

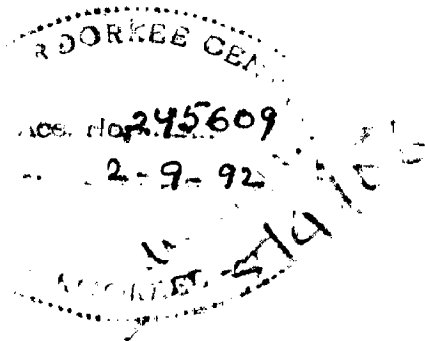
**AESTHETICS OF URBAN FORM,
CASE STUDY OF DISTRICT CENTRES, NEW DELHI.**

A DISSERTATION

submitted in partial fulfilment of the
requirements for the award of the degree
of
MASTER OF ARCHITECTURE

By

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APRIL, 1992

CANDIDATE'S DECLARATION

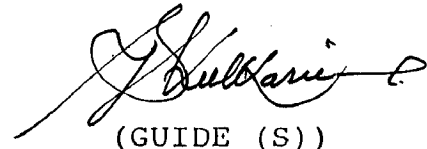
I hereby certify that the work which is being presented in the thesis entitled AESTHETICS OF URBAN FORM, Case Study of District Centres, New Delhi in partial fulfilment of the requirement for the award of the Degree of MASTER OF ARCHITECTURE submitted in the Department of ARCHITECTURE AND PLANNING of the University is an authentic record of my own work carried out during a period from 1st August 1991 to 31st March 1992 under the supervision of Mr. S.Y. KULKARNI.

The matter embodied in this thesis has not been submitted by me for the award of any other degree.



(VARUN KUMAR LAU)

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.



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ARTICLES

OF URBAN FORM

Case Study of
District Centres, New Delhi.

CONTENTS

PAGE NO.

	CANDIDATE'S DECLARATION	...	(i)
	ACKNOWLEDGEMENT	...	(ii)
<hr/>			
CHAPTER - 1	INTRODUCTION	...	1
<hr/>			
	1.1 Introduction	...	1
	1.2 Identification of Problem	...	3
	1.3 Matter of Concern	...	4
	1.4 Aim	...	5
	1.5 Objectives	...	5
	1.6 Scope & Limitations	...	5
	1.7 Methodology	...	6
<hr/>			
CHAPTER - 2	AESTHETICS AND CITY IMAGE	...	7
<hr/>			
	2.1 Introduction	...	7
	2.2 Objective Criteria of Aesthetic Quality	...	9
	2.3 Principles and Elements of Aesthetics	...	12
	2.4 Spatial Illusion	...	22
	2.5 Perception of Outdoor Elements	...	28
	2.6 The City Image	...	36
<hr/>			
CHAPTER - 3	URBAN FORM	...	40
<hr/>			
	3.1 Quality of Urban Form	...	41
	3.2 Generation of Urban Form	...	49
	3.3 Principles & Elements of Urban Form	...	55

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CHAPTER - 4	FACTORS AFFECTING URBAN FORM	...	60
4.1	Urban Form and Land Use Relationship	...	60
4.2	Urban Form and Zoning Relationship	...	61
4.3	Urban Form and Activity Pattern Relationship	...	67
4.4	Human Aspects of Urban Form	...	81
CHAPTER - 5	CASE STUDY AND ANALYSIS	...	89
5.1	Criteria of Evaluation	...	89
5.2	Case Study I : Connaught Place	...	93
5.3	Case Study II : Nehru Place	...	95e
5.4	Case Study III : Rajendra Place	...	95j
5.5	Case Study IV : Bhikaiji Cama Place	...	95n
	ANALYSIS	...	96
CHAPTER - 6	INFERENCES AND CONCLUSIONS	...	103
CHAPTER - 7	FUTURE GUIDELINES	...	107
	BIBLIOGRAPHY	...	111
	APPENDIX "A"	...	116
	APPENDIX "B"	...	118

chapter I

Introduction

1.1 INTRODUCTION :

All the planned physical development is aimed at achieving a better quality of life for human being. A city is more than the sum of its inhabitants. People put together can create a collective surplus of enjoyment-buildings brought together can give visual pleasure which none can give separately. But this can have disastrous results if not properly thoughtout & controlled. This can be rectified through the knowledge of aesthetics of urban form.

The district centre of today is a result of the progress in various fields of technology, mechanization, transportation, the prevailling social and cultural systems and economic conditions, thus making physcial form of the urban area very complex in nature. In recent times there has been an awarness that an urban centre should be designed as a three-dimensional entity and its form to be thought as much as its plan. This demands a study of issues like activity patterns and urban form as a whole. It is equally essential to recognise & assign a form to each building so that it fits into its environment & is compatible with its neighbours.

The physical environment of the city is the visual expression of its functions and life. What we perceive is

more than just seeing; the physical environment becomes more than a setting; we make it into an extension of our own actions and life.

The built environment of the district centre needs to fulfill certain physical and functional requirements as well as satisfy certain aesthetical needs. Apart from visual quality and aesthetical appeal the visual order is far more important since only then there can be 'clarity' in the perception of the centre. The 'clarity' or 'imageability' of an environment is very important for physical and mental satisfaction for a person. The physical satisfaction demands the knowledge of activity system and spatial patterns in which user pursue their daily activities and interact with one another in time and space, while the mental satisfaction demands the application of this knowledge in such a way that the ensuing spatial pattern and urban form are rendered imageable.

We must aim at establishing volumes of space which are in scale with current needs and are creatively compatible & in harmony with contemporary technology. These spatial volumes must be enlivened by the quality of architectural forms which define them. Such means are the basis for the generation of variety & stimulus in a city.

1.2 IDENTIFICATION OF PROBLEM :

If we look into the history, it is seen that the evolution of city and its urban form is a result of integrated activity patterns related to function and use, which were the major determinants of aesthetics of urban form at that time.

As the time passed more and more individualistic approach cropped into the urban fabric. In today's context the district centre is taken as an object (building) fitted into the urban fabric and the sense of total fabric is lost, thus creating a bad taste in its visual quality.

The district centres coming up these days are considered as the place of concentration of major urban activities and thus fitted into the existing fabric. This very aspect of the district centre makes it an image giving element. Therefore, it should come out as an element which is rich in aesthetics and adds to the total urban aesthetics.

It is observed that the district centres are somehow, lacking in expressing the elements of aesthetics which are perceived at the design stage considering the principles of aesthetics and form. Keeping the above mentioned issue in mind, it is needed to lookback into the already established principles and evaluate their validity in today's context. This requires a deep study into the various aspects of aesthetics of urban form.

1.3 MATTER OF CONCERN :

The quality of the physical environment of cities has been an increasing concern in recent years. The poor standard of new development, unrelated to its surroundings & increasing visual squalor creates the need for considerable improvement.

Urban form seems to be small concern of an individual developer. He is self-centered & wants to beat the neighbour which results in direct attack on the city-scape in general. Price on this account, perhaps, has to be paid. It would be a tragedy if things go unnoticed any longer. The most disappointing aspect of these operations is that by & large they tend to end up looking all very much the same. Rarely has a new character and identity been created.

Today there are many additional justifications to build high. High central area land values call for the maximum exploitation of the building site. The truth of the matter is that we have rushed to build high without the full realization of what we are doing. One would have thought that so important an element as a high building in the cityscape would receive the most careful consideration with regard to its location, urban form & its visual impact on the environment.

There is a need to produce physical forms & systems that are rational, coherent & responsive to the needs &

expectations of those who use them. Above all, its highest achievement must be the creation of an aesthetic quality in the environment to be able to give satisfaction to all.

1.4 AIM :

The purview of the dissertation is an exploration of spatial patterns, possibilities of mixing and housing diverse human activities and to establish guidelines to build an environment which generates visual order and is responsive to the overall urban form and at the same time accommodates people from various walks of life to use it in a peaceful and serene but interactive environment.

1.5 OBJECTIVES :

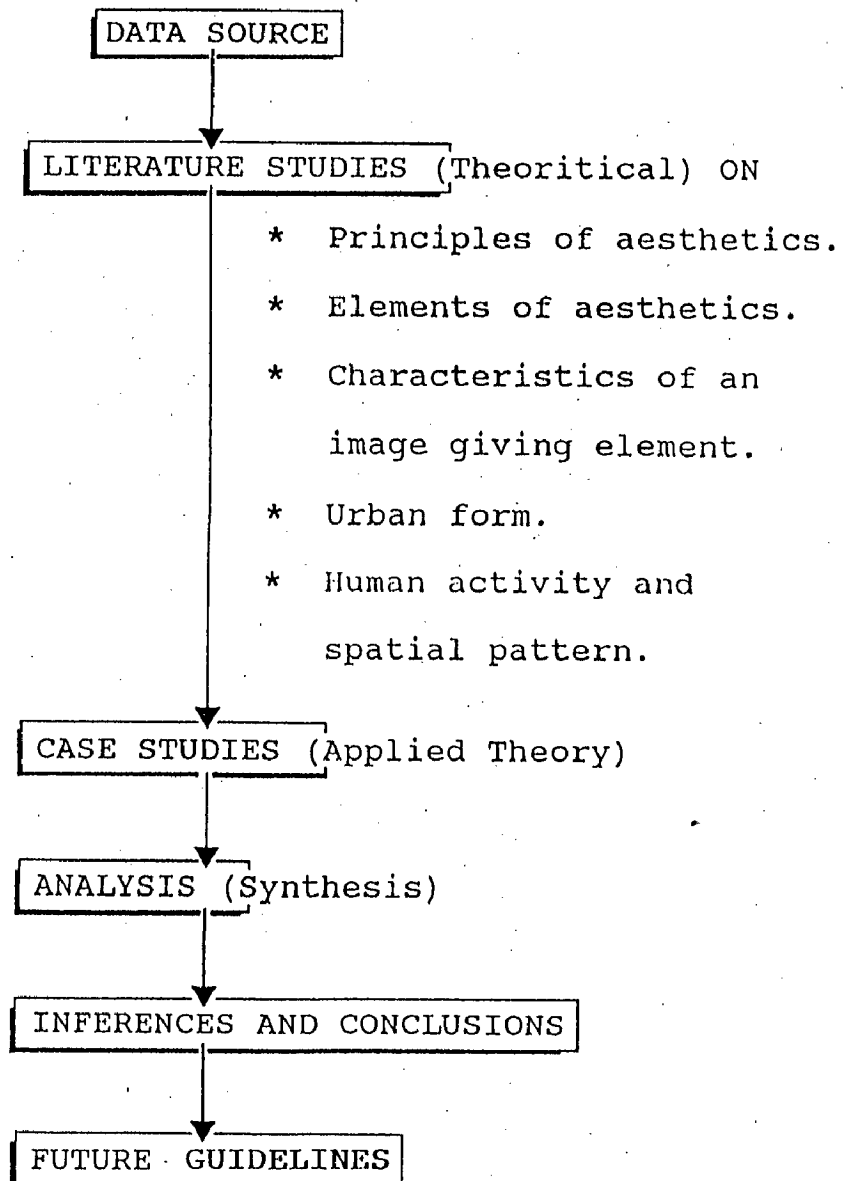
To achieve the main aim, the dissertation is intended to identify the role of activity patterns and urban form, their relationships in the urban context and endeavours to prove the validity of these principles in generating overall aesthetics of urban form.

