive background conditions can temporarily cripple vision by destroying the observer's ability to adequately perceive a task, an obstructure, an object, or a space. See Fig. 1.

Luminous environment and illumination level to achieve the optimum comfort is changeable according to the kind of task accomplished within this environment and this can be seen in detail by the following. The sonic Environment: The individual's psychological tolerance for background noise will depend on:

(1) His conditioning,
(2) His ability to maintain his concentration at a given point in time,
(3) The information conveyed by the sound.

In the latter category, there is evidence that noises which mystify the occupent are more likely to become annoying than are sounds that can be easily located and identified by the listener.

Echo in a room or a hall

is very annoyable and most successful buildings have been designed after considering this item very accurately for e.g. any circular hall should be designed with its centre of the circle outside of the hall. Any rectangular lecture hall should be designed with broken walls so that the reflected noise does not meet in one point resulting in Echo. The ceiling and walls should be treated with absorbant materials absorbing the sound and even the ceiling is usually designed as broken louvers between which artificial lighting could be designed. Carpeting and human clothing are absorbant materials and affect greatly in diminishing echo If we design any building we should put in mind the Sonic Teritoriality of each person that is there should be about 20 to 60 ins between two individuals for personal communication and about 8 to 20 ins for confidential communication as for the space in a hall there should be a physical proximity of about 8 to 20 ft for Group adress.

The Thermal Environment; [5]Depending on the part of the world in which he practises, the architect must design his buildings so that they successfully create conditions of comfort, by keeping out the wind & the rain, the cold or the heat. Conditions of comfort are created by keeping first the temperature between a certain maximum & minimum & by also keeping the amount of moisture in the air as far as possible within a certain range. In certain parts of the tropics it is also necessary to encourage movement of air to maintain comfort.

First the Architect must understand the type of climate with which he is dealing. It is impossible to estimate the climate only by temperature reading for humidity must also be considered.

Air conditing, which is a mechanical & costly method of creating an artificial climate within the interior spaces of a building is used in the tropics to produce conditions of comfort by reducing both temperature and humidity.

In the tropics thick heavy concrete sun breakers are used, because they are

5. Danby. Grammar of Architectural Design.

mble of a dense material, absorb a lot of heat from the sun's rays which is given off for a long time after the sun has gone down. Concrete takes a long time to heat up but once it has been heated it radiates heat for a long time after the heat source is removed. If a building with thick solid stone or concrete walls and a single roof slab is situated in a hot dry zone where the nights are cold, the fact that the walls and roof continue to radiate heat during the night can be an advantage.

In a hot humid zone or wherever the nights are warm and humid, a building constructed in this way can be absolutely intolerable during the night. A different sort of roof construction is essential. A very suitable material is sheet aluminium in corrugated or other similar section. The air immediately below the roof sheeting becomes hot so we must arrange cross-ventilation so that the hot air is quickly removed & replaced with cool air. A double roof may be formed with an open cross ventilated air space between the two layers. The double roof may be constructed with aluminum or asbestos cement roofing sheets supported on timber truses with a timber or soft board ceiling attached to the underside of the trusses. Two concrete slabs also could be used, the upper one formed like an umbrella e.g. le corbusier's work at Chandigarh-in India.

In the hot wet areas, the most favourable method of avoiding ground radiation during the night is to raise a house off the ground & support it on columns.

Lastly we may discuss the arrangement of furniture according to human scale & human comfort. Of all equipments used in buildings, furniture is the most intimately related to the human figure. A chair whether it is a simple office chair or dining chair or an arm-chair designed for comfort & relaxation, must be carefully related to the various parts of the human anatomy with which it comes in contact.

The British Standards Institution made a survey of office chairs in 1958 and defind that: Seat height from floor 14-18 ins.

Seat depth back to front 16-24 ins.
Back height from seat 16-26 ins.

By tabling down all the measurements of the human being as has been done by Le Corbusier (The Moduler), explained in chapter of proportion, the design of any furniture could be done to satisfy the requirements of human activity.

The design of utility equipments or furniture should be placed at the right height & easily reached by the occupants of the house to minimize as much effort as possible for example [6]a housewife uses much effort of carrying, thrice daily, dishes from a kitchen to a dining room and back, and it is safe to assure that the shorter & straighter the route the better she will like it. The housewife would be more efficient if she reaches her aim with her arms horizontal, than if she had to reach it above shoulder height.

At the same time the dimensions & design of furniture should be changeable according to the user's age.

6. A.S. p. 260, 4 Aug. 1971

CHAPTER:2-PHOBIAS AGAINST PSXCHOLOGICAL BALANCE

2. PHOBIAS AGAINST PSYCOLOGICAL BALANCE

[1]Phobias are peculiar absurd fears that the person feels but is unable to explain or overcome. The judgement on which such feelings are regarded, as normal or abnormal, depends primarily on the degree to which they incapacitate or distress the individual and on the extent to which he understands the origin and significance of the fear.

In this chapter Phobias are dealt with according to otherwise normal individual and how they experience phobias and why ?

There are many kinds of Phobias e.g.
Agora Phobia: Fear of open places.
Claustro Phobia: Fear of closed places.
Acrophobia: Fear of high-places
Nycto Phobia: Fear of darkness.
Ochlophobia: Fear of crowds.
Zoo Phobia: Fear of animals or of a certain particular animal.

2.1 AGORA PHOBIA: Fear of Open Places.

We can say that due to social or economical or climatical reasons, or all of them, some sort of a huddled or clustered Housing might occur which in turn results in the dweller's acquaintance with certain limits in space; thus, out of these limits in space, Agora-Phobia is born and developed in such a dweller.

Examples of Agora-Phobia can be seen in Siwa Oasis through the case of the old city of Shali where the whole city was a cluster of housing on a rocky hill, and due to the intensity and increase of the population they had to

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1. Abnormal Psychology. A clinical aproach to Psychological Deviants. By: James D. Page, New York & London. McGraw Hill Book Co. Inc. 1947.
   Dictionary of Psychology. Edited by: Howard C. Warren. Houghton Mifflin Co.
   Psychology
   The study of man's mind.
   Contributors:
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remove some of the families to live in the open valley beneath.

The result was, that the removed families and especially the old aged were very unhappy, being for long years acquainted with confinement and clustering, and absolutely refused to dwell in this open new environment. See Fig. 1

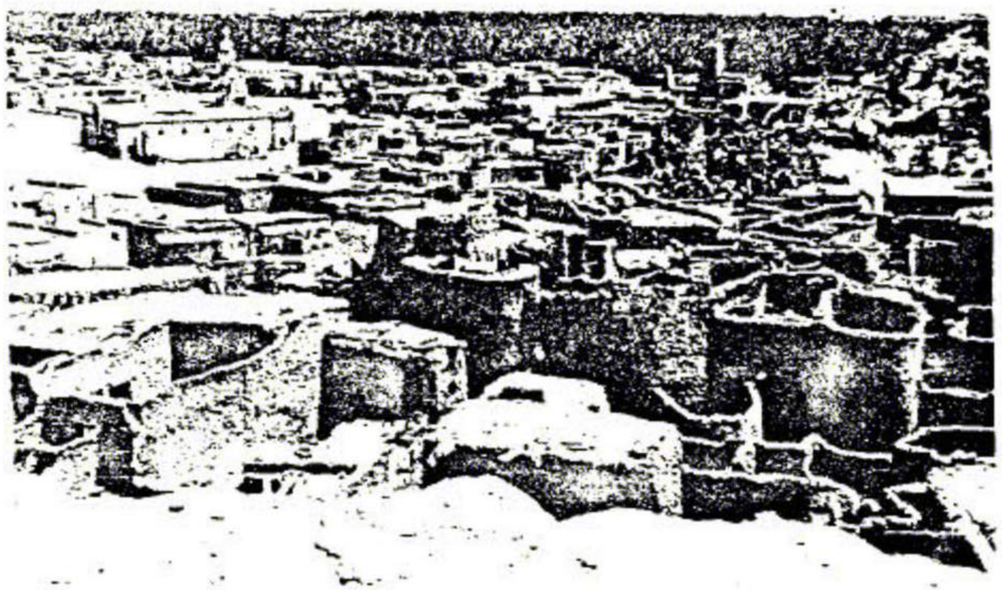
If any person watches a small child, he will notice that children always crawl under tables and chairs that the child looks for a confinement to match his scale.

[2]"Child Concretizes its oxistential Space".

Le Corbusier tried to

2. New Concepts of Architecture. "Existences, Space and Architecture" Christian Norberg Schulz.

a.



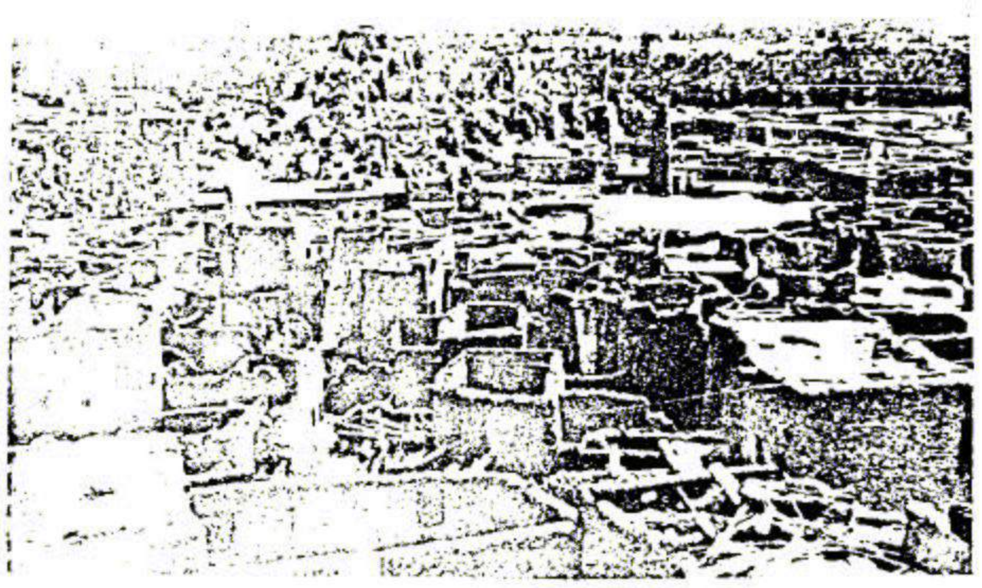
b.

Fig. 1 a,b Old City of Shali, Siwa Oasis on a rocky Hill.

Reff. (Photo taken)

c.

Fig. 1.c New city of Shali, the new building in the open Valley.



d.

Fig. 1.d Oldcity of Shali, Siwa Oasis on a rocky Hill.

induce a feeling of enclosure in the Unite d'Habitation at Marseilles in the planning of the parapet around the children's playground on top of the building. The inclination of the parapet was for the purpose of giving the child the feeling of being confined in a space; due to the presence of hills near the building. That is the inclined parapet gives a grading realization of the hills height and brings them nearer so that the child feels he is playing within an enclosure on the ground. Fig. 2.

[3]In the towns of the middle ages the streets were never left with open vistas, but were designed to always

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3. Housing development for industry.

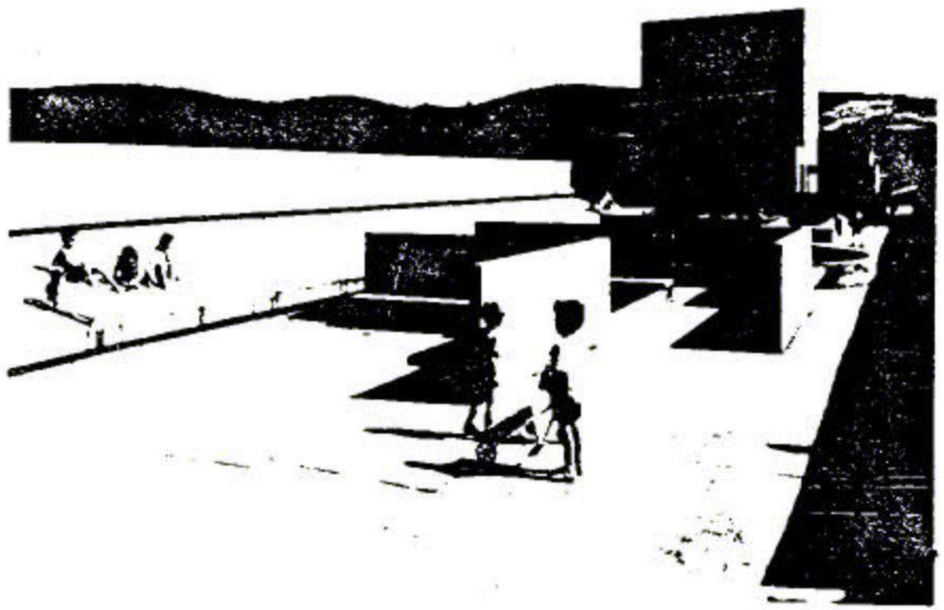


Fig. 2. Unité D'habitation at Marseilles.
The roof of the Building a playground for children.
Reff: Architecture. The Appreciation of the arts/1 Sinclair Gauldie

have a feeling of enclosure and, almost, always with a building of some importance as a focus on the turning point of the street; and a visual transition inducing at the same time a continuity of differentiated spaces. Fig. 3

Thus we can say that the architects must put in mind always to have a feeling of enclosure, but at the same time suggesting visually a continuation of space in the form of a succession of variated and differentiated, streets and squares. Therefore the Arabs solved their design of streets curved, so that at every step there is a feeling of enclosure with a different view and a continuation of space.

In the Pharaonic period another symptom of Agora Phobia is that the people could not bear to leave blank spaces without filling it with Bas-relief and Hieroglyphs, but we can at the same time say that in this way they helped in solving another visual problem which is the problem of the near scale. That the observer should also find new points of interest at the near scale of the building.

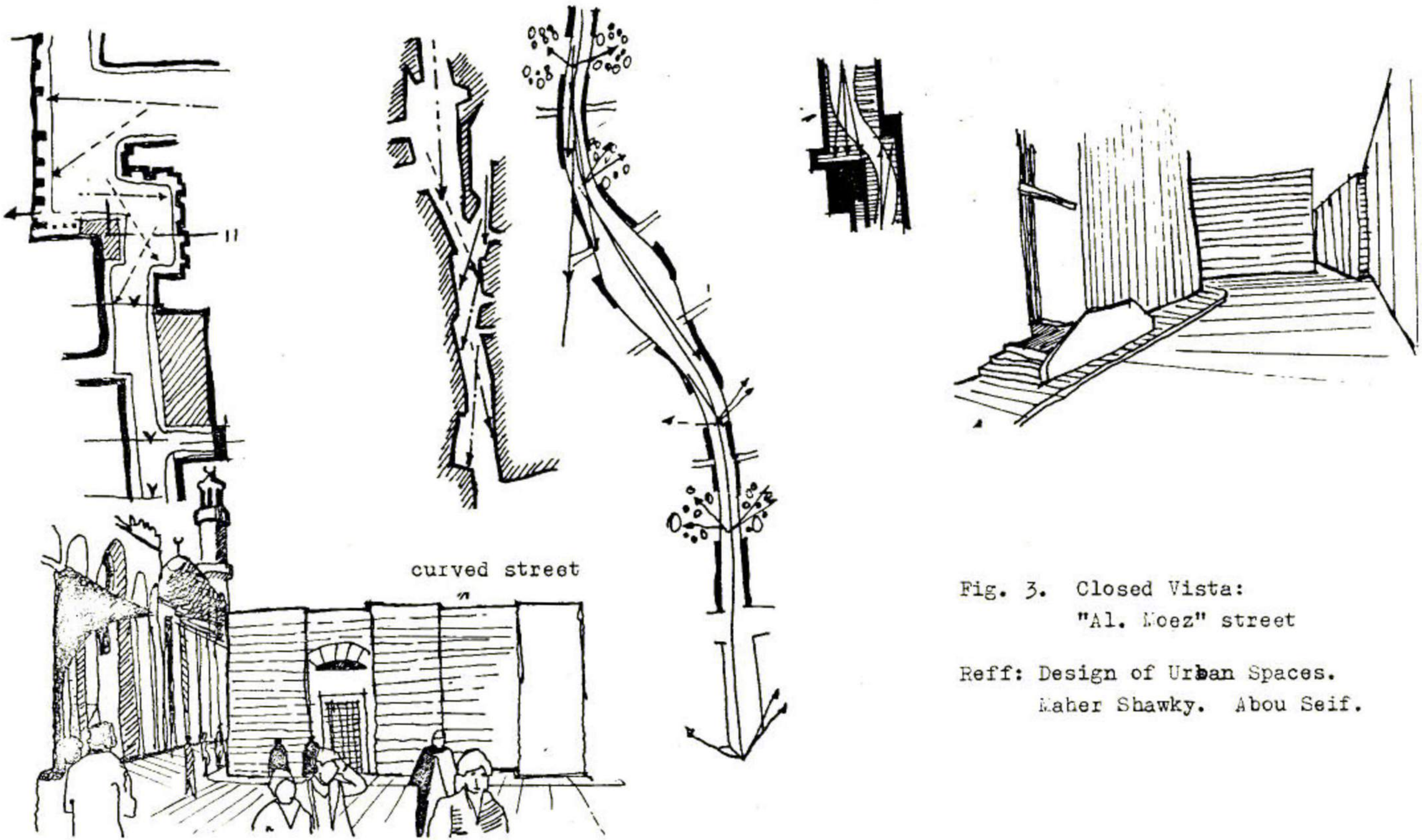


Fig. 3. Closed Vista:
"Al. Moez" street

Reff: Design of Urban Spaces.
Maher Shawky. Abou Seif.

The Arabs also filled with Arabesque geometric patterns and fleuristic patterns. The Arab due to his tiresome life in the desert, although he is acquainted with it, yet he gives his back to the severe side of such spaces, (heat, dust, sand storms, monotonous view, glare) and accepts only the soft and soothing side of such spaces, that is why he closes his house to the outside and turns it towards an open court and pathio, open to the sky, which he changes to a man - made paradise by using certain refreshing elements, greenery & water; that is why he sleeps on the roof with his face upwards to the endless sky, cool, enjoying the summer nights. Also the Pharoes used the roofs of the temples for festivals in the summer cool nights.

However, we can say that the inhabitants of old quarters or industrial slum areas, with their mixed social life and confined spaces, are never satisfied with big spaces and open views in newly planned Housing projects.

2.2 CLAUSTRO PHOBIA: Fear of closed places.

We can begin speaking about Claustrophobia by pointing out that those human beings acquainted all their life with open and wide spaces, are apt to feel Claustrophobia when they are obliged to change their environment.

One of the most apparent examples is the Fallah and the immigration of large numbers of fallahins to the city and their uneasiness with small confined rooms and narrow streets and limited views.

Another example in the Omayad period is that the Omayad Caliphs and princess could not bear to live in their palaces in the middle of the city of Damascus and built small rest palaces (horror - vacui) for chase isolated in the Syrian Sahara far from the city; and due to their insistence on cleanliness they built baths attached to them. e.g. Kusir Amra Fig. 4., Hammam El Sarkh Fig. 5., Kasr Kharana.

Generally speaking we can say that in the hot regions (hot, dry & hot wet) usually

Fig. 4. Qusayr: "Amra". Plan.

Reff.: A short Account of "Early Muslim Architecture". K.A.C. Creswell
Librairie Du Liban

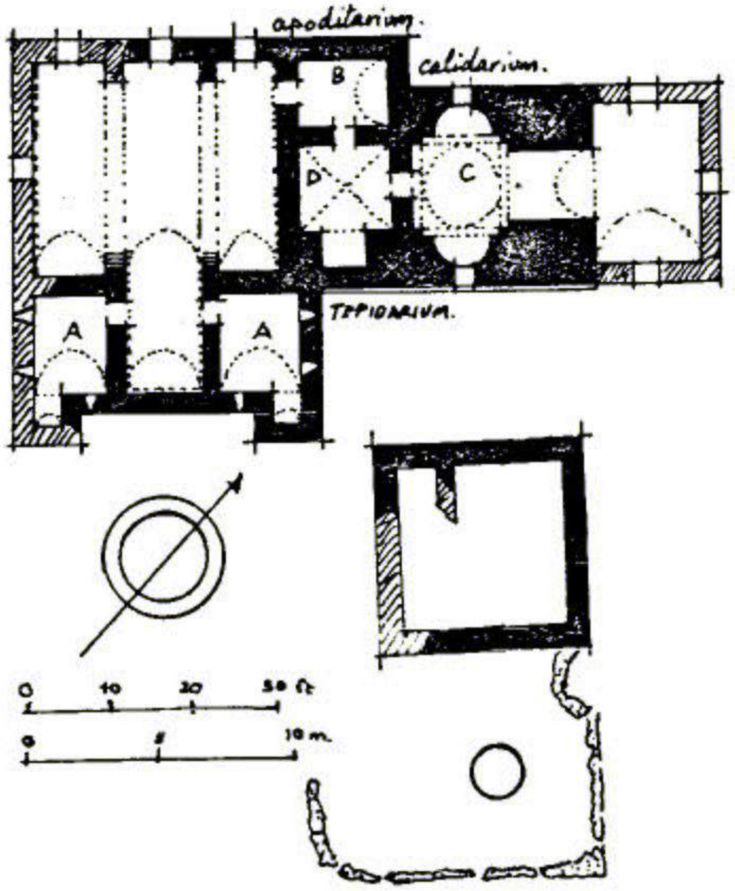


Fig. 5.
Hammam as-Sarakh

Reff: A short account of Early Moslim Architecture. K.A.C. Creswell.

the cieling is designed high for climatical reasons and in the cold regions cielings are designed low to be heated economically and easily

This resulted in the people's acquaintance with this certain height, therefore ending in either Claustro phobia or Agora phobia.

If we look backwards we will see that from old ages rooms very small scales 1 x 1½ meters (prisons) were used for severe punishment and even in

convents small rooms were used for solitude, although they were really used for the torture of one's soul, so that he would be more near to the almighty, but that is really due to the fact that the smaller the room, the more close it will be to the coffin and the person feels suffocated.

This problem can be solved by opening the rooms on each other to give the feeling of more open space and this new movement began by Frank Lloy Wright as in Sturges House at Brentwood Heights. California (1939).

The main aim was for economical reasons and at the same time helped in solving the feeling of Claustrophobia.

[4]However, the height of any space with respect to its width was especially taken into consideration to avoid Claustrophobia. e.g. Cordova, the great Mosque 585 ft x 410 ft. Fig. 6

If a big space have a small height, then Claustrophobia could be avoided by differentiating it into smaller spaces. e.g. restaurants with small heights are divided into alcoves to avoid Claustrophobia and at the same time to maintain privacy in eating. Also, Claustrophobia could be solved by mirror walls or different colour planes; cold

4. The History of Architecture.
Sir Banister Fletcher.

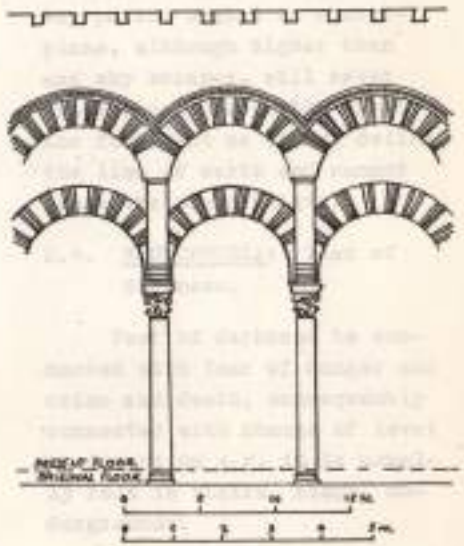


Fig. 6. Cordova: The Great Mosque
The Construction of arcades.
Reff. A short Account of Early Moslim Architecture K.A.C. Creswell.

colours recede, while warm colours protrude.

Yet Claustrophobia is mostly felt by small children in the age of action and the age of playing (begining at 4 years old), in any room with any space they will feel the walls closing in on them and the only way to make them feel at ease is by designing for them large play grounds.

2.3. ACROPOLE-PHOBIA:
Fear of high places.

That is in high buildings. especially for those who have always lived in the greenery and in the desert where almost always horizontal planning is their most, Acro-Phobia is experienced on rising in more than one storey.

However, this feeling could be avoided by many treatments in the parapet: either by gradually rising the height of the parapets with the gradually rising from the gound. Secondly by widening the parapet so that the observer's view is always upwards or horizontal.

Thirdly by the inclination of the parapet for the same aim e.g. Le Corbusier's Unite d'Habitation at Marseilles. Fig. 2

Thus the main aim is to protect the observer from looking down.

If we want to understand Acro phobia, we will find that the basis for this fear is the result of ground gravity and the fear of falling, therefore we can say that if the observer does not see the ground or feel the height he will never experience Acro-phobia. e.g. Any person seated in a aeroplane, although higher than any sky scraper, will never experience Acro-phobia due to the fact that he cannot define the line of earth and cannot sense the exact height.

2.4. NICTOPHOBIA: Fear of darkness.

Fear of darkness is connected with fear of danger and crime and death, consequently connected with change of level or direction e.g. it is usually felt in stairs, ramps, undergrounds.

Thus we can solve this kind of phobia by strong lights and in places designed for the maximum light in the most needed points "For lights on the

sides of the stairs of any dark spaces. e.g. Night clubs, Cinemas, Theatres, Restaurants.

In the Middle Ages, prisons were built in the undergrounds, and darkness was used as a tormenting element reflected from the feeling that one lies in his coffin in the darkness.

We can notice that in any country when a part of street has been designed with an under pass and an over pass, we will find that the underpass is preferably for cars and the overpass for pedestrians due to the fact that the quick flow of cars permits the person to spend the least time in the darkness of the underpass especially if it is not sufficiently lighted.

CHAPTER:3_ILLUSIONARY PERCEPTION OF ARCHITECTURAL PRINCIPLES

3.1. ILLUSIONARY. PERCEPTION OF PROPORTION & COMPOSITION

3.1 PROPORTION & COMPOSITION IN ARCHITECTURE:

PROPORTION

[1]It is held by many persons that there is a definite arithmatic of beauty, and that it should be possible to discover some relationship of mathematical values, some curves or geometrical forms, through the use of which, it would be reasonable to synthetize beauty with mathematical accuracy.

Theorists have ascertained that there is a certain relation, based on numbers or on geometric forms, which helps in laying down guiding principles in proportion and it has been proved that certain well-known buildings or ornaments, of architectural beauty, bear in the setting out of their proportions a proved relationship to geometrical figures, such as, for example, the square, the circle, the equilateral triangle, or the parabola.

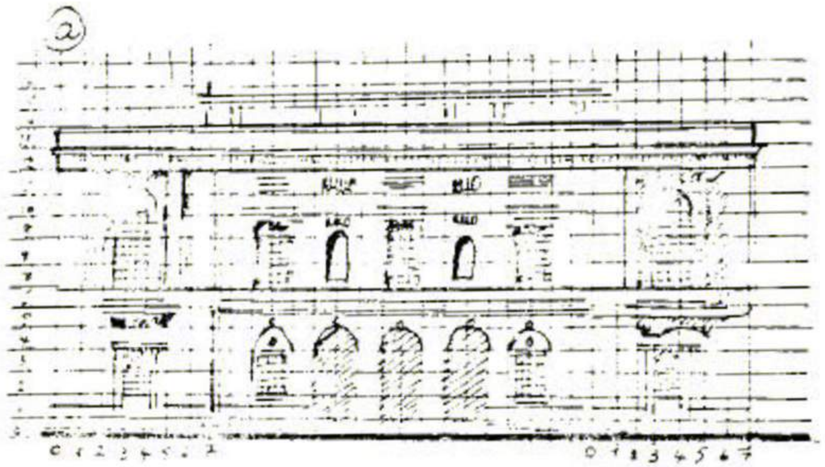
[2]The cardinal points of the building's contours or silhowette are found to be contained within such figures, or the perimeter of these figures coincides with certain focal points of the building-design. e.g. used by M. Francois Benoit & Claude Bragdon Fig. 1, 2, 3.

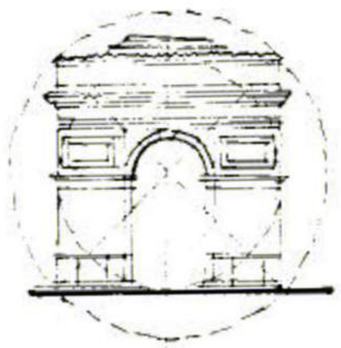
As soon as an architect begins a design for a building, he must decide the dimensions of the spaces of that building, in terms of feet and inches or meters depending on the system of measurement in his country. Already he is dealing with the question of proportion and scale. As soon as he puts a dimension to plan and elevation, he is creating the proportions of walls and floors and creating the space of a defined extent.

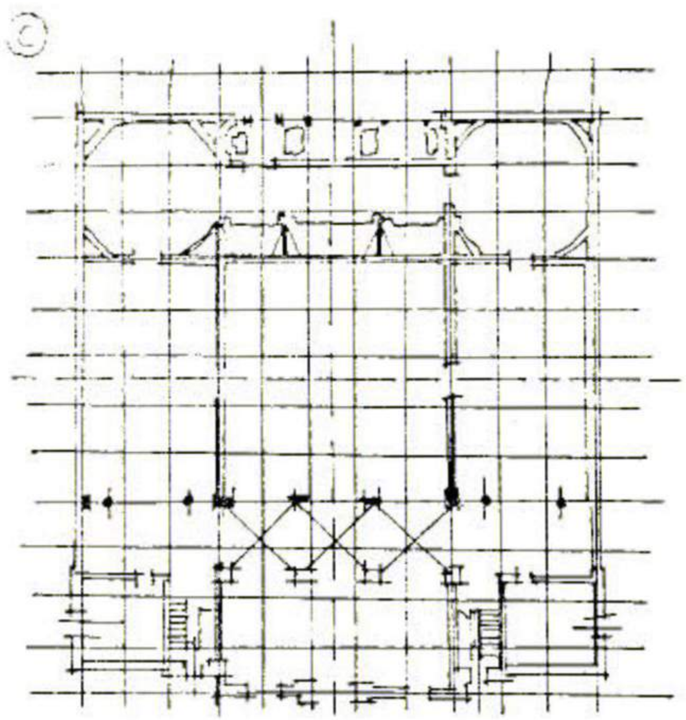
We are most concerned with human scale in architec-

1. The principles of architectural composition. London, The Architectural Press. Howard Robertson.

2. Grammar of Architectural Design. Danby - Oxford. London - Oxford University Press New York, Toronto







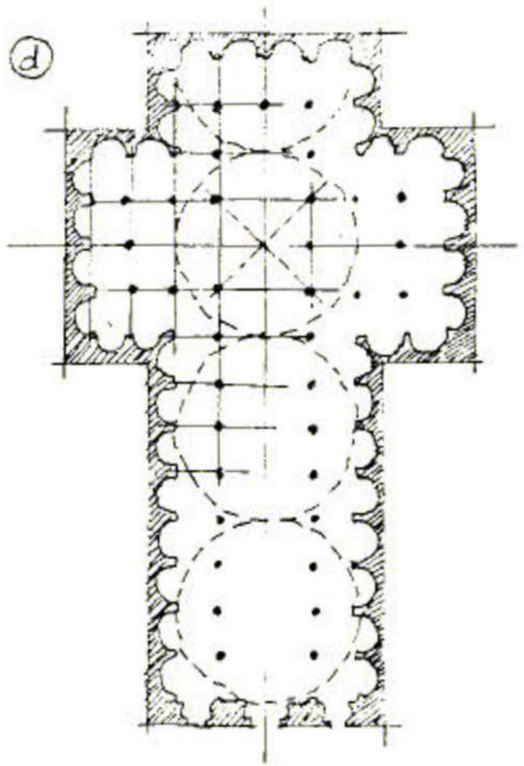


Fig. 1.

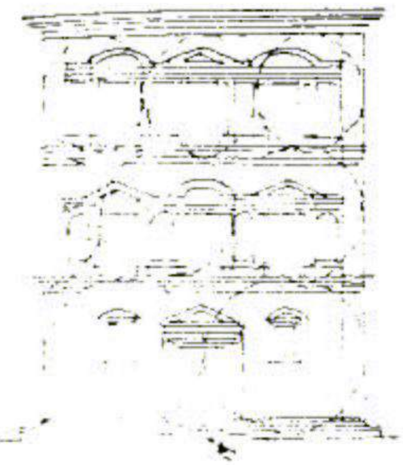
a) Illustrating the use of squared paper in determing the general proportion of the elevation.

b) Goemetrical basis of the Arc de Triomphe, Paris. Stabelity by use of the square and circle.

c) Illustrating the use of squared paper in determing the general proportion of a plan.

d) Brunelleshi's church of san spiritio in Florence. Analysis of geometrical proportions in presence of the square as a basis for setting-out.

Reff.: The Principles of Architectural Composition by, Howard Robertson.



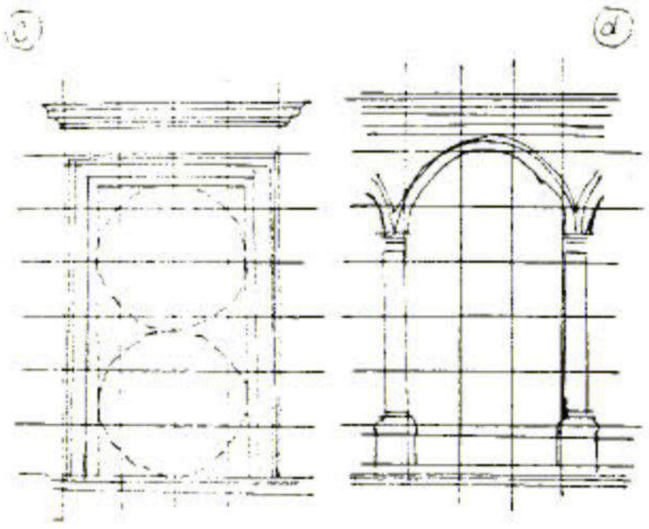


Fig. 2

a) Triangular setting-out in the caryatid Porch of the Erechtheion

b) Geometrical proportions in the Palazzo Bortoloni in Feorence

c & d) Geometrical relationships in details. Window and arcade from Italian palaces.

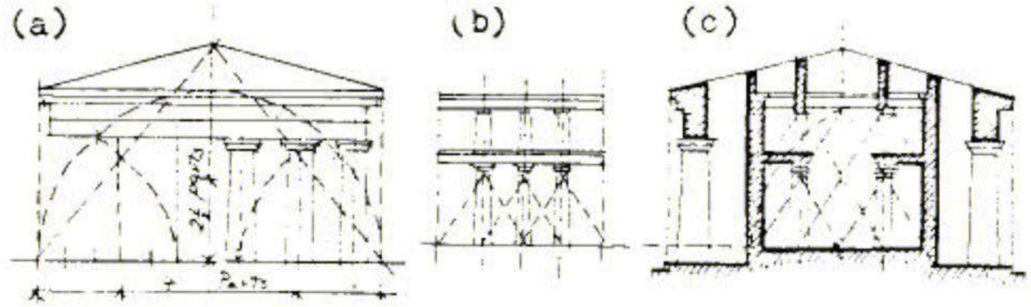


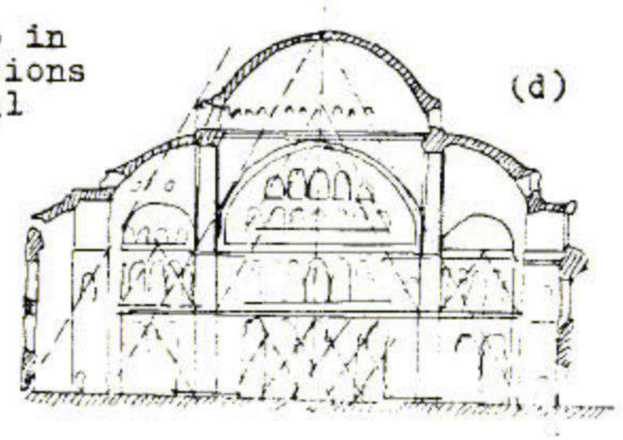
Fig. 3.

a) The presence of the triangle in the Greek Proportion. Facade of a Temple of Poseidon at Paestum.

b & c) Longitudinal and transverse sections of the same.

d) The presence also in byzantine proportions of the equilateral triangle.

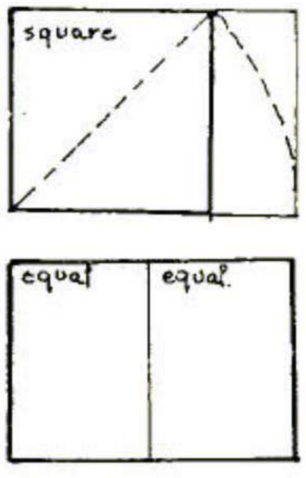
Santa Sophia in Constantinople.



ture that is to say the comparison of the proportions of a human figure with the spaces and proportions of buildings. A design built up by the use of squared paper, or of which the main proportions are reached to by utilizing, for each dimension, a certain relationship of squares, would result in the establishment of a certain rhythmic harmony.

The proportion of a rectangle can be judged by considering the angle of its diagonal to the horizontal; one particular rectangle, the $\sqrt{2}$ rectangle, has a special property.

The $\sqrt{2}$ rectangle can be divided into two equal parts across the long side and these two parts will be found to have each the same proportion of the main rectangle and the smaller divisions will realize the same proportions in smaller scales. This special property $\sqrt{2}$ rectangle has been used in forming the International Standard paper sizes. It is also considered by many architects that $\sqrt{2}$ triangle has particularly pleasing proportions. Fig. 4.



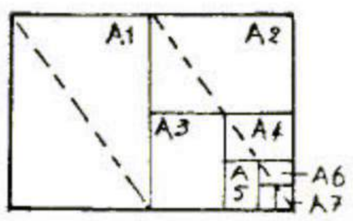


Fig. 4.
$\sqrt{2}$ triangle

Another rectangle frequently used in architecture is the double 1:2 Fig. 5. The double square forms the mathematical basis of the traditional Japanese house.

Because of the frequency of the earthquakes in Japan, the traditional house is of very light construction, consisting mainly of timber frames and paper panels. Fig. 6

The planning of the house is based on the size of the Japanese sleeping mat which is 6 ft. x 3 ft. Various combinations of this rectangle from the plan of the house and the size of each room is known by the number of mats used (four mat, ten mat room, and so on). The wall panels, some of which slide apart instead of hinged doors, are based on the 6 x 3ft.

rectangle as well as the floor plan. The traditional Japanese house is therefore designed also scaled to the human figure, that is, the scale being large for a Japanese to sleep on.

Le Corbusier had always been interested in the relation between mathematics and form and developed his system of "Modulor".

The system based on a particular ratio which can be expressed as follows a:b\b (a + b). A rectangle with sides band a + b. The ratio known as the "golden section" was used by Greek mathematicians yet one must note that the importance of the golden section to the human being is due to its presence in himself and because he sees it in many constituents in nature, the ess. sea shells, leaves.

It is possible to have a series of numbers related to each other in this way and Le Corbusier wished to adopt a series of numbers so that he could use them for every single measurement in the design of a building e.g. 3, 5, 8, 13 21, 34, 55, 89, 144.