1.6 SCOPE AND LIMITATIONS :

The study context has a theory base developed from literature studies and case studies based on these theories are limited to district centres in New Delhi.

1.7 METHODOLOGY :

The first part of this dissertation provides a theoretical base, the second part demonstrates the theory in case studies, while the third part provides the observations and conclusions and future guidelines.



chapter 2

Aesthetics & City Image

CHAPTER - II

AESTHETICS AND CITY IMAGE

Aesthetics : Greek "Aisthetika" : perceptibles.

- The power of perception by means of senses : said to have been the science whereby the first principles in all arts are derived, from the effect which certain combinations have on the mind as connected with nature and reason : Joseph Gwilt, para 2493 Encyclopedia of Architecture.

2.1 INTRODUCTION :

Architecture is a social art. Architecture requires three things. A building must serve the social needs for which it is built. The materials and the structure must be firm and suitably durable. And then there is the art. The examination and understanding of architecture require the study of how buildings have or have not worked for the society that built them, how they have employed materials and structural principles, and how they can be measured as art.

"The aesthetic virtue of a building can be sensed without any knowledge of its history at all. This is a physical sense. It also is not without standards of measurement and is certainly not wholly subjective; but it cannot rely on the intellect alone. It depends upon the impressions the building produces of its firmness, its commodity, and its delight." 40

The assessment of commodity requires knowledge of another kind. One cannot understand whether the building is commodious if he has no idea what is supposed to happen in it. To this extent the appreciation of commodity is intellectual; one needs to measure the achievement of specific purpose against what the purpose is. But again there are other elements of commodity which transcend specific purpose. In a well-designed building, the way you enter, the way you come naturally to the important spaces without signs, the way you find important corridors or elevators, all these can be sensed almost independently of the purpose. This element of commodity, known technically as the **circulation**, should always be crystal clear. Movement is an essential element which produces a form of kinesthetic experience, & conditions perception through the other senses, all of which, however, are directed to the total perception of the environment. Physical circulation patterns connect building, site & neighbourhood. They require recognition in surfaces which will stand the traffic & make it comfortable & convenient. Circulation is the means for that continuity of sequential space experience which is the fundamental vocabulary of architects. We move physically as far as time, energy & mechanization will carry us. We move visually as far as we can see, aided by imagination, memory & stimulus of what we see.¹¹ If it is not, the building lacks commodity, no matter how impressive it may be

in other ways. A truly commodious building seems to work with a certain inevitability. It does not prompt you easily to conjectures as to how it might have worked better.

2.2 OBJECTIVE CRITERIA OF AESTHETIC QUALITY :

Before a building appeals to the intellect it will have appealed to the **senses**. The sense of a building does not require the taste buds and only rarely the nose. The ears are more important. A bell or a fountain may affect our impression of space. People need some spaces where sounds are clear, some where silence is supreme and privacy secure, some which are dominated by resonance. Touch also accentuates architectural sensation. We can increase our sense of space by walking. Touching with our hands, we learn the texture of materials. A pool or shaded court may produce more than relief from heat and humidity; we feel temperature, sun and shadow and the movement of air, and these modify our sensations of space.

But more than any of these, the **eye** must be satisfied. It seeks fine space, appropriate furnishings, appealing changes of level, and convincing ways of entering and leaving. It relishes well-formed masses and eloquent surfaces. Colors and patterns of light are important; so are exquisite small details or the synchronized work of painters and sculptors and craftsmen. The architect must decide what light will do: whether it will illuminate, cast shadows,

create mood, stimulate movement, or arrest activity. He must decide when a space shall use color fortissimo (very loudly) and when pianissimo (very softly) and when not at all; when he shall enrich with ornament and when leave bare; when textures shall be rough, when smooth, when neutral; when to bring a colleague from painting or sculpture into a full collaboration and when to reject all these more personal arts.

The foremost principle of this visual experience of architecture is that it is **three-dimensional and physical**. Photographs have made us familiar with particular aspects of a few famous buildings, always from the same viewpoint, but we must never forget that there are many points of view for any significant building and that they cannot all be assumed simultaneously, even in the memory.

There is no substitute whatever for the first-hand physical experience. Buildings are made by men for men, and their size in relation to a man, the limitations they impose or the freedoms they propose, cannot be suggested in anything more than a meager way by photographs or motion pictures or anything short of the three-dimensional full-scale encounter.

Great architecture offers not only external visual satisfactions of mass, form, or detail which can be sensed much as monumental sculpture can be sensed. Almost always

it also insists that you enter and be enveloped by it so you must meet a great building in two fundamentally different space situations, one where you are outside it and one where it is outside you. If you have not given the interior of a building an opportunity for the embrace, you do not really know the building. This embrace, too, can be experienced only progressively through time.

The visual pleasures of a building depend on two quite different experiences. The more important one, which we call the experience of **composition, or design**, results from the arrangement of the elements that make up a work of art, and particularly from its spaces, masses, and planes. While design affords the first and fundamental experience of architecture, secondary pleasures depend upon the observer's interpretation of the mood and meaning of the building. The source of this experience we call **expression**.

The building involves both, design and expression; the separation is an abstraction, useful for analysis, untruthful to experience. Many architects and critics assert that architectural enjoyment stems almost entirely from design; others implore us to concentrate upon expression. The historical fact is that architecture has been richest when excellent design and meaningful expression have been joined.

The expressiveness of a building is bound then to be somewhat personal since it builds on the accumulated exper -

ence of the viewer. It is often quite subjective, depending on how the building affects us, whether we are tired or rested, responsive or callous to its messages. Subjective interpretations account for the fact that one may like or dislike a building whether its architecture is bad or good. Personal likes and dislikes in architecture are thus inevitable as in all the other arts; they are not undesirable. But they should not be confused with the absolute merit of what is liked or disliked. Thus it is reasonable to say of a piece of good architecture that you dislike it; but unreasonable to call it bad merely because you dislike it. Whether it is good or bad, transcends personal like and dislike and is subject to reasonably objective determination.

2.3 PRINCIPLES AND ELEMENTS OF AESTHETICS :

The fundamental ones are criteria of unity, of balance, of rhythm, of scale. They are the primary ingredients of quality, which refers to design, not to style. Style is the product of a time, the expression of what a people considered choice. Design refers to the organization of architectural elements - mass, space and plane - independent of their style. Two buildings in the same style may be differently valued as to their quality as compositions, while two buildings in different styles may both be fine compositions.⁴⁰

2.3.1 Unity :

Unity insists that a work of art must be consistent with itself. Nothing patently extraneous can appear. Unity in architecture is easily noticed when the building has a very simple plan and is made up on one dominant shape.

(Case study 1: plan, photo C1) Modern buildings can be made with one overriding all-enveloping simple form. Thus unity is more often achieved by blending various compatible parts, even by skillfully combining apparently discordant features. Profiles, forms, patterns, materials, textures, taken separately or together, may help to provide a possible common denominator outside the confines of which many variants are possible without destroying the essential unity. Unity is, indeed, the key, as is a single work of architecture or art, rather than any suggestion of uniformity, which must be firmly avoided.

If the purpose is to create something beautiful of a serene and pleasing sort, then anything that disturbs balanced, singly dominated unity must be avoided. The building, then, must be one undivided thing and so perceivable in the first instance. Reasons of utility or symbolism may require combinations of incompatible shapes, which appear as dualities, warring with each other. Equivoaction between two strongly self-contained shapes may be resolved. There is the classic method of dividing a facade so an even number of solids will force resolution in

the central odd space, as in the Parthenon. Design depends on purpose. Duality may be a good thing; it may serve to reduce the apparent size of an object and thereby enable a large building to stand harmoniously within a small environment; it may also prevent an object from seeming to be complete in itself, making it intentionally disunified except as it is related through spaces to other buildings in a composition. Thus unity, the fundamental feature of a work of art, may be accomplished by principles that require positive and negative applications according to the purpose intended.

2.3.2 Balance :

Equilibrium or balance - one of the chief aspects of unity - is also dependent on purpose. Any part of a composition may be unbalanced and generate thrusts and directions that are not self-contained. There are many kinds of balance. The classical sort is symmetrical disposition of solids and voids on an axis. (Case study 1: plan, photo C1) programs suggest asymmetrical compositions and then visual inequalities are inevitable unless the program is distorted. They can be controlled by establishing an eccentric focus where various masses and voids find a resolution of their axes and apparent weights. Symmetrical buildings offer no problem.

psychologically more pleasurable than others. Within these larger elements, moreover, the rhythm of the lesser elements, like windows and furnishings, will be disturbing unless their proportions are related to the spaces in which they stand. (Case study 1: photo C4) A sense of proportion is indispensable to an architect, who must always be mindful of how color, light, texture, and sound alter spaces, apparently changing the actual dimensions.

Space differ in character according to their shape & their proportions. Proportion is an internal relation & may be studied in a model, but spaces are also judged by their scale with respect to objects outside themselves. Outdoor enclosures, for example, contend with the vast scale of the sky. They must connect their own size with that of the earth's atmosphere (by large openings or the use of the verticals) or reduce it to a backdrop. A relation to the scale of the surrounding must also be established. Fitting new functions into a mature & established landscape without disrupting the old scale is an exacting task. Finally, a space has a scale with respect to the observer himself & either appears measurable by him or take on an awesome & superhuman size. In each case, the scale relationship should be decisively intended & decisively carried out.²⁹

2.3.5 Scale :

A building may have a well-proportioned unity and still fail of quality if it is out of scale. Scale, too, is related to purpose. A whole building may be out of scale with its purpose. Monumentality in a house may destroy the sense of domesticity. A portion of a building may be badly scaled in either of two ways. It may actually be too small or too large for the remainder of the building. It will be equally misscaled if it is the proper size but appears to be too small or too large. The relationship between one element and another without regard to actual dimensions establishes an order of magnitude for the major components of a buildings. This is radically different from scale as defined by the mensurate size an element has or seems to have relative to other objects whose size we know - for example, men.

a) Scale & Human Vision : 39

Our eyes have a general field of view & a detailed field of view, the former sees general shapes, the latter, details of objects. The general field of view has an irregular conical shape, measuring about 30° up, 45° down, & 65° to each side. The shape of our faces establishes these limits. Our detailed field of visions is a narrow cone with in this large cone. It measures a very minute angle, approximately equal to a thumbnail held at arm's length. Because our eyes have overlapping cones of view

horizontally, we can "see around" verticals placed in our view. An important limitation of our vision is that we cannot see an object which is farther from us than about 3,500 times its size. (Fig. 2.1)

A person who stands 3 to 10 feet from us is in "close" relationship to us, 8 feet being normal conversation distance. We can distinguish facial expression upto about 40 feet. We can recognize a face upto about 80 feet. We can discern body gesture upto about 450 feet. Finally, we can see people upto 4,000 feet, beyond this they are too small to see at all. (Fig. 2.2)

Thus "intimate" spaces are usually not more than 80 feet across, the "urban space" no greater than about 450 feet. The monumental vistas are greater than 4,000 feet across. (Fig. 2.3)

Ornament provides one of the means for giving scale to buildings. The decoration of a building may serve no other function than to enrich its walls and its skyline, or it may reduce the scale of a large module to that of a smaller screen. The function of ornament has not often been so neglected as in the modern period, when architects have forgotten that ways of resisting wind, draining water from roofs, controlling sun, or removing bad air and smoke all provide excellent opportunities for enriching building form.