Le Corbusier demonstrates "Modulor" in the following manner. First take a square (sides 113 cm), divide two opposite sides and join the points of division dividing the square into two equal rectangles. With the diagonals of one of these rectangles as raduis, and the midpoint of one of the divided sides as centre, describe an arc to meet the bisected side produced at q. Joint. At e construct a line at right angles perpendicular to qe which meets the opposite side of the square produced at f. q f is then found to be 226cm. q c = 70, p F = 43 and q D = 183 cm.

183 cm is the dimension which Le Corbusier takes as the average height of man and 226 is the height of man with one hand fully extended above his head hence all other dimensions of the human being follow according to the Golden rule as shown (Fig. 7).

Proportion should also be taken into consideration in staircases and should always be related to the human scale.

The proportion of tread

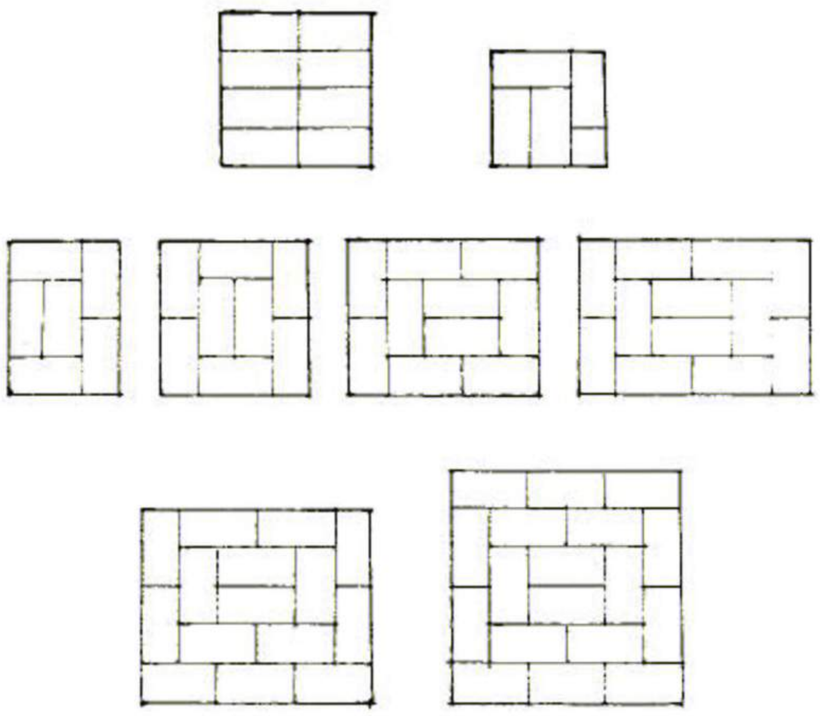


Fig. 5.

1 : 2 rectangle

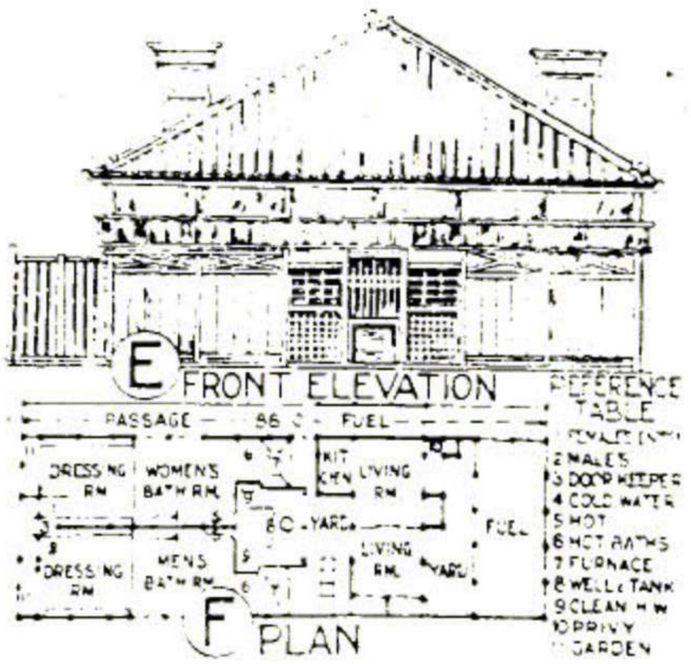
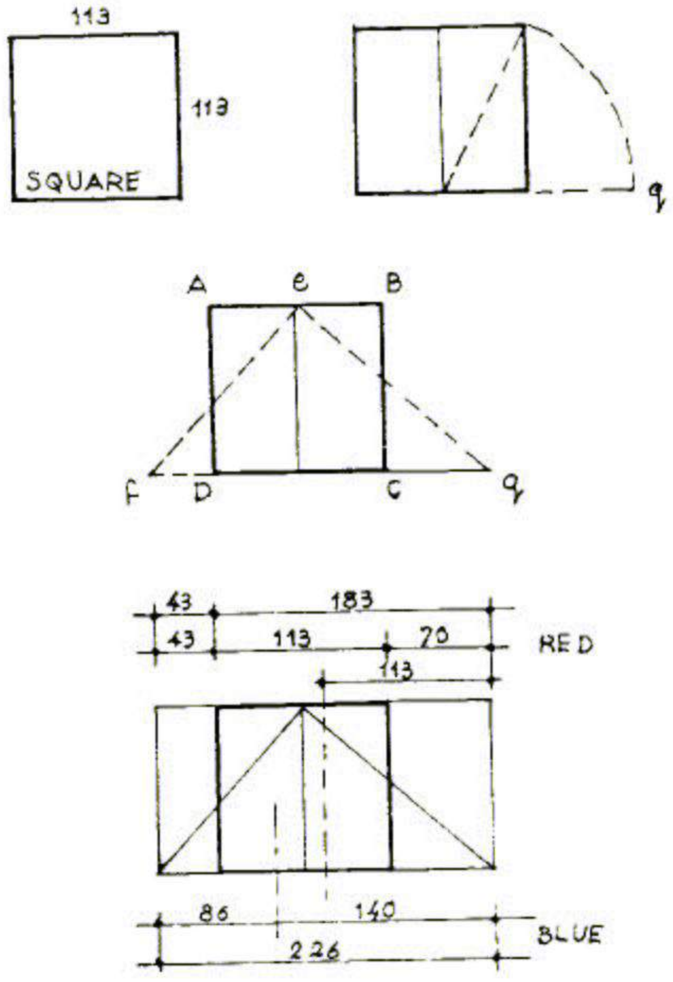
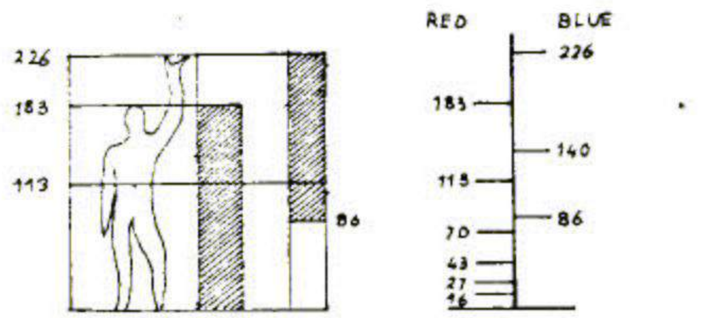


Fig. 6. A Japanese House

Reff.: A History of Arch. Sir Banister Fletcher.





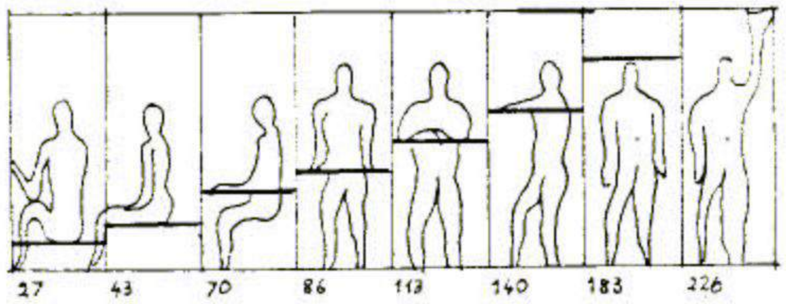


Fig. 7 The Modulor of le Corbusier.

Ref.: Grammar of Architectural Design. Darby

to riser are shown in diagram noticing that this proportion differs wether it is for grown-up or children according to the width of the human step. Fig. 8.

	A	B
PUBLIC BUILDINGS	12"	4"
NORMAL	10"	6"
DWELLINGS	9"	7"

Fig. 8. Relation of Tread to Riser.

The proportions of a standard door for example, the height and width of the door is determined by allowing enough room for the tallest and widest human figure to pass through and the position of the door handle is determined by the average proportions of the human figure i.e. the relationship of the length of the arm to the total height, because the handle must be at the most convenient height for operation by the hand. The size of the door is sometimes made larger than is necessary for other reasons; such as the door of a mediveal mikvah made wide and high enough to allow a loaded camel to enter, but although there is no functional reason for fixing a certain constant proportion between width and height of a door yet one, aesthetically, expects a door to be of a certain proportion regardless of size.

There are many possibilities of shape and design of a window and the architect has to make decisions concerning the proportions of the windows of the opening itself and of the subdivisions into panes (both fixed and open). The relation of the window both to the proportions of the walls, of the internal space, and to the elevation of the external wall must be carefully considered. A whole series of rectangles must be designed and their proportions duly in relation to each other.

The houses in Bedford Square London built in the 18th century, present an example of a faced that depends for its architectural effect

on the relation of the proportions of the windows and door openings to those of the brick wall in which they are formed. The relationship between the proportion of the window openings and that of the glass panes have also been carefully considered and contribute to the total effect. This facade is an interesting exercise in proportion which results in a harmonious relations of openings to solid wall. Fig. 9

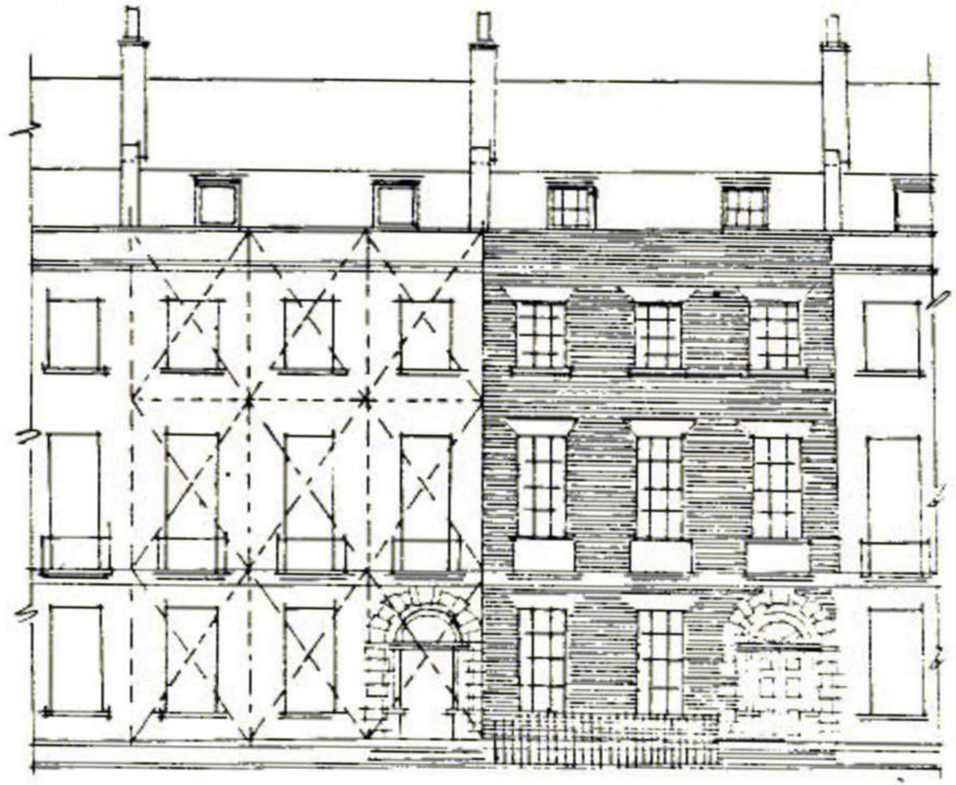


Fig. 9. Houses in Bedford square London.

Reff. Grammar of Architectural Design. Danby

As for proportion in the Moslim Architecture, their designers used different measurement systems of relative dimensions to achieve human dimensions. The finger (digit), the palm (hand breath) the shibr, the foot (Kadam), and the cubit (deraa). Fig. 10.

Their human modules were used by designers not in the search of architecturale means like the Greek and the Chinese one, but similar to Le Corbusier, depending upon practical and functional considerations mainly based on human, physical and psychological needs.

Simonds, J. Landscape Architecture.

Fig. 10. The human figure as a standard for measure units in the Moslim Architecture.

COMPOSITION

It appears to be a fact that the human eye is psychologically pleased by definite forms, because such forms can be readily grasped and understood, and by this property they produce an impression of general satisfaction. Regular figures such as the square, the circle, the equilateral triangle are all shapes of a frank character and give the feeling of stability.

It should be clearly understood that there are no limitations to the number of elements which may go to form a composition, as long as their grouping is arranged with a dominant or focal point of interest, the one to which the eye is first attracted and to which it naturally returns after an examination of various details of the composition.

The effect of grouping in composition, resulting in a focus, whose position is at the centre of gravity of the picture, is similar in principle to the composition of forces in mechanics.

A number of isolated forces in mechanics may be composed into a single force termed the resultant.

The direction and position of the resultant will pass through the centre of the gravity of the particuler group under consideration. In order that the composition should be satisfactory, the centre of gravity should not be awkwardly situated, for example, at the extreme edge of the composition, for the eye demands stability, and stability is best realized in an approximately central position, which is one most favourable to balanced arrangement.

However, it is important to note that there is a psychological human yearning for balance, because it is a born natural feeling induced by his physical stature. Colour, tone, texture, the strength and vigour of its design, have a strong effect on its value in the design, and we may therefore find a building, a large mass on one side balanced on the other by small but vigorous elements.

Yet on looking at compo-

sition in the design of a plan we will find that there are many principles which govern it and work in the production of a good plan. Abstract qualities to move the aesthetic emotional senses of the beholder and practical requirements to satisfy functional needs of the user.

However, the composition of any building depends on its nature. The more grandiose the building, the more monumental, orderly and dignified will be the appropriate treatment in the design of its composition. At the same time if the building is of a modest nature we have to resort to the final expression a simplicity and directness, suitable to the type of building.

In the study of monumental buildings we will almost always find secondry elements, which although providing interesting contrasts with each other, yet they are a mere repetition of the principal climax to which they lead and which must be of a strong and dominent character.

This strong and dominent character could be expressed by different emphasizing architectural features, that is, thickening the general dimensions of these features.

Nevertheless, Composition in plans are divided into three main categories.

The Symmetrical Composition, Balanced Composition, Asymmetrical Composition.

3.2. ILLUSIONARY. PERCEPTION OF SCALE

[1]We begin our discussion of scale with the observation that impressions of size are frequently illusion, they derive their final qualities from the relationships of sizes that are seen at the same time.

Architectural scale has always existed, and there are a few problems of scale that have not been solved in the monuments of the past by architects who were primarily interested in symbolism, in proportional systems, in utility, or in absolute standards oi beauty. But the study of architectural scale has been consciously undertaken and only recently stimulated by a growing awarness of the dependence of man's experience upon his own aptitudes and limitations.

That is we can say that the functional requirements of most of the great monuments of the architectural past have not been pressing; and the architect has considered them much less important than the expression of symbolism, intangible ideas and emotions.

[2]A few conceptions, may be said to have, governed the proportional systems of the Middle Ages & the Renaissance. Both Medieval & renaissance architect believed firmly in the Pythagorian Conception "all is number". The universe was thought to have a basic mathematical order in which the elements of fire, earth, water, ... etc. were represented by geometrical shapes, and that shapes that lent themselves to the evolution from one shape to another acquired a symbolic meaning in addition to their partical value. Fig. 1. Both conceptions - that of universe N° and that of a geometrical order which seen in the large, is an image of the Divine Order and seen in the small is the image of man's path

1. Architectural Scale
   Health Licklder
   Architectural Press.

2. Randolph Wittkower.
   The Architectural Principles in the Age of Humanism,
   London, 1952 PP.24-27.

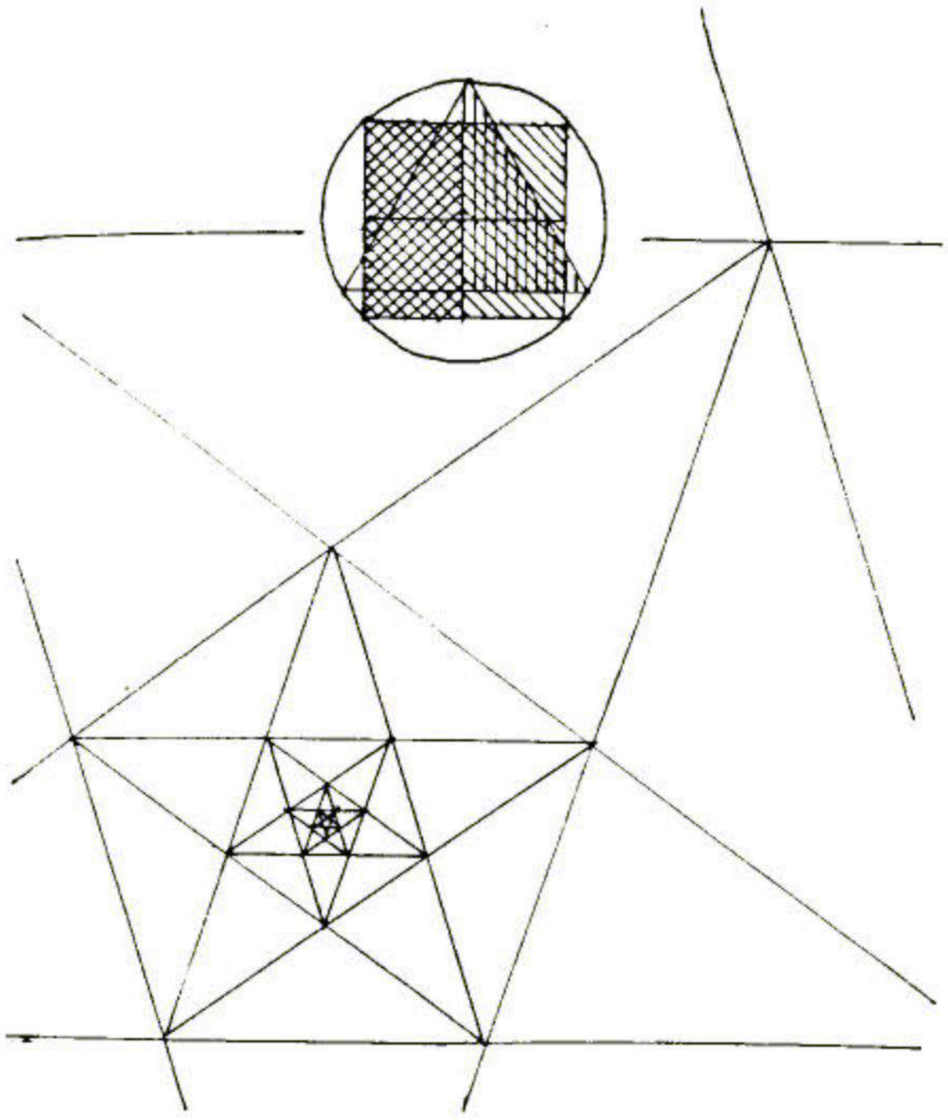
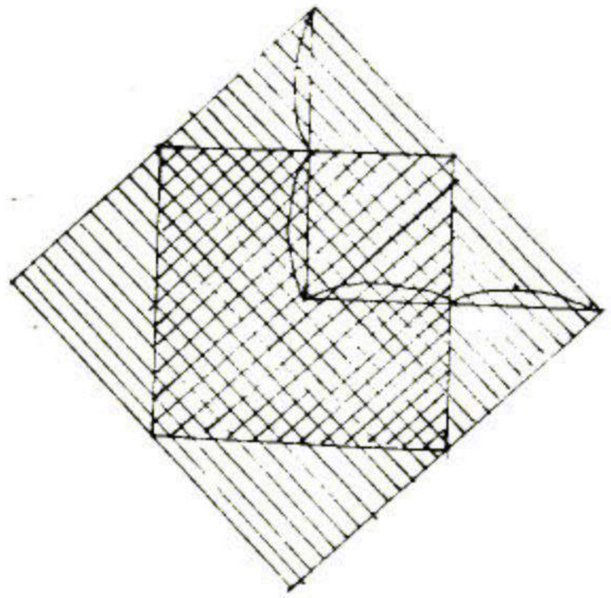


Fig. 1. Both conceptions endowed certain shapes with near-saercd meaning.

Reff: Architectural Scale. Heath Licklider.



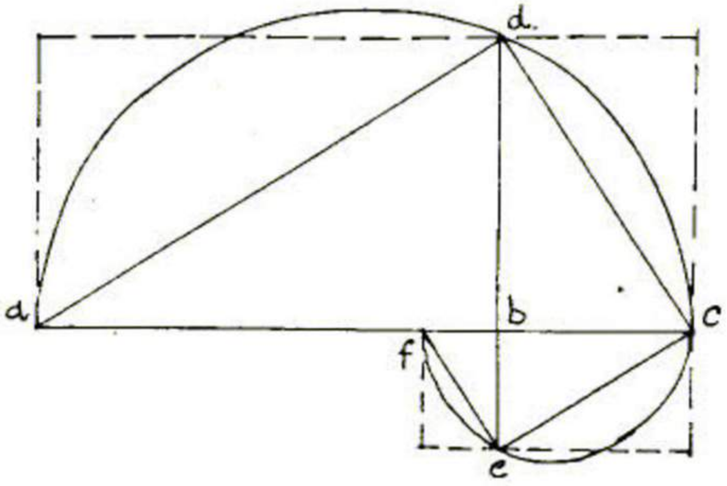
Doubling the area of a square

towards the Divine - endowed certain shapes with near - sacred meaning the square, the circle, the double square, the equiloteral triangle and its half triangle, the pentagon & the star formed by extending the arms of the regular pentagon. Fig. 1. The geometry in which a building was basred

attained such a religious significance that in the Renaissance, it was believed that if a church bas been built in accordance with essentuial mathematical harmonies, we react instinctively; an inner sense tells us, without rational analysis, that we percieve an image of the vital force behind all matter God himself.. It follows that perfect geometry is essential in buildings even if accurate ratios are hardly manifested to the eye.

However, many geometrical systems have been later adopted e.g. the Japanese system which has been described in a previous chapter and the Modular system of Le Corbusier also described in a following chapter. Le Corbusier, who is one of the most inventive living architects, and who is often a brilliant analyst as well, holds that the shapes of the golden section are those for which the good architect is consciously or unconsciously looking for. Fig. 2.

After examining some of the reasons for proportional system it is necessary to admit that this regularity is not always apparent to the observer. It can be said that the image reflected in the observer's eyes is stimulated by what lies before the eyes, but it is not at all an automatic impression. Even the simplest acts of perception involve a complicated matching of visual stimuli to a lifetime's store of remembered experience.



Extreme and mean ratios: $\frac{bd}{ab} = \frac{bc}{bd} = \frac{be}{bc} = \frac{fb}{be}$

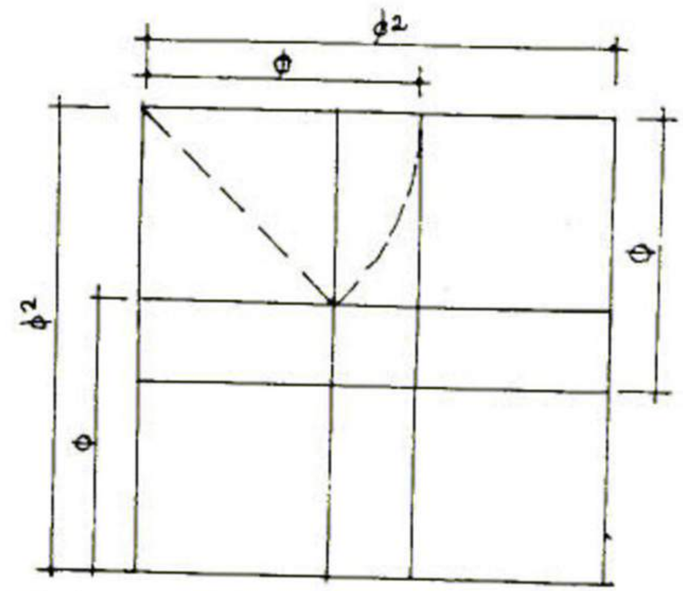


Fig. 2. The golden section
This figure has three different shapes, nine figures can be found in it, and uses only two dimensions: &

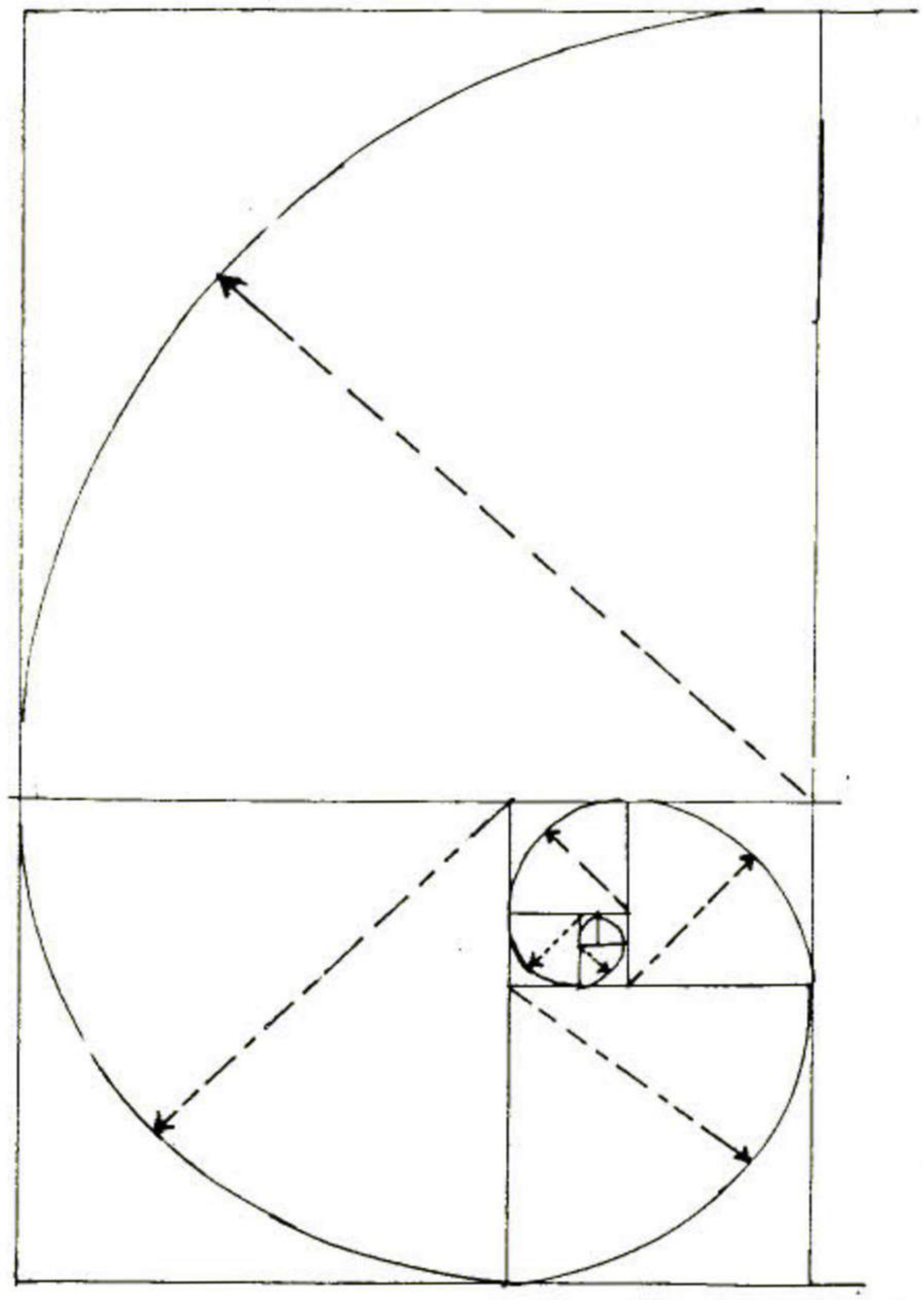
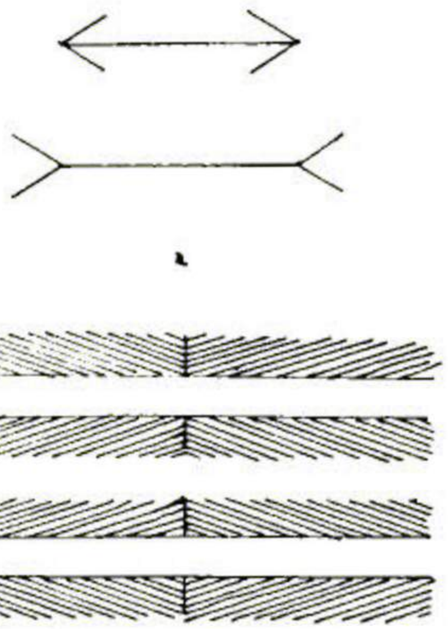


Fig. 2. A series of similar rectangles similarly related, generate to an infinte largeness or smallness. (Golder section rectangls)

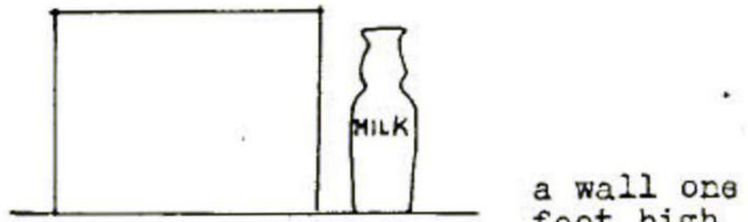
There can be no absolute qualities of colour and shape, of light and dark, or of size; for each of them must be influenced by other colours, values, or sizes, seen at the same time. Many of the familiar optical illusion diagrams show this clearly. [3]Two straight lines are the same length by measurement; but the one with outsweeping ends appears longer than the one with inturning arrow ends. Fig. 3. The same rectongular figure is interpreted variously as a wall one foot high when a milk bottle is next to it, as a six foot wall when a man is standing near it, or as a large building dwarfing a small house Fig. 4. According to archtectural scale, this change of

3. The language of vision, Chicago 1944. Gyorgi Kepis.

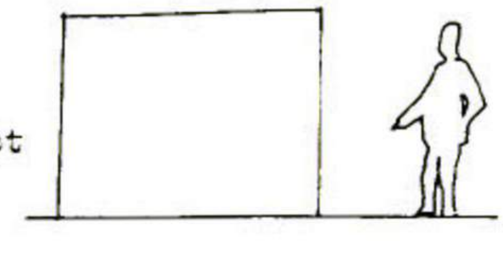


b.
Visual illusions.

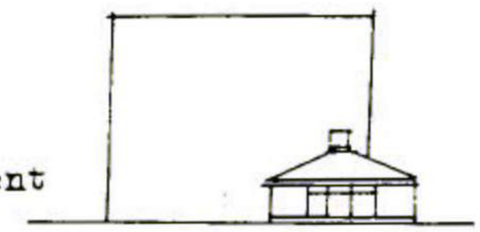
Fig. 3. The Psychology of perception. The Perception of Shape by Adults.



a wall one foot high



a six foot wall



a large apartement house

Fig. 4. Architectural Scale
Heath Licklider

impressions means that the apparent size of a division in a building is affected by the other divisions and size relationships in the same view. Shapes that have customary recognizable sizes may be counted on to "measure" the architectural elements seen with them and to assume a particular importance in the perception of sizes. That is, when the spectator looks at one wall of a room, it may be assumed that, his impressions of its height are influenced by its surface texture, and even the pictures hung on it. But the recognizable size of a chair standing before it indicates a special definite measure of the surface. Fig. 5.

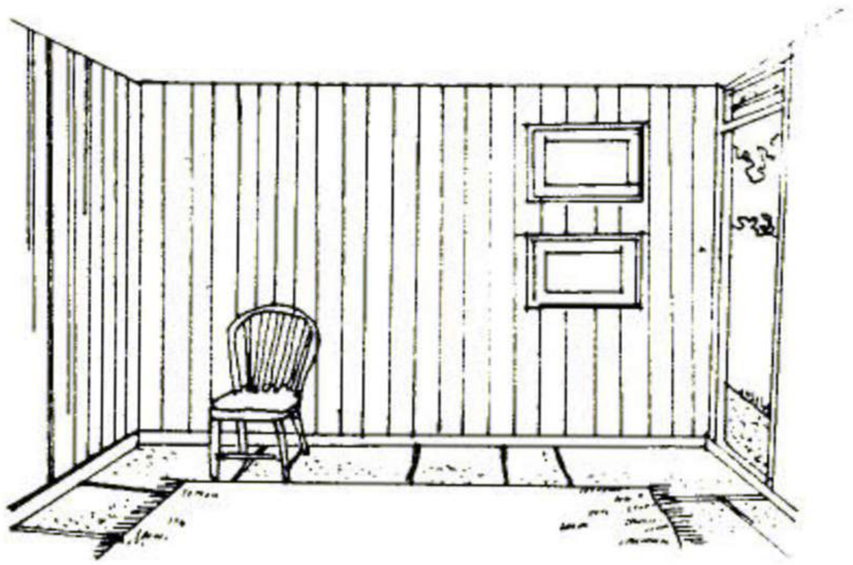


Fig.5. The impression of the height of the room could be assumed by the special definite size of an architectural element beside it.

People themselves provide the most dependable measures. Buildings usually have people in them and around them; and we are so familiar with our own genus that is exceptionally short, or tall, or immature, is quickly recognized for what it is. Because of this, the human figure is depended on, as a measuring standardized rod used to give a building its scale.

But this application cannot be completely correct according to the observer's familiar shapes and his architectural background; that is if an American traveller visits

different cities in rapid succession. At first, arriving at home, he is surprised by the apparent smallness of people and furniture in his hotel room, and by the relative largeness of the room's diminsions. On the streets he is impressed by the general largeness of the buildings, although the city is without sky scrapers. Their doors, windows, and even their mouldings, are surprisingly large; this is seen against the small European cars, who look even smaller than he expected. After a week's stay he no longer notices this unusual relationship. It becomes normal.

But if this American traveller arrives at Venice he is met with a tightly packed town of small alleys and little arches, people and furniture seem larger; and he will need a few days to become accostomed to feeling larger in his surrondings. In England he becomes accostomed to toy-like villages; rooms that lie about his feet when he stands up, the windows that he completely fills when he leans out of them. Even this world can become, after a while, normal to the Am erican and he is likely to make another revision of his standards when he returns to America. Fig. 6.

Variations in what is normal even derives from the actual materials and construction of architecture. The observer expects a building with more units to be smaller. The same effect is gained by the use of a smaller or a larger detail within the whole block.

The organization of one set of divisions, within another, may provide a set of predomininant shapes for each viewing distance and as the observer moves forward the transfer of influence from one set to another may be smoothly accomplished. Fig. 7, 8.

This has been done in the famous Taj Mahal, at a great distance it is little more than a silhowette, a very fine and complete shape in itself. The big simple dome is visually supported at its base by lesser domes. The fine outline shape is in a very large scale, as there are, at this distance,

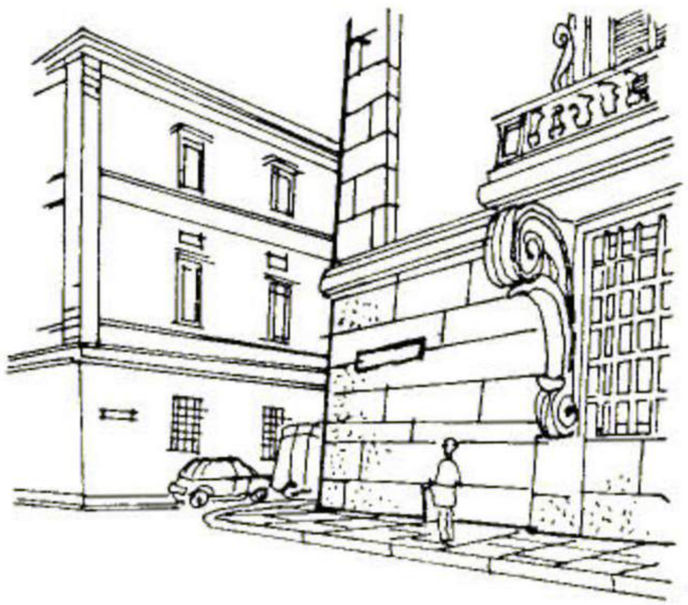
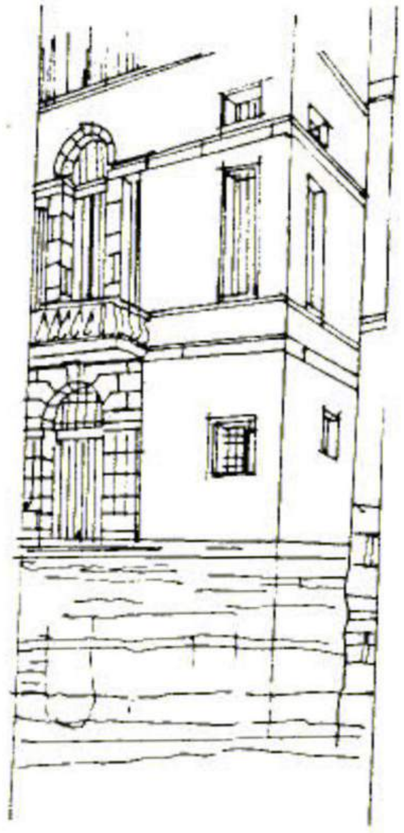


Fig. 6.

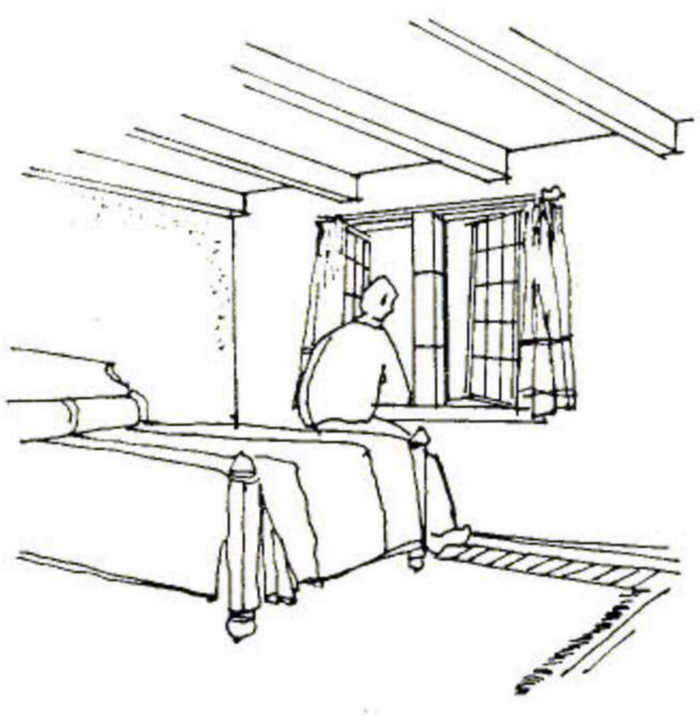
Reff. Architectural scale

Their doors, windows and even their mouldings are surprising large.

Heath Licklider



Tightly packed town of small alleys and little arches.



Windows that he completely fills.

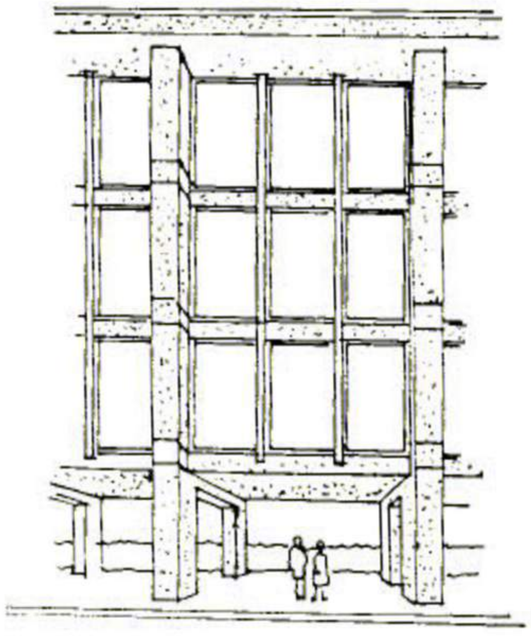
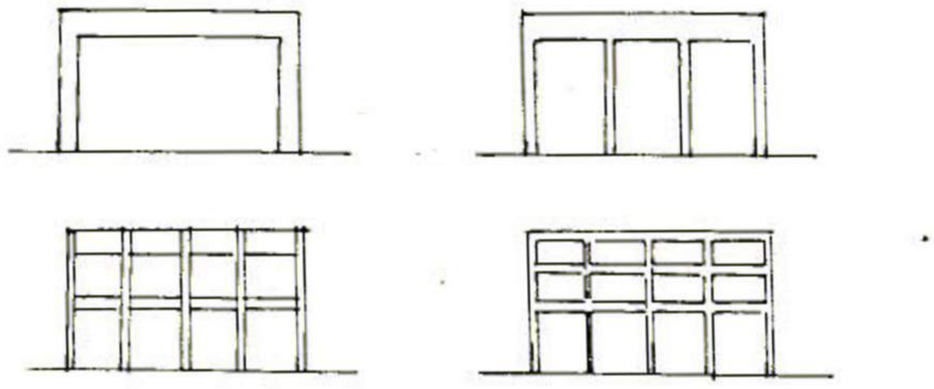


Fig. 7.

Some of the relationships 'feel big'



In the absence of other evidence the more divisions that are used, the larger the building appears.

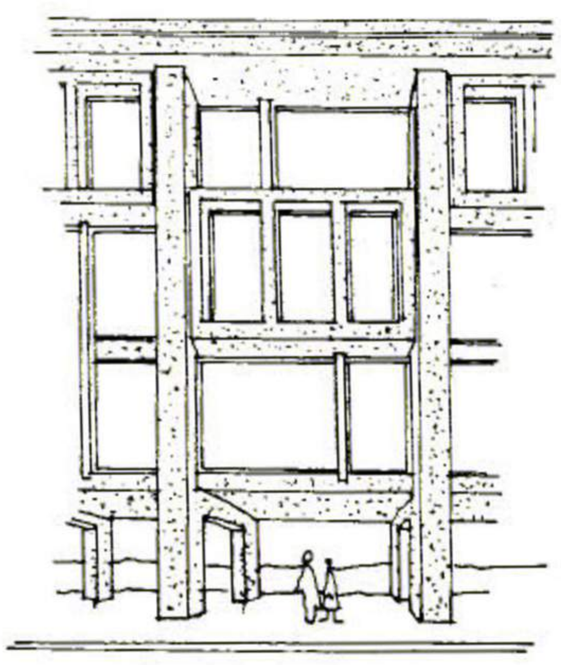


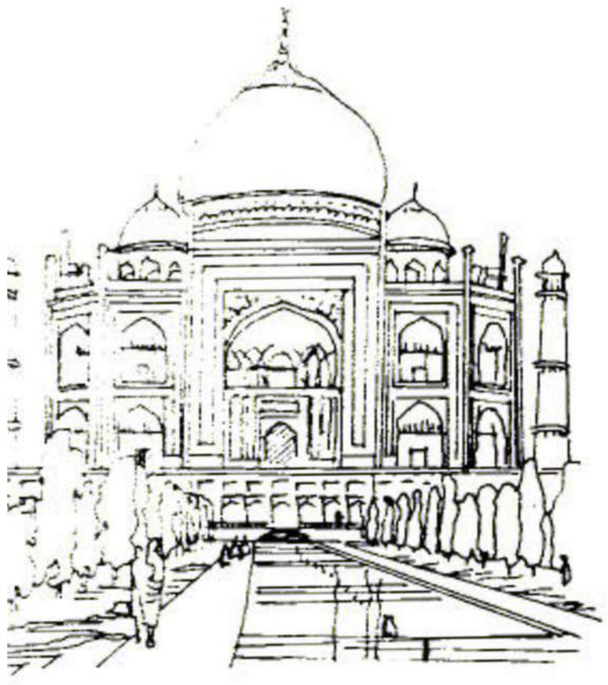
Fig. 7.

Elephantine

Fig. 8. A design with no units or divisions is enignatic

The spectator's attention is led back to the block shape.

details that can be seen
leave it, but as one
ass towards the building,
ll gradually grow in size
each step forwards. Fig.



9. It will grow in size with each step forward.

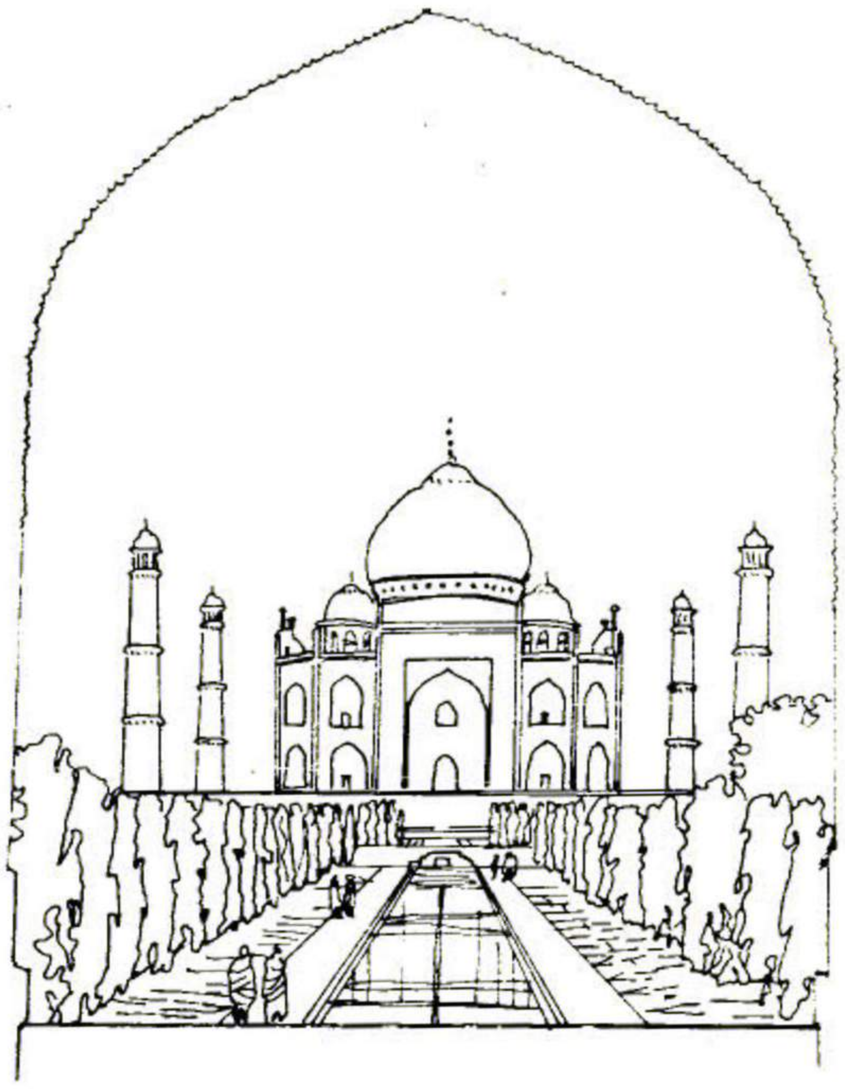


Fig. 9. Taj Mahal.
Reff.: Architectural Scale Heath Licklider

Another successful use of such a descending scale, when approaching a building, is a charming house on the Seven River near Annapolis. From the water, its classical appearance suggests a very grand mansion. As you walk towards it and the full length of the house emerges from behind the trees it shrinks with each step. Fi;g 10.

In other buildings the sequence has accentuated the element of surprise. The great pyramids of Egypt are frequently found in discussions of scale, because of the brutal simplicity of their scale treatment. As first seen, they have great feeling of bigness, owing to the immaculately simple geometrical shape; and they are seen in large scale. They have no treatment to control the impressions of size, but their great size guarantees that they will look big. As you approach one of them, its size is further indicated by the stones (originally there was a polished stone casing) and by comparison with the human figures, camels, ... etc. nearby. And when one stands at its base, it is impossible not to be over awed by the pile's great size. But nothing has been done to help you grasp the full immensity; and its length has to be discovered - not once, but over and over again. The effect is somewhat crushing, but wholly, in keeping with its function as a religious symbol,

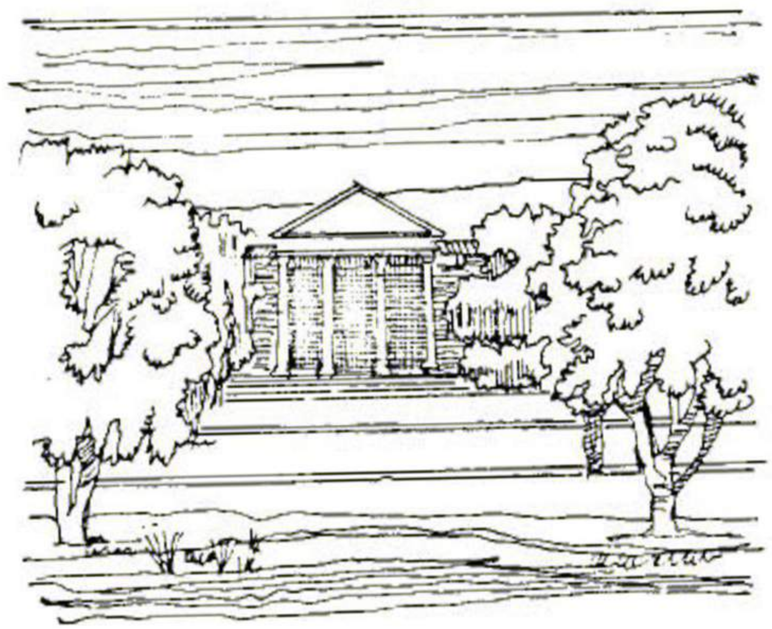


Fig. 10.

House on the Severn River near Annapolis.

Reff.: Heath Licklider.
Architectural
Seale

and as a tomb. The same experience is felt on approaching st. Peter's in Rome.

Here the scale of the building looks very large at first glance, and as you approach it, it grows steadily in apparent size.

The full size may be calculated by comparison with human figures, parked buses .. etc. only to slip away again so that it must be repeatedly discovered. A reduced scale is supplied at the door by the metal gates. But walking through the door is like passing between the legs of parked elephants.

4. The real problem of the big scale in the pyramids and St. Peter in Rome is that is that although they look gigantic and overcome, yet you have to discover their scale repeatedly by comparing them to human scale, cars, busses.... etc. as measures. Supposing you have a photo of them without these above-mentioned measures you can't feel their big awsome scale.

[4]In this case, as in the case of the great pyramid, the surprising size finds a proper object in the building's meaning. Built as the center of Christendom, it was intended to overawe.

In some seventeenth century town houses, the large scale of the street front preceedes the fore court, which is only slightly reduced in scale. From this, you enter an entrance hall that maintains a large scale - reduced, but near that of the courtyard. In this way, the transition from the street into the building is a progression from public to private scale, but gradually designed so as to be continuously experienced. The big drawing rooms will be in a smaller, definitely interior scale. Now that you have been received the scale will be more gracious. And if you penetrate into the [5]boudoir you will discover the flattering small scale that encourages intimacy.

The architect may mould an observer's expectations right before his eyes e.g. a fine medieval tower design. It is quite large in scale at the base, which is broken only by the large butress shapes, a strong base course and the

5. Boudoir a small private room usually for a woman.

stone joints; and it is much smaller in scale at the top, which is crowned by a spire of stone lace-work. The shift between bottom and top is treated as a transition from plain to complex, and from large scale to smaller scale at the top.

This has the effect of heightening the tower, because the smaller scale top looks higher than it is. And it acquires a dynamic rocket-like upward movement. Fig.11.

However, it is important to remember in the choice of any scale that the effect of large and small on the observer depends first and foremost on the obseerver's different ideas, emotions & historical background.

At the same time these previous facts were taken into consideration in the design of domestic buildings in Cairo. They affected the use of different scale qualities; the natural, the Monumental, the Intimate, the shock and the near scales. The natural scale was adopted here to the residental units that is the use of different architectural elements to give the unit aesthetic qualities and by designing according to human or natural diminsions e.g. The entrance of the wikala to the dimensions of the loaded camel's scale and the design of the door according to human heights and widths.

The monumental scale was used by the Egyptian Moslim designer to express the owner's pomp e.g. in the qaa, every architectural element is larger than what one is accustomed to expect. Fig. 12.

The intimato scale was used to make the space of the inner court closer to its inhabitants. It gave them a feeling of easy, relaxation and charm by the slight and relative change of the courtyard height to the human one. The intimate scale was designed in the form of fountains, flooring pattern, minute ornaments, and patterns in the floor, walls & ceilings, the use of furniture and other human accessories. Fig. 13.

As for the shock scale, it was employed to provide a feeling of excitement, startle and surprise, by the

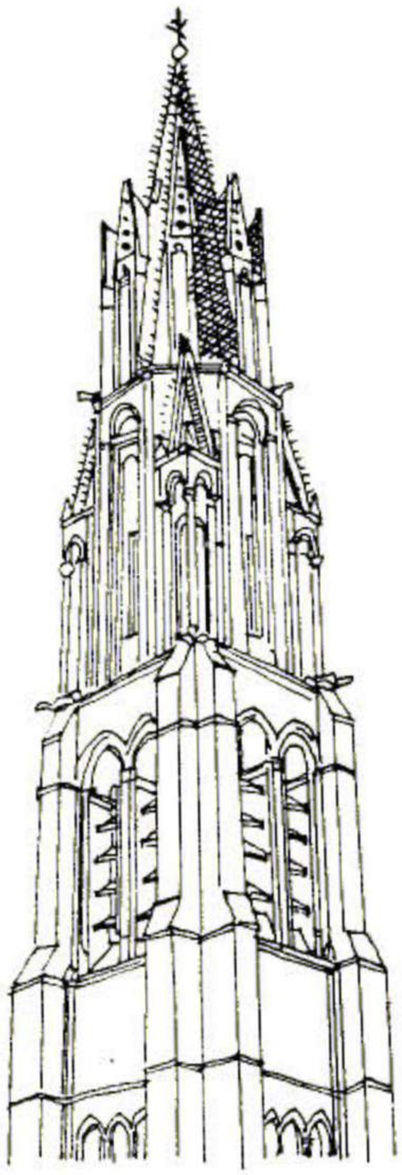


Fig. 11.
The shift from bottom to top is treated as a transition from plain to complex.

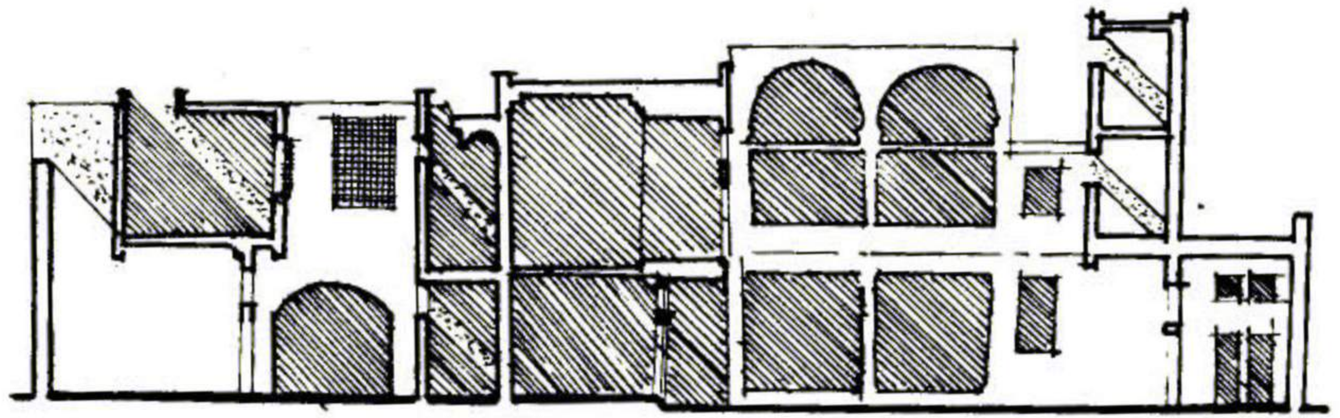


Fig. 1. A Longitudinal section in house of Ibrahim El-Gennary (17th C) By 4th year s students, Architectural Dep. Ain Shams University 1968-1969.

Fig. 13. A Fountain in the Courtyard of an Early Moslim House

accidental change of different design elements, space volume, colour, light & texture. The sudden transition from the outside spacious, bright, crowdy, noisy and disturbing street, to the closed, open to the sky, shady, calm and private inner court, through the narrow, low ceiling, dynamically shaped space and dim bent entrance. The near scale was taken into consideration to a great extent by the apparent human scale of the residental streets and at the same time, by filling the large plain surfaces of the outside bearing walls, by the geometric interlacing treatment of ornaments. Fig. 14.

Fig. 14. Minute Geometric Interlacing Treatment of Ornaments (Photo Taken)

3.3. ILLUSIONARY PERCEPTION OF RHYTHM

The term Rhythm is borrowed from other arts involving a time element and based on movement, such as music and dancing. Rhythm in Architecture is difficult to difine. In nature it is our everday life for our life passes like a systematic rhythm although changing daily but still beginning at morning and ending at night. Yet in the world of Architecture you can also experience delightful examples of smooth variation within strict regularity. It can be seen in a row of houses in an old street where dwellings of the same type and period were built individually within the framework for a general plan. These houses are variations on a plan within a certain pattern. It sometimes happens that a sensitive artist deliberately attempts to create effects which in order buildings were entirely spontaneous; he corbusier in his church in Ronchamps, sought to give variation and life to wall planes by a pattern of various-sized windows. Many other examples can be see, but they are exceptions.

The simplest method for the architect and the artisans, is absolute regular repition of the same element that is solid, void, solid, void. It is a Rhythm easy to understand and because it is so easy to understand, many people find that it does not mean anything and says nothing, yet it is a classic example of man's special contribution to orderliness. It shows a regularity and precision found in nature itself e.g. everywhere in nature we find order, rythm and precision-beginning from the macro-scale down to the micro-scale; from the precise order of the cosmic solar systems to the wonderful exact and rythmic systems found in the inner structure of the atom.

Also - The biological rythmic cycle, the water cycle, the carbon cycle, the blood cycle in the body...etc, Rythmic heart pulses, Rythmic res-

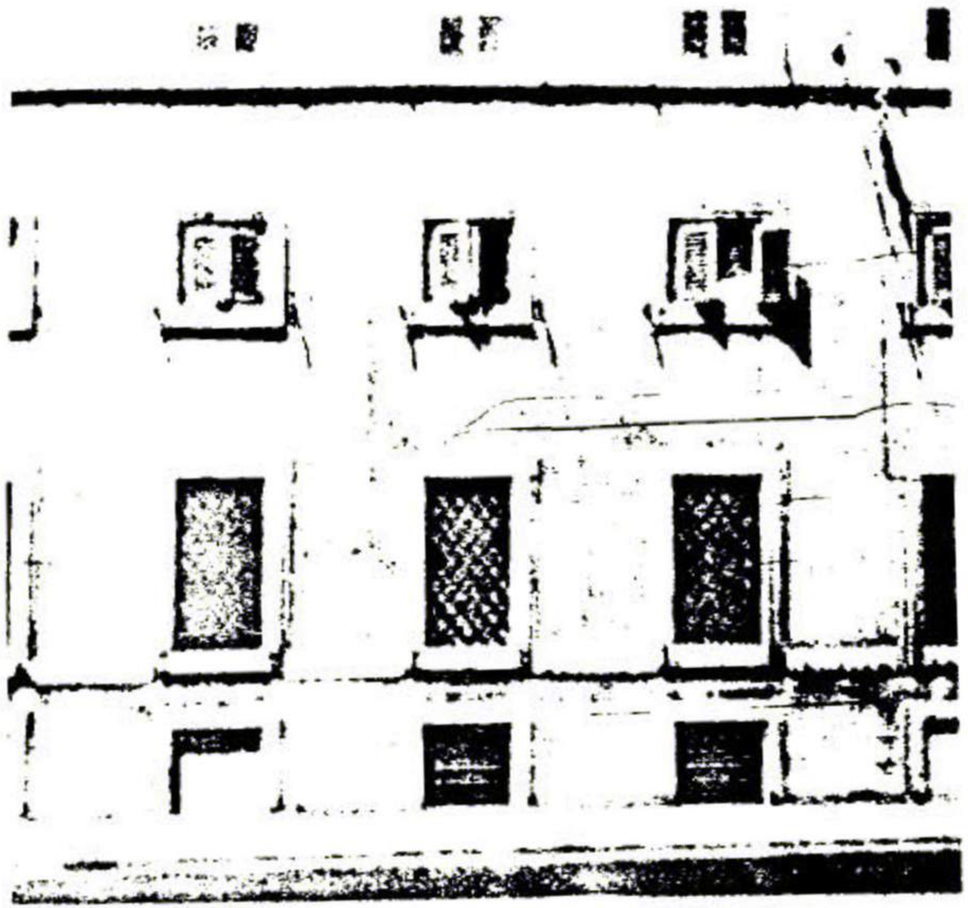


Fig. 1. The Quirinal, Rome
The Region upwards.

Reff: Experiencing Architecture. Eiler Rasmussen.

piration, Rythmic marching.

In Rome the visitor's immediately notice the difference between the low-lying part and the region up to the Quirinal where the former shows the medieval city and through which it is just as difficult to find your way about in, as in a piece of untaned nature. As for the latter, man has created order from chaos, when you go up the Quirinal you find a brighter and airier and much clear region, the Quirinal street streches in an undiviating straight line. On the street's side lies the Quirinal palace, impressive dimensions and simplicity. Fig. 1

The details are large, the windows are either proportional according to squares or two squares and framed in broad heavy mouldings. The distances between the windows vertically and horizontally are exactly similar. This continuous repetition can be interesting rather than being monotonous.

In Venice you find a different window Rhythm seperated, again and again, due to the venetians preffering two windows in one room seperated by an expanse of wall; perhaps it was used for a fire place with an outdoor chimney and from the outside it seems as if they were stuck to each other but, in reality, they have a wide expanse between them. On looking at the building's elevation we find the windows coupled together, two and two, with a narrow pier between. Fig. 2.

[1]Ever since the middle ages the venetians have built rows of uniform houses for the lower classes. There still exists a row of four-storied, two family dwellings, built in the fifteenth century with a different window rhythm at each floor and outdoor chimneys, like the vertical bars of a music score to keep the rhythm. Fig. 3.

In the Calle dei Fretti the houses are so narrow that the pattern formed by the windows is very difficult to be seen from the street, but on drawing them to scale the

1. Row houses from the 15th century in Calle de Freti near via Gairbaldi in Venice (Experiencing Architecture. Eiler Rasmussen).

pattern appears clearly and the facade gives you the sense of a complicated dance rhythm; a variated and more satisfactory rhythm to man.

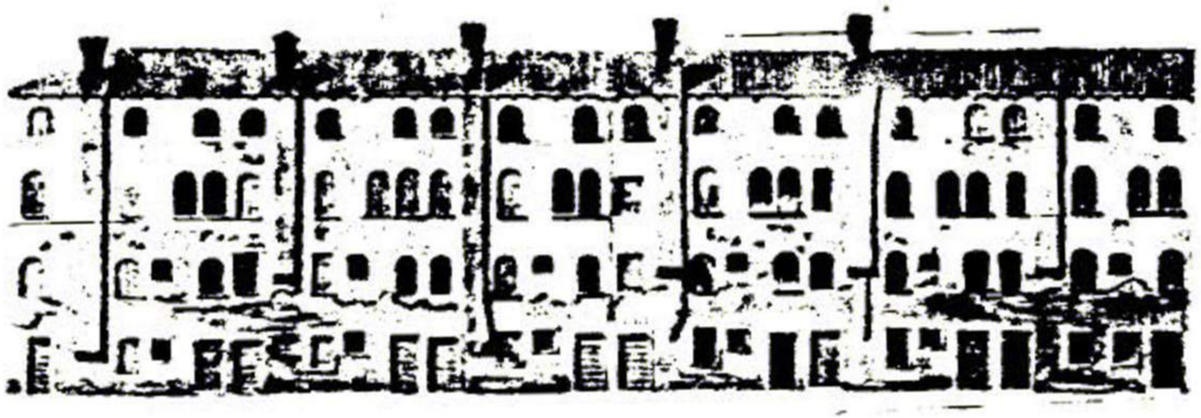


Fig. 3. A four storical two family dwellings, built in the fifteenth century, Venice

Reff: Experiencing Architecture. Eiler Rasmussen.

Fig. 2. House in Venice

Reff: Experiencing Architecture. Eiler Rasmussen

People on passing would sense that these facades are rhythmically divided, but if the question "what is Rhythm in Architecture?" Rose, they would not know how to answer.

Steen Eiler Rasmussen in his book "Experiencing Architecture" says "there is something mysteriour about the stimulating effect of Rhythm. You can not explain what it is that creates rhythm but you have to experience it yourself

to know what it is like. A person listening to music experiences the Rhythm as something beyond all reflection, something existing within himself.

A man who moves rhythmically starts the motion himself and feels that he controls it. But soon the rhythm carries him, he is possessed by it. Rhythmic motion gives a feeling of heightened energy. Often too, it occupies the performer without any conscious effort on his part so that his mind is free to wander at will - a state very favorable to artistic a creation."

Eric Mendelsohn described that he listened to Bach when he worked because he felt that the music shut out the world around him and realised his imagination enabling him to create freely. His sketches show that his designs were not ordinary but strange formations created and developed rhythmically.

[2]Yet Frank Lloyd Wright felt the opposite for when he saw Architecture which moved him he seemed to hear music in his ears.

Rhythmic experience can pass from one person to another and a big number of people could be absorbed and moved by the same rhythm, especially people of the same country. Even the difference in tastes, from age to age, can be seen by the complete difference in attire which is due, accordingly, to the movement of the people in a different rhythm. Similarly Architecture expresses Rhythm differently through the ages and that can be seen by different examples.

In the spanish steps in Rome, as shown in Detail of an engraving by Piranesi, where the main problem was to make a link between two different levels. Fig. 4.

The low Piazza di Spagna and the high Piazza della trinita. Its design looked as if it was based after their ceremonial dance "Polonaise" being composed of bends and turns. Fig. 4.

The dancers danced in

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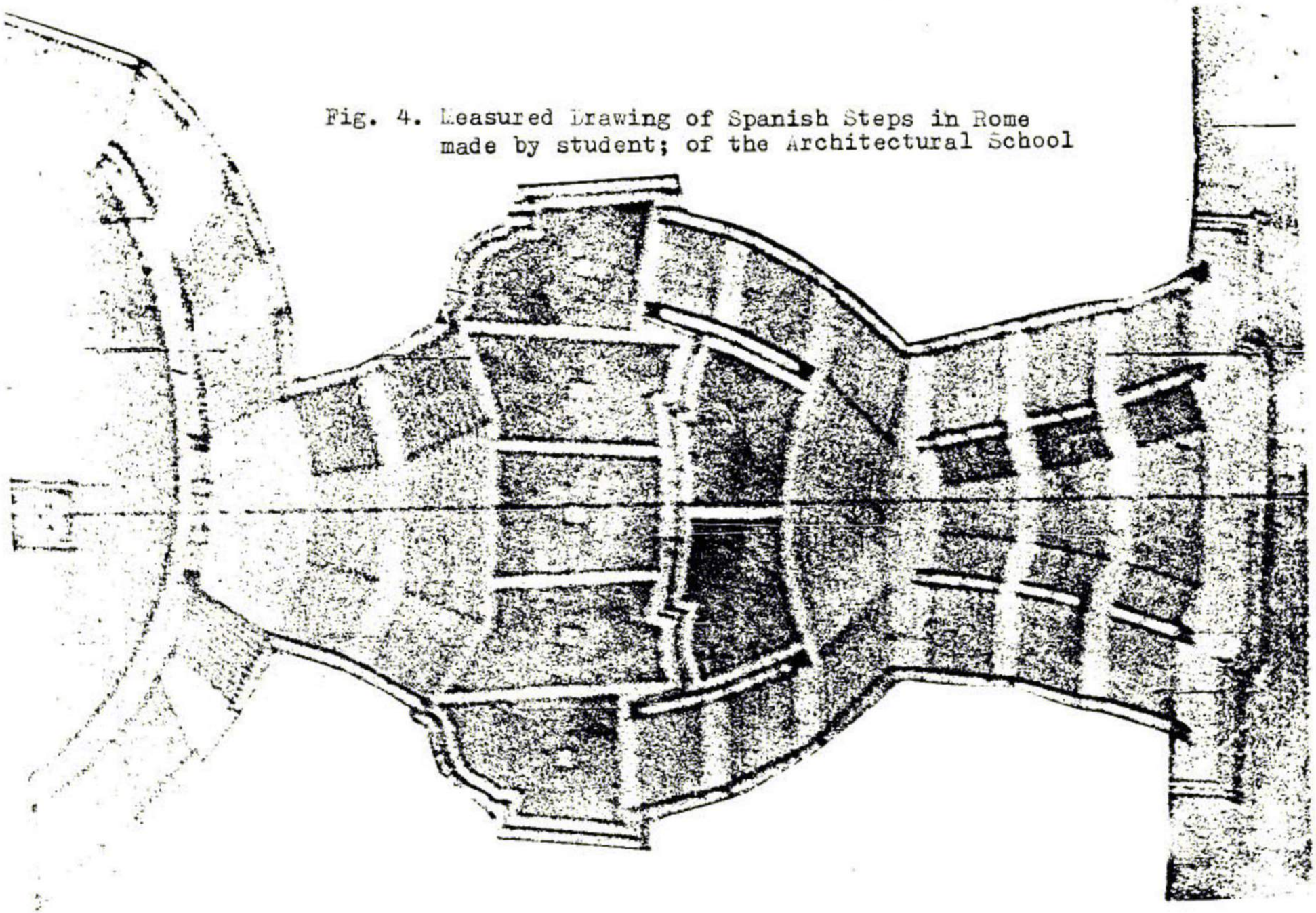
2. The sense of the beauty G. Santians

Fig. 4. Measured Drawing of Spanish Steps in Rome
made by student; of the Architectural School



The Spanish Steps, Rome. Detail of an engraving by [illegible]

Fig. 4. The Spanish Steps. Refl: Experiencing Architecture

fours, in straight lines, than they seperated two to the right and two to the left then they turn and turn again and curtsey and then meet again on the large landing and continue once again. That period was a period of gallantry, and that is why the steps were an application of that period, where all their movement was graceful as if in dancing and by their attire; men in high heeled shoes with toes turned out being taught by fencing masters and the ladies tight - laced bodied. Fig. 4.

From this example we can deduce that rhythm in architecture should be an application for the way of life going on inside it.

Sacred buildings also indicate their use by architectural devices; by pillar after pillar and arch after arch the eye senses a great solemn rhythm throughout the church. Individually each arch means nothing but it is by their rhythmic relation to each other that they obtain their significance.

The Gothic churches have very tall and narrow bays. Singly each bay can only pull one's attention vertically; but by their rythmic continuous sequence they pull one's attention forward. e.g. Chancell wall in Beauvais Cathedral. Fig. 5.

On the contrary, the Renaissance Architecture's aim was to create harmony & clarity that is why they chose regular shapes; the square, the

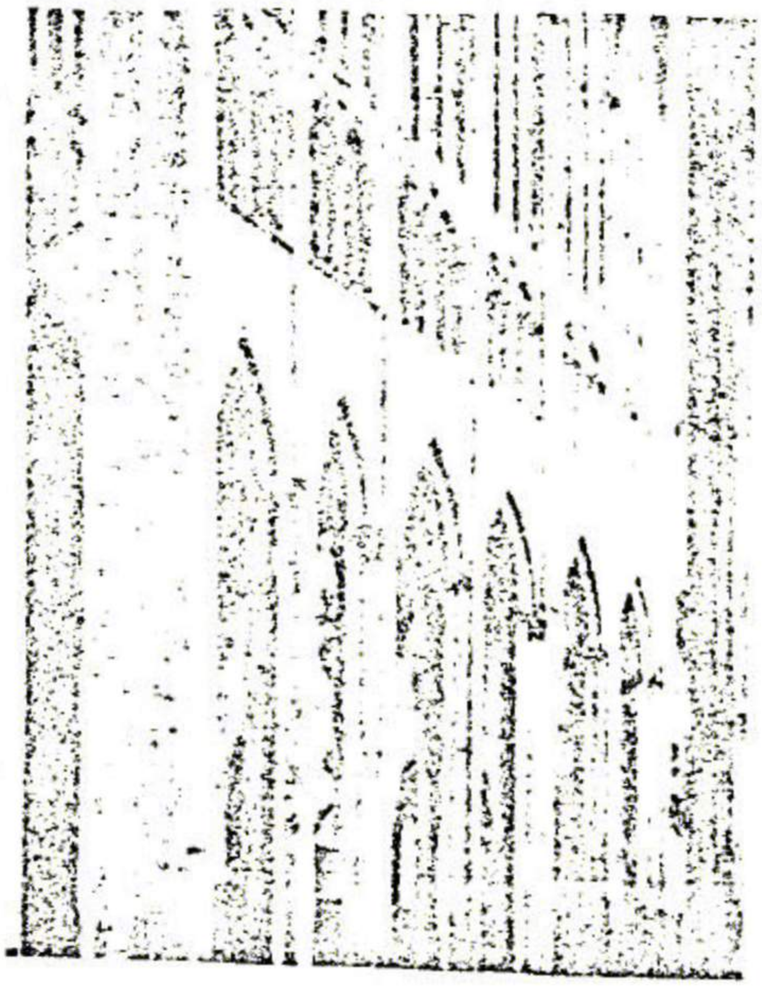


Fig. 5. Chancell wall in Beauvais Cathedral, Gothic Arch.

Reff: Experiencing Architecture
Eiler Rasmussen

octogon, the circle covered by a hemispherial vault. They depended basely on mathematical rules of proportioning and while the architect has consciously calculated them, you intuitively sense the harmony. Fig. 6.

In the Baroque, a more restless rhythm appeared again. Here architects created or tried to create spatial cavaties opening on other courts and that can be seen in the planning of the baroque city stage like Plazas in a variety of shapes opening on to each other.

Also the monumental buildings of that period was based on spatial rooms one after the other where they all were treated as one unit and they all led in one di-

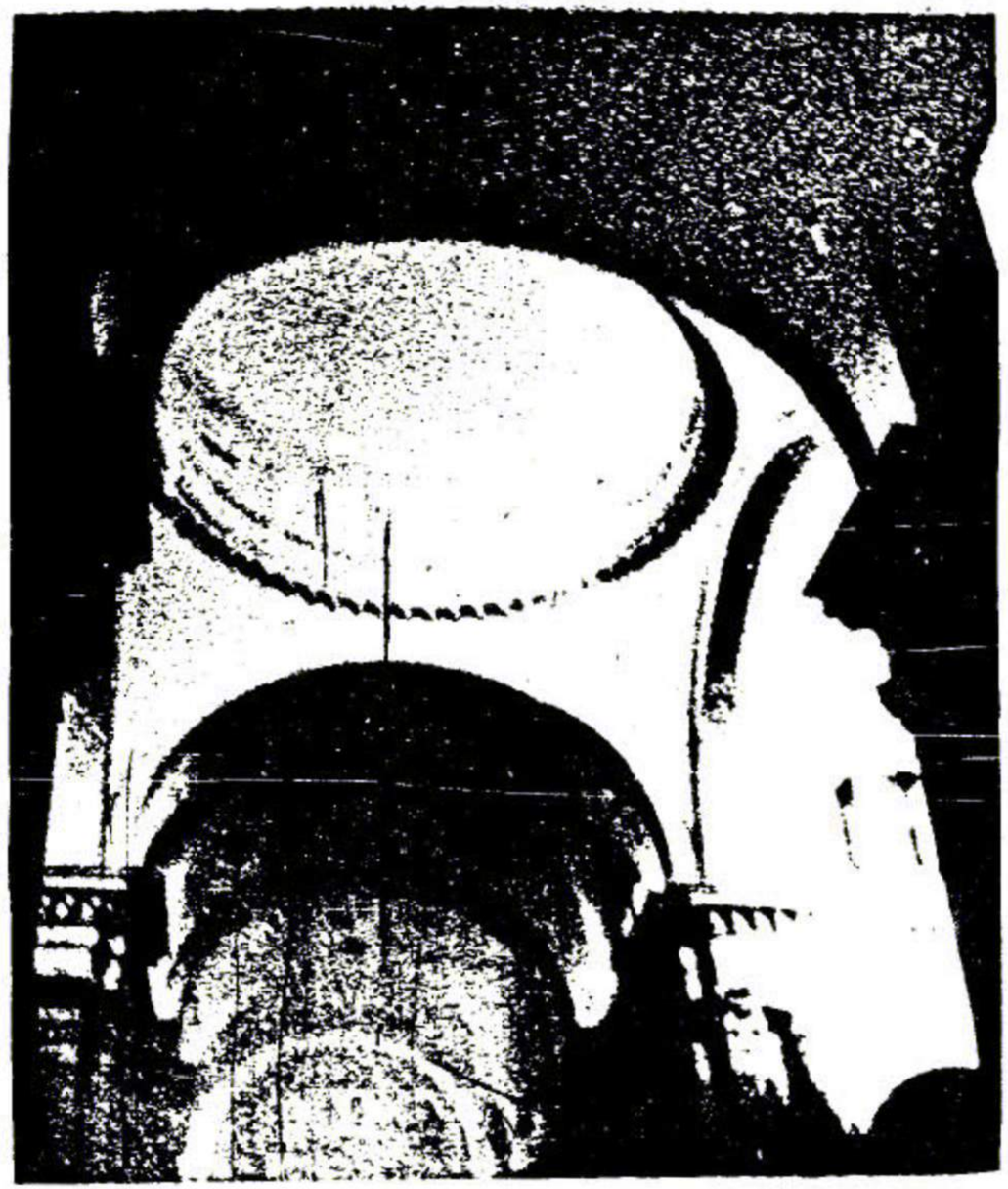


Fig. 6.