Perceiving an environment is creating a visual hypothesis, building an organized mental image that is based

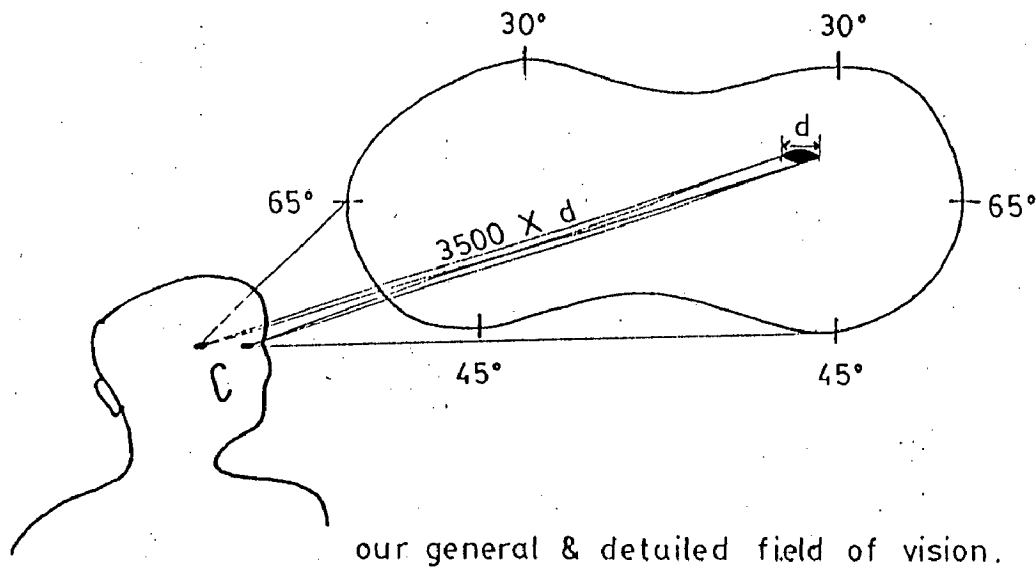






Fig. 2.1


Source: SPREIREGEN, PAUL D. - "Urban Design: The Architecture of Towns & Cities"

max. distance for seeing people.  4000 FT.

max. distance for discerning action.  450 FT.

max. distance for recognizing a face.  80 FT.

max. distance for discerning facial expression.  40 FT.

range of conversational distance.  3 TO 10 FT.


observer. 

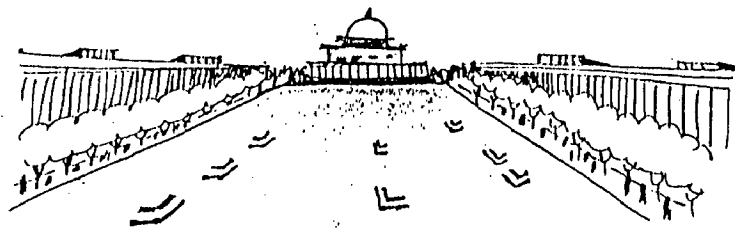
Fig. 2.2



Intimate scale.

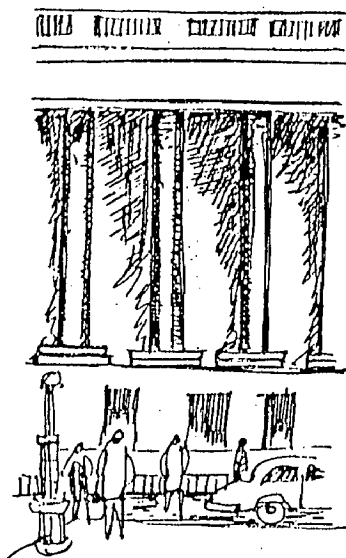


Urban scale.



Monumental scale.

Fig. 2.3



Familiar objects - poles, people & cars - lend a sense of scale.

SOURCE: SPRENGER, PAUL D. - "Urban Design: Architecture of Towns & Cities"

on the experience & purpose of the observer as well as on the stimuli reaching his eye.²⁹ In building his organization he will seize on congenial physical characteristics; continuity & closure; differentiation, dominance, or contrast of a figure on a ground, symmetry, order, repetition, or simplicity of form. Structure & relatedness can be facilitated even in areas too extensive to be seen at one glance. Rhythmic repetitions may be used, such as the appearance of open spaces or dominant masses at regular intervals. Parts may be related by maintaining common scale of space or mass, or simply by similarities of form, material, color, or detail, such as common building materials, a homogeneous ground surface, or uniform planting. (Case study 1: photo C2, C3, C4) The parts may reveal a common purpose or the impact of a dominant force like a powerful climate or a highly organized culture.

2.3.6 Contrast and Transition :

Sharp variations are also a way of relating parts if there is some continuity of access, form or character between them. A dark narrow street is related to the broad avenue into which it emerges, and a quiet park is tied to the extensive shopping area fronting on it. Related contrasts, seen in sequence or at a glance, bring out the essence of a feature & put us in touch with a wide range of experience. Near may be contrasted with far, fluid with

fixed, familiar with strange, light with dark, solid with empty.

Continuity depends on the important transitions-the joints between building & ground, & between building to building, corners, gateways between spaces, decision points on a pathway, or the upper edge of objects at the skyline. (Case study 1: photo C2, C3, C4) Transitions are often the most noticeable features at the outdoor scale. They must be articulate if the spaces are to be readable & coherently joined. The classical architectural emphasis on cornices, base courses, & door mouldings can be shifted to the silhouettes, steps & entrances of the site plan.

The sought-for effect is usually broad & simple rather than precise & intricate. Richness is inherent in the material, and an intricate plan may end in confusion. Not only is the material complex, but it is in motion, seen in different lights & at different stages. The scene must be able to accept all this variation without losing its form. This does not require the use of formal geometry but only that breadth of treatment which is in consonance with the scale of the work being done. A good site plan is straight forward while it may be highly refined at critical points, it is often atmost coarse over all.

The main structure of site design is most often some sort of hierarchy, dominance, or centrality. Thus there may be a central space to which all other spaces are subordinate

& related or a dominant path linking many minor paths together. Similarly, in sequences, it is customary to organize a principle approach that has a gateway or point of beginning & is developed to a climactic point of arrival, where there is a strong sense of place & of being at the heart of things.²⁹

2.3.7 Congruence :

Perceptual structure must also be congruent with actual use & ecology. Visual climaxes must correspond to the most intensive or meaningful activity locations; the principal sequences should be along the important lines of circulation. Perceptual territories should fit social territories, & visible traces of time should recall critical histories. The basic aspects of site organization i.e. activity location, circulation, & sensuous form-should function together in detail.

Interrelation is further complicated by the necessity of coordinating the design of individual structures with that of the site plan as a whole. These structures have a pattern of use, circulation, & visual form that should mesh with corresponding patterns of the site plan. Building shapes are fundamental elements of the external spatial form. The relation of floor level to ground level & the character of the openings in the building envelope are of special importance.

At an urban scale, a building's environment, its site, and its neighbours are important aspects of architectural enjoyment. Spaces between buildings are frequently more important than the building themselves. This frequently requires that individual buildings be asymmetrical, not self-centered, modest, almost walls, rather than monumental sculptures, to the end that the spaces may be fully enjoyable. In such spaces, certain types of building that serve communal uses tend to dominate their environment.

The sizes of buildings cannot be limited by human physical capabilities but must be tempered by human capacity for comprehension. The largest buildings can be made to feel appropriate if we instill human scale in their often immense forms. We can also employ the principles of scale to create different impressions of size & importance in a building, creating a sense of grandeur in a large square. The range of scale effects extends from intimate scale to our world of normal human scale, & on to a world of monumental scale, overwhelming us with crushing grandeur.³⁹

2.4 SPATIAL ILLUSIONS :

The looseness of outdoor space allows a certain freedom in layout. Formal flaws can be masked & optical illusions achieved; two bodies of water coalesce because their outlines seem to match, a large object "disappears" when blocked out by a small object nearby, an axis appears

straight though in reality it is bent. Level areas may tilt by contrast with adjacent counterslopes, or the relative elevations of objects may be reversed by the treatment of the grades surrounding them.

The designer uses every resource to confirm the form he intends to establish. Except in the special cases where he wants an air of mystery & doubt, he makes sure that his spaces are well defined & clearly joined at marked transitions, whether the volumes themselves are crisp & geometric or irregular & flowing. Rhythm & direction will be supported by the form of all visible elements. Changes in plan will coordinate with changes in section.

Spatial dimensions are reinforced by light, color, texture, & detail. The eye judges distance by many optical features, & some of them can be manipulated to exaggerate or diminish apparent depth; the overlapping of more distant objects by closer ones, the parallax movement of objects disposed in depth, the expectation that farther things will be higher above the horizontal base line, the smaller size & finer texture of things far away, the bluish color of distant surfaces, the convergence of parallel lines. Used with restraint, these manipulations add to the spatial effect. As with any illusion, there is a danger that from another viewpoint, the trick will be exposed. Illusions of features indirectly perceived, such as geometric plan, distance, or level, are the easiest to achieve & maintain.

Illusions of characteristics seen directly, such as the attempt to imitate the color & the texture of one material in a substitute, are much more difficult.

2.4.1 Visible Activity :

If visible space is the perceptual quality over which the designer traditionally exercises control, it is nevertheless not the salient impression of most places for most observers. People are most interested in other people. The sight and sound of human beings in action are usually the prominent features of the perceptual form of a place. But the designers are accustomed to equating "design" with things and who categorize persons as the users and observers of things, but not a being themselves part of the visible environment.

Places without people or other living things simply horrify us, and those that conceal the human trace, as many of our new buildings do, are cold, dull, and depressing. To see or hear active people is endlessly entertaining. We are always interested in who are there, what they are like, what they intend towards us, what they are doing. Seeing and being seen, promenading on a busy street etc. are permanent pleasures.

This can be done in many ways: by concentrating and mixing the location of different activities so that they are intervisible; by providing places of meeting, celebration, and mutual observations; by exposing sight circulation flows

or the basic public or productive activities; by providing ways in which human action can leave its trace on the inorganic environment.

Spaces must be sized to the expected activity. A square in a central location may seem oppressive because of the crowds of people using it, while it would appear empty, vast, and lonely at the periphery, where pedestrians are few. A footpath along back lots may seem excessively long while it were bordered by varied activities and used by many people, it would appear exciting and relatively brief. Spaces should not merely support the activities that occur within them—they should visibly support them. Action can be clarified and expressed, its emotional mood and proper conduct visibly reinforced. This will emphasize how the look of a place and its action can stabilize and heighten that action. Outdoor distances and outdoor light will determine whether we can read faces. The sound level makes conversation easy or difficult. The shape of the space and the location of its detail will help or hinder us as we try to delimit behavioral territories. Openness, transparency, and overlook can bring what is happening into view. The obvious danger is an intrusion on privacy, the exposure of activities that some would prefer to keep hidden. Therefore we expose only those functions about which both viewer and viewed wish to communicate or in which the exposed function

is an impersonal trace of human action.

2.4.2 View point :

A landscape is usually seen from a set of view points. These are the paths along which the observer moves and along which the forward look is distinct from the backward one- and certain key stationery view as from windows and principle entrances. The lines of sight from these critical fixed or moving point should be critically analysed. This may be done by quick perspective studies or by traces of the cone of vision on plan and section.

Sight lines may be manipulated by slight shifts in ground level or the position of opaque elements. The eye may be directed by framing the view or drawn along a rank of repeated forms. It may be attracted to some focal object, thus in effect blotting out surrounding detail. A distant view can be enhanced by some foreground object to which it is contrasted. Often it is improved when subdivided by a nearby structure so that attention is concentrated. Thus the total view may be organized into parts, or perhaps only a hint of its full sweep is given.

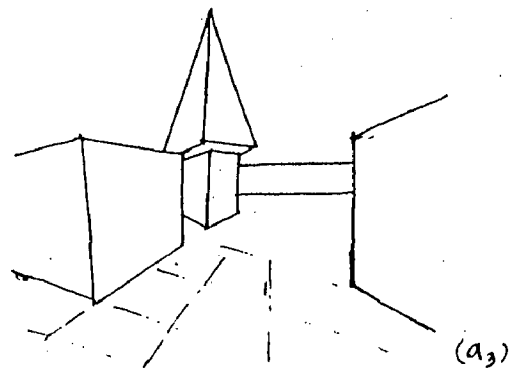
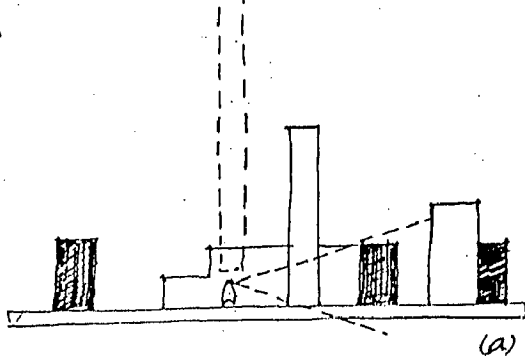
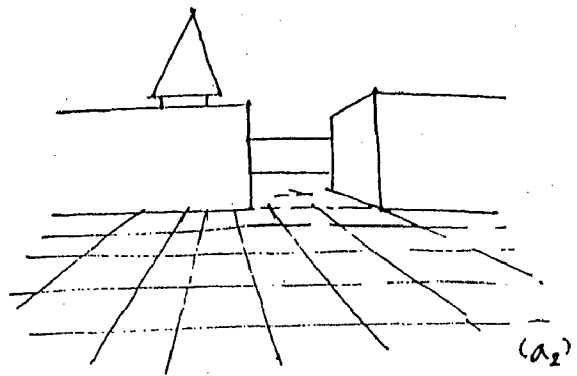
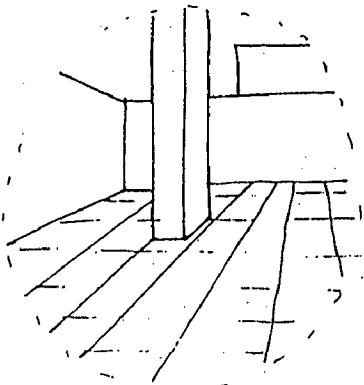
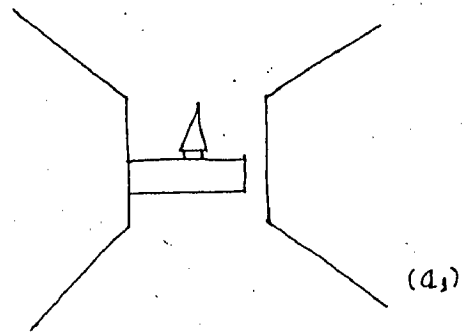
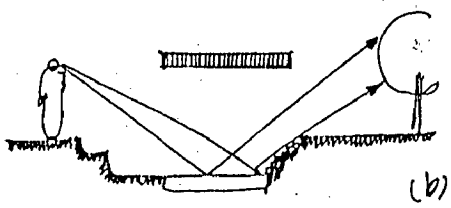
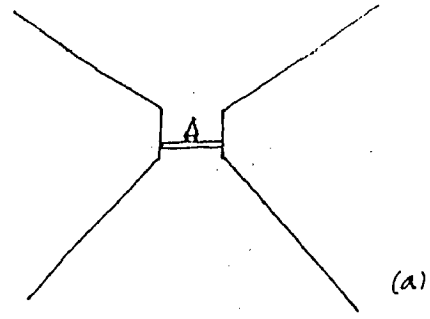
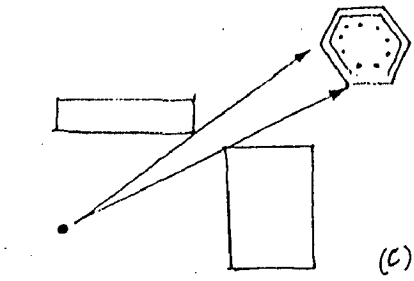
The sequence views or spaces is crucial in a site design. For example, a major view may be hinted at, be succeeded by a more intimate view of something else, be repeated with a dominant foreground, disappear in a confined space, and finally reappear in its full sweep the expected

direction and speed of the observer are critical since sight becomes restricted to a narrower forward quadrant as speed increases. (Fig. 2.4)

2.4.3 Visual Sequence :

Question of orientation become significant : the apparent direction toward a goal, the making of the distance traversed, the clarity of entrance and exit, the explanation of the basic structure and the observer's place in it. A succession of arrivals, like the series of runs and landings on a stair, will be more interesting than a single protracted approach. Each event should prepare for the next one without completely foretelling it so that the observer receives each as an ever-fresh but coherent development. The environment should have a form that is readily apparent to the distant glance and yet reveals new features and organizations when inspected more closely. The form of motion itself had aesthetic meaning : it may be direct or indirect, fluid or formal, smooth or erratic, divergent or convergent. Further more objects can be disposed to clarify or heighten the visual sense. (Fig. 2.5)

Potential motion takes on importance: a path suggests direction, and the eye follows it as a connecting thread. Broad, flat steps will seem easy and inviting than those that are narrow, steep and curving appear dramatic and exciting.



SCUFEZ: LYNCH, KEVIN - "Site Planning"

Fig.2.4 VIEW POINT

Fig.2.5 VISUAL SEQUENCE

2.5 PERCEPTION OF OUTDOOR ELEMENTS :

Outdoor spaces are rarely created by complete enclosure. They are partially bounded; their form is completed by the conformation of the floor & by smaller vertical elements that mark out imaginary aerial definitions. Since the out-of-doors is dominantly horizontal, vertical features or changes take on exaggerated importance.

Level changes will define spaces; they can open views; and they can create effects of silhouette, truncation, or dynamic movement. Steep slopes or drops are difficult to handle within a regularly organized space: it is a safer rule to make up vertical differences in the approach to important openings or in the separations between them.

Once readable space is established, it has a strong emotional impact on the observer. The intimacy or constraint conveyed by a small enclosed space and the exhilaration or awe of a great opening are universal sensations. Even stronger is a transition between the two: powerful sense of contraction or release.

2.5.1 Enclosure:

Spaces may be enclosed by opaque barriers or by walls, that are semitransparent or broken by gaps or windows. The space definers may be visual suggestions rather than visual stops: colonnades, changes in ground pattern, imaginary

extensions of objects. (Case study 1: photo C3) Buildings have been the traditional enclosures of urban space, but this function has become more difficult to accomplish as the demand for open areas around buildings has grown. To some extent these breaks in enclosure may be masked by such devices as staggered openings, overlaps, buildings that bridge a street, screen walls, colonnades. Enclosure may be achieved by planting. But we can also modify the intended spatial effect to fit new conditions.

Spaces vary in effect by the way in which they are entered, passed through, and left behind as well as by the related spaces that precede and follow them. Their appearance is modified by the activity that goes on within them, by the color and texture of walls and floors by the way in which they are lighted and by the objects and details with which they are furnished. A scale relation between a man and a vast space can be established by the use of a few "man-sized" objects; a tall tree may relate a small space to the larger world. Blue or grey walls strengthen the atmospheric perspective and thus seem farther away.

2.5.2 Light:

The direction and quality of light that bathes a space is a determinant of its character. Light will sharpen or blur definitions, emphasize silhouette or texture, conceal or reveal a feature, contract or expand dimensions. Silhouetted objects are prominent visual features, and the

designer is always careful of objects that will appear against the sky. He is also aware of the apparent outward radiation of bright surfaces, which makes light sources seem fat and silhouetted objects thin. Shadow patterns can be distinctive, whether they are large masses or delicate trceries, dark and opaque with light. Shadows may be employed to focus attention or frame a view.

To some extent, the designer can manipulate outdoor light by casting shadows, using reflecting surfaces, or filtering light through screens. More often he is concerned with creating a form that will receive natural light gracefully, that will reveal itself equally well into the hazy sun of winter and the blaze of summer, and that seems coherent in the morning and evening alike or under the bright moon. To do this, he must be aware of the geometry of sun and moon position, of the light effects on various kinds of weather.

The architect has another resource in artificial light. Most sites are used at night as well as day time: Artificial light, in all its variation of color, direction, motion, and intensity, can produce a new visual world. Spaces can be modified or even created with light alone, planes made to advance or recede, objects brought to the foreground, and textures transformed. Light can reinforce the familiar day time setting or transform it. It can pick out the structure of paths and the location of entrances, indicate the

presence of activity, and confer a special character or a place. At important points there can be intriguing displays of changing light. It is pleasant to look from darkness into light or vice versa, to watch a rhythmical play of light patterns, or to see an object transformed by a steadily changing light source.

2.5.3 Landscape Elements :

a) Ground Form :

In an urban area, space may be defined by man-made structures, in less development by basic natural materials: earth, rock, water, and plant cover. In either case, the surface underfoot is the only continuous one, and it plays a dominant role.

b) Ground Texture :

The textural finish of the ground can be a source of delight in itself. It can also set a general visual character and scale. It may be a harmonious background that unifies and sets off the whole scene, or it may be a dominant surface that communicates the principle patterns and directions of the plan. The texture of the floor imparts sensations of touch as well as sight. The pattern of surface activity can be expressed in textural pattern, and such differentiations then play a role in guiding or controlling the activity.

Fine ground textures-moss, monolithic pavement, or close-cropped grass-tend to emphasize the shape and mass of the underlying ground and to increase its apparent size. They act as background for the objects that rise from them. Coarse texture-rough glass, cobble, bricks, or blocks-work in the opposite ways, calling attention to the surface itself, rather than to the underlying mass or the object above it. A centrally dished floor gives us a static sensation; a valley guides our vision along its course. Changes of level act as space definers, or they can be used to vary the point of view or to separate activity areas, as when raised beds protect planting from intensive traffic. The surface may be left rough or in natural growth, as a region for imaginative play.