The Renaissance Architecture.

Reff: Experiencing Architecture Siler Rathmussen

rection to the center part of the building and, although not like Peking, they were not designed for processions, they seemed as if they were. Fig. 7.

However rhythm in a wide sense can be classified into two kinds; natural Rhythm and intentioned rhythm, the latter can be defined as a regular pattern used by many people e.g. ceremonial rhythm and the former a natural rhythm where a certain cultural level of people discover its grace and follow.

For example we can see in Pekings broad sacred road on both sides are the pleasure gardens. In this road the men took part, in the great New Year Ceremony, in the

Fig. 7. Peking's central axis formed as a great processional road from palace to temple

Emperor's solemn procession which marched on untill the alter of Heaven; while later on they changed into a more comfortable attire & skated spirally on the beautiful frozen artificial lakes. Here the march in the sacred street represents the deliberate rhythm while the skating of each person with a rhythm of his own represents the natural rhythm. Fig. 8.

Similarly the Chinese displayed their sense of rhythm in their art in cultivated nature seen in the Chinese gardens.

Yet each period & each country has its own measure and

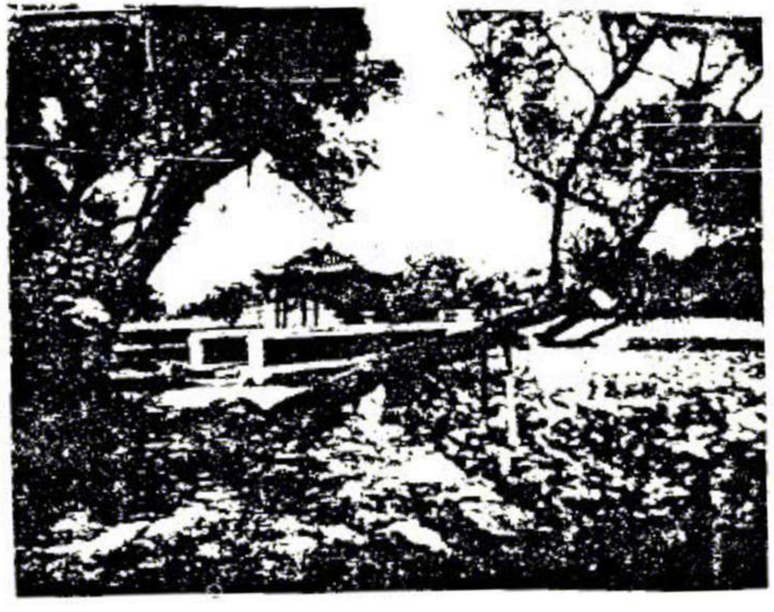


Fig. 8. From Winter Palaces, Peking, Pavilion from which fish are fed.

that can be seen on finding that the Chinese winding paths, being used in Europe, were not very successful and later on they were replaned into modern motor parkway with its turns and sweeping curves which allow a steady flow of traffic at an even rate of speed and at the same time it gives daily pleasure to the motorists.

Another attitude in New York displays its special kind of rhythm, the motor rhythm, for example in the city plan of Manhattan a car can go on along Second Avenue leaving street after street, with a measured tone, on either sides are unobstructed highways where there are only entrance and exit roads on which the traffic goes in a continuous flow. This is the modern New York rhythm.

However on looking at all rhythms nowadays we will find them modern, for old rhythm when discarded are replaced by other modern rhythms.

This replacement can be demonstrated by many examples; in our gymnastics instead of fencing there is tennis. In swiming which was regarded as a millitary drill with a complete symmetrical form of motion untill this century when the crawl swimming appeared and a new rhythm was realized.

In the same phase the replacement took place also in visual arts Fig. 9 with Rafail, Michel Angelo & Tintoretto, from rigid forms to plastic forms. This could also be seen by the design of the Italian Architect in 1951 of a swiming pool Fig. 10. and in the design of Eric. Mendelsohn's Einstein Tower in Potsdam which took on the form of streamlined automobile proving that the design and form of any building should follow

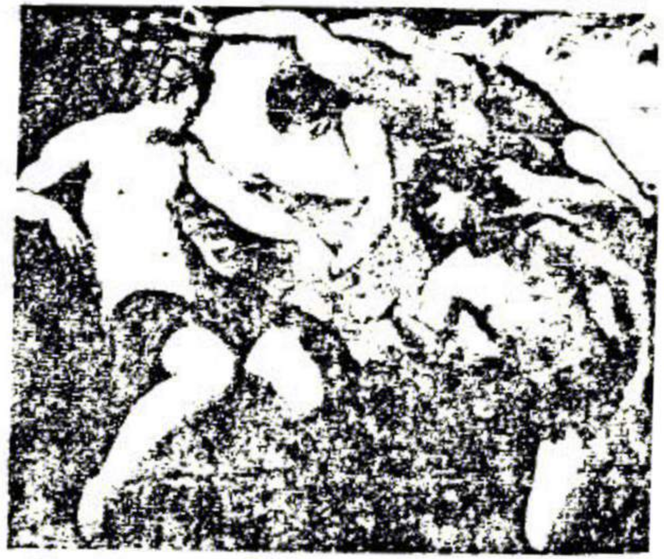


Fig. 9. Jacopo "Tntoretto: Ariadne (sitting) & Bacchus; Venus, Her body turning floats in & takes the star crown off ariadne's head dege Palace Venice.

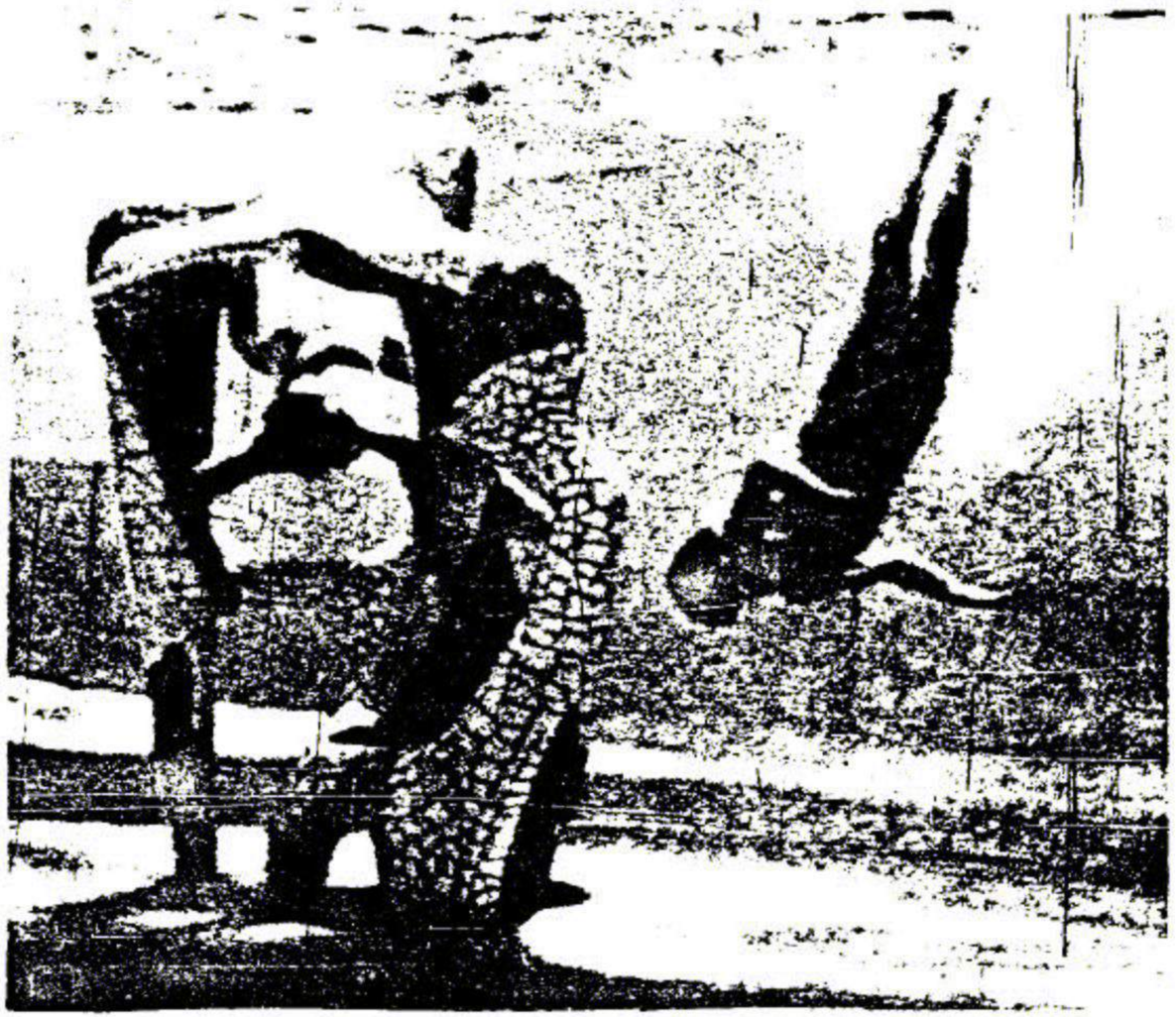


Fig. 10. Swimming Pool by Italian Architect (1951)
Ref: Experiencing Architecture. Eiler Rasmussen.

the movement that goes on, in them. Fig. 11.

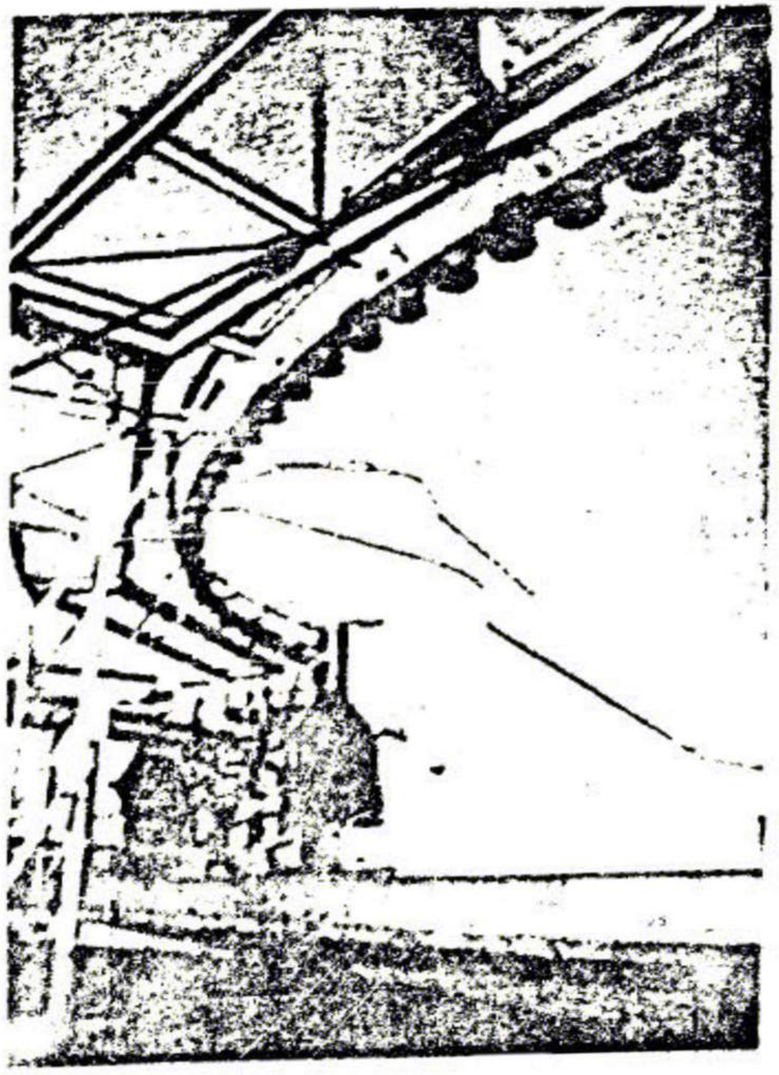


Fig. 11. Eric Mendelsohn Einstein tower, Potsdam.

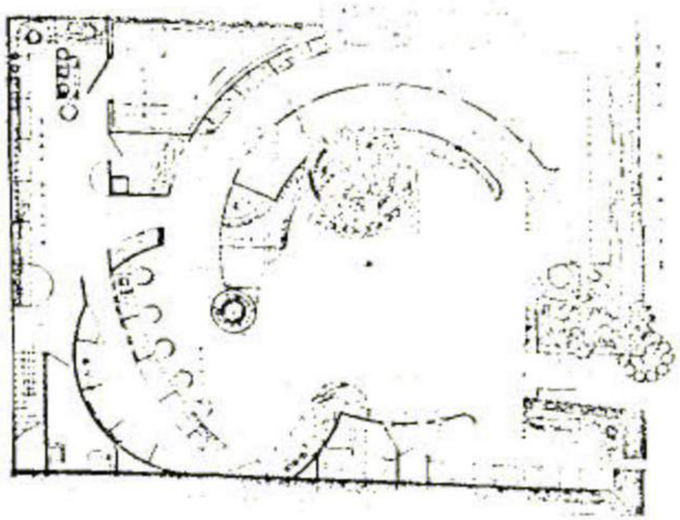


Fig. 12. Frank Lloyd Wright: Glass Shop built for V.C.Morris, San Francisco, 1948 Plan, Scale 1:200

The stiff ceremonial rhythm has long been rejected, and movement in Architecture has been realized in many designs, Frank Lloyd Wright's two homes, Taliesien West and Taliesien East are both designed according to the landscape and the way you move in it; also the glass shop which Frank Lloyd Wright designed, who being inspired by the curved forms of the glass, sold there, designed everything in the shop rounded and even made the passage of the customers a curved rising passage on which with every progressing step a new angle could be seen; a new dynamic rythm. Fig. 12.

Although after the glass shop had been executed it appeared more goemetric than rhythmic yet the idea of the design opened a new direction for other

architects and resulted in many beautiful examples.

Alvar Alto's way of producing rhythm in his work shows more vitality and has proved much more natural than Frank Lloyd Wright and has combined between our daily life and Rhythmic Architecture.

Alvar Alto's buildings are considered of the main examples for this dynamic rhythm for, he designed his buildings putting in mind the kind of life in them e.g. In 1948 he designed the dormitary of Masachussetts Intitute of Technology and though the plans were executed by a group of American Architects and the details were not done as he intended

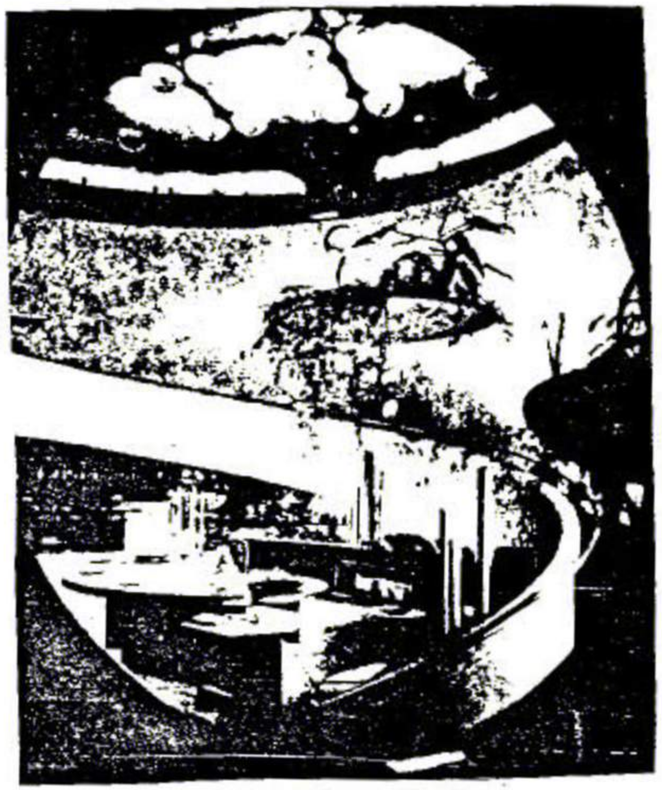


Fig. 12. Frank Lloyd Wright: Glass Shop built for V.C. Morris, San Francisco, 1948.

Reff: Experiencing Architecture. Eiler Rasmussen.

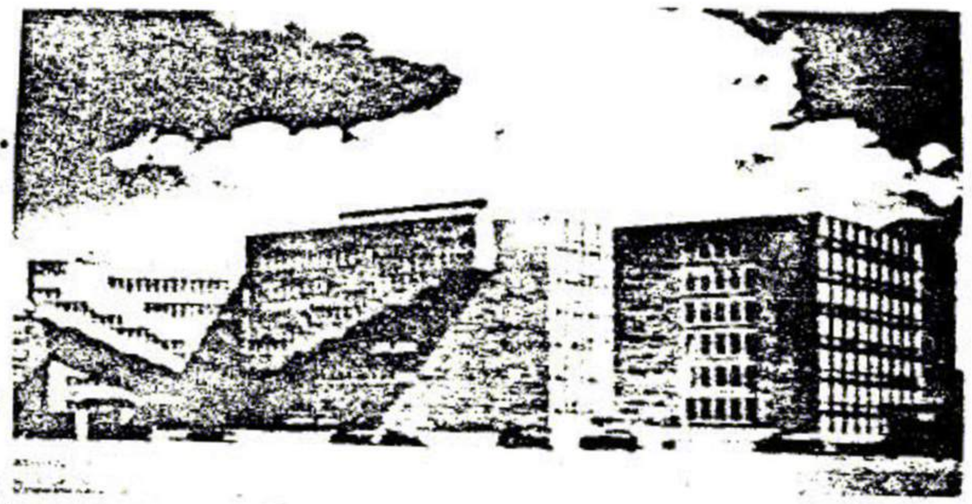
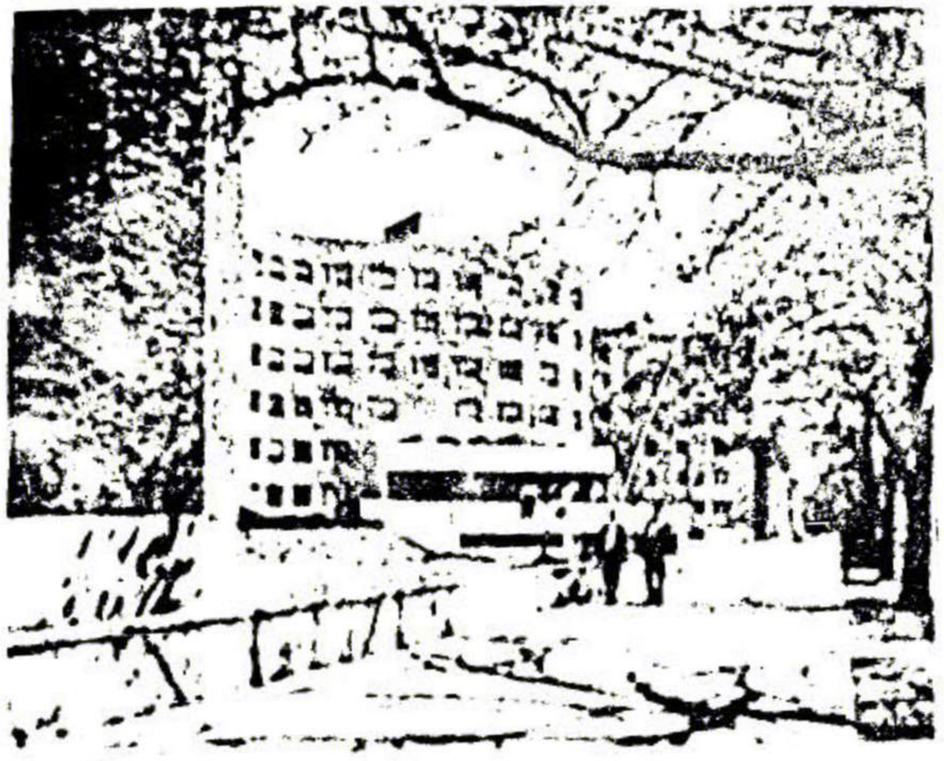


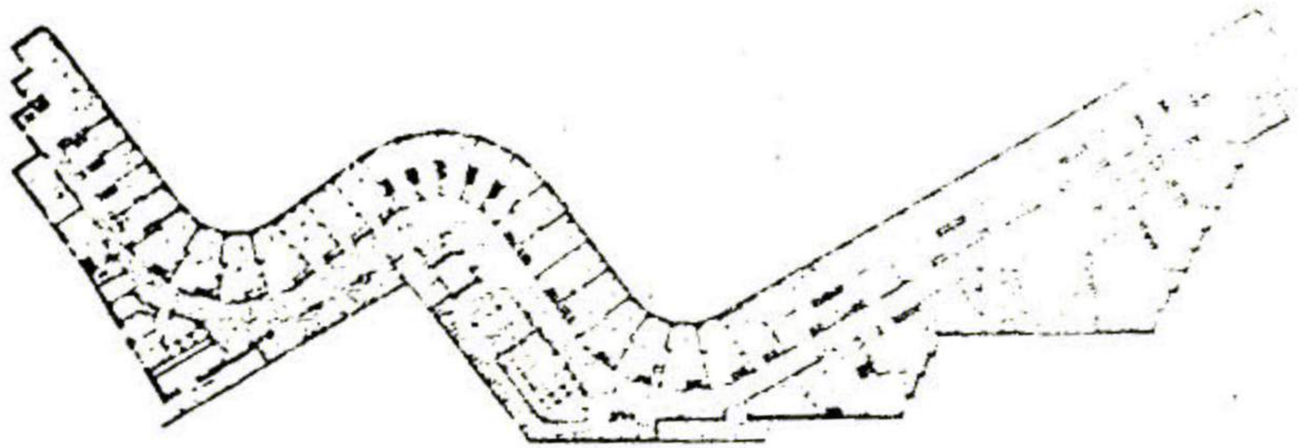
Fig. 13.a

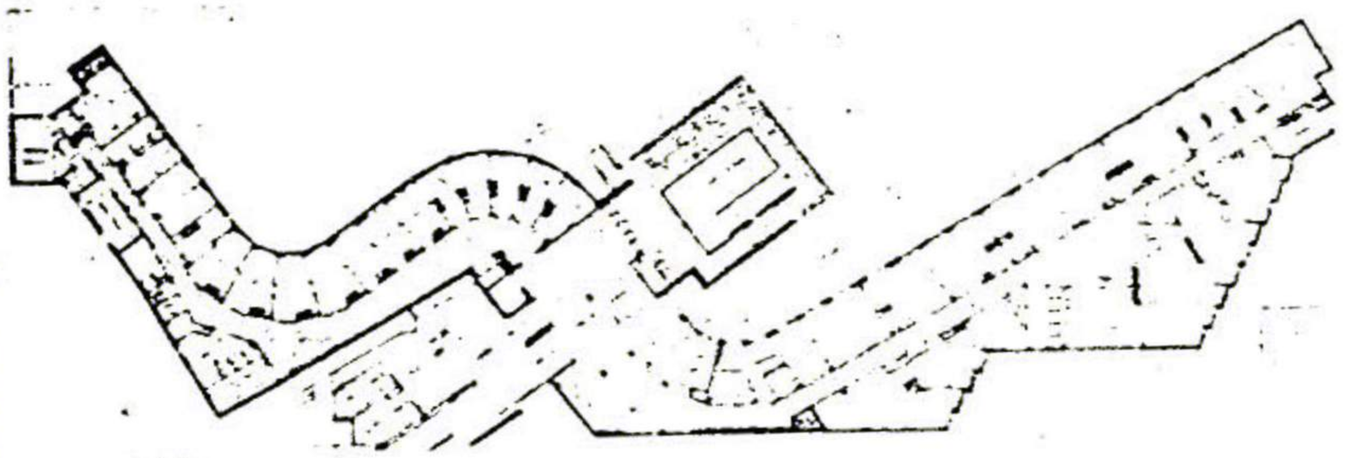
yet, M.I.T. is considered one of the main rhythmic dynamic movements of the twentieth century.

Alvar Alto's aim, in this building, was that most of the wall gave the sense of a long unbroken rhythm.

He felt their needs and sought to give each student his own human private individual room and at the same time designed, common rooms for meeting, in small groups, on each floor or meeting, in bigger groups, in the lounges on the main floor and even in their own rooms, each student feels that his needs are satisfied and almost every room has its own location. On entering the building and tracing the movement of any student







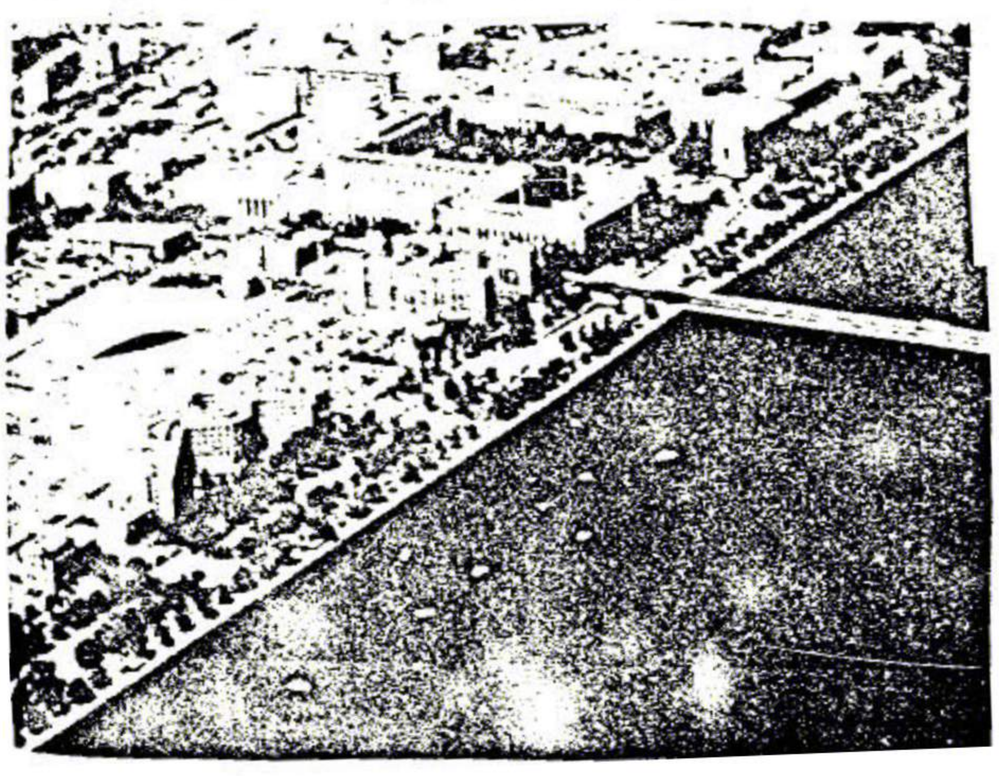


Fig. 13.

b. Massachusetts Institute of Technology, Cambridge, Massachusetts. Aerial phatograph.

d. Plans.

in the building you will discover that as the church and palace have their ceremonial rhythms, here also there is rhythm of the modern student dormitary. Fig. 13.

Yet also we can say that Rhythm in the Egyptian's Moslim Architecture had been cleverly tested, for they understood the structural principles of the rhythmic action and sought mathematical ways for disciplining their native creativity.

This natural instinct for creation was presented in the design of either structural or architectural elements in their buildings e.g. Mikaletel-Ghory. The archade surrounding the inner court creates in the observer a sense of rhythmic pleasure, the curve itself being a [3]"line of Beauty" and giving the person the rightness of its structural stability being the means of transmiting force to the bearing piers.

The regular repetition of centilivers in Islamic Rosetta Houses and the corbels and rashrabias in the old Islamic houses of Cairo, derives a feeling of pleasure on being observed.

Even in the design of their plans Exciting Rhythm can be recognized by the different spaces in the Moslim's house, by the bent entrance, then the unexpected inner court, the maqad and the qaa. The sense of dramatic surprise and delight is pulled forth, though the movement from one space to the other, untill the person reaches the climax.

To sum up, it is evident that Rhythm through many periods and in many different countries has proved itself in all kinds of buildings, and architectural elements, shops, factories, monumental gardens, and swining pools, although we cannot define it, yet we sense its presence and beauty.

3. Santiana, G. The sense of the beauty.

3.4. ILLUSIONARY. PERCEPTION OF SPACE

We cannot lay down fixed proportions of space as architecturally right.

The value of space, as a whole, is affected first and foremost, no doubt by actual dimensions but it is affected by a hundred considerations besides, such as:- climate, material, structure etc. From the time man knew how to build he tried to erect structures that enclosed large spaces. The need for big interior space is partly functional (to accomodate great numbers of people in a single room) and partly immotional (to achieve a sense of awe and grandeur).

However human behavior towards interior space is not controlled, but their responses towards it differ according to many factores e.g. the Age of the human being, his mentality, his culture, the climate of his country etc. Examples can be seen to show how space is designed according to the age of its users as in: Kinder gardens.

Here the architect, knowing that this space is considered as the only place the child enters after his home, endeavours to design the kinder garden to the child's scale so as to give a family atmosphere, and mostly playrooms are prefered to be a flexible space that could be differentiated and subdivided, at desire, into smaller spaces related to children's scale to help groups to form easily and disperse. Yet the importance of a still smaller individual space such as tiny alcoves where a child or two could retreat at desire (perhaps where he can perform his favorite hobby and feel his privacy and identity) is very important. Fig. 1.

Thus we can conclude that our main goal in building kindergardens is to create a psychological relation between the child and the space around him, that is the more it is

resembled to his home & to his scale the more he gets easily acquainted with it, the more quickly he will be able to move naturally in it.

The design of space according to the age of its occupants and their psychological needs can be also seen in the other extreme of age i.e. Homes for the aged.

Here the home of the aged is a substitute for the kind of life one hopes to have in the intimacy of a family circle that is why, although it is a public welfare which admits big numbers of people, it should be designed in small groups so that the interior space should be as closely as possible to the home which the old aged had just left. The architect must provide a private small living room where the old aged could meet his guests and another bigger living room where the residents could meet socially and exchange gossip; putting in mind that each room, in which the old aged mixed with the adjourning rooms (either living or dining), must have a small personal private alcove or space where he could retreat at need.

Also another goal in the designing of such a space for those residents, who have certain psychological needs, is to fulfull their desire to know that they are needed and that can be done by giving them spaces for workshops and making use of their accomplishments; and giving them complete feedom in decorating and furnishing their own spaces so as to feel the sense of belonging i.e. flexible space that can be easily changed and decorated to give the sense of belonging to its occupant. Another example in which psychological needs affect the design of the space, is designing for the blind, here other senses, rather than the visual senses, act and this results in a simple unambignous design in our space; corridors should be various to help in movement and our space would be better designed with a certain modular so that the blind person would easily recognize it and be able to adapt himself more easily to the space around him and sometimes corridors could be designed with protruding pilasters or recesses on both sides so that, by touch, he could easily count them and

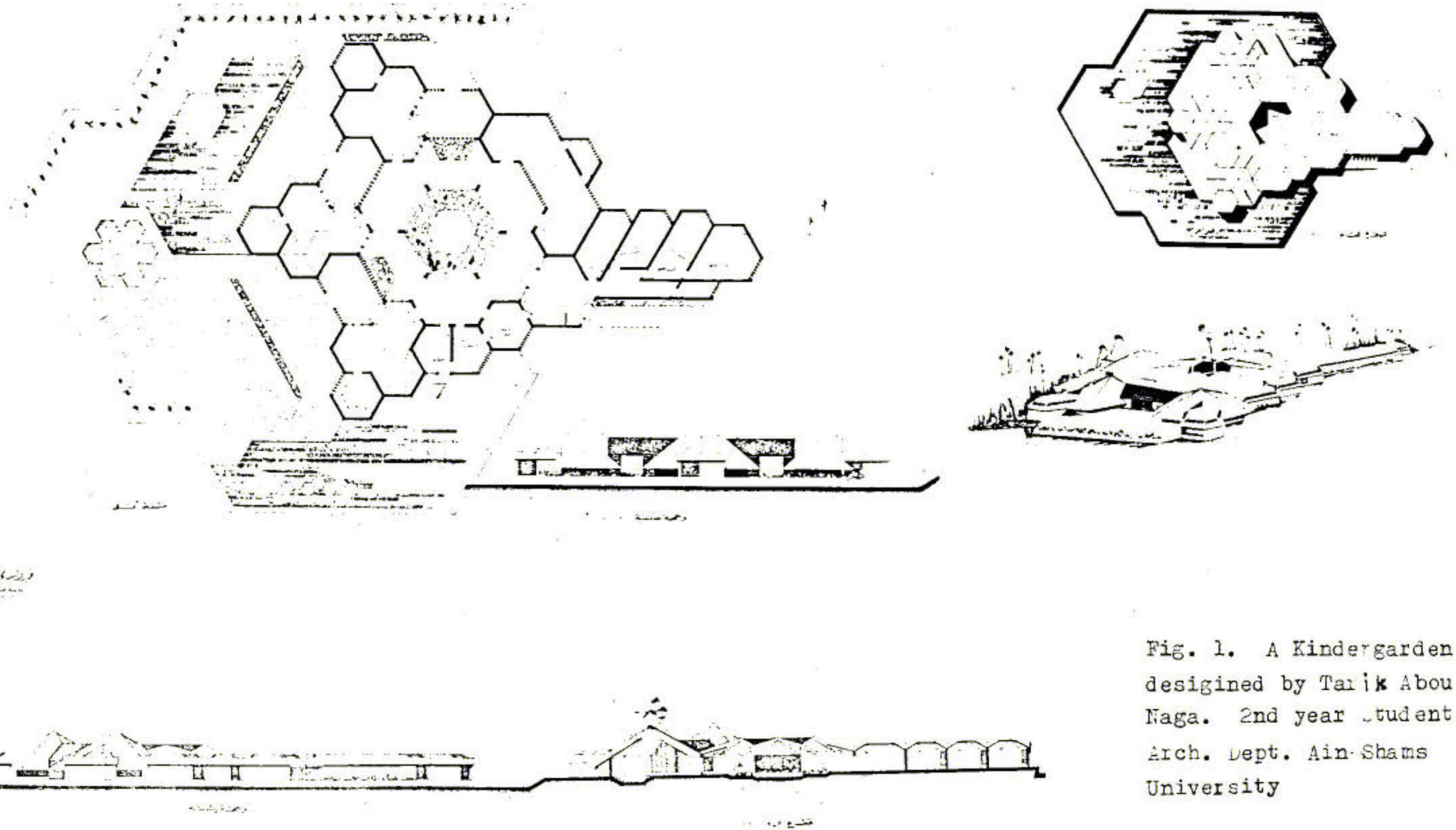


Fig. 1. A Kindergarden desigined by Tarik Abou Naga. 2nd year student. Arch. Dept. Ain-Shams University

reach his aim. A different smell in every room could also help the blind person to differentiate between every space. Blind people develop "facial vision" that is they can detect obstacles in their way by "feel" and auditory senses to recognize the space around them is discovered by the length of the sound waves which result in echo.

Human behavior towards space is not controlled but their responses towards it differs. Confinment in very small space has been a form of torture since ancient times (prisons) yet also when space becomes too immense it becomes soul-diminishing, and increasing attention should be paid to mediate between man and his shelter, Bruno Zevi explains this in his "Architecture as space" by saying" The greeks had achieved their human scale through a static proportion between the columns and the height of man". Even so, their space depended on proportion not on a close relation between both scales. Generally the only difference between one-big interior space in the past and nowadays is that in the past this one-big space was intentionally designed to fulfill certain physical & psychological functions; Nowadays such one-big space is designed as a universal flexible space to fulfill a lot of very different functions and one psychological modern aim which effects the modern man's yearning towards mobility, dynamism and change.

Such qualities could be given to this sare universal space quickly and economically in a very interesting way by modern technological means. e.g. [1]chuch of the Bethren in the roral community of live Oak California. This church is designed for full time use, meeting community as well as church needs. In weekdays the major spaces of the building are used as a child care center, a facility that town lacked and needed. The program of the building required a multi - use space and the character of the principal space as was described "a simple place of beauty for worship... a warm enfolding room but at the same time durable and able to withstand the wear and tear of many uses". Fig. 2.

1. Architectural Record, July 73

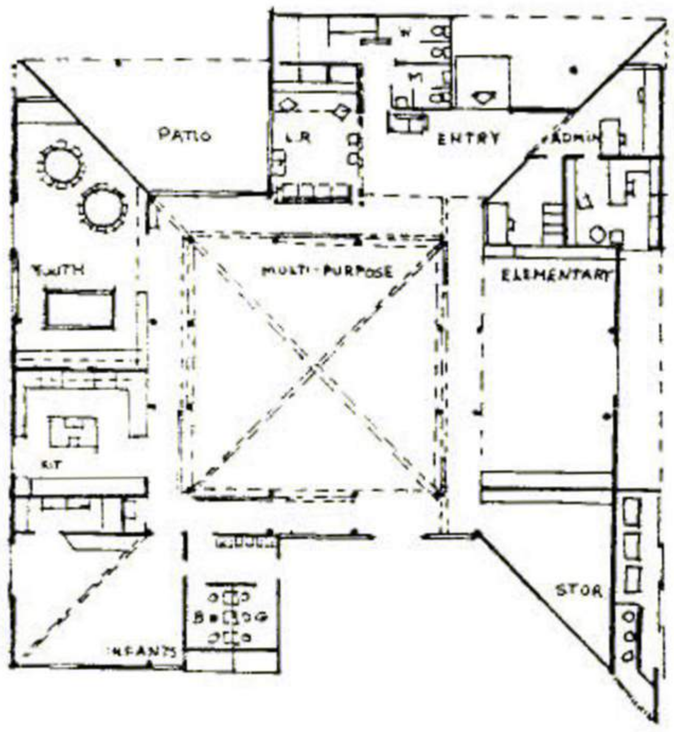


Fig. 2. Church of the Brethren, the rural community of live Oak California.

Ref.: Architectural Record July 1973.

Up to this point we have directed all our attentions to the psychological perception of inside space but if we step a little further on we have to consider the psychological perception of the outside space begining by the inter-penetration and integration between outside and inside space as a reflection of a certainpsychology, induced in the east by climate, and transferred to the west after the invention of big sheets of thermoglass.

The interpenetration between inside and outside spaces and the integration between enclosed and open-to-sky spaces (courts) and the semi-open places (I wans) has always been developed in the Middle-East as a direct impact of the subtropical hot climate e.g. the moslim's house.