Ground is usually either skinned clean or put under trees and buildings. But the range of surfacing available is in fact far wider. It includes cultivated or stablized earth; low shrubs and ground covers; over head planting and natural thickets; sand or gravel; asphalt or concrete with fillers, jointings or surface aggregates; wood block or decking; terrazzos or mosaics; and pavements of bricks, tiles, cobbles, stone blocks, or slabs. These materials may be used in many combinations. It is wise to remember how they will be maintained.

c) Water :

Water is equally elemental-simple in nature but extremely varied in effect. The very number of descriptive terms in the common language indicates its potential richness in design : pool, sheet, jet, drop, spray, cascade etc. The range of form, the changeableness and yet the unity, the intricate repetitive fluid movement and suggestion of coolness and delight, the play of light and sound, as well as the intimate connection with life, all make water a superb material for outdoor use. It can evoke moods of gaiety, serenity, mystery, majesty etc. It is as attractive for play as it is for contemplation; it affects sound, smell, touch as well as sight. Unfortunately, it also entails problems of maintenance and safety as well.

Moving water gives a sense of life. Still water conveys unity and rest and may be used to clarify a plan. Usually it is wise to place still water at the lowest point in its immediate surroundings. Water plays with light and acts as a mirror. It can reflect the changing sky with open borders. If the water is in shade, it will catch the images of sunlit objects near or above it. It may be made to reflect ground objects if the optics of reflection are kept in mind and if the water surface is not disturbed with plants or movement.

The edge of a water body is a focus of attention. A water edge of simple shape conveys clarity and stability; if

it is complex and partly hidden, it can evoke a sense of expectancy and extended space. A few large stones set just below the water surface will convey a sense of depth. The edge may be made abrupt and definite or low, shelving, and obscure. But if there are many people about it, it will not take heavy wear, and it is wise to pave it.

d) Plant Material :

Next in importance is the plant material-trees, shrubs & herbs-the plant cover is the only one element as used here. Their habits, form & texture are their most interesting features.

e) Detail :

A site includes many man-made details. Their number becomes apparent when we try to catalog the furniture of some existing area: fences, seats, signal boxes, signs, etc. It is curious that the mere list conveys a sense of clutter & disharmony, a feeling quite opposite from that evoked by mentioning houses, trees, water. The near world of the detail affects the appearance of the whole, particularly for the habitual user of an area. The texture of floor, the shape of the curbs or the steps, & the design of a bench are things close to the person & his purposes. They present themselves directly to his eye. At the same time, if not directly used by him, they will often escape his conscious attention. Designers put much stress on harmonizing all the street furniture, yet most observers will hardly be aware of

their effects. Details require a substantial investment of design & supervision if they are to be finely shaped.

f) Fencing :

Fences & walls are of particular importance functionally, as they limit territories and confer privacy, and visually, as they form spaces & provide vertical texture. Fencing should be provided from the beginning to accomplish all these objectives. There many fencing materials in numerous patterns. Wooden rails, pickets, stakes or lattice, wooden boards, stretch or woven wire, iron rails, plastics, woody plant, brick, stone, earth, poured concrete & concrete blocks are all amenable to intensive use.

The height of a fence in relation to the eye defines its meaning. It can be solid or perforated, but even a perforated fence will seem opaque if it is light in color. To make a fence seem transparent, keep its members thin & black. A fence may be lost in a hedge or under a vine, or it may carry planting containers.

g) Signs :

Another site detail merits a separate discussion; the signs that have become such a dominant, & generally such an ugly & chaotic, they are necessary to explain & direct activity, & they can add to the interest of the scene. Signs are ugly & chaotic, not by their nature, but because they are thoughtlessly used, ambiguous, redundant & fiercely

competitive. Above all they are ugly when they are intended to deceive or exploit the viewer.

Architectural beauty, thus understood, is not a matter of pleasantness and certainly not of sweetness, for the beautiful may be delicate or strong, refined or crude, receptive or forbidding. To please is not the only aim of art or architecture. It may sadden, frighten, even horrify, as well as lift up, console, or reassure. If the architect prompts us to return, if he has established a definite and consistent organization of space and mass, then he has fashioned a beautiful thing, whose beauty transcends hasty pleasure or displeasure, transient like and dislike.

2.6 THE CITY IMAGE :

2.6.1 Concept of Images :

There seems to be a public image of any given city which is the overlap of many individual images. Such images are necessary in an individual is to operate successfully with his environment & to cooperate with his fellows.³⁰

Images are conspired of both facts & values & also that behaviour depends on images, these sociological aspects of the city in their manifestation are a result of various images that persons have, some of the images are as follows:

- 1) **Spatial Image :** The picture of the individual's location in space.

- 2) Temporal Image : A representation of man's stream of time and man's place in it.
- 3) Relational Image : The picture of universe around an individual.
- 4) Value Image : The ordering on a scale of better or worse of the various parts of the image.

The spatial, social and temporal images of the city are the perceptual inputs, which feed cognition mechanism and elicit effective responses and are the result of a wide range of social and cultural factors.

2.6.2 Urban Images :

Images play a major role in environmental cognition. They are mental representations of those parts of reality known through direct or indirect experience, grouping various environmental attributes and combining them. The study of people's understanding and structuring of cities raises two basic questions - do people know and mentally structure the physical environment and secondly which features do they notice and to what extent is the structuring due to people and to what extent does it depend on the environment (i.e.) are there any regularities?

Kevin Lynch (Image of the City)²⁸ concluded that people did notice the physical environment, were able to talk about it, describe it and draw maps of it and despite the subjective differences, there were some regularities in the

things noticed. He categorised their structuring in 5 types viz. Path : Edge : Node : District & Landmarks. (Fig. 2.6)

a) Path :

Routes with various characteristics that are identifiable by the user: primarily the continuity of the route. Although a route will often continue, it tends not to be identified as a path if its character changes by variations in land use, architectural forms or directional changes.

b) Edge :

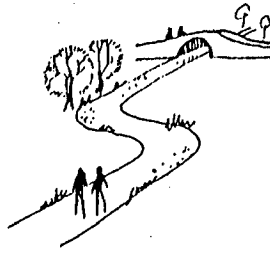
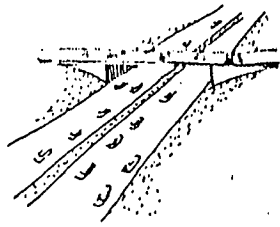
Edge is a barrier between two different kinds of areas, which may be, but do not have to be paths.

c) Nodes :

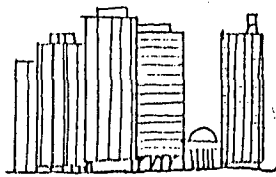
Nodes are the 'Strategic foci' into which the observer can enter, typically either functions of paths or concentrations of some characteristics.

d) Districts :

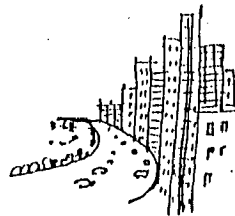
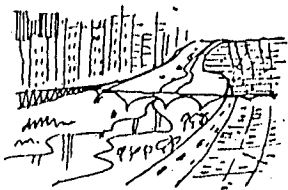
Are internally recognisable areas which the observer can mentally go inside of, and which have common character. The definition of district is not wholly visual but also includes social clues, primarily indicating either class or ethnic composition of the residents or special land use such as major commercial or entertainment and cultural centres.



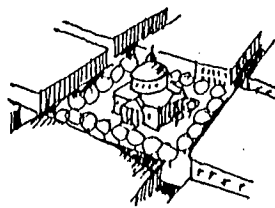
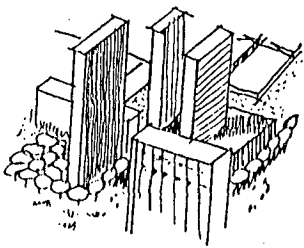
PATHS



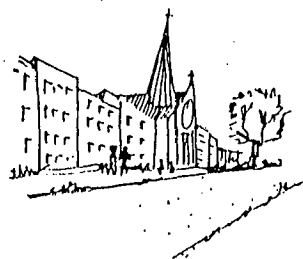
DISTRICTS



EDGES



NODES



LANDMARKS

SOURCE: LYNCH, KEVIN - "The Image of the City"

Fig. 2.6

e) Landmarks :

Landmarks are visually distinguishable buildings or spaces that tend to be unique to their location either by contrasting with their surroundings or by being visible from far off areas.

Cognition and mental maps are those specific spatial images which people have of the physical environment and which primarily affect spatial behaviour. They are a series of psychological transformation through which people acquire, code, store, recall and decode information about their spatial environment - its elements relative locations, distances and directions and overall structure. These maps can also be called cognitive maps. Definition and classification of areas form a major segment of a mental map.

chapter **3**

Urban Farm

CHAPTER - III

URBAN FORM

"Men come together in cities", said Aristotle, "in order to live, in order to live good life " in many cities today men come together principally to earn a living and to get out of it as quickly as possible, if necessary, in order to enjoy the pleasures that Aristotle might easily have taken for granted in his days: clean air, refuge from noise and crowds, a patch of earth and a glimpse of sky.

A city is a natural phenomenon as well as a work of art in the environment. Form in nature is not a preconceived order. It evolves as it grows or happens. The art form is a result of the inherent nature of materials and the process of putting them together. The art of urban form, as other branches of modern art, follows a naturalistic process. The designer does not give form to preconceived idea, he takes the elements and allows them to come together. In the process of their coming together he finds new relationships between the things, and only then does he exercise control by making selections. The form evolves as the total process is in progress. The search for form is a search for valid processes".¹⁹

- LAWRENCE HALPRIN

3.1 QUALITY OF URBAN FORM :

3.1.1 Meaning :

It would be better to refer to built environment before referring to urban form. Built environment is the result of man-motivated modifications in the natural environment and constitutes of modified landscapes. Meanings ascribed sacred spots, human occupied settlements and the like. Amos Rappoport (1977) describes it as, "Built environments are the physical expressions of man's idea of what the world should be. It accommodates human community and activities, represents human values and symbols".³²

In the context of human settlements, urban form relates to buildings, their spatial configuration and all other related aspects like elements of buildings, aesthetics etc. Buildings are the objects of varying size, form, density & quality. They may vary in form from pure cube, cylinder, or pyramid to the formless complexity of some romantic institution & metropolitan blocks. They vary in density from a house to air-conditioned concrete cube. They vary in quality from most refined products of architectural genius to the most humble practical expedient.¹¹ They, by far, form the major component of built environment hence are primary in the studies of urban settlements. Like a forest having both the trees and the spaces in between, an urban scene also has both the buildings and the spaces i.e., masses and voids which together can be termed as 'urban form'.

3.1.2 Urban Form As a Process :

In recent times, the evolution of urban form has taken a complex path with numerous forceful factors intervening. One of these is the profession of architecture which values originality of a descant norm for the constructed environment. This point is drawn to emphasize the importance of the profession today, which is increasingly getting involved in the process of urban form, thus replacing organic modes by planned modes. Ownership pattern is also important which in most of the old buildings is a complicated affair with more than one owners. Likewise urban form as a process would have its own criteria in different contexts which should be an important consideration.

3.1.3 Urban Form As a Product :

Built form has very often been studied as a product i.e. as it is, which has greatly influenced our approach to buildings design. But if the understanding of the process is lacking, this study gets handicapped. Every detail has a cause for its origin which should be realised before any attempt is made to employ that detail. To gain a better understanding of the urban form it is suggested to study these both as a process and product. Built form as product has four main aspects :

a) Use and Utility :

Being the basic reason for the evolution of urban form, it continues to be a major force. The degree of utility and compatibility determines many related aspects like design suitability, maintenance, etc. They considerably influence the form and we lack debates in 'form and function' relationship in buildings. In organic growth, form normally follows function or an established form. But in planned approaches only the broad functional aspects are considered.

b) Design :

The desired form is achieved by design. Materials, technology used, practised design principles etc. decide the final design. It limits the functional aspects of a building to other aspects like aesthetics and meaning, thus acts as the main media to express the details of urban form. Fenestration as a design detail has many variations like total void, jali, window with shutters, closed glass panel window etc., all of which have certain functional aspect behind them.

c) Aesthetics :

Human instinct of appreciation has resulted in many aesthetically appealing artifacts including buildings. Only when utilisation or economical issues are dominant, it gets top priority not being an economically remunerative one.

A place affects us directly through our senses-by sight, hearing, touch, & smell. The aesthetic quality of a place is a consequence of form & of how & by whom it is perceived. Wherever people are involved, it is as important as cost or shelter or circulation. Aesthetic requirements may coincide or conflict with other demands but cannot be separated from them in designing or judging, nor are they 'impractical' or merely decorative, or even nobler than other concerns. Sensing is indispensable to being alive.²⁹

d) Meanings :

Every built form is meant to mean something to indicate certain values. Meanings are attributed to urban forms also as in grid form/even grown urban form which is often taken for equality and freedom for all.

The above four conceptualise certain aspects of urban forms which can be further elaborated. None of these components, in reality, act in isolation; thus the use influences the form which is expressed in design. The design is supported by aesthetics; together they would convey meanings.

3.1.4 Form as Function

If form follows function, it does so with discrimination. The form -function relationship is never a direct one ; the link between the two concepts is man. Every artifact is the result of human decisions induced by specific needs. The shapes that artifact take, therefore,

are a result of only those functions that are recognized in the building program. They in turn represent a deliberate selection from all of the functions that could conceivably influence form. In favouring some functions & neglecting others, & in establishing priorities on the basis of individual & communal value judgements, a strongly biased functional structure is established in every building program. This functional structure is more universal the more elements it connects ; & the stronger their interlinkages, the more the resulting form is predetermined.³

However, the introduction of new factors destroys this functional structure & with it, its formal expression. The urban environment is characterized by a vastly expanded universe of which functional elements, only a limited number of which remain constant for any length of time. Society continually regroups itself. Form can no longer follow all the functions.³ Yet by selecting a limited set of functional elements & by structuring it, a clear bias is established. Depending on the number & kinds of element & the pattern of their interlinkages, form is now or less predetermined. The set may even be specifically composed of fully predetermined urban form. Urban form that is functional in this limited sense is too narrowly defined, too simple, & therefore never truly adequate.

For form to satisfy, the functional consideration must leave it indeterminate. The result is random form, which may be ordered & completed in the imagination of each individual who is confronted with it, or which, alternatively, may be shaped by a designer who superimposes his artistic conception on the functional considerations. But an artifact may also be a collection of formally fully determined, self-contained components, each of which is designed independently of the others; or the inclusion of specific stylistic elements in an artifact may be a functional requirement, in which case a designer incorporates predetermined form elements into his artistic conception.³

3.1.5 Communication Through Form :

All form becomes a medium of communication the instant it is perceived. It may be charged with, or void of, content; in either case, it communicates the fact. Ruskin's careful distinction "between architecture & building" in which architecture is "the art which impresses on the building certain characters venerable or beautiful, but otherwise necessary" & "concerns itself only with those characters of any edifice which are above & beyond its common use",³⁶ hints at the different degrees to which buildings may be used to transmit information. At the same time it betrays a value bias which raises the function of communication above all other common functions a building

might serve. Their information content & the quality of its expression, then, determine the value of artifacts with in the urban environment: "In its simplest form architecture is rooted in entirely functional considerations, but it can reach up through all degrees of value to the highest sphere of spiritual existence, into the realm of pure art".³

The art of communication through the forms of buildings & their arrangement in space, all but lost in the process, offers opportunities for sensory involvement in an increasingly artificial environment. Explicit forms, packaged & labeled, repel the senses, & the district centres conceived as³ collection of trim concrete, glass & metal boxes isolate man from contact with his environment and from people who inhabit it. Form can introduce social cohesion into urban environment by inviting mutual involvement between its occupants not as hot medium through the sharp formal definition of geometrically clear building shapes which appeal to the pure intellect, but through the richness of form that helps relate urban artifacts to the human senses.

1). Scale :

The relationship of man to urban form introduces the question of the human scale of artifacts. At its simplest, this relationship is between the dimensions of the human body & those dominating the various parts of the urban environment. Even a purely visible concept of scale,

however, must allow for a variation in the color of objects & in the relative speed of viewer & object when in motion. In addition, the concept of human scale may also be applied to the non-visual senses : hearing, smell, touch & taste.

Thus the question of human scale merges into that of how man perceives and controls his environment, & the considerations of scale cease to be merely a matter of aesthetics. Scale becomes one aspect of the fit of forms & thus of the fitness of the total urban environment which is only rendered tangible through its form. By manipulating urban form, man, in a sense exercises his control over the environment. To the extent that he loses his prerogative to mould the space surrounding him, he is alienated from his environment. And, to the extent that his senses fail to establish direct links with his environment is, in other words, out of scale-man's sense of orientation within the environment is lost.

3.1.6 Feedback Through Form :

The dual function served by urban form to provide a malleable medium for the expression of individual & collective values & to bring the environment into sensory focus implies a complex feed-back relationship between the habitat on the one hand, & human motivation & the will to form on the other. These three basic form determining forces are ever present in the urban environment.

a) Human Scale :

Compositional form is irrelevant not only at the extrahuman scale of the metropolis & beyond, but wherever elements of urban form are perceived from moving vehicles. Only at the personal and intimate scales, dominated by pedestrian movement and by individuals, does the compositional arrangement of spaces and artifacts retain its traditional importance. The limiting dimension of the personal scale in the urban environment is the distance at which people are within the range of kinetic communication and recognize each other as acquaintances or strangers. Contained within the personal scale is the intimate human scale, based on the distance at which people's facial characteristics can be clearly perceived.³

3.2 GENERATION OF URBAN FORM :

Built environment is a product of man - environment interaction. Referring to the generation of urban form, Anthony D. King (1980) has following hypothesis "First the activity occurs at a particular place whether may be either an existing building or simply a location on the ground, and then becomes institutionalised. Next, perhaps property rights are established and boundary markers drawn; an existing building is adopted for use. Next, there is a rationalisation of activities, theorising the construction of an ideal (as Rappoport says, the environment is thought

before it is built). Finally the built form is constructed".²⁵

"Thus a particular form is envisaged and built to facilitate a related activity. Apart from this primary purpose, many subsidiary purposes are also fulfilled during this process which include protection from nature, territorial identity, indicating socio-economic status, symbolising a societal value etc. Just as many of these manifestable and latest aspects create built forms, built form also creates a meaningful environment. They act as a setting for these hidden aspects, which can be understood by people and act accordingly".³² (Amos Rappoport, 1977). The generation of an activity guiding environment by the urban form can be illustrated by the differences in the human behaviour in a shrine, office and hotel. We are expected to act in a certain way in these spaces; the serene calmness of the shrine, busy actions of office, and the inviting, pleasing decorations of a restaurant indicate what we should do there.

3.2.1 Determinants :

During the generation of urban form, it's form details are determined by many factors termed as 'determinants of urban form'. They should not be confused with generators of urban form like human instinct to act, or need for shelter. Determinants are a set of criteria that had to be considered during the development of urban form. There are certain



related issues to be thought of before actually discussing the determinants.

For the study purposes, determinants have been separately identified and studied but, in reality they do not act in isolation. The interactive processes between are of two types: complimentary and contrasting. To illustrate, we see the social status of a person expressed in the house form, hence a social issue acts as a determinant. Most often the status is derived from wealth i.e., economics or power i.e., politics. In the earlier days, in India, both money and power were related to the caste hierarchy hence to social issues. These all determinants are complimentary to each other. Climate was a major determinant earlier. Today technology has reduced its importance which itself is controlled by economic considerations. Herein, again there is an interaction between the determinants, each controlling the other.

3.2.2 Form Determining Forces :

Artifacts satisfy needs through their forms which in turn are shaped by the forces generated by human needs. These form determining forces are amplified & directed by the power of the will & thwarted or deflected by environmental constraints. Never they act singly. Urban needs are never constant for long : their structure is clearly dynamic. Underlying them, however, it is the

constancy of basic physiological & psychological needs. Pyramids & skyscrapers suggest how much the world's economic activity also is really a flight from death.³ Physiological needs are clearly more urgent than psychological needs, & the will to form has little scope to express itself. Only when physical survival appears assured does the priority of physiological over psychological needs begin to reverse itself until, in the age of abundance, the will to form take primacy. City building becomes pure monument building & ceases to be rationally motivated. Communal attitudes partly predetermine the essential character of urban artifacts, even if basic drives originate in individuals & die with them. To be effective in shaping urban form individuals must thus be in tune with their community.

3.2.3 The Fit of Form :

Urban form is determined by the simultaneous action of dynamic & contrasting forces that result from the needs & demands of the moment. For this reason total urban form is collective form in the sense that it is an accumulation of components over a long period of time. Each such artifact is shaped to satisfy specific functions. To the extent that it accomplishes this, its form can be said to fit. A collection of fitting components does not, however, add up to a fitting urban environment unless every component has been clearly defined in its relationship to the total urban form, or unless the total urban form is left deliberately

indeterminate & permits the addition of new artifacts to compensate for the inadequacies arising from the use of those already existing.

In the absence of valid alternative criteria, the form of urban artifacts has tended to be fitted to simple sets of functional requirements. Hilberseimer's definition of the city architect's goal "to achieve an optical order adequate to the city's physical order",²⁰ suggests the nature of the compromise: it ignores the relevance of all but one of the human senses, it avoids consideration of the ways in which form & function influence each other, it assumes the physical order of the city to be fixed & disregards its dependence on constantly changing individual & social needs. This kind of oversimplified conception of urban form-function relationships becomes dangerous if, as a result, form is fitted too closely to an insufficiently broad range of urban functions. The determination of urban form is essentially a long-range decision, if it is made on the basis of expediency, quick obsolescence is inevitable. And urban obsolescence ushers in urban decay. Urban forms must fit functions both spatially & in time. For this reason, the fit of form must necessarily be loose in respect to either. The only conceivable alternative would be forms that adapt automatically to changes in the functions they are expected to fit.