Here the intimate scale was used in the inner court of the Malim's house due to the nature of his country, being almost a completely desert with a limitless skyline, and an open extended plane, intimidating man, making him feel overwhelmed, lonesome and unprotected resulting in space-phobia. Yet at the same time the Moslim rarely observes any greenery & water in the vast spans of yellow sand, that is why in the design of his private home he yearns towards the introvert type of design i.e. the inner court with territories, inside green gardens (pathios) and fountain in the patio or any other intimate scale is to give the inhabitant a feeling of relaxation against the huge open spaces which are heavy and imposing on human scale. Fig. 3

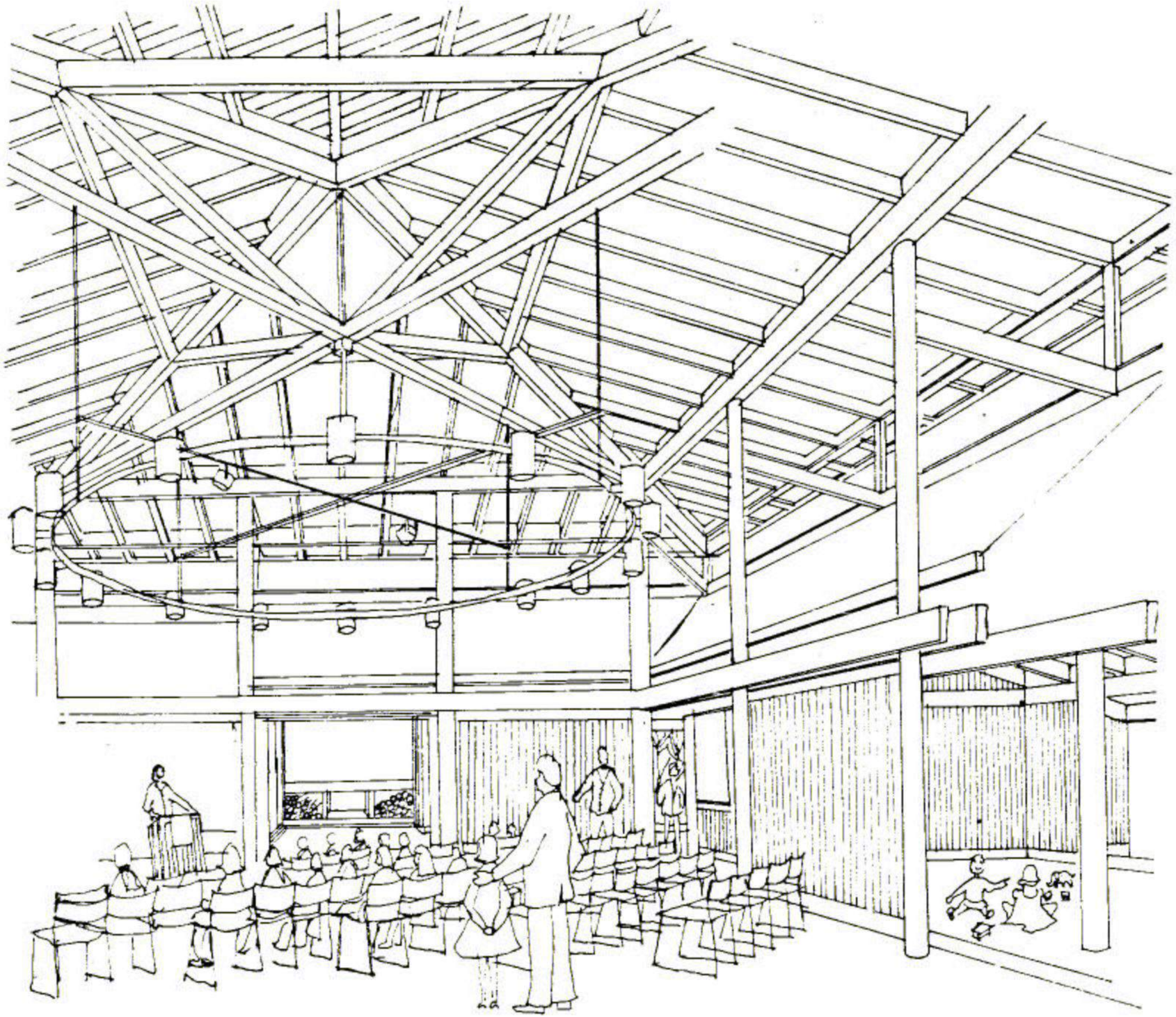
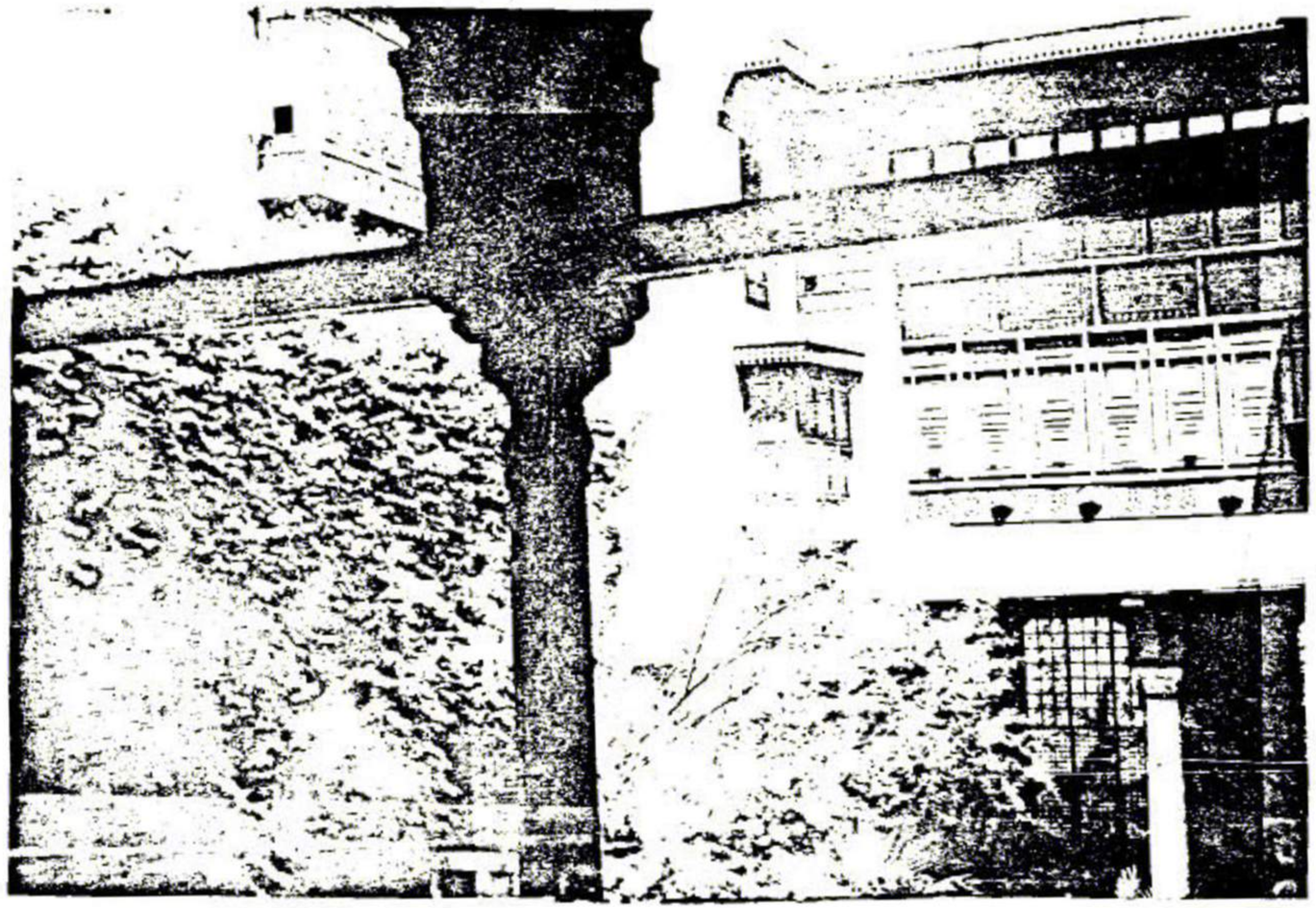


Fig. 2a.
Church of the Brethren. The rural community of Live Oak California, Left.: Architectural Record July 1952.



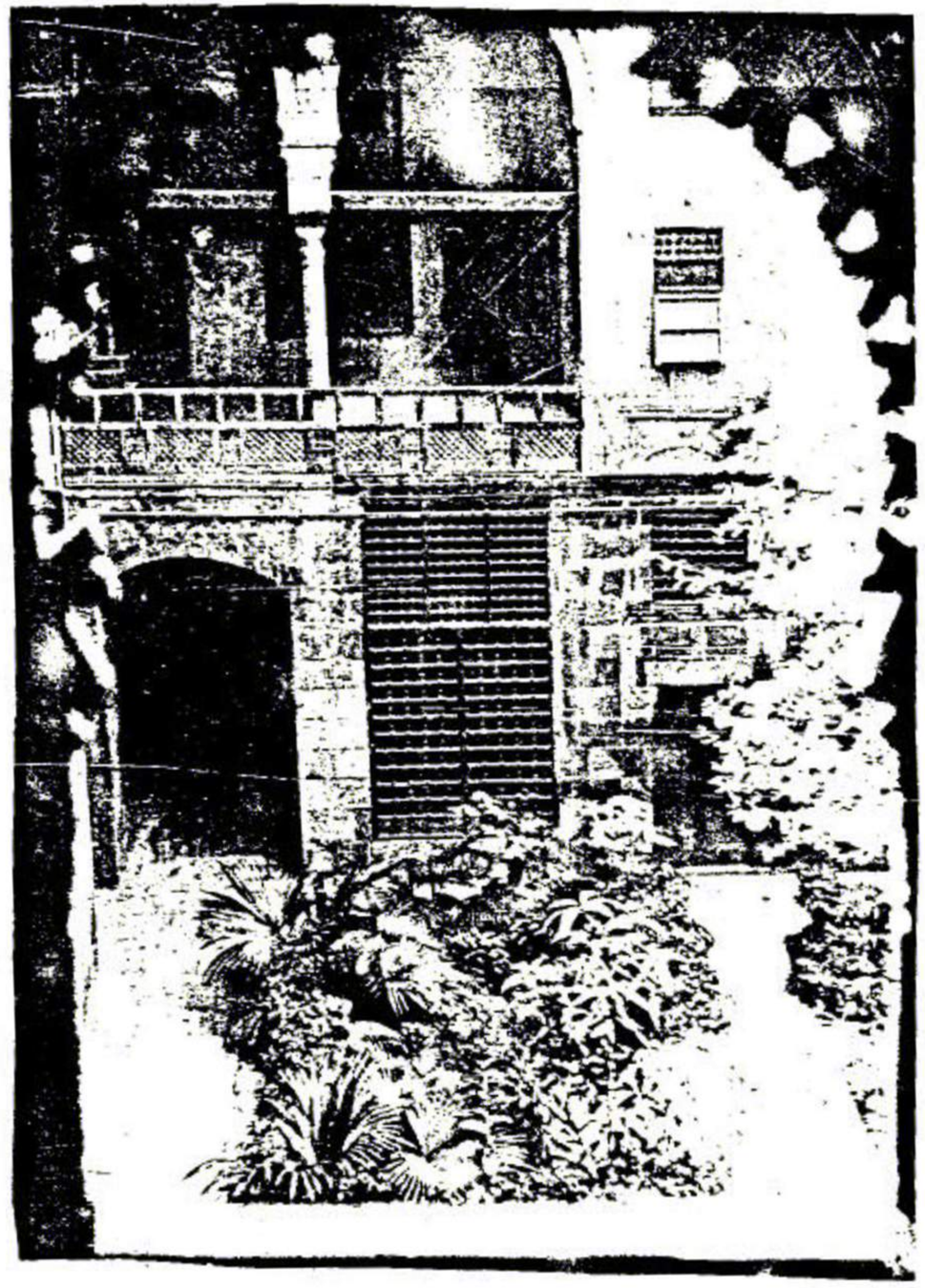


Fig. 3. The internal Gothic in the House of Ibrahim El-Gennary (17th C) (Photo Taken).

[2]Sequence in terms of planing, may be defined as a succession of perceptions or experiences having continuity. It is obvious that all planed areas and spaces are really recognized by sequence and climax but it would be more effective if this sequence is designed & controlled; It might be simple, complicated, sustained, interrupted, modulated, varied and with, every design it obtains its own character which gives forth an emotional response which in turn could be intentionally designed to induce a feeling of excitement, fear, mystery, pleasure, surprise ... etc. Fig. 4.

2. Landscape Architecture
The shaping of Man's Natural Enviroment.
John Ormsbee Simonds.

Mostly in Mediveal towns the climax being the public spaces, they were gometrical nor were they entered by wide axial streets; they were entered by narrow winding streets that penetrated at or near the corners. The buildings (cathedrals) sculptures, fountains were seldom on axis with the approach of the sequence; instead they were set back to give a better view and create a certain emotional reaction. The space around the building could be organized to give the best effect and so that the human eye could see every minute detail in the building. Fig. 5.

The unit of measurement for space in urban society is the individual" Arthur. B. Gallion.

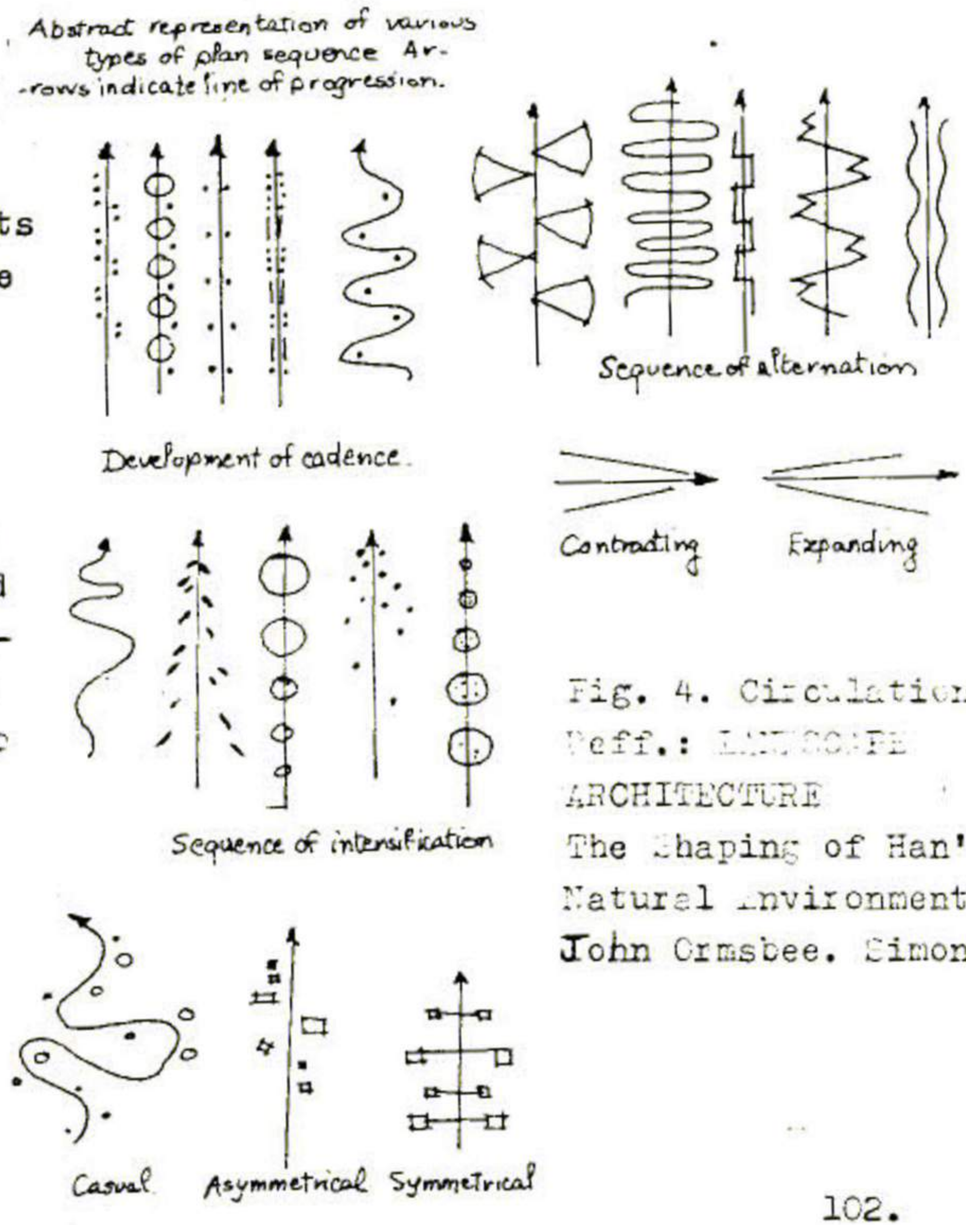
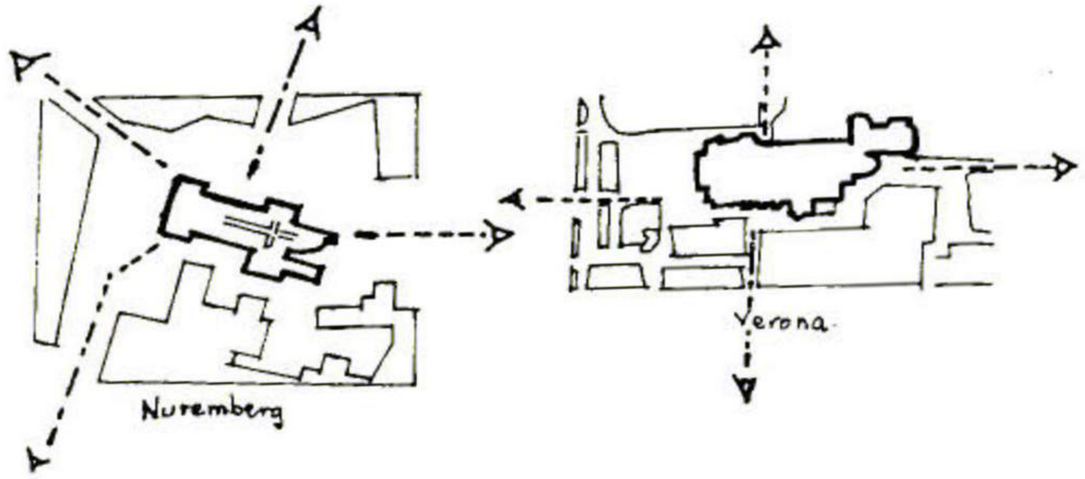
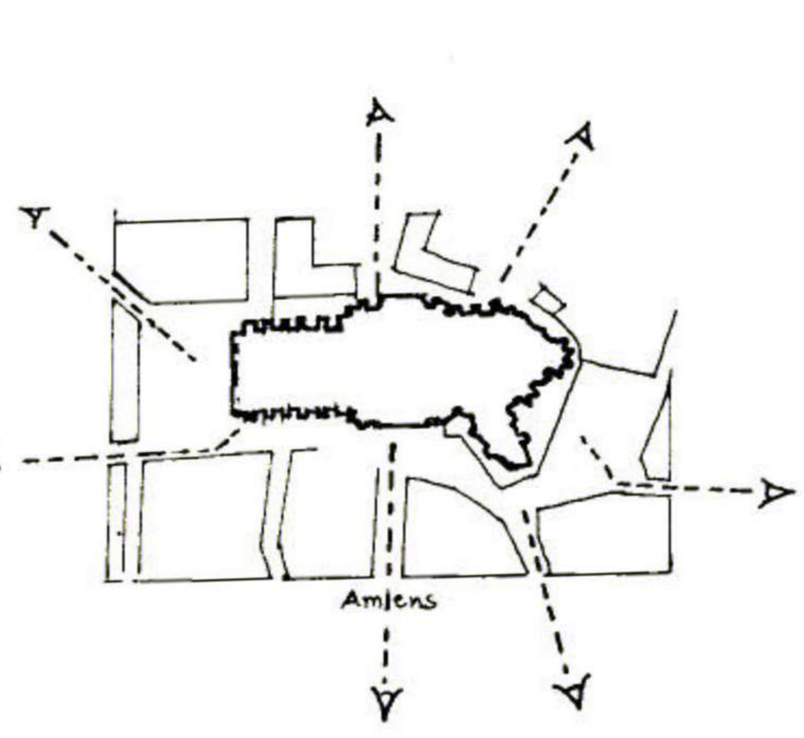


Fig. 4. Circulation
Ref.: LANDSCAPE ARCHITECTURE
The Shaping of Man's Natural Environment
John Ormsbee. Simonds





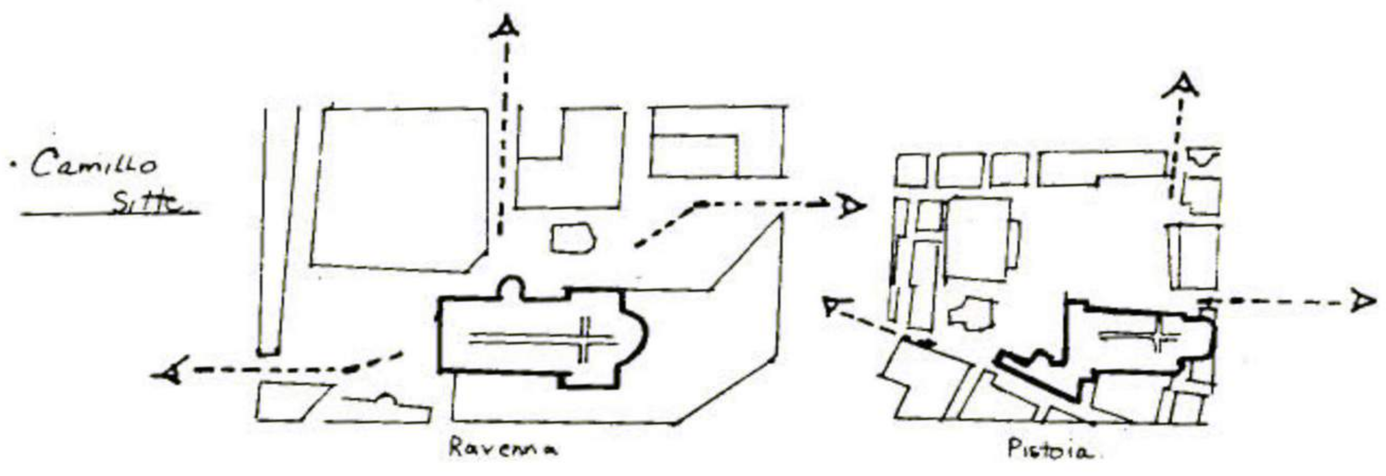


Fig. 5. Mediveal Towns, the Approach to the public Spaces.

Reff: Landscape Architecture. The Shaping of Man's Natural Environment John Ormsbee. Simonds.

3.5. ILLUSIONARY PERCEPTION OF EXPRESSION & FORM

The form of any building and the success of the designer in conforming its expression, so as to suggest its function is merely a matter of human judgement.

Usually the expression of the building is judged according to the past reminders of similar forms for example to an average man a building which, "looks like a factory", is a building which reminds him of some other building, previously seen and which he knows to be a factory.

Expression in Architecture could be defined in two ways, either designing with concern for the expressive content of Architectural form, or an expression for the development of the community around it.

The birth of the former kind of expressive architecture proved to be the introduction of a new dinamic Architecture and it was Werkbund Exhibition of 1914 at Cologne Fig. 1. that started this new Architecture and later Van de Velde's Model theatre Fig. 2. and Bruno Taut's small Glass Pavilion. Fig. 3. Also the Office Building and Hall of Machinery by Walter Gropius. Fig. 4.

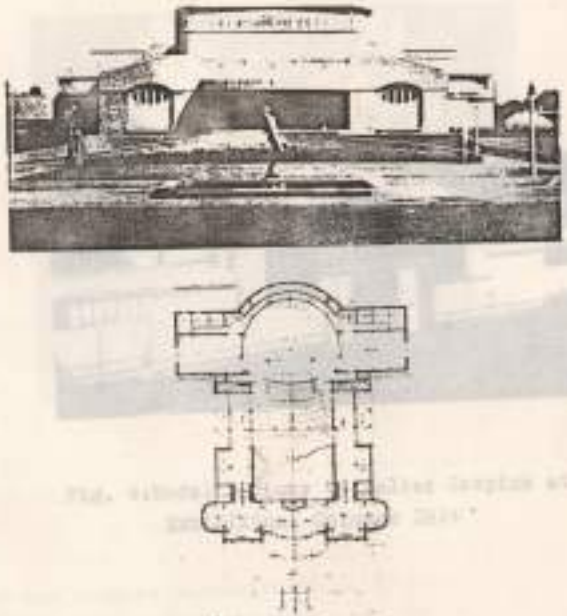
All three Architects, Van de Velde and his plastic form way; Taut and his visionary way; Gropius and his mechanistic technological way; showed a concern for the expressive content of Architectural form.

Another of the greatest triumphs in Expressive Architecture is the most famous of Hans Poelzig's buildings, the grosses Schauspichaus in Berlin 1919. Here Poelzig in his designs, he eliminated the barrier between the actor and the audience. Fig. 5.

[1]"For him, the stage was not merely a faithful mirror

1. Dennis Sharp. Modern Architecture and Expressionism.

Fig. 1. Plan of the Werkbund Exhibition, Cologne, 1914
Refs: Modern Architecture & Expressionism
Dennis Sharp.



/Fig. 2.
Refs: Modern Architecture & Expressionism.
Dennis Sharp.

Fig. 3. Bruno Taut's Gless Paui Lion
Reff: Modern Architecture & Expressionism
Dennis Sharp.

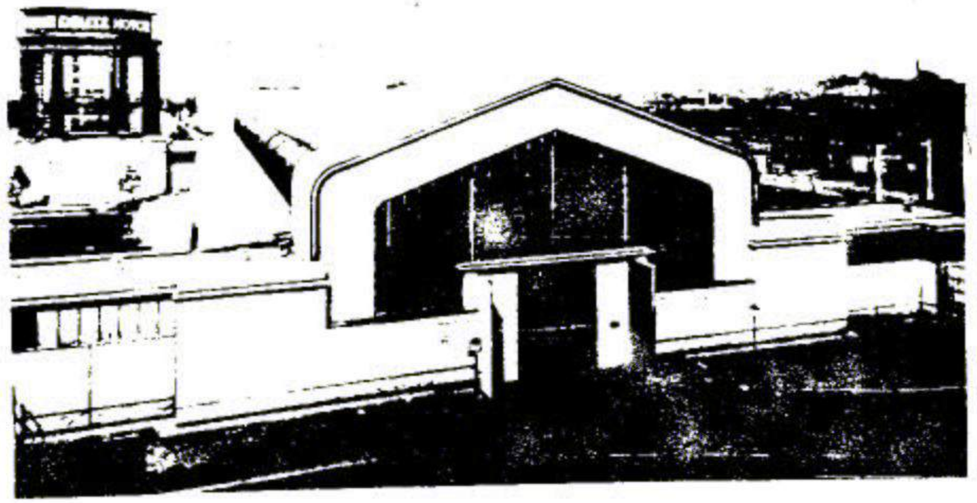
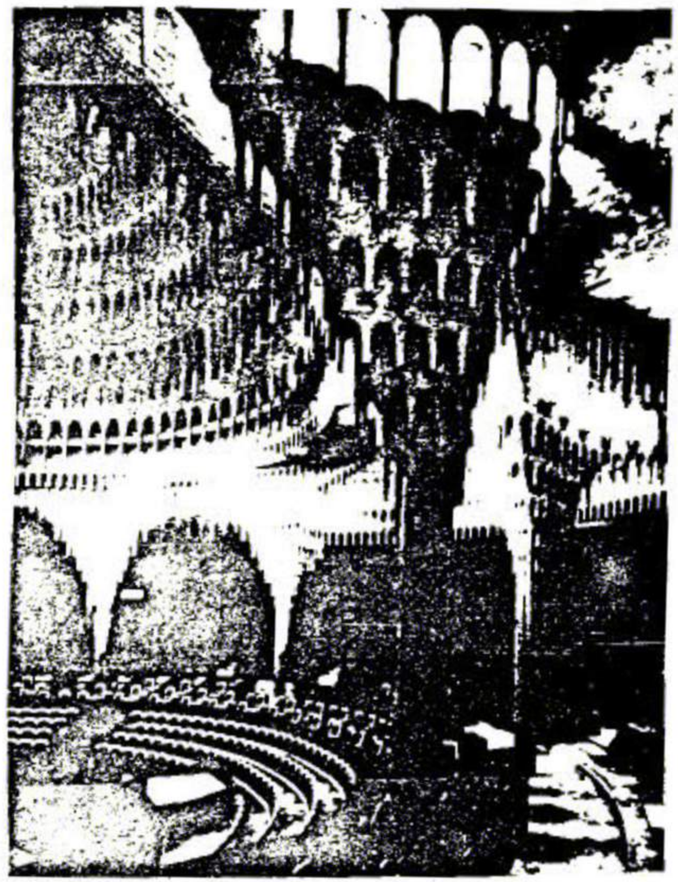


Fig. 4: Model Factory by Walter Gropins at the Exhibition, Cologne 1914



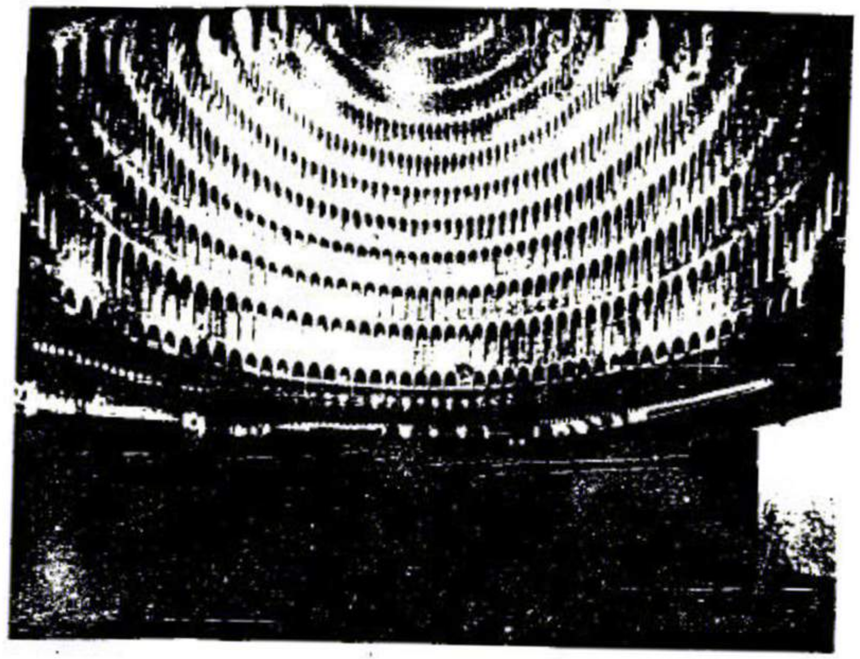


Fig. 5. The interior of the Grosses Schauspielhaus, showing the hanging icicle forms around the dome, and the concealed lighting effect.
Ref: Modern Architecture & Expressionism
Dennis Sharp.

of reality but a magic world radiating its own light". His first aim, in the design of his architectural-theatrical mission, was to carry the spectator into a world beyond reality by creating a cavernous interior, of hanging icicle forms, that ran around the gallery levels.

Bruno Taut, produced a pamphlet speaking about expressive Architecture; "there will be no boundaries between the crafts, sculpture, and painting, all will be one: Architecture.

A building is the direct carrier of spiritual values, shaper of the sensiblities of the general public".

One of the most impressive pioneers in this type of creative architecture was Erich Mendelsohn. Erich Mendelsoh, tried to symbolize the purpose of a building by its external forms and succeeded in the Einstein tower he reached the climax of expression, that is, dynamic architecture next function giving forth free curves and fanciful nature exploring the possibilities of plastic of expression. Fig. 6.

[2]The Einstein tower is an impressive structure, monolithic, symbolic and heavy, designed to stimulate the grandeur of the Einsteinian Concept.

2. Dennis Sharp. Modern Architecture & Expressionism.

[3]Architectural beauty... must express in plan and appearance our own times' requirements and perceptions".

However, in general, Architecture is the only tangible expression of space and form, which the human spirit is capable, and its conception is founded wholly on the human-being which in turn is also governed by; Past History of the individual - Conditioned reflex due to custom - The National and the Social life. Expressive Architecture rose after Architectural problems, being, [4]"the respect of tradition" and "Love of old work"

3. Architecture in a World Crisis' in the Lectures on Architecture, Berkeley and Los Angelos, 1944 p. 13.
4. The Principles of Architectural Composition. Howard Robertson.

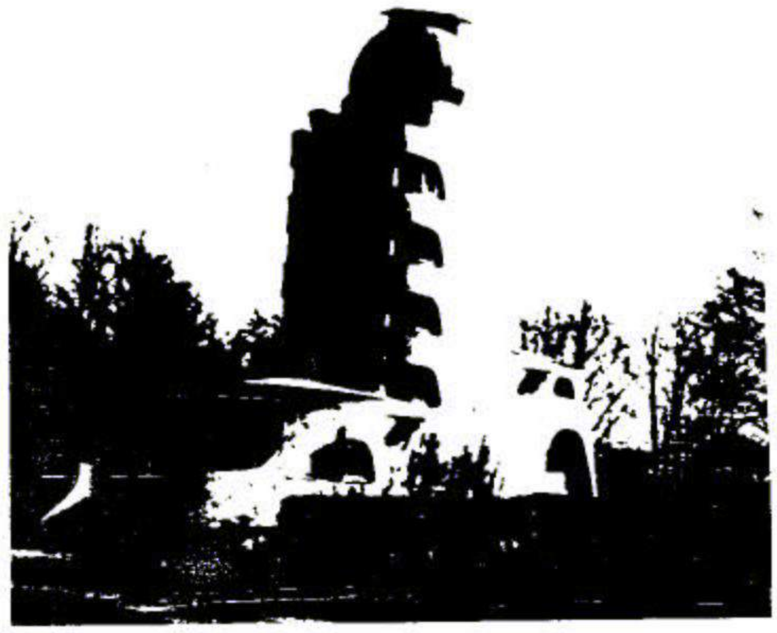


Fig. 6.
Einstein Tower,
Potsdam, 1920-1.
General view and
detail of entrance
steps

but this type of architecture, being created through the appeal to the average level of understanding and also to the natural revolt against copyism, gained many appreciation from the public and succeeded in overcoming many obstracles.

Lastly we can say that the creation of modern types of buildings, e.g. modern shops, wireless Station, Recreational buildings, encouraged creative imagination and ended in a long succession of expressive Architecture; meantime other traditional buildings e.g. American bank buildings, Pennsylvania railway terminals in New York and Washington were based on classical precedents and proved to be dull and inactive in that Architectural period.

3.6. ILLUSIONARY PERCEPTION OF COLOUR, PATTERN & TEXTURE

Colour is the most subjective element in the individual's choice of decoration; no two individuals have quite the same colour preferences and that is because the preferance is due to the reflection of one's internal perception.

The physical basis of colour is constituted by the wave length of the light reflected from objects to the eye and there is a continuous succession of colours known as the colour spectrum from red to orange, yellow, green, blue & violet which corresponds to successive wave lengths of decreasing magnitude. Fig. 1.

Fig. 1. The Colour Circle

The Fig. shows the six main colours of the spectrum in the form of a colour circle - the primaries which are marked as (1) are red, yellow and blue and their mixtures which are marked as (2) give the other three - Red + Yellow = Orange, Yellow + Blue = Green & Blue + Red = Violet. From these six all others are derived.

The essential words to describe effects of colour are:
Hue the character for a colour marked (1) in the circle its particular blueness, greeness, redness etc....
Shade[1] a hue with black added.
Tint a hue with white added.
Tone degree of brightness or darkness i.e. a shade in a dark tone a tint in a light tone.
Intensity the purity of a hue-colour is strongest or has greatest intensity when it is free from any admixture of black or white as a complementary colour. Fig. 2.

1. The value is either a shade or a tint.

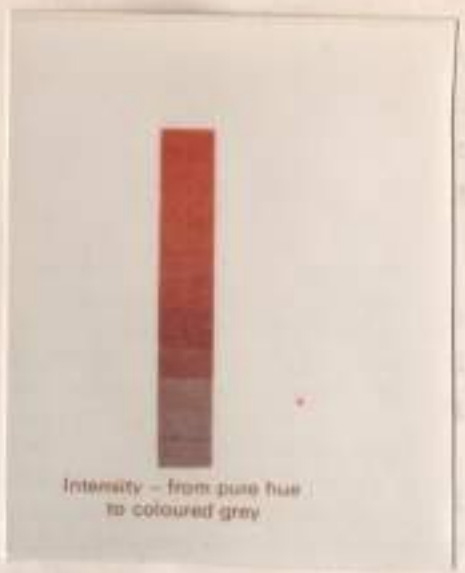


Fig. 2. The intensity of the colour

There are three main ways in which colours relate to one another and which are basic to our use of colour in design.

1. Complementaris:x

In the colour circle, those which lie opposite each other are complementary or contrasting e.g. Red & Green - Blue & Orange - Violet & Yellow. These colours have the most visually stimulating effect when used together.

2. Harmonies:

Hues lying side by side in the circle are in Harmony, they shade off into each other and mixtures of them produce new harmonies in the same range e.g. Blue shading through Blue/Green into Green. These combinations are restful rather than stimulating.

3. Discords:

Hues from either side for a primary (Red/Orange - Red/Violet which lie on either side of Red) just oposite create discords. Discords as in music have their own special stimulies, and can create very original visual effects but they need very careful selection and modulation.

Suppose we put the same colour in its original hue in three different tones as seen in Fig. 3. we will find that the colour appears changeable. If Red is placed in white it appears less brilliant softens all adjacent colours and the Red in dark tones will appear more brilliant as dark tones heighten the colour and makes it more brilliant. We find accordingly that cool colours appear as if they recede and worm colours advance as can be seen in Fig. 4.

It two complementary hues are mixed, the result will be a grey, darker than either of the component colours, which has a tint of one or the other of the colours. Greys result-

ing from complementary mixtures have more life and depth than the greyed colours made by mixing a hue with black and white.

The neutrals, black and white and grey play an important part in decoration, they affect other hues. A black surface is one which absorbs all light reflecting back none; any other colour placed next to or against a black background will appear more brilliant, since its reflection of light contrasts strongly, with the non reflecting black. Black is an accessory colour to heighten other colours in a room while surfaces reflect all light. Any hue will appear less brilliant against a white background. It is used as

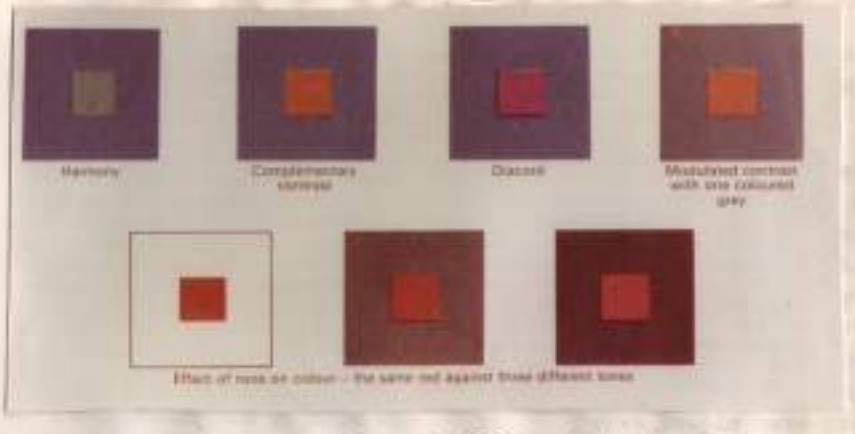


Fig. 3. The same colour in different backgrounds

Fig. 4. Cool & Warm Colours.

an excellent accessory colour, it helps to soften & merge stronger colours in a room.