3.2.4 Unit Form:

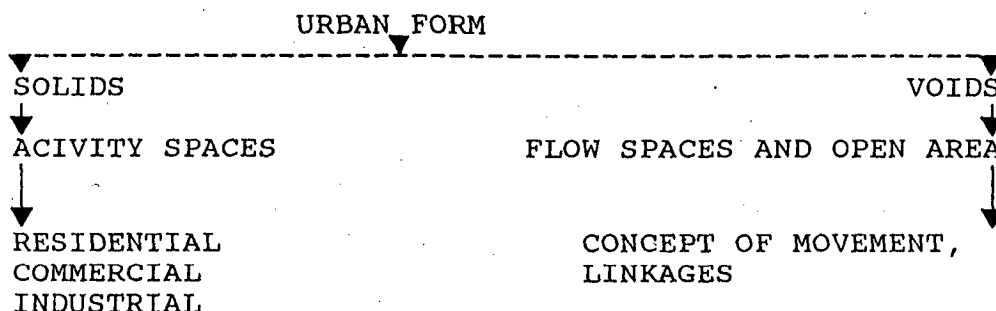
An image may be established at the megascale of the urban environment, but the experience of physical form is ultimately limited by the nature of the human body's sensory receptor system. To make sense, form must be accessible to the ears, the nose and to touch, as well as to the eye, and even, if only through association, to the sense of taste. But at best, urban form is under direct individual control only at the smallest scale of the urban environment - at the level of unit form. The units whose total aggregate is urban form, may be spaces or components, or spaces made up of components. When components are hand made and hand assembled, all aspects of unit form are naturally in human scale.

3.2.5 Collective form :

Collective form must reflect a communal structure and since the continuity of communal interaction is dependent largely on random encounters between individuals, the continuity of collective form is essentially of a random nature. But if man is to move with confidence in an ever-changing environment, urban form at the scale of collective form must be an extension of form at the personal scale. In the presence of an assertive individual will to form, collective form may remain compositional in character, and the elements of unit form may be filled into preconceived shapes and positions on the basis of artistic

considerations. Alternative by, unit forms, if of one kind and clustered in a simple order, may constitute the subsidiary elements of group form-or of megaform if different unit forms are incorporated in more complex artifacts. Group form is essential additive in character.

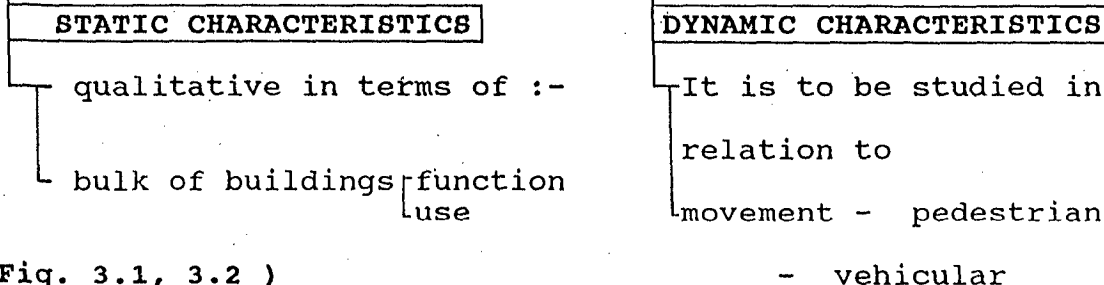
3.3 PRINCIPLES AND ELEMENTS OF URBAN FORM :



URBAN FORM CAN BE MEASURED IN TERMS OF FOLLOWING :

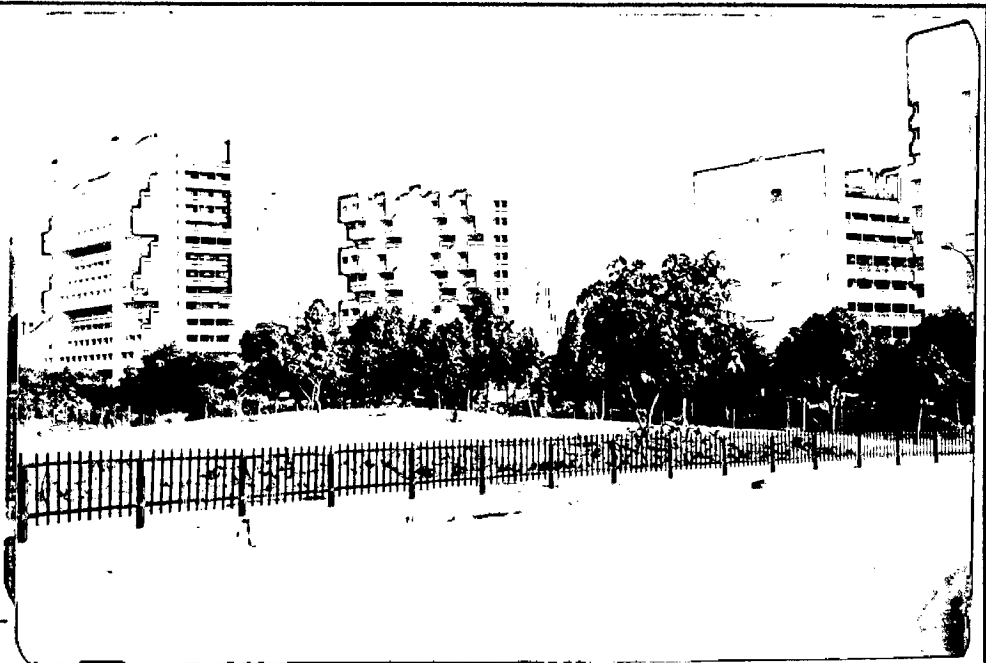
- space building relationship.
- intensity of development.
- urban morphology in terms of :
 - use
 - infra-structure
 - systems

URBAN FORM CAN BE APPRECIATED THROUGH :-



(Fig. 3.1, 3.2)

Fig. 3.1
BULK OF
BUILDINGS



The bulk of buildings gives static characteristic to urban form.

Urban form can be appreciated qualitatively in terms of function & use.

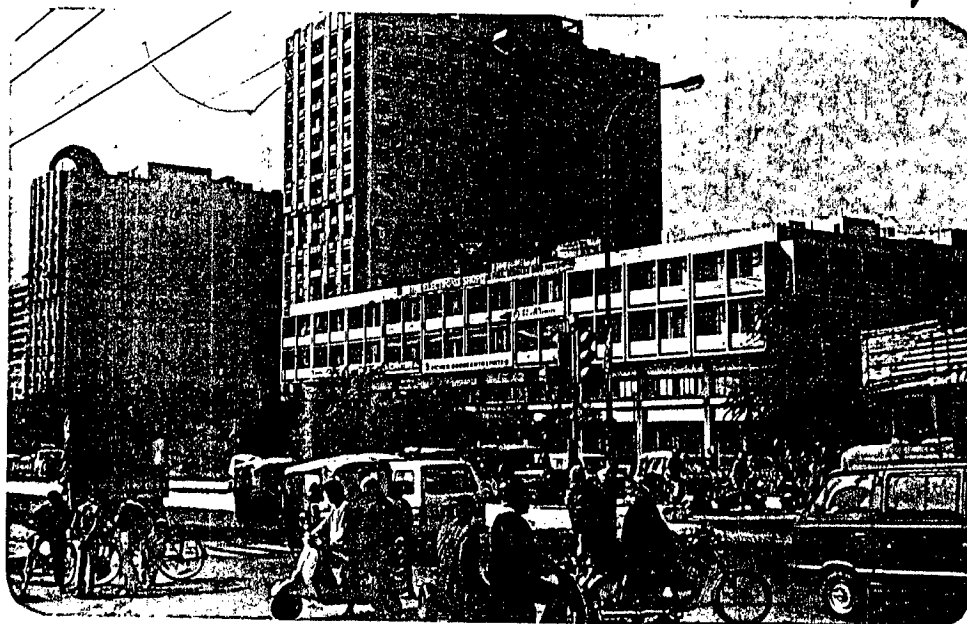


Fig. 3-2
FUNCTION &
USE.

- urban pattern & texture
- environmental qualities

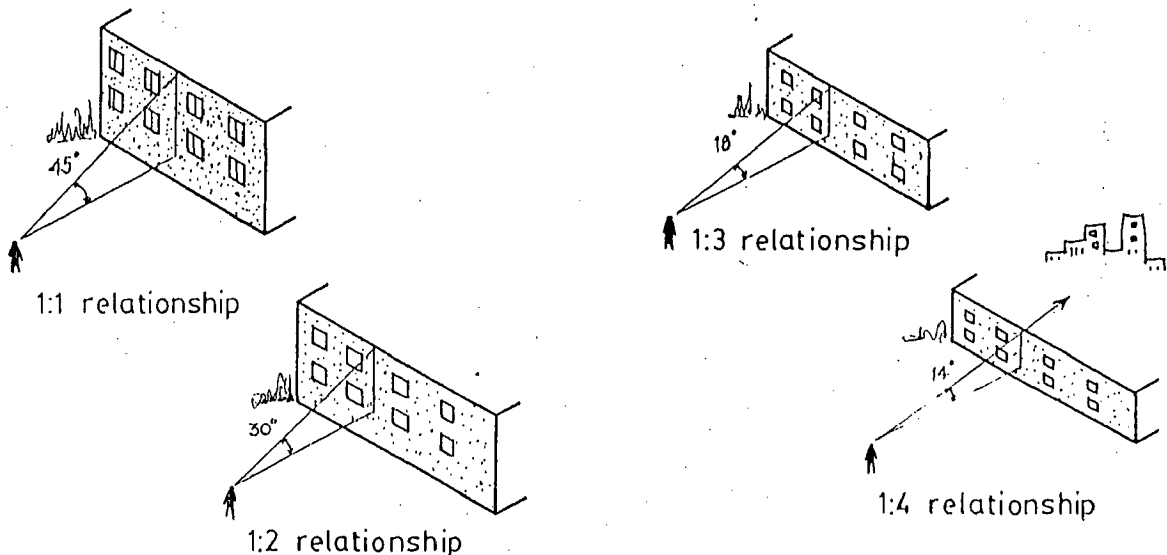
It is to be measured
in terms of existing

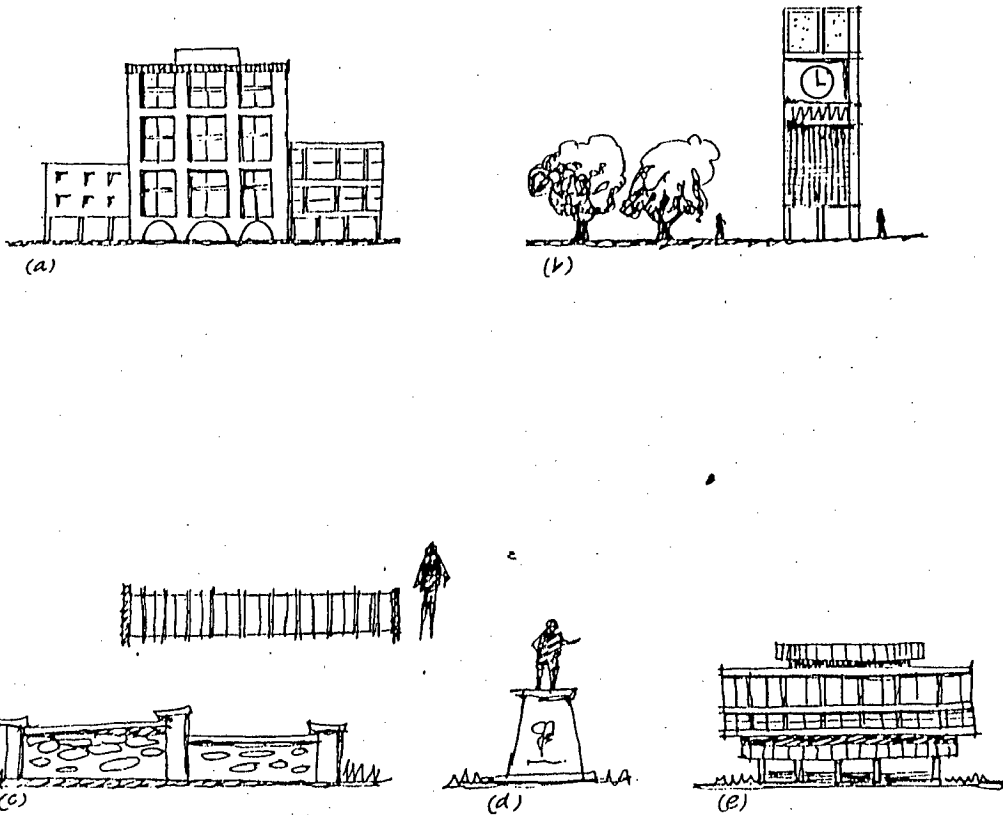
- sky line
- panorama
- vista
- landmarks
- space pattern & volume
- mass & void
- entrances etc.