In primary colours we will see that the colours of the spectrum can be divided into those which are predominently warm (orange, red & yellow) and those which are cool (green, blue & violet). This division of colour into warm & cool effects decoration in two ways: Effectively & Optically. Effectively, warm colours give a feeling of heat, warmth or sunlight and therefore, preferably, is used in cold countries while cool colours can make a room actually feel cooler and preferably used in hot countries, warm colours tend to be stimulating, while cool colours relaxing. From this it follows that the feeling or mood of a room can be improved by the appropriate use of warm or cool colours.

For example in Temperate climates there are always rooms which, because they get little sunlight, seem to be habitually cold and gloomy even if adequately, heated, these rooms can be made to feel warmer and more welcoming if decorated predominantly in warm colours. Conversely, these rooms which recieve a great deal of sunlight, where warm hues are excessive, can encourage cool colours. Pale neutral tones (white, off white & pale greys) are also cool in mood & with cool tints of primary hues are most appropriate for the main background areas in Mediterranean and tropical climates.

Here colour is affected with the different climates, but on looking at colour from another point of view, as from the person's perception of colour, we find that it is often associated with feelings of pleasure and displeasure. Most people have preferences for certain colours than for others; that of course depends on the personality of the chooser for e.g. [2]According to the general observations of E.R. Jaensh, warm colours produce the response of children, excitation, the extroverted human being, the predilection

2. Light, colour & Environment.

of the brunette complexion type with the cool colours goes the more mature response, tranquilization, the introverted being, the predilection of the blond complexion type. Warmth and coolness are dynamic qualities, warmth signifying contact with environment, coolness signifying withdrawal into oneself. Yet in adults, excessive "longing" for colour may be an indication of mental confusion for as the person grows older, interest in form exceeds interest in colour; however, balanced relationship between colour and form is probably present in a person who admits emotional life but keeps it within reasonable bounds, but as a whole a person who, in general, reacts freely and agreeably to colours is likely to have a responsive personality and to be happy with the world around him while his neighbour, who is not very enthusiastic about colour, may have a glum and solumn disposition, that is why it can be said that persons having an agreable rapport with the outer world will like colour and those given to inner rapport may not.

There are other aspects for preferences in colour for example every age and every type of life has its own colour preferences e.g. A very modern apartment for young people may have light tones and bright colour as its basic theme; with modern use of texture supplementary the theme, but with no use of pattern can be seen in Fig. 5.

However a house of character owned by a wealthy man with interests in collecting might have the amphasis on restained colour, subtle tones and authentic traditonal pattern as a background to carefully chosen antiques and paintings.

A large country cottage for active people with mainly open-air interests might be characterised by mellow, low tones, complemented by comfortable pattern rather than colour with restful lighting the whole frame in a relaxing counter-point to their outdoor activities can be see in Fig. 5.

Particular colours may give rise to certain emotional reactions and at the same time the choosing of each could be associated with a certain kind of personality:

Red: is a highly stimulating colour and it may be said that a preference for red is to be associated with an outwardly integrated personality with a person who nourishes a desire to be well-adjusted to the world. Red indicates extroversion and is highly prized by persons of vital temperament. Such, may not be too reflective and may be more ruled by impulse than by deliberat_on. Architecturaly, if red is used in wrong or excessively large areas, it can have an irritating effect. It may be appropriate as a 'main colour in some places of entertainment, but it is less likely to be successful in a domestic setting. It is best used as an accessory colour, and if used in any quantity, it should appear in an intercoating texture, such as silk wall covering, or painted on a rough surface rather than dead flat areas. It combines well with pure white, pale yellow, ochers & gold or contrasted with pale tints & pale greys of its complemented green. It is unflattering to dark and reddish woods in furniture.

Yellow: is a happy colour, giving a feeling of sunlight likely to be preferred by persons having intellectual bent. Yellow may be looked upon as an intellectual colour associated both with great intelligence and mental deficiency. Vincent Van Goh's attraction to the hue is notable in many of his paintings, parti cularly in those exhibited in the latter years of his life. The painter Kandinsky wrote with some fever "yellow is the typically earthly colour. It can never have a profound meaning.

An intermixture of blue makes it a sickly colour. It may be parraleled, in human nature with madness, not with melancholy but with violent raving lunacy".

Architecturally, what may appear as a very pale yellow on a small colour chart, may be overpowering when seen on four walls. Being the colour which reflects most light,

yellow is intensified by reflecting itself from opposite walls. It is seen at its best when not combined with too many contrasting hues. It is elegant when combined with white or with harmonizing ochres, brown and warm closed greys & can make an anusual accessory note if used in neutral or low-toned schemes.

Green: is usually the choice of persons who are superficially intelligent, social, who are given to valuable habits of speech, and who often have an intense appetite for food. To the psychoneurotic and psychotic, green is a great favorite. Probably it suggests escape from anxiety, santuary in the untroubled greenness of nature. Under stress those who preffer green will not, as a rule, crave seclusion; on the contrary, they need companionship.

Architecturally, green, the colour or nature, is neutral rather than warm or cool. Properly used, it is one of the most restful colours. In pale tints of pale coloured greys, it is a very good foil for warm colours, while combination of different greens, from pure emeralds through veridians and terre verte, can create very beautiful harmonized schemes, especially if combined with blues and white as a main neutral. The classical combination of green, gold (yellow) is one of the most restful colour schemes.

Blue: is a colour to be associated with schizophrania. A majority of inwardlyintegrated personalities will favor the colour, for it is to be allied with a conscious control of emotions. Under stress persons who like blue, may tend to make a tragic flight from environment.

However it is considered as the coolest colour. In its full intensity it can be gloomy and overpowering. Correctly modulated used in the correct amounts combining a range of tints, it can create very restful schemes. It is most, suited to rooms which get plenty of sunlight or houses in warmer climates. It works best in rooms used by one person e.g. (bedroom, study) where the scheme results from personal choice, rather than communal living or dining rooms. Very pale and turquoise tints make excellent complementary combinations with red & orange.

Orange: Convival persons may be attracted to orange and it is generally stimulating, but generally gayer in its effect than red. It gives a strong feeling of warmth like red, it should not be used in any setting where relxation is of primary importance, for example, in bedrooms.

An excellent accessory colour, it combines well with black, brown and pale tints of complementary blue and violet. A good colour for enlivening odd areas of wall in dull lobbies and passages, bathrooms and other small spaces. It is often preferred by fresh, full of life, youth.

Violet: is usually combined as an artistic colour and is thought of as the most mysterious colour and is the most difficult to use, since it is made up of half warm and half cool and is the darkest of the colours in the spectrumn. Used in strong intensity, or on too large an area it can be depressing. However, used as a mauve or lilac tint, it is one of the most restful colours and combines well with white and with its complementary yellow. When used in strong intensity in small areas (e.g. curtains, cushions, ornaments) it creates an unusual atmosphere.

Therefore we can say that colour has the ability to stimulate, relax, depress and that is why strong warm colours are more appropriate to places of entertainment or areas such as passages, hallways, cloakrooms where limited time is spent. On the other hand living rooms or bedrooms are most satisfactory decorated with tints or shades rather than with full hues of primary colours.

On the whole, it is not just the choice of favorite colours that matters but how they are related to each other. Each hue has its own degree of brightness. Yellow in full intensity may be too strong for a room and full violet would be too dark for use in large areas. Yet its derivatives of mauve or lilac are considered to be among the most pleasing and restful colours.

A room in which all the areas are too close in tone will be insipid and boring;

one in which the contrasts between light and dark are too strong, will be restless and upsetting. This is because the eye consistently adjusts to light and dark, the pupil dilating when it focuses on a dark area and contrasting when it takes in a light area.

The eye needs the stimulation of carefully selected balanced contrasts, but if it is confronted with harsh contrasts of light and dark, the eye is over-worked, trying to adjust rapidly between the two and the result is a feeling of irritation.

Optically warm and cool colours can also, dramatically, affect the space and proportion of interiors. Warm colours appear to advance making walls appear closer to us. Cool colours recede, making plans & objects appear more distant. These optical effects of warm and cool are enhanced if the warm colours are intense and the cool colours are light in tone e.g. a strong orange wall will give the maximum effect of recession. A well proportioned room, of course has no need of changes of tone from wall to wall. These would merely destroy its balances and restfulness. A badly proportioned room can be improved by the use of warm and cool colour to alter the feeling for space. Fig. 6, 7, 8. Similarly alterations to feeling for space can be affected by variations in the intensity of colour one uses: Full intense colour advances, while tints

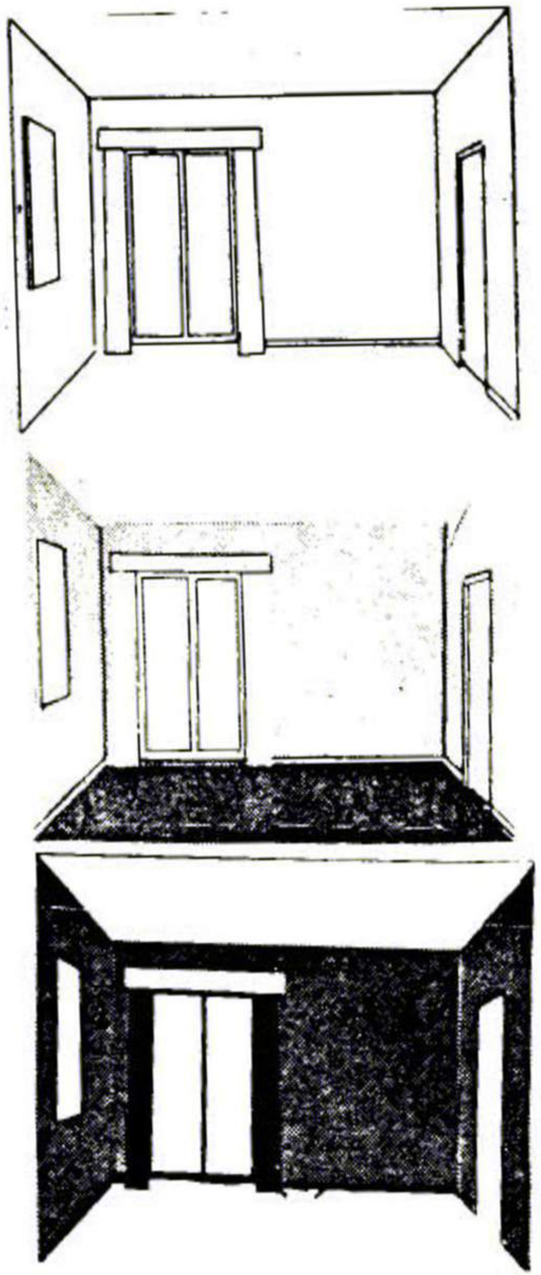


Fig. 6. The proportion of the room could be changed by use of warm & cool colours.

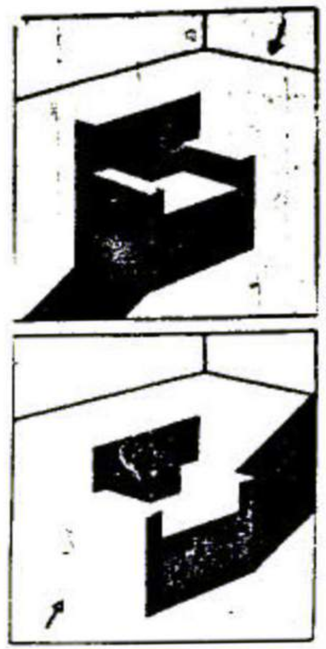


Fig. 7. Shade & Shadow can change the General effect.

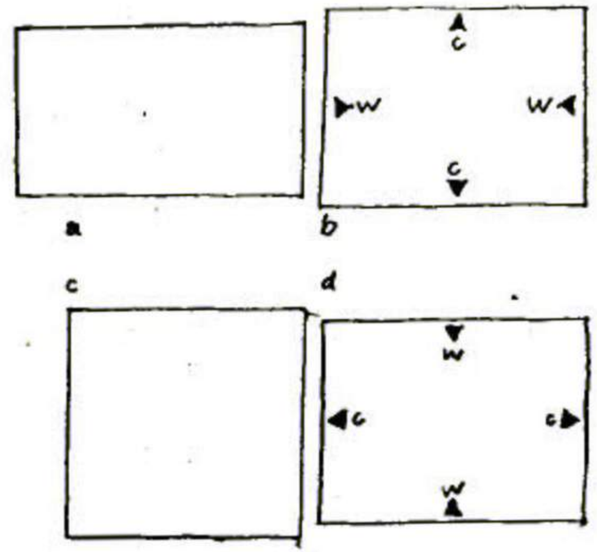


Fig. 8. Effect of warm and colour

a) Actual rectangle
b) Apparent rectangle
c) Square
d) Apparent rectangle

and the less intensely coloured greys recede, likewise strong tones advance, pale tones recede.

However, the key to satisfactory interior decoration lies in its creation of the correct degree of balanced contrast in a room. A well designed room should have sufficient contrast within its over all design to engage and hold our attention, but one should avoid excessive contrast which can lead to unbalance and confusion. It must have harmony without boredom and contrast without confusion.

But on the whole, the degree of contrast, between light and dark, in a room is largely a matter of personal preference and has a great deal to do with the amount of time the occupants spend out-doors. People who spend much in the bright day-light outside; generally like the relaxation of low-toned interiors such as fellahins in Egypt, while those who spend a great deal of their time working indoors often need a higher lighting level and lighter tones.

However, all the previous part is dependant on personal choice, but it is needed to have information about the application of colour in places where personal choice is not important as the comfort of the majority e.g.:

1. <u>Office Buildings</u>: decoration here is hardly a matter of aesthetics or personal taste. People in an office are supposed to get things done and not merely sit around to enjoy themselves Fig. 9. It is wrong to assume that because colour is appealing and attractive, it is conductive to engoyable labor. Indeed for the very reason of its strong impact, it may, when not properly applied, distract from work, interfere with taste, and actually make work difficult and fatigueing The best colour for offices is grey. Such a colour is neutral and non distracting, it reduces the rate of eye blinding, affects less fatigue in retinal and is judged pleasant as a sort of extra dividend.

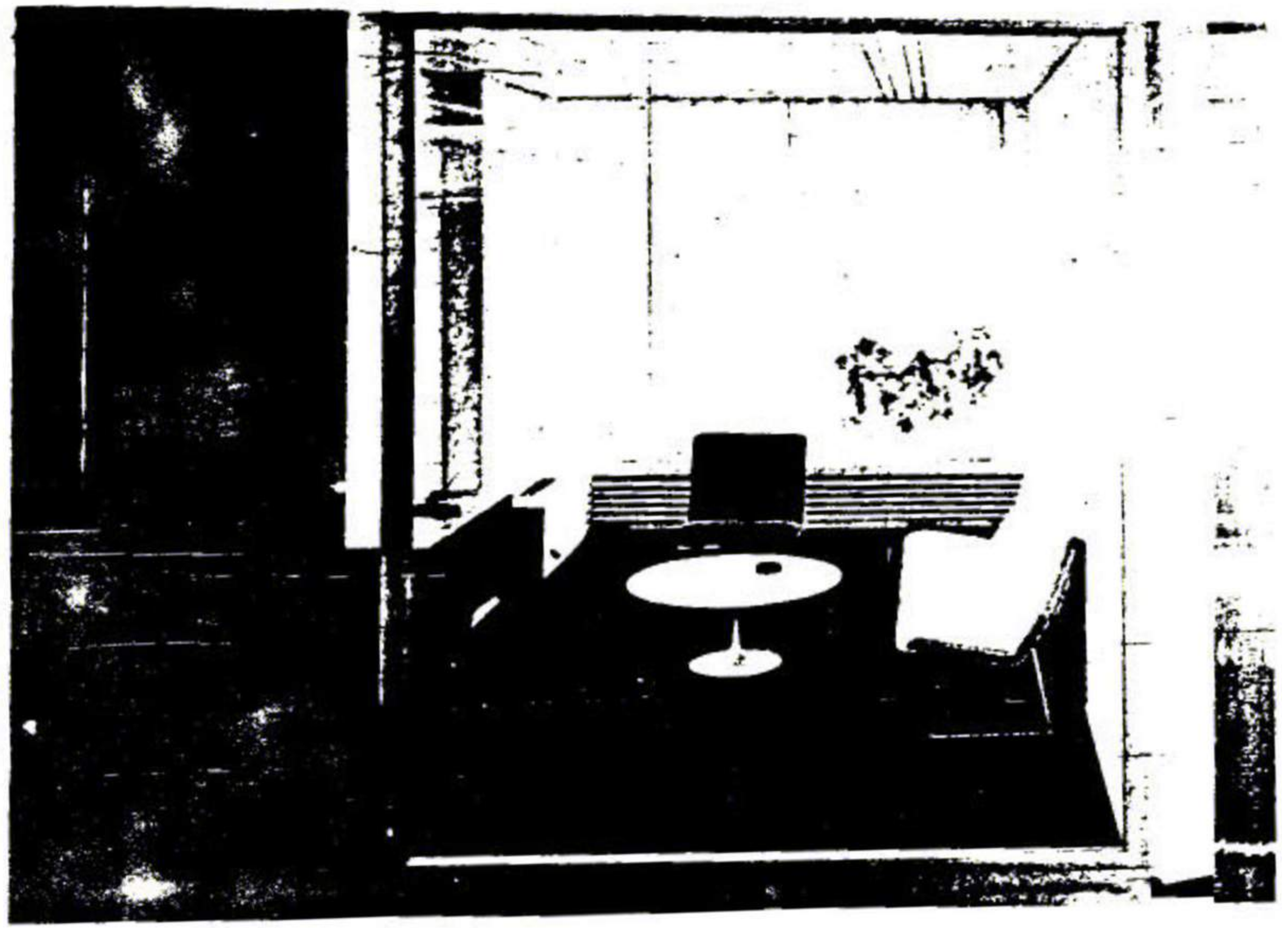


Fig. 9. Interior of an Office building

2. School Buildings: In school buildings one must bear in mind that the critical use of the eyes or brain is upset by distractions - glare, sharp, colour, noise, movement. Where the effort is to come from with, the environment must be subdued, so it will not set up an annoying competition. Aquas and greens accomplish this by causing the surroundings to recede and allowing the child to devote himself to the exacting demands of thought and contemplation.

It is a good standard to use white for all ceilings, both for consistent appearance and to reflect an abundance of shadow-free illumination.

"School buildings are for the populace at large and should seek democratic rather than sophiscated values. Colours such as green, blue, yellow, coral and red have a well known appeal, as revealed by psychological research in colour preference. They have impulsive and spontaneous charm recognized by most persons. To venture a field from these known qualities of pleasure in colour is to contradict the direct and impredudiced purposes of educations".

3. Hospitals: In patients accomodations, fairly soft tones are better than sharp ones for reasons of greater subtlety and refinement. If warm bright colours tend to be exciting and to draw attention outward, they seem desirable for convalescent patients, but it would be better to consider moderate tones of Coral, Peach and soft yellow. Cool and subdued colours inspire a relaxing mood and are more suitable for chronic patients.

4. Food Service: In psychological studies of appetite appeal in colour, a specific food palette is clearly revealed. Although not all persons will feel the same about colours or have the same reactions, but on the whole there are common perferences worthy of attention. Looking at the hues of the spectrum, a peak in appetite appeal is found in the red-orange and orange region, where such hues seem to arouse the most agreable sensations. Yellow here also as a chosen colour but yellow-green although it may appear fashionable when applied to clothing or home furnishings, it is distasteful when applied to foods. Cool green, blue green and purple produce pleasure. Turquoise and saphire are successful in the sale of meat. White trays suggest cleanliness and salads have been found to be more saleable in green plates.

On the whole, food, is big business. All too often it may lack a pleasing and

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3. Light, colour and environment. Faber Bivren;

friendly touch that colour could help provide. Man has to eat. If he is at the mercy of this necessity, it would seem wise to offer food in a way that will delight his eye and charm his emotions, not merely fill his stomach.

Not only is the choice of colour in a home the result of personal preference, but also decorative requirement differ from room to room according to its use. e.g.

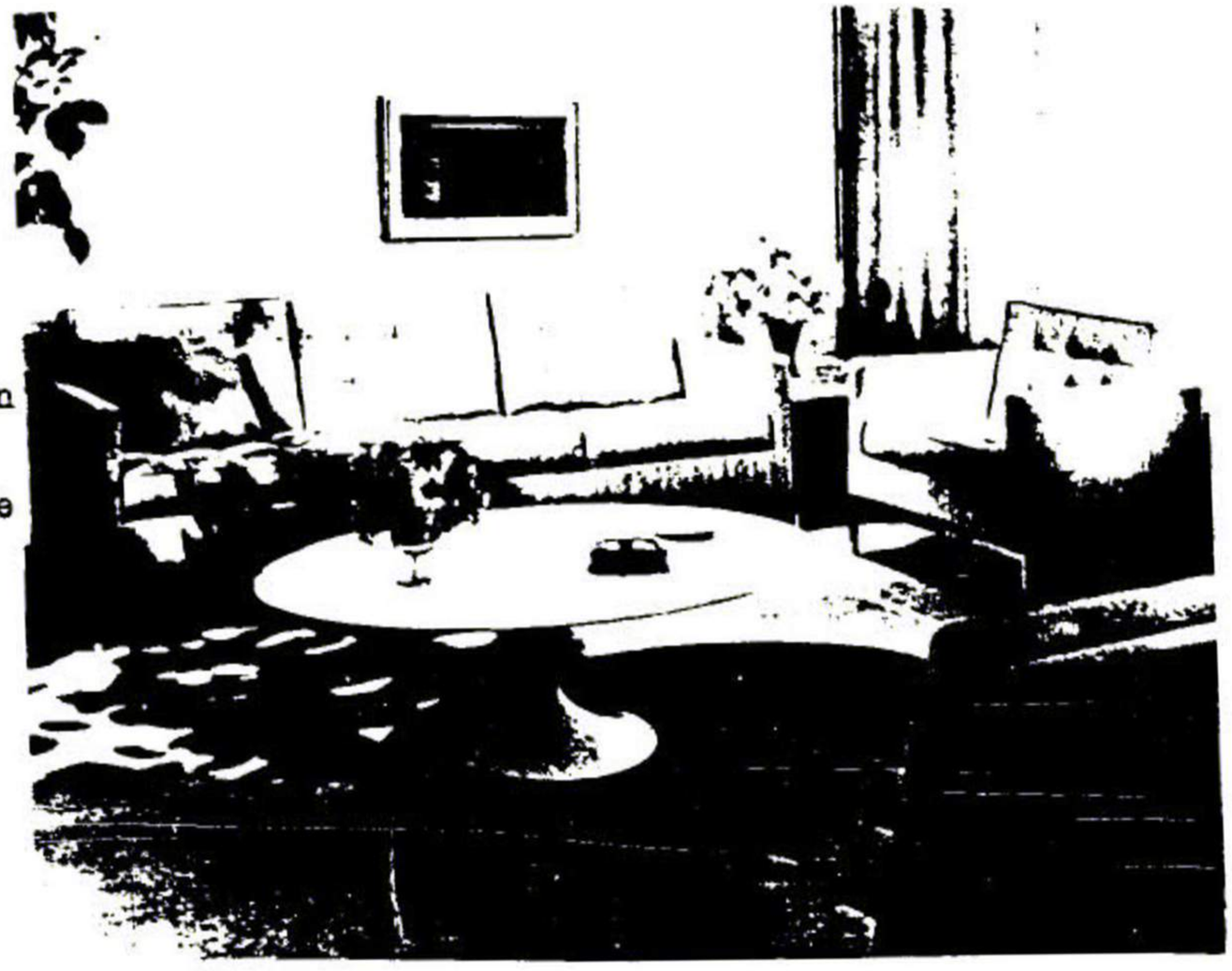

Fig. 10. The general design of the living room should be restful.

Living Room Fig. 10: The first requirements is that the colour tone and pattern should be restful. The tonal range should generally be light, since the room will be used both day & night.

Dining Room: The key note in colour schemes should be restfulness. Nothing should interfere with the enjoyment and relaxation of eating. Neutral colours in plates with warm colour in the back ground is generally considered to be the most flattering for food. Fig. 11.

Accordingly the treatment of other rooms should so be designed, yet we have to put in mind certain factors; the

Fig. 11. Dining Room.
Reff. Plan Your Home. William Grabam

eye always needs a focus, or an adequate point of rest, within the field of vision. It repells from vacant spaces and it is for this reason that a room with too many planes, unadorned areas, can be as unrelaxing as a room with too much pattern. In a bare room, the eye moves restlessly over the empty spaces without the relief of a point of rest, and this, after a short time, creates a feeling of irritation. Similarly in a room with too many plain areas, where there are only one or two very strong focal points, the eye will be held for too long and the lack of variation in focus will lead to tiredness and boredom. In a well designed room, the eye should be led naturally around the room, bringing on a focal

point, but being led on by intermediate areas between fast areas of movement and static points of rest. Psychologically the pattern must be in harmony with the use and mood of the room.

Dynamic patterns diagonals, zig-zag ... etc. should be avoided in rooms intended for rest and relaxation for example in living and bedrooms. These however may be used in hall passages, entrance halls, or other areas where little time is spent. Sophisticated patterns are appropriate to the adult rooms of the house, but are wholly out of place in nurseries and children's room; for children have little interest in sophisticated pattern, but complicated patterns may be harmful to the sight of small children, who are only begining to develop the coardination of their eye muscles. Children therefore, should have their rooms decorated in simple shapes and bright colours, which they prefer, and still it would be better if in a really up-to date living room and children's room the personal adventurous homemakers, design the walls by leaving them plain and make their own pattern according to their own personality Fig. 12.

Also, if we are speaking about pattern and plain areas and how they relate to each other, we must also say that the plain colour, primary or neutral, may appear dead and uninspiring if simply painted on a flat surface. The same colour, when applied over a textured surface such as rough plaster, or brickwork, will take on a new vitality.

Rough surfaces absorb light giving a darker tone, smooth surfaces reflect light giving a lighter tone.

Strong pattern in a room seems to come forward, while plain finely textured areas seem to recede. Strong pattern on opposite side walls in a narrow room will make it appear narrower, but if applied to the endwalls, will give it a better proportion by bringing them close together.

Similarly the appearance of a square room can be altered by stong pattern on two of the facing walls, while the other two left plain.

Fig. 12. Bed-sitting room for a teenage boy, in Council of Industrial Design exhibition. Designed by Elspeth Burningham Cold. Photo: Copyright Cold.

Pattern with a strong vertical motif or stripes will make a wall look higher and narrower, while horizontal lines will make it look wider and lower Fig. 13, 14.

In carpets and other floor coverings, a plain closely fitted covering gives the greatest feeling of space in medium sized and small rooms. Restrained pattern can have the same effect, but large strong motifs will reduce the feeling of space. Likewise rugs and centre squares of carpet break the floor into two or more areas, make it appear smaller. If these are also strongly patterned, the apparent space will be still further reduced.

Next the importance of texture can be defined, neutral

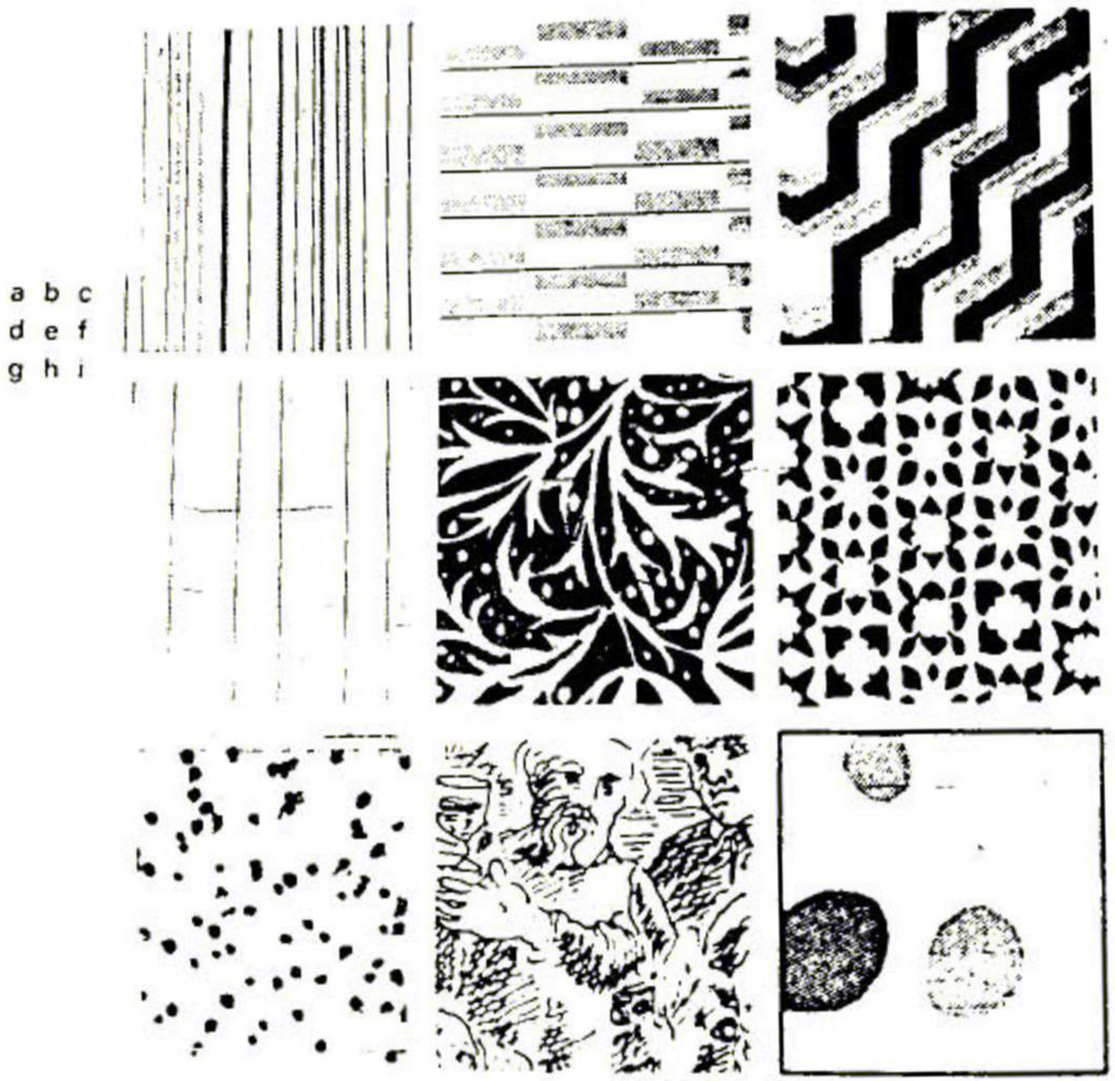

Fig. 13. Patterns with different motifs.

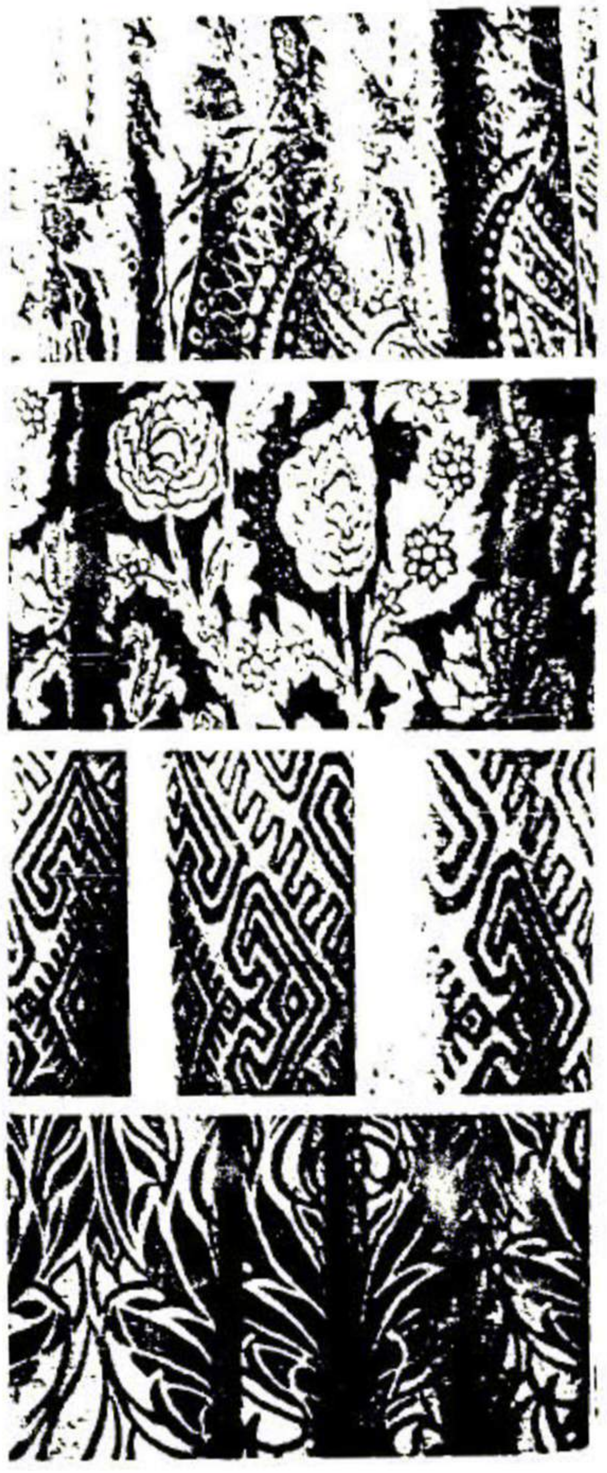

Fig. 14. Curtains with different patterns to suit the character of the room

or manufactured textures are more suitable to the character of modern rooms, but, in medium and small rooms, they lend visual interest to surface just as pattern does,

but at the same time preserve a feeling spaciousness that pattern does not.

Texture is important in creating the mood of an interior. A combination of tex-

ture such as plate, glass, stainless steel, polished rose wood, smooth pile carpet and silk wall covering immediately confuses up a sophisticated urban apartment. On the other hand, the combination of rough earthenware tiles, pine furniture, white washed walls, coarse woven fabrics & rough stone fire places could only apply in a country cottage or ranch house Fig. 15.

Texture, Structure and Space:

A pale, shiny, surface, such as glazed tiles or gloss paint, makes us aware of the hardness and solidity of a wall. The opposite effect is created by a dark matt surface, such as flat or wall paper, which makes a wall appear softer and less substantial, and therefore more restful.

Fig. 15.
The interior of a country cottage or ranch house.

A dark shiny surface acts like a modified mirror, giving a darkened reflection of the room beyong the wall surface. This effect can be used in special situations to improve the proporties of the room. It is yet another way of disguising the difficult shape of a square room, since one wall, treated in a reflecting surface, will give a suggestion of greater space in one dimension.

This effect can be used in a room with a very low ceiling, such as a kitchen, where the reflection in the ceiling surface will create an even greater feeling of space than will the application of a cool, receding colour, yet the use of an actual mirro can be very unrestful.

Texture & Light:

A pale matt surface reflects and diffuses light and is thus the best texture for enhancing both day & artificial light. A dark matt surface absorbs a considerable amount of light, giving a feeling of richness and comfort. Dark surfaces should be adequately lit by artificial light or they may create a feeling of gloom. A room in which most surfaces are of, almost, even texture would be boring, even with variations in colour and texture, whereas one with an indiscriminating mixture of too many textures would be confusing and would lack a specific character. Thus unity and contrast must be reconciled.

Thus we can say that in designing our homes we bring together, against a back ground of colour, pattern and texture, a variety of decorative and useful objects with which we aim to create that combination of comfort, efficiency and visual pleasure which is essential to civilized modern living.

Finally, it is important to deduce that any human being can feel a sense of irritation and restlessness by a certain colour or pattern, in a certain room, without really knowing the reason and can also feel a sense of cheerfulness and gaiety if the same colour or pattern be used in another atmosphere.

By applying this choice on other individuals we find that each person has his own reactions according to his environment, personality, age and past experience.

CHAPTER: 4 _ ARCHITECTURAL APPLICATIONS

4.1. BUILDING FOR THE AGED

A home means many things to many people, but the one requirement, on which most would agree, is that the place in which a person lives, is the one in which he feels "at home", to which he belongs, and in which he has a meaning to himself and to others who live under the same roof with him.

Feeling of satisfaction and belonging are created, not by the building but rather, by the quality of the life lived in the building and the relationship established within it. Yet it is obvious that when life in the home is carried on in a building designed to permit the individual resident to follow a daily pattern of living that meets his personal needs there is a greater peace of mind for the individual.

The most important thing in designing for the old aged is to recognize that the older person, is a person with desires and yearnings that deserve attention and respect and that the life in the home should allow as much gratification of these feelings as possible.

Therefore it is obvious on designing buildings to house older people, much thought must be given to what actually constitutes the minor and major activities that fill the hours of the individuals, and of the group as a whole, both the residents and the staff - and at the same time, it is important to put in mind that life in a home for the aged is a substitute for the kind of life one hopes to have in the intimacy of a family circle and thoughtful planning can make it a very rewarding substitute.

The problem that we are presented with and that represents the main part is the need for privacy for the old person, so long as he is able to conduct himself in the residence

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Geneva Lathiasen. Planning for the aged
Edward H/ Noakes & Associates
F.W. Dodge Corporation.
New York.

without any major difficulty for himself or for others.

The group admitted to either voluntary or public homes had to adopt themselves to the new demands.

A greater portion of accomodations must be infirmary beds; a greater part must be skilled in the care of patients; yet at the same time to organize accomodations services in the daily program of living so that medical and nursing care do not dominate the home to such an extent that the "home" atmosphere disappears, is of vital importance and although it is a difficult task but it is the criterion by which the home must be judged.

Many examples have been designed and have been most successful e.g. the Home for the aged, designed Arch. Gould and Leaf. Fig. 1. In this plan complete privacy is attained for each individual with thoughtfull planning for a cabinet for folding the wheel chair and an overbed table and a folded writing table to leave a space when folded for use of wheel chair.

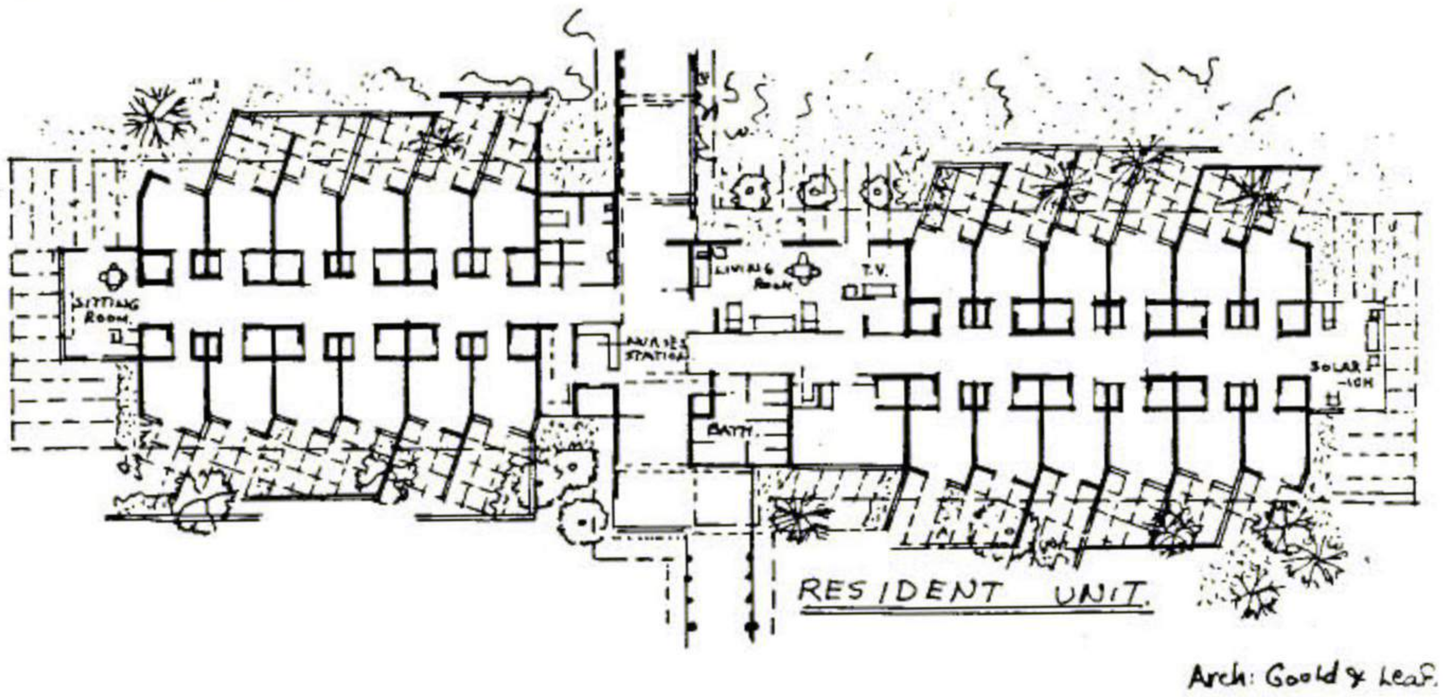


Fig. 1a. Plan of a Residential unit of a home for the Aged by Could and Leaf.

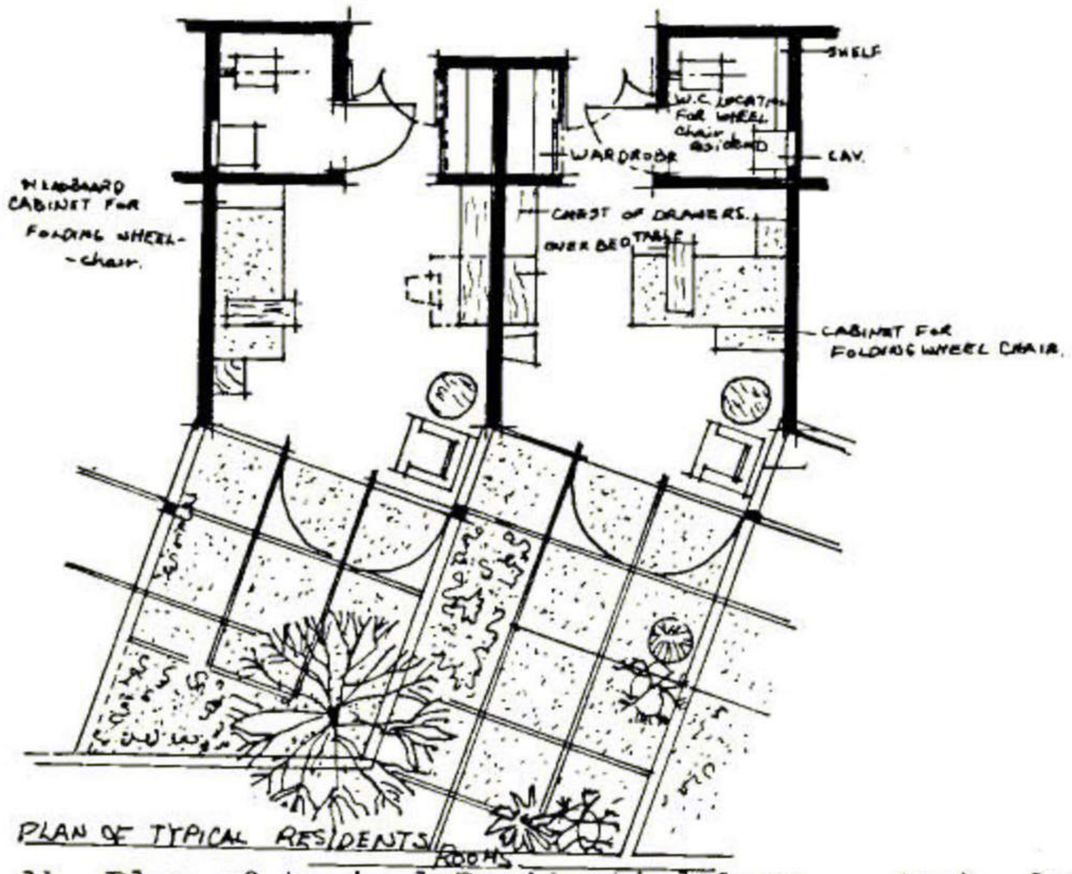


Fig. 1b. Plan of typical Residential Room. Arch Go ld & Leaf

The individual rooms are easy to frunish having four interior corners free of circulation and the return of the mould give a sense of spaciousness hard to achieve otherwise.

The individual garden outside each room permitted each resident to have the privilage of a distant or intimate view from his window.

The nurses station also gains in visual control but care would have to be exercised to avoid overemphasis of the supervisory aspect.

Other examples could be given e.g. Crawford Manor Apartments. In New Haven Connecticut by Arch. Paul Rudolph. Fig. 2a, 2b.

Here the plan is characterized by areas of different activities which are seperated.

The boys are different in size to differentiate the diferent kinds of spaces they span. The balconies are high but they are not intended to see down but are rather a place you know can go to, if you want to take a breath of fresh air outside. The plan was designed

to provide the resident complete privacy in his own space and although all his activities are grouped together kitchen, living and sleeping, yet each activity is defined within a corner or an alcove.

Earlier in 1956 an architectural competition was done for the design of a home for the aged. The First and Second prize are here chosen to show their advantages and disadvantages.

First prize was taken by Joe. J. Jordan. Philadelphia Hairford Yang, School of Architecture and Planning. Massachusetts Institute of Technology. Fig. 3a. 3b.

The plan is designed in three residential units, arranged in a cluster about the main lounge area of the central building, providing intimate outdoor sitting spaces. Within the circuits, residents rooms are groups two and three together, creating pleasant circulation areas that lead to indoor facilities and the small communal gardens. The all-purpose room, chapel, shop, and library are closely related to the resident's rooms so they could be well used.

The residence units themselves are excellent examples of small scale planning for a large-scale home. Because the four corridors are offset about a central point, a resident can see only his own, corridor and consequently a feeling of identity with the individual wing. Each wing has its own covered garden patio, and everywhere there is a feeling of freedom to go in and out at one's own pleasure.

The bed patients have a medical unit, isolated from the other units to keep the sense of Hospital as minimized as much as possible.

The second prize was taken by Bellante and Clauss, Philadelphia. Jane West Clauss, Alfred Clauss. Fig. 4.

Here the cottages have been grouped around enclosed court yards to emphasize the residential scale so as to provide quiet landscape areas

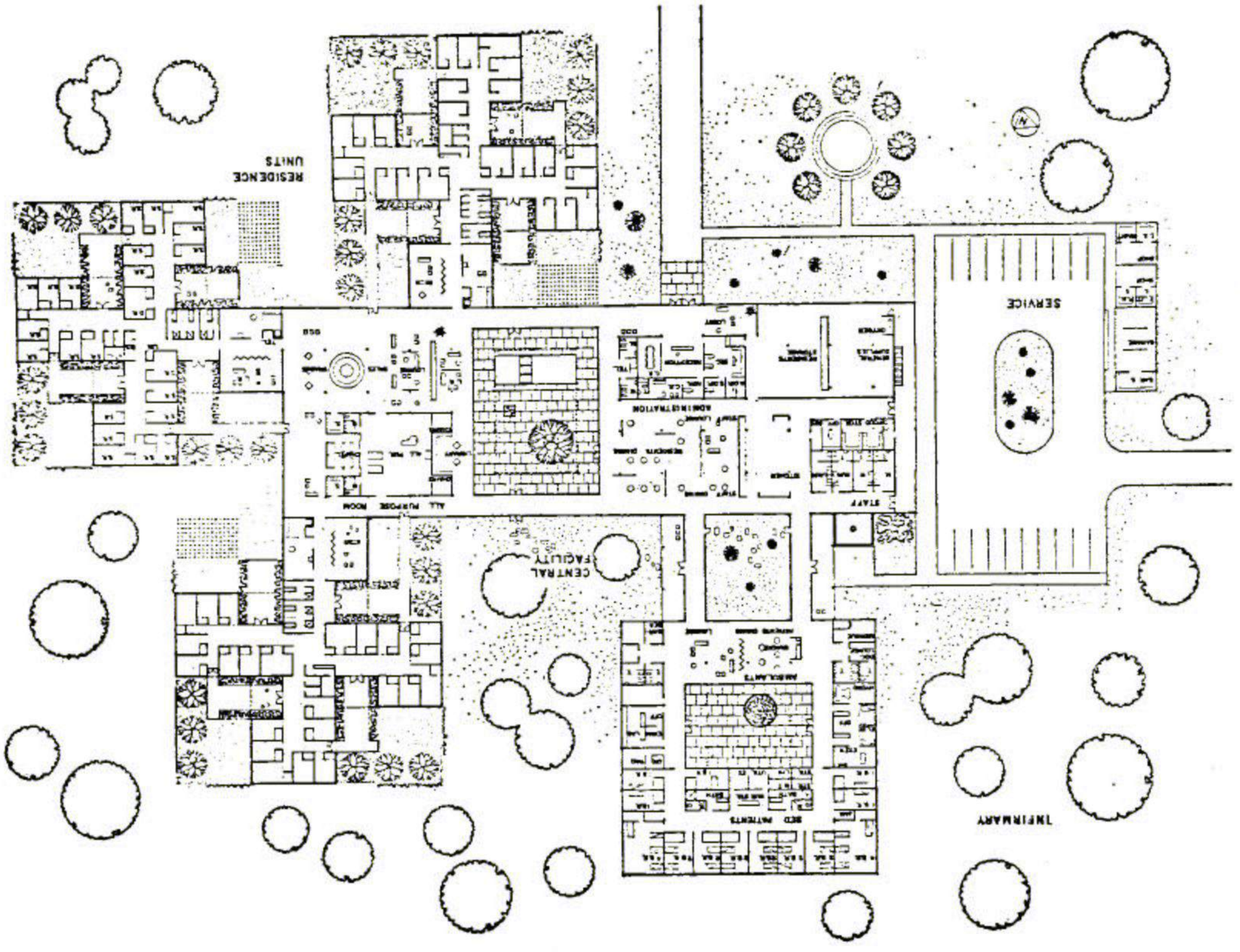
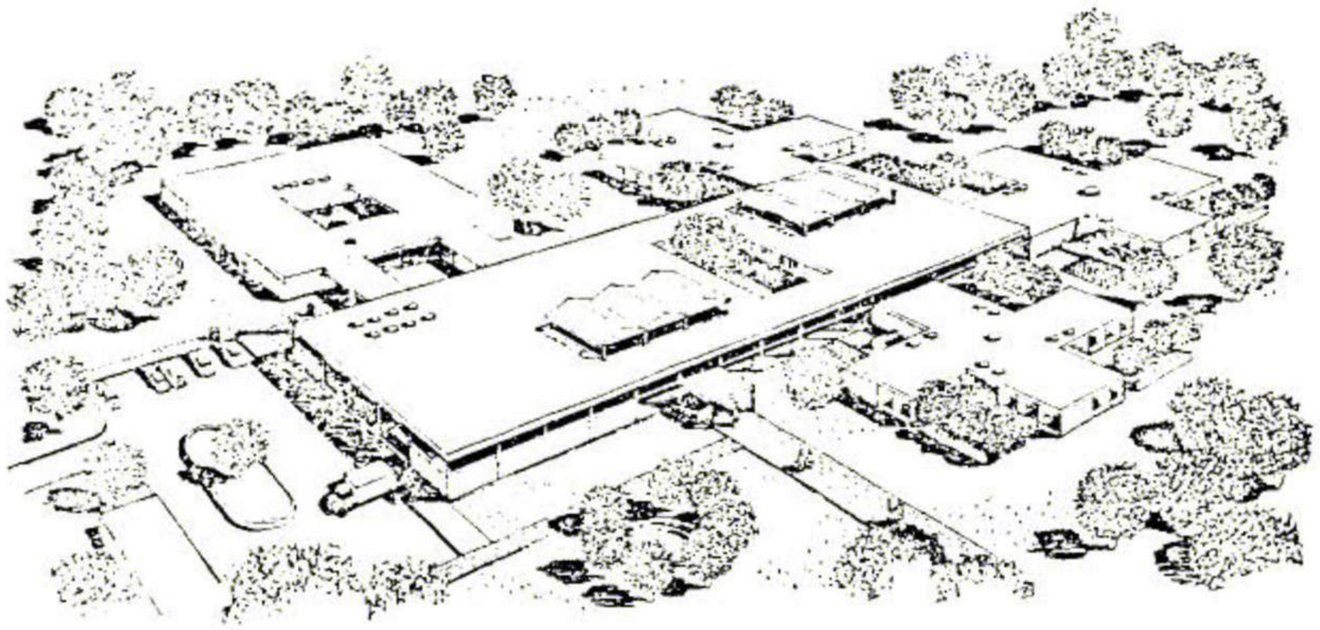
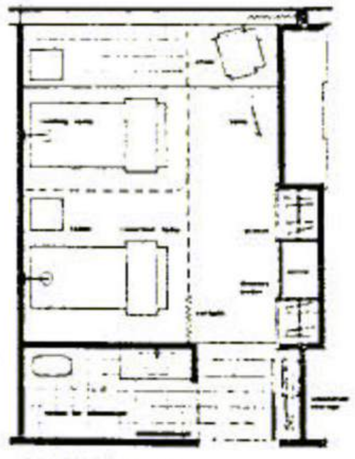
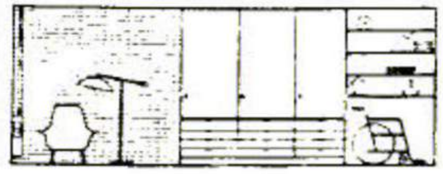
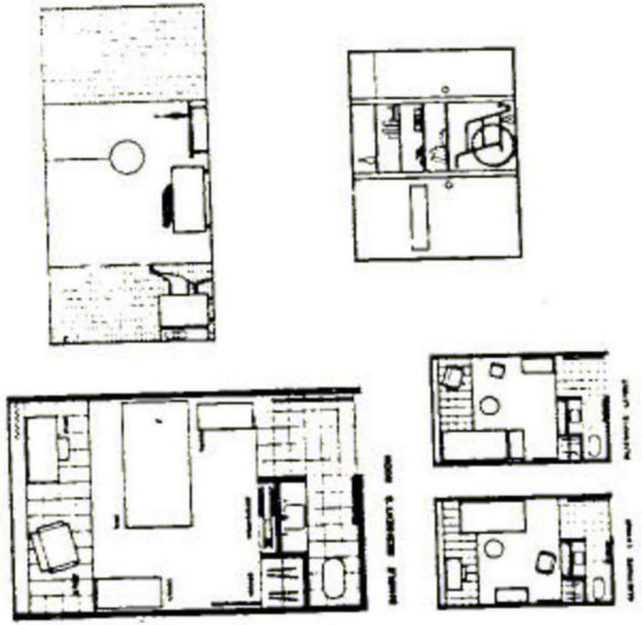


Fig. 3a. House for the Elderly Joe. J. Jordan. Philadelphia. Hanford Yang, School of Architecture and Planning. Massachusetts Institute of Technology. First Prize
Reff: Planning for the Aged. Geneva Mathiasen.









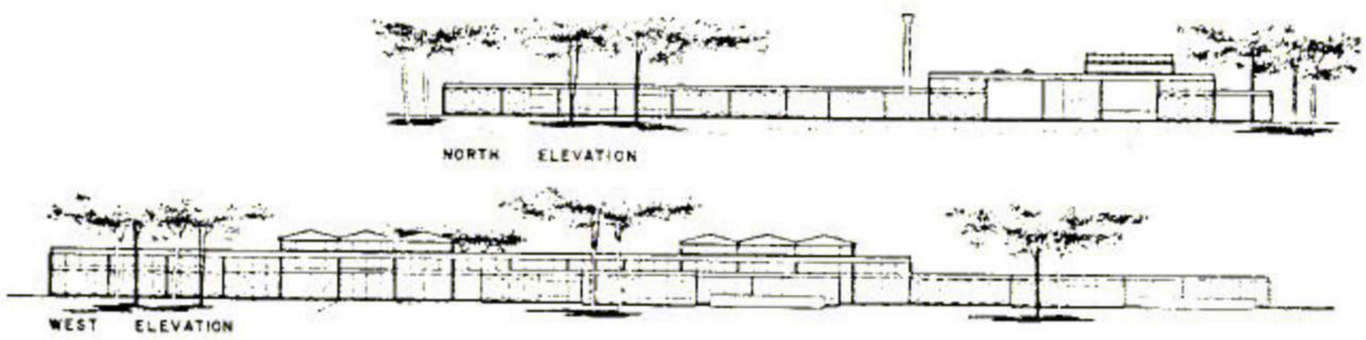
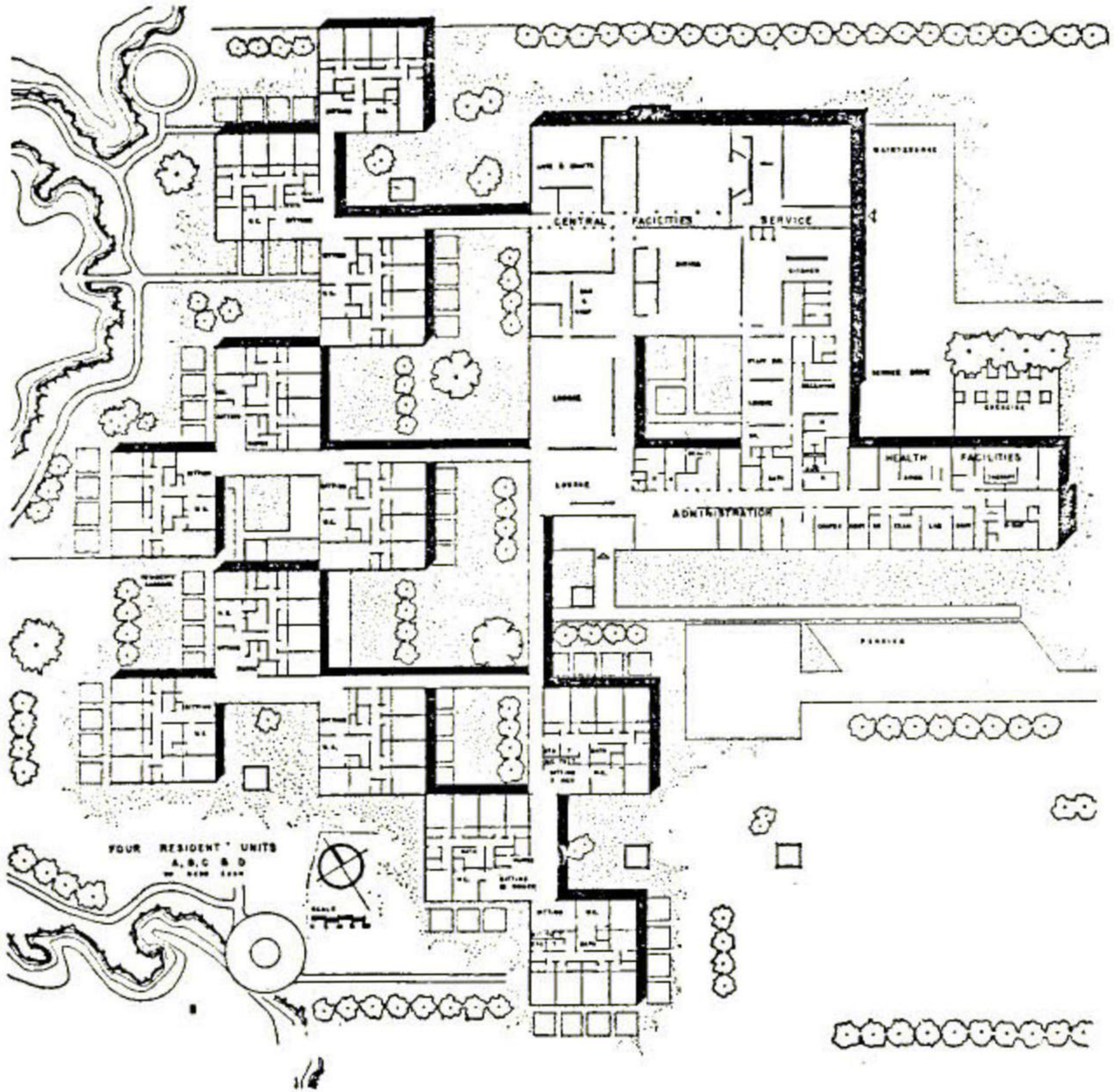
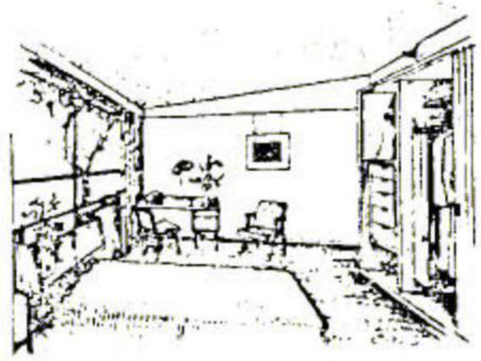


Fig. 3b. Perspective, Elevations & Single residential units of House for the Elderly
by Jordan & Yang





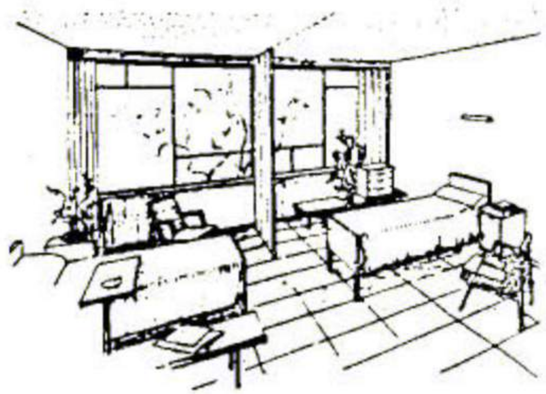
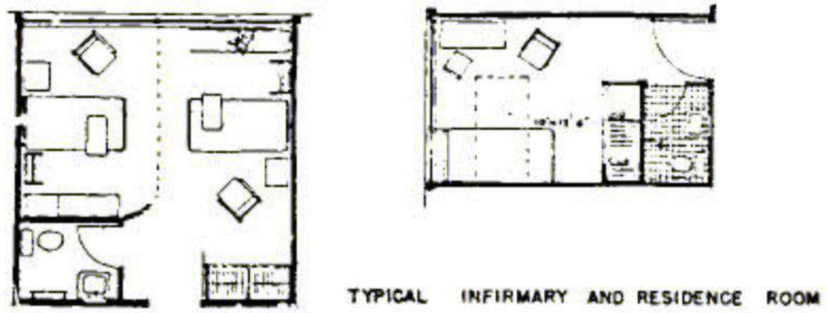
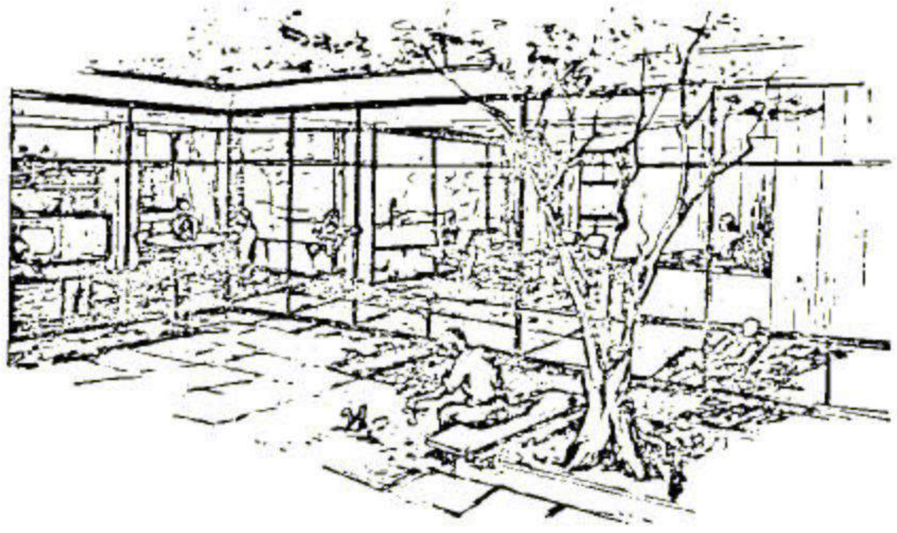


Fig. 4. House for the Elderly Alfred & Clauss, Philadelphia, Jane West Clauss, Alfred Clauss, Second Prize.
Reff: Planning for the Aged. Geneva Mathiasen





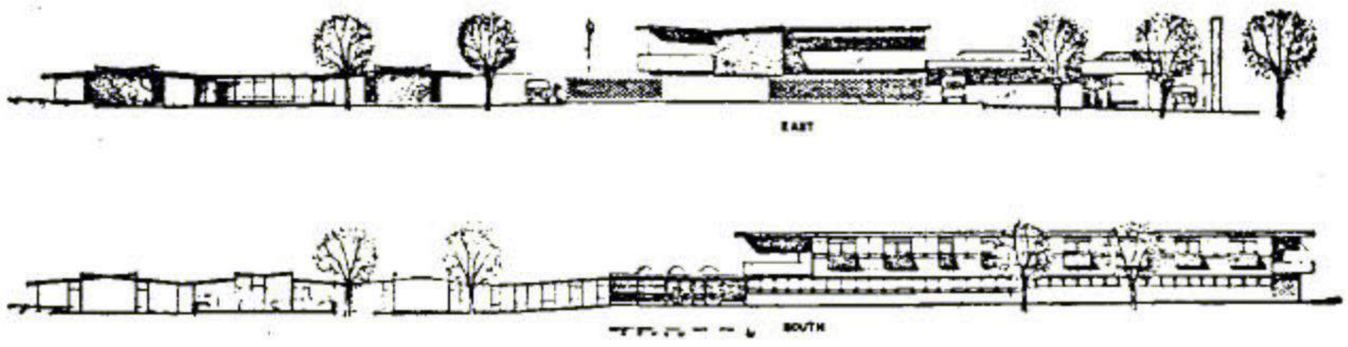


Fig. 4. Elevations & Interior of typical infirmary & Residence Rooms.
Alfred & Jane West Clauss

where the inactive resident can relax on benches beside small pools, surrounded with flowers for a "gossip over the fence". All the cottages are set back from the road to take advantage of the excellent view of the woods and reservoir, and to place these within easy strolling distance for the nature lover and fisherman.

Thought has been given here to occupying the residents' leisure time. Arts and crafts rooms have been provided, and the nearby snack bar and shop has been designed to be used in the evenings as a wine and beer bar, to be operated by a few of the more active group members.

The residence unit lounges are well planned to provide for furniture arrangement in three or more small groups, all with garden views.

This plan also provides a choice of outlook from residence rooms, ranging from intimate courts to the countryside.

The infirmary is well planned for nursing and has above-average lounging and terrace space; it is also well related to the ground floor health facilities and ambulance entrance. However, the feeling that the infirmary residents should be out of sight or at least out of the main home is reflected here.

However, generally, social contacts, religious worship must exist within the house for those who cannot move out into the community.

If the life in the home is to have the flavor of normality there must also be opportunities for engaging in the activities of the community for those who wish to do so and for bringing the community into the home without formality.

Assuming that the home is a man's and woman's castle where freedom reigns therefore the interior decoration of one's own room should be a personal affair. Most human beings have deep feelings about colour and it seems important for a person to obtain his own way with

D. Ground floor plan.
Carpeted areas are tinted.
Ref: The Architect's
Journal information
Library - 29 September
1971.

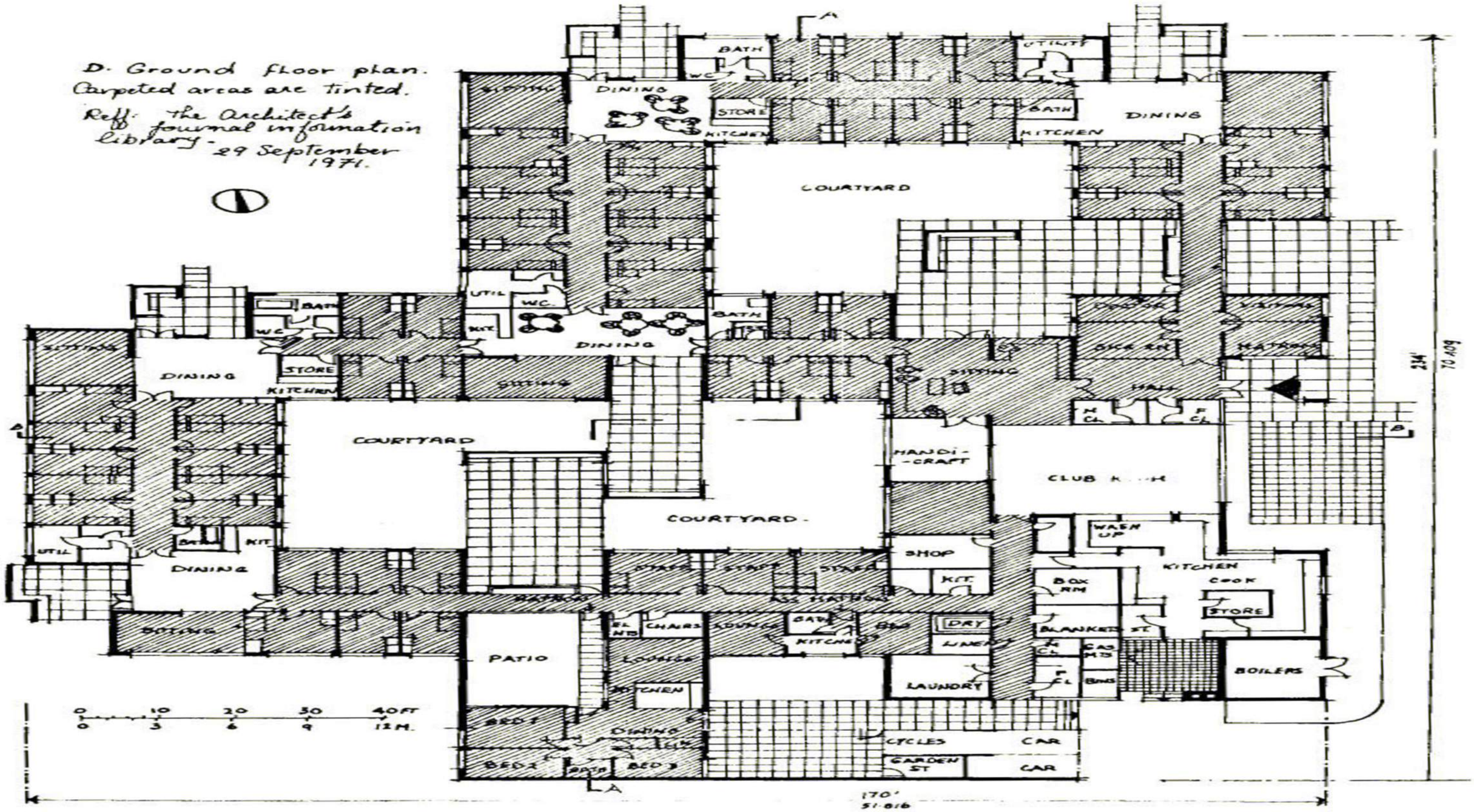
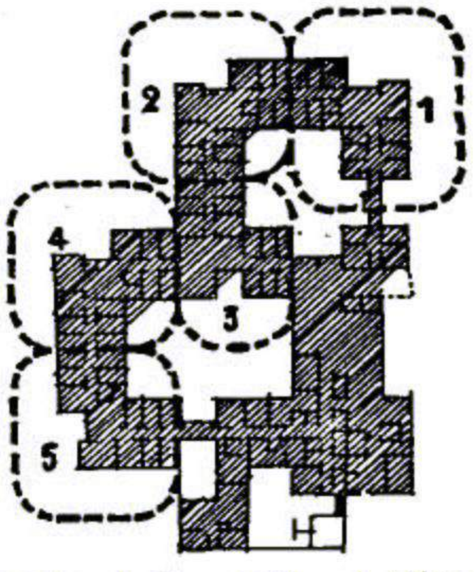
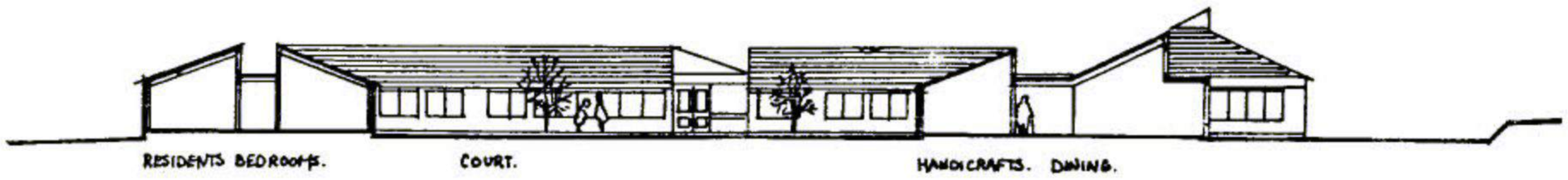


Fig. 6a. House for the Elderly. Ground Floor Plan
Carpeted areas are tinted. Ref: The Architect's
Journal information Library. 29 September 1971



E Plan showing division of living accomodations into five clusters.



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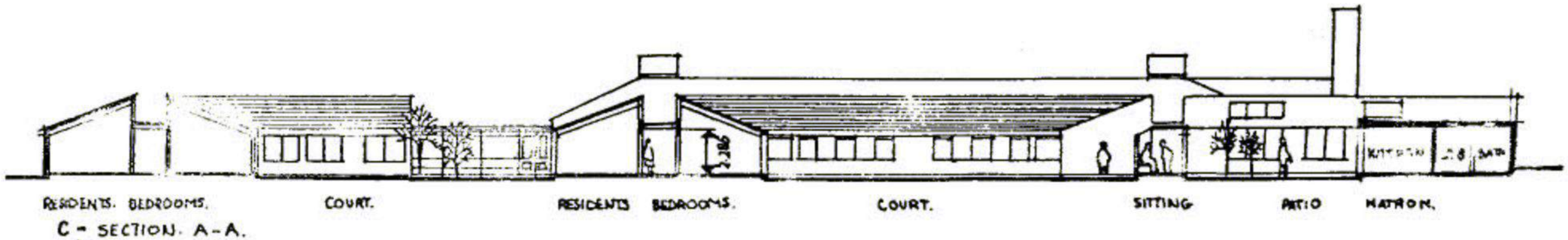

C - SECTION. A-A.

Fig. 5b. Analysed plan and Sections

colour. This technique is called Psycodecor.

Yet, generally, we can say that certain colours are relative according to different ages that it is unquestionably a normal condition for human beings to like colour. There are precise reactions and "moods" to be associated with sunny weather, rainy weather, with a colourful world or environment and with a drab one. Yet in old people, excessive verbosity or longing for colour may be an indication of mental confusion, for as a person grows older, interest in form quite naturally exceeds interest in colour.

The main lounge should be near the main entrance, but not part of a public lobby.

Residents should be able to talk with friends and relatives without having to move furniture from one part of the room to another.

The main lounge can be used by larger groups for recreational purposes such as films, concerts, plays, dances and parties. Fig. 5a, 5b.

In the dining room the arrangement of tables should allow for wheel chairs and crutch walkers. Older persons need more room for movement; stumbles and falls must be anticipated. A small parking stand for crutches.

In addition, provision sould be made for privacy for those residents unable to dine with others - residents who are embarrassed by infirmities, or who may have difficulty in eating properly.

With respect to religious services smaller homes may have to adopt the recreational room for use as a Chapel, but seperate arrangements for religious services are better. Small meditation rooms rather than large expensive, Chapels. Religion is usual an intimately personal experience for the old aged and the architect should plan accordingly. The varied persuits that constitute occupational therapy require a small suite of rooms for wood working, basket weaving, ceramics, leather crafts, painting, fabric wearing, and bandage rolling.

Therefore the most important thing necessary in designing for the aged is to put in mind the different needs of the aged that is the psychological needs: Need for belonging by giving him complete freedom with his own room and activities. Need for privacy and that should be satisfied wherever he goes. Need for social contact at his own desire.

[2]Secondly the Health Needs and the most important thing necessary in preparing the health needs for the aged is to try and give the impression that the home is much more a residential home than a sanatorium, but at the same time have every medical services possible for the handicapped.

2. Housing the Aged in Western Countries. Gienn H. Beyer & F.H.S. Ninstrosg.

4.2. BUILDING FOR THE MENTAL DEFECTIVES

[1]Psychoses are severe mental disorders that tend to shatter the integration of the personality and disrupt the individual's relationships. The behavior of the psychotic is too bizarre, unreasonable and unappropriate to be understood by a normal person. It is necessary to supervise closely or hospitalize psychotic patients, because they are incapable of adequate self management and their peculiar and unpredictable actions constitute a potential threat to the Welfare of Others.

1. Abnormal Psychology. A clinical approach to Psychological Deviants. James De Page Associate Proffessor of Psychology

[2]Dr. Asmond votes the collaboration of the architect and psychiatrist so that the therapeutic possibilities of architecture may be thoroughly explored.

"Perhaps by applying our measuring rods to the great needs of the mentally ill we may emerge with something valuable for the mentally well. We need here, a module derived, not from the size of man's body, but from the way in which he disposes of that body in social relationship.

The design calls for an architect who is deeply aware of the patient's experience

2. Progressive Arch. April 1965.

and one who can design a building which limits social interaction to the amount which provides the least chance for panic and withdrawal, while maintaining the greatest and most suitable kind of social relationship.

Dr. Thomas Kirbride of Philadelphia felt that it was hardly possible for most architects, unaided to plan a hospital for the insane, emphasizing that these buildings had to be differentiated from factories, workshops, since the harsh surroundings of patients greatly influence their conditions and feelings.

The grounds were to be tastefully ornamented .. everything repulsive and prisonlike

carefully avoided but most important it should be advisable to design single rooms for most patients. e.g. (1) Mental hospital Design by strorm lyzmour. University of Pennsylvania, Architecture Geddes, Bower. Fig. 1.
(2) Mental Hospital design by Mirriam Comings. Fig. 2.

University of Pennsylvania, Architecture Geddes/ Bower Studio.

Patients met in small groups in day rooms designed to hold no more than 10 people. The total number of patients in a hospital should be kept to a maximum of 250 and the need for limited social contact is urgent, that is, the more close is their social module to the normal family size the batter the social contact.

What are the pecularities of the mentally ill people (schizophrenics in particular) which the architect must take into account in his design ? The illness is characterized by changes in perception, thinking, and mood that precipitate the sick person, either slowly or at a great speed into a world far less stable and predictable than that which he would normally be accostomed. The sick person becomes anxious, and with rising anxiety, the distortions worsen and invade increasingly larger areas of his life. Sight, hearing, touch, smell and taste may be subtly changed or even grossly distorted.

What would be most harmful or helpfull in the environment of the sick person ?

3"Avoid anything", says Dr. Asmond which makes heavy demands on the patients impaired perceptual apparatus. Avoid ambiguous and muddled design, too much complication, even though it may be aesthetically interesting. Avoid too much space and too many people forced on the sick person. Ensure that shapes, colour, lighting, textures are unambiguous; that corridors and spaces are clearly defined, that living space of the biologically derived kind is provided.

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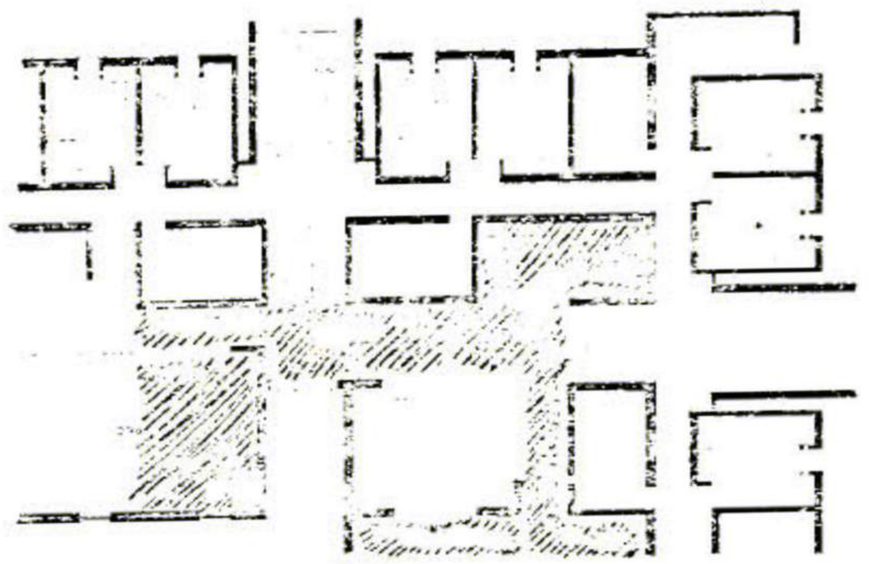
3. Progressive Architecture. April 1965.

1. Living Unit 4 patients in single rooms, living room (enthropophilic) stair (socio-petal) corridor (socio-petal) tinted area: social space

2. Nursing Unit (composed of 4 1 living units in split-level arrangement) 16 patients share: 1 marses' station with adjacent lounge (socio-petal) recreation room (socio-petal and anthropophilic) dining room (socio-petal and anthropophilic) corridors (socio-petal)



3. Floor-community ± 100 patient 2 recraation rooms for noisy activities, 3 recreation rooms for quiet activities, 2 dining rooms 2 therapy areas, corridors.

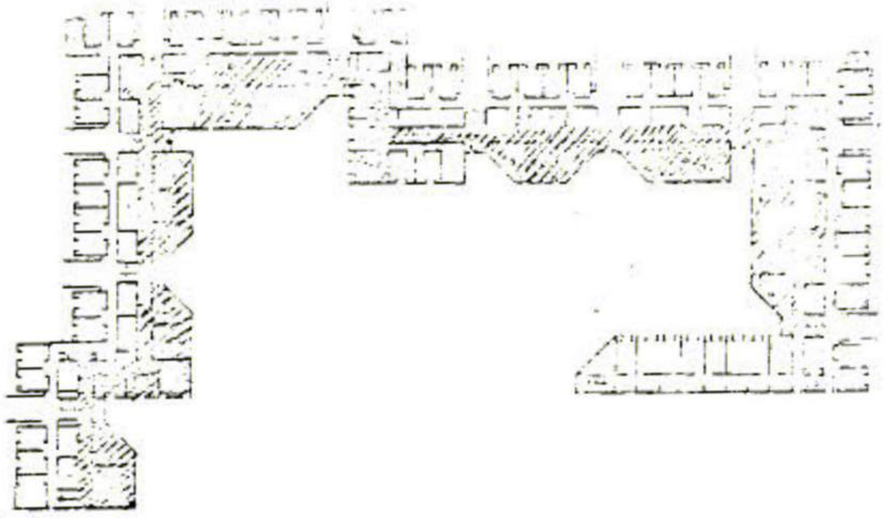


Fig. 1. Mental Hospital Design by Steorn Izencur, University of Pennsylvania, Architecture, Geddes/Bower Studio

1. Living Unit
4 patients in single rooms share: center hall (socio-petel) living room (anthropophilic) Inted area: social space

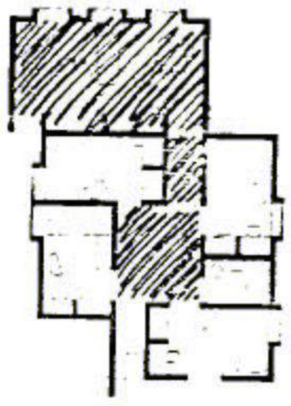
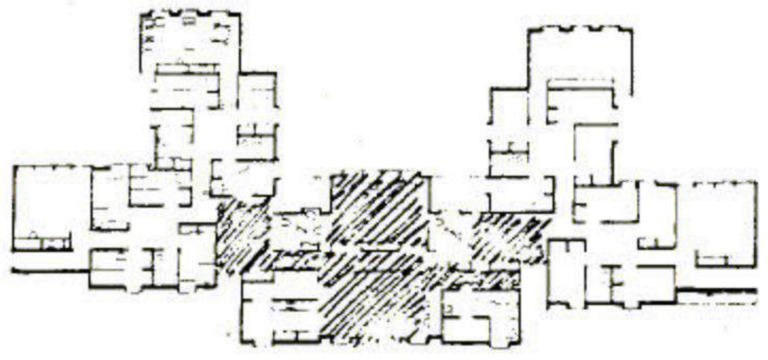
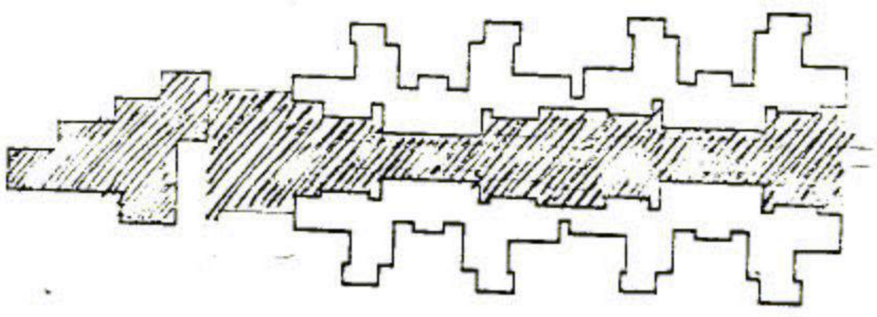


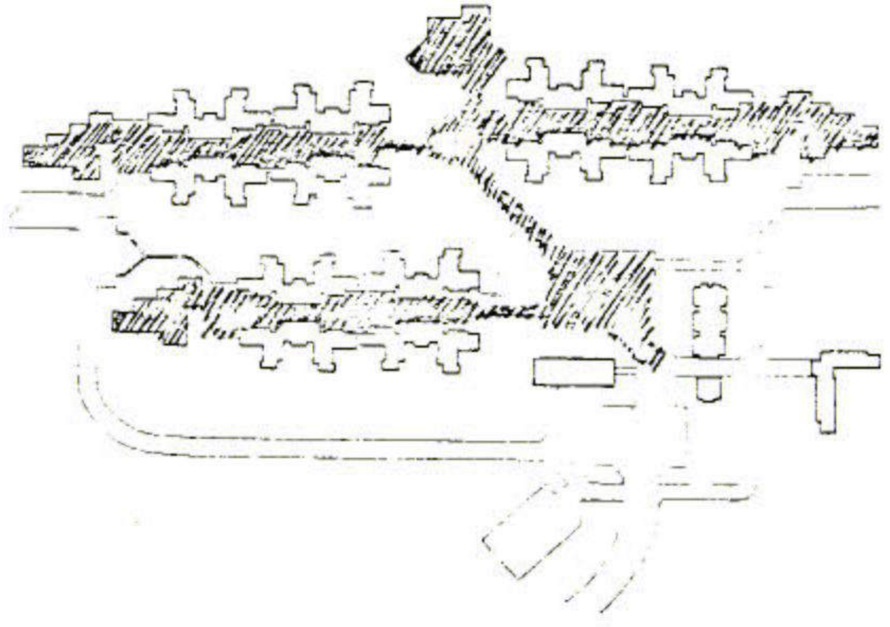
Fig. 2.
Mental Hospital design by Miriam Comings University of Pennsylvania, Architecture Geddes/Bower Studio



2. Nursing Unit: (composed of 4 living units) 16 patients share: (2 nurses with adjacent waiting space (socio-petal) recration room (anthropophilic and socio-petal) dining room (anthropophilic and socio-petal) corridors (socio-petal)



3. One-street community (composed of 4 nursing units) 64 patients share: outdoor space for petionte, visitors, staff (socio-petal) workshop/Therapy for in-pationts and out-pationts (socio-petal and anthropophilic)



4. Total Hospital community. (composed of 3 one-street communities ± 200 patients share: 3 outdoor spaces (socio-petal) connective walkways for staff, visitors, in and out-patiants (socio-petal) open-air recreation area for in and out-patients (socio-petal) therapy for in-patients and out-patients (anthropophilic)

[4]The normally balanced individual will face and adopt himself to his problems, whereas mental disease is the manifestations of different depths of escape.

With this fact in mind, we generally find that hysterical patients, especially in psychoneuroses with anxiety state, have a preference for green as symbolizing the mentioned escape mechanism. The emotional attack of the outside is repressed, the "red" impulses of hatred, aggression and sex denied... For the same reason we will not be surprised that red is the colour choice of the maniac giving the extreme of his emotions their "burning and bloody" erpression. Finally we see yellow as the colour of schizophrenics. Yellow is the proper and valued colour of the morbid mind. However some writers associate blue with schizophrenics.

Considering all these previous preferences, one must put in mind that the mental defectives, as human beings, are entitled to surroundings that are warm, vital, and stimulating, where all the needs of the individual are recognized, including the good things enjoyed by other members of our society.

More than the usual amount of space should be provided for various functions, particularly in view of the training process often requiring attendants in every move and action of the retarded. Buildings should be human in scale and intimate in character with skilful use of colour, texture and materials, as well as good taste in furnishings. There is perhaps more response to attractive surroundings by the majority of the retarded and less tendency to destroy, than among normal individuals. Facilities should be planned to permit small groupings that will allow individuals to move easily, relate themselves to their associates and their environ-

4. Article by Eric. P. Mosse. Reff. Light-Colour and Environment. Faber Birren.

ment. This creates a psychological world that is more comprehensible and more conductive to normal psychological development.

"Design of Facilities for the Mantally retarded", developed by the Division of Hospital and Medical Facilities, Architectural, Engineering and Equipment Branch; Public Health Service; U.S. Department of Health, Education and Welfare". This plan here provides living units for 20 ambulatory retarded patients. Fig. 3.

It is one of many exhibits where the plan shows the general kind of spaces now suggested for this single category of mentally retarded patients. The design is characterized by providing day and nigh-care facilities, education and training facilities.

Another example showing the human scale in individual Hexagonal cottages can be seen in the plan for Woodbridge school, designed for the state of New Jersey, Department of Institutions and Agencies. Fig. 4.

Another example reflecting the infinite variety of long range and immediate needs of all degrees of retarded patients.

Aregon Fairview Home, Salem. Architects. Wilmson Endicott Unthank, a state institution for the mentally retarded and Psychiatric Facilities. Fig. 5.

For Logan Mental Health Centre, Denver and the Wallace Village for children, Broomfield, Colorado. Fig. 6.

Architects: Victor Hornbien and Edward D. White Jr. One of the most successful designs planned for the mental defectives is the design of the Resthaven Community Mental Health Centre, Los Angelos.

Architects Kaplan and Mc Lauglin. A private hospital - associated facility in Los Angelos. The aim was to make the buildings specific and identifiable, because in mental health patients the ability to percieve is limited, at best cases, and may be quite impaired. To help patients find their way to secluded activity areas, building exteriors avoid

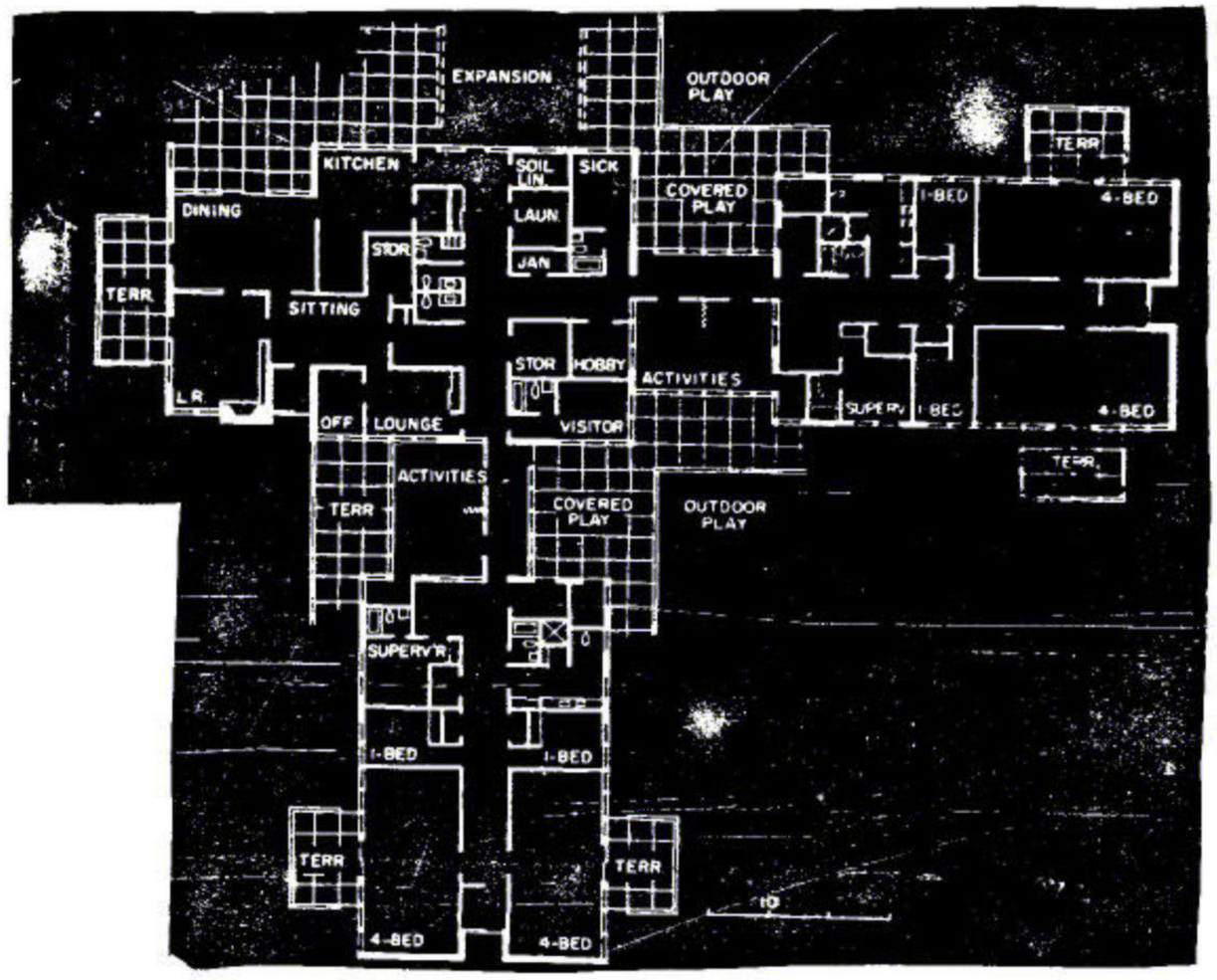
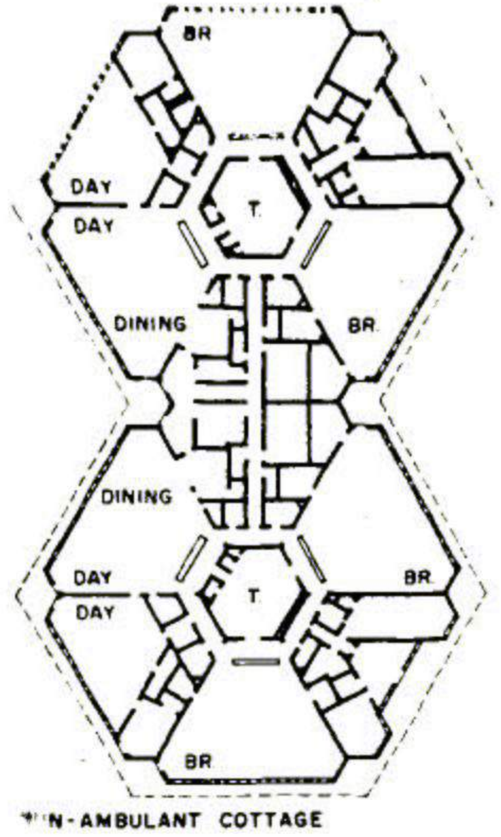


Fig. 3. "Design of Facilities for the Mentally retarded".

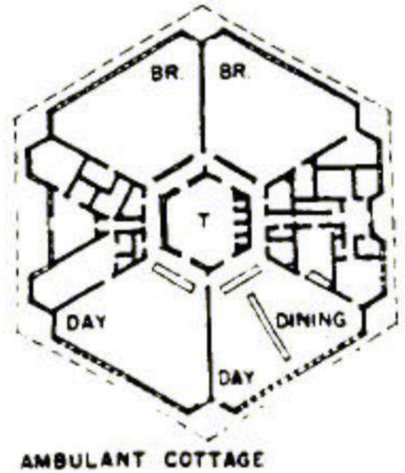
Division of Hospital & Medical Facilities, Architectural Engineering & Equipment Branch

Fig. 4.

Woodbridge School State of New Jersy Dept. of Institutions & Agencies.



N-AMBULANT COTTAGE



AMBULANT COTTAGE

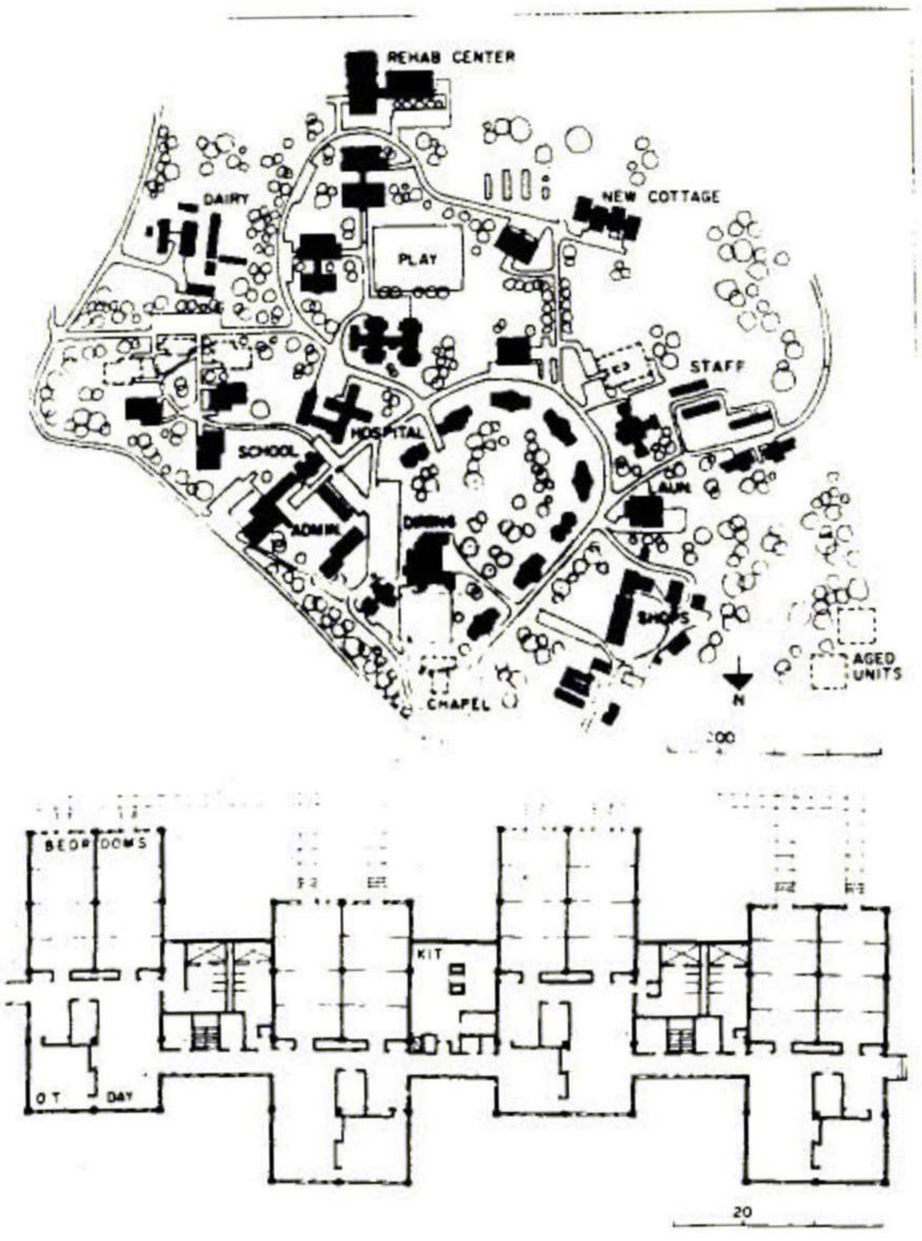


Fig. 5. Aregon Fairview Home
Salem Architects Wilmson Endicott
unthank.

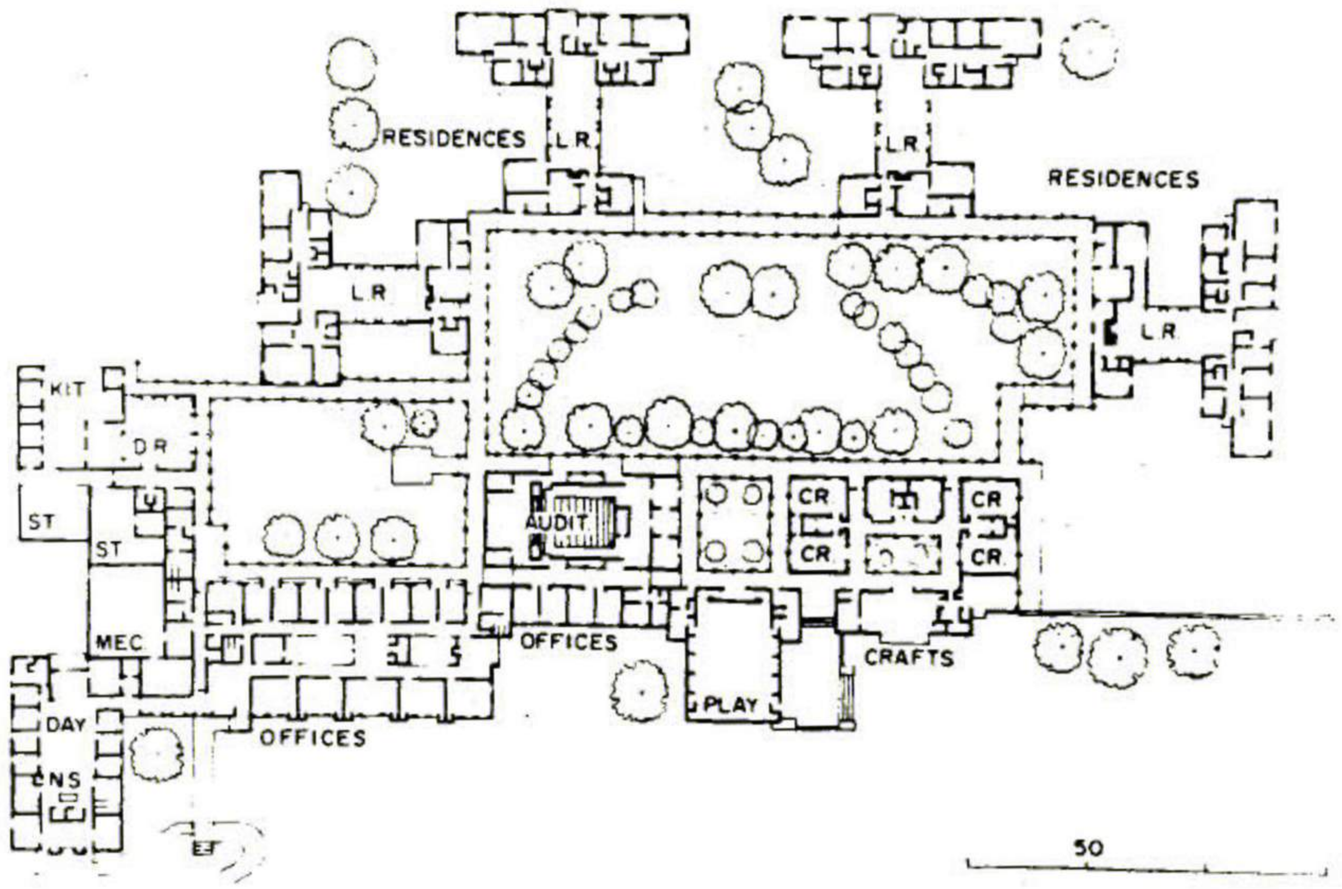


Fig. 6. Logan Mental Health Center, Denver and the Wallace Village for Children.
Broomfield, Collorado.

repetitive modules and are differentiated by form. Identification of activities also relate to change of level which develops normally from the sloping site. Building form and division further reflects and specifies flexibility in therapy requirements. Fig. 7.

The center functions, as a whole, as patients progress from one phase to another, establish a chain of spaces and movement from one building to another becomes part of the center's function in re-training patients for return to the community.

As a whole, these requirements are necessities an and are the challenges which force the Architectural profession, in its role, not only for creating a proper physical and psychological environment for a specific function but for inspiring man's effort to enrich and give meaning to the lives of the less fortunate human beings.

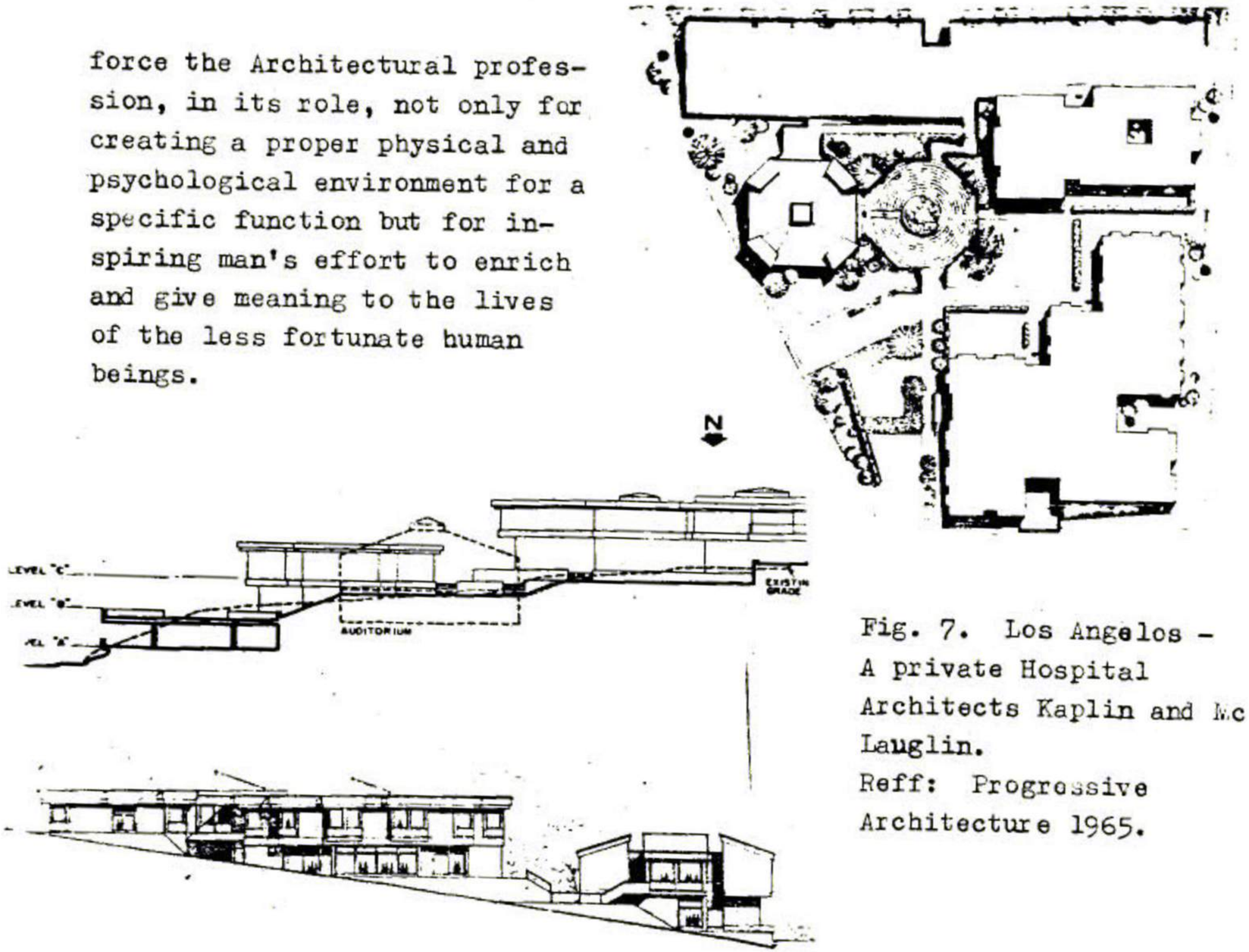
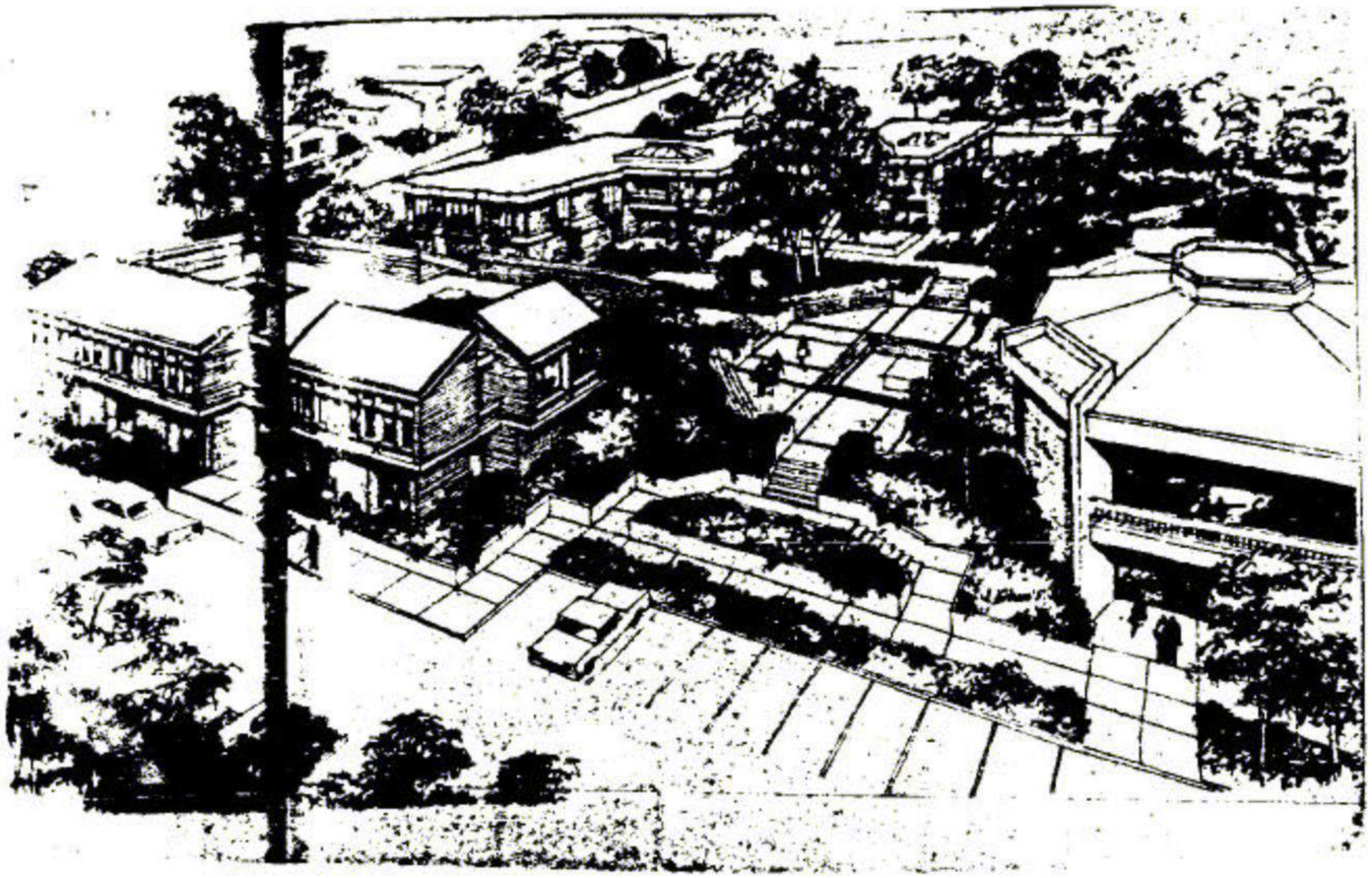


Fig. 7. Los Angelos - A private Hospital Architects Kaplin and Mc Lauglin.
Reff: Progressive Architecture 1965.



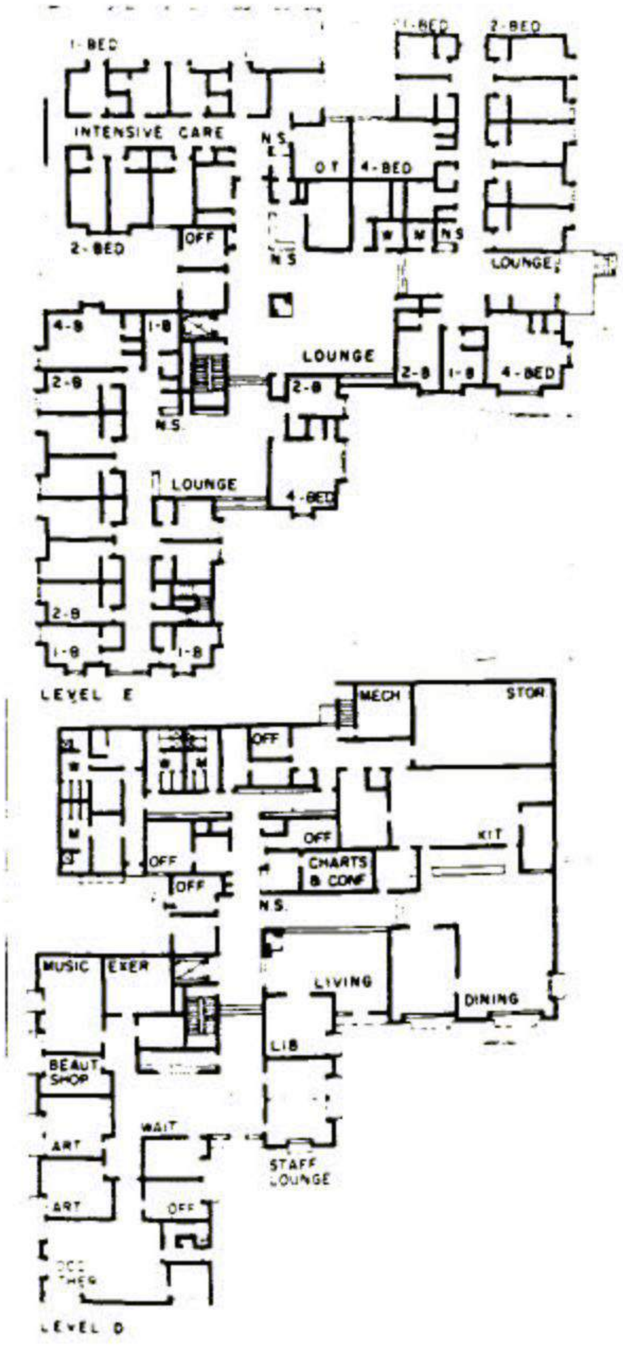


Fig. 7. Los Angelos - A private Hospital Architects Kaplin and Mc Lauglin.

Reff: Progressive Architecture 1965.

CONCLUSIONS

Man begins to cultivate the search for pleasure in the things that make survival possible. Once the language of architectural form has been developed to the point where it is seen to have the power of touching the emotions, we find it being used as means of building the personal attitudes of an individual into an artefact which will shelter, and satisfy him.

Man builds first of all for protection but as he progresses in building a shelter he needs to feel that he belongs to it by creating a language of form which becomes capable of touching his emotions; in a word communicates with him.

Of the other main human needs is the need for Privacy and it could be concluded that this need, due to its great emotional value to the human being, has been satisfied, in different countries, by different Architectural devices, which are in same cases, the main Architectural features e.g. Mashrabeyahs, Bent entrance, Munbang (Korean).

This need is urgent and necessary begining from each member of the house group and moves forth to other different cetegories of human beings, due to their traditions, culture, and the way through which they persue life.

The Need for social contact; one may conclude that this need, after analysing Architecture through four different periods; Old Egyptian Architecture, Greek Architecture, Roman Architecture, Egyptian Mamluk Architecture, had been satisfied by desiging certain Architectural devices with certain intentions to create a social center in the middle of the city or the center of the dwelling.

Need for Comfort; this need depends on several factores which could be classified under two main features, the subjective stimuli and the objective stimuli. The subjective stimuli concerning the visual sensation; personal space, colour atmosphere, preferences, background and habitual environment.

The objective stimuli con-

cerving the physical comfort; the luminous environment, the sonic environment, Arrangement of furniture according to human scale and human comfort.

Thus by Conditioning the subjective and objective stimuli to a satisfactory degree it could be concluded that the human being could enjoy life and accomplish his work to his utmost.

Phobias Against Psychological Balance: are natural fear against unaccustomed stimuli. There are many kinds of Phobias but that which we are concerned with, are those related to Architecture e.g. Agora Phobia, Claustro Phobia, Acro Phobia, Nycto Phobia. Certain factors such as climate, tradition, economy which affect the dimensions of any building resulting in accustomed spaces and being confronted by difference from this accustomed space, the human being experiences Phobia.

Our Perception of the Architectural elements and the external stimuli depends upon our personality.

This thesis deals with the illusionary perception of Proportion and Composition, scale, Rhythm, Space, Expression and form, Colour. It could be concluded by this study of the illusionary perception of these different factors that they are based first and foremost on the human scale & human psychological satisfaction which in turn is governed by; Climate, environment, religion, customary detailing, are traditions and emotions. The human being needs to be visually comfortable by moulding the external stimuli to harmonize with his character according to the previous Terms.

Finally the last chapter deals with the Design of Buildings for two individuals with certain psychological needs and a trial has been made to understand their needs and the satisfaction of this need is the criterion by which the design is proved successful .

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