3.3.1 Space Building Relationship

The ground surface, buildings, & objects in space constitute the urban mass. We can arrange these elements to form urban space & to shape urban activity patterns, on both large & small scales. (Fig. 3.3)

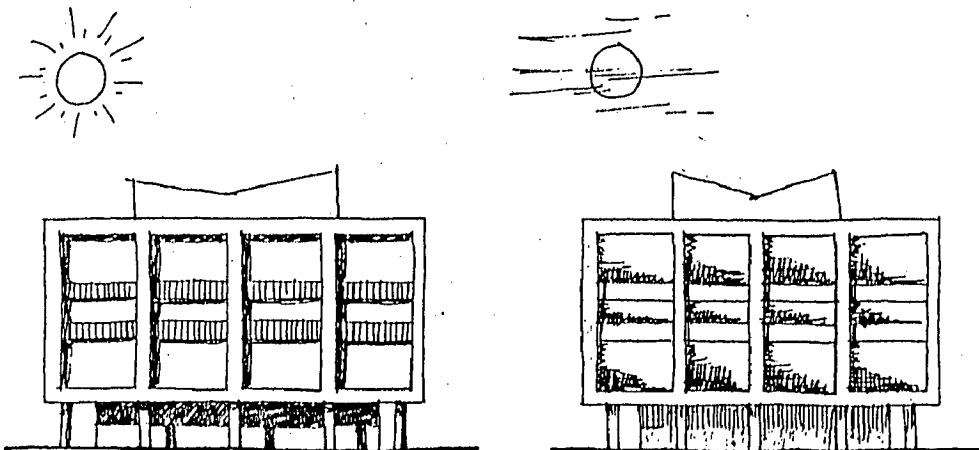
Our eyes & light conditions govern the way we see masses. (Fig. 3.4) From a viewing distance which equals the height of a building or object (45° angle or 1:1 relationship) we tend to notice details more than the whole facade or object; at 30° angle or 1:2 relationship, we see the object as a whole composition, together with its details, at 18° angle or 1:3 relationship, we tend to see the object in relation to surrounding objects; & at 14° angle or 1:4 relationship, we tend to see the object as a forward edge in an overall scene.³⁹





The components of urban mass- buildings, trees, walls, statues, etc.

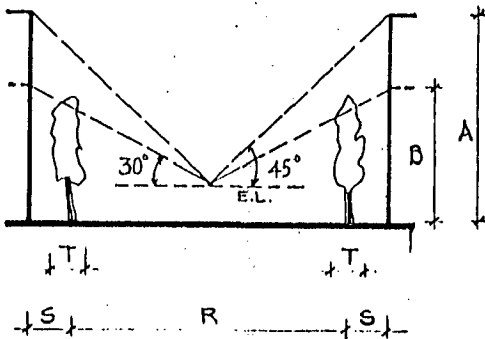
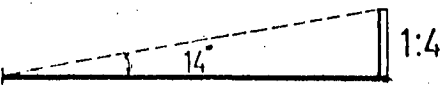
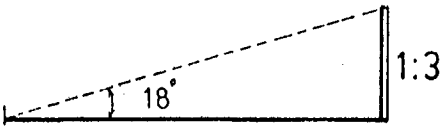
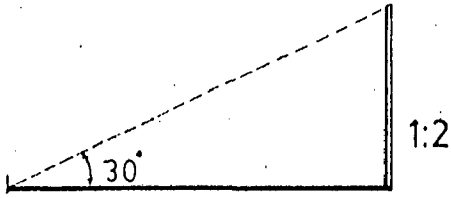
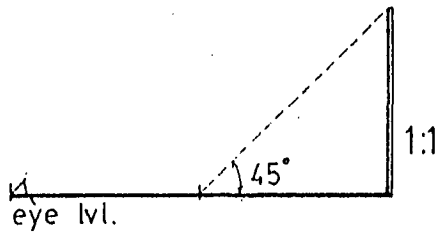
Fig. 3.3



Appearance depends largely on light conditions.

Fig. 3.4

Source: SPRINKS, PAUL D. "Urban Design: The Architecture of Towns & Cities"



R-Right of way }
 S Building line } Fixed element
 T-Tree line }

A-Ht. of structure } Variable
 at full enclosure }
 B-Ht. at threshold encl.
 S-Set back line

- FULL ENCLOSURE: The distance for seeing in detail.
- THRESHOLD OF ENCLOSURE : The distance relationship for seeing the whole facade and details simultaneously.
- MINIMUM ENCLOSURE : The threshold of distraction for distant vistas.
- LOSS OF ENCLOSURE : The facade acts as an edge to a distant view.
- The building dominates the street scape when they are taller than the height required for full enclosure i.e. the proportion more than 1:1. One of the criteria for finding out the F.A.R is the threshold of full enclosure proportion to 1:1. The height measured at fixed point from the edge of road with range of 45° for complete enclosure and 30° for complete partial enclosure drawn on the centre line of right of way with the levels.
 - pedestrian eye level
 - drivers eye level.

The building starts to dominate in actual conditions with the calculated height of structure but they do not dominate if the vision is blocked by trees. The taller the trees more the screening.

3.3.2 Intensity of Development :

The intensity of development is directly related to the floor area ratio i.e. $\text{FLOOR AREA} \times 100 / \text{PLOT AREA}$. Higher the floor area ratio the intensity of development is higher.

3.3.3 Urban Pattern :

Urban areas have distinctive patterns. Usually they are seen in their blocks & street layouts. Mixture of open space & built-up space constitute still another pattern. An urban pattern is the geometry, regular or irregular, formed by routes, open spaces & buildings.³⁹

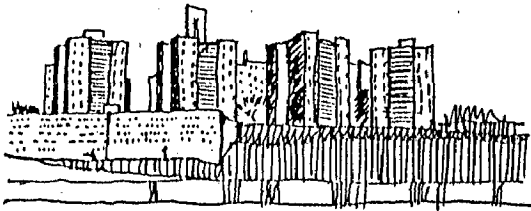
4.7.4 Texture :

It is the degree of mixture of the fine and coarse grain elements. Grain is the degree of fineness or coarseness of an urban area. Urban shape, pattern, grain, size, density and texture are primarily aspect of solid form-the building mass of the city.

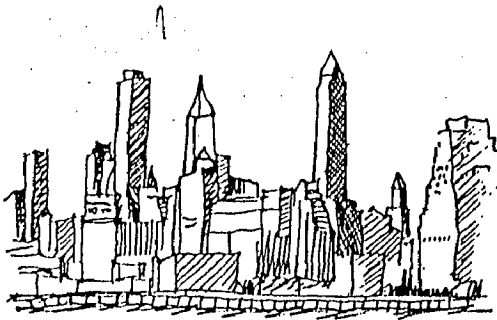
A suburban area with small houses on small plots has a fine grain & uniform texture. With small houses on varying plot sizes, it could still have a fine grain but an uneven texture. In the city, large blocks with buildings of varying sizes could be described as having a coarse & uneven texture. If the buildings are uniform in size they could be described as having a coarse grain but a uniform texture.³⁹
(Fig. 3.5)



Fine-grain & uniform texture.



Coarse-grain & uniform texture.



Coarse-grain & uneven texture.



Coarse grain & even texture.

SOURCE: STREIBER, PAUL J. - "URBAN DESIGN: THE ARCHITECTURE OF FORM & SPACE".

Fig. 3.5

They are useful in evaluating an area's form & making decisions about a design treatment for it.

3.3.5 Sky Line :

The city's sky line is a physical representation of fact's of life. But a skyline is also a potential work of art. An urban sky line is it's collective vistas. It is often the single phenomenon which embraces the maximum amount of urban form. A sky line is vertical definition of the plan of the city.³⁹

(AFTER SPRIEREGAN)

3.3.6 Vista :

Vista is a space whose primary dimension is length along which we feel compelled to look and move. This may be established by enclosure. For Example, Central Vista Delhi.

3.3.7 Land Mark :

They are usually a rather simply defined physical object : Building, sign, store or mountain. Their use involves the singling out of one element from a host of possibilities. Some landmarks are distant ones typically seen from many angles. Landmarks are type of point-reference and a prime aid to orientation.

On the overall scale of the city, prominent landmarks are tall verticals like skyscraper groups, district edges & centres with strong visual characteristics etc.

chapter 4

Factors Affecting Urban Form

CHAPTER - IV

FACTORS AFFECTING URBAN FORM

4.1 URBAN FORM AND LAND USE RELATIONSHIP :

4.1.1 Introduction :

In an urban environment specifically the term landuse means the relation of a parcel of a land to human activity on it. Here the physical characteristics such as slope, drainage, bearing capacity, climate etc play a role of secondary importance.

Urban communities have always developed as part of our social and economic conditions and the amount utilized in terms of land by specific activities and their spatial location reflects the requirements of this system. Thus despite a lack of formal planning in early cities the LANDUSE patterns evolved were essentially FUNCTIONAL in character.

4.1.2 Elements of Land Use :

Purpose of measuring landuse is

- To relate activity to the area.
- To organise the activities to achieve the optimum utilization of the area.

Land use can be measured in terms of the following :

Time scale : Time scale deals with the changes in land use during different periods.

Area scale : Area scale deals with

- Size : population size and its impact on land use and urban form.
- Function : land use and its variations according to the predominant functions of the area.
- Speed : impact of speed on the land use in relation to time-distance.
- Technology : it mainly deals with development of transportation system, building science construction and communication system (urban graphics).

4.2 URBAN FORM AND ZONING RELATIONSHIP :

4.2.1 Introduction :

In general zoning can be defined 'as the demarcation of a city by an ordinance into zones and the establishment of regulation to govern the use of the land and location, bulk, height, shape, use and coverage of structure within each zone'.

The objective of zoning legislation is to establish regulation which provide location for all essential uses of land and buildings and to ensure that each use is located in most appropriate place. Zoning helps to exclude nuisance which would tend to creat blight in particular zone.

4.2.2 Types of Zoning

a) Use Zoning :

In the zoning plan the city is divided into a number of use areas in which the land-use is restricted to certain classified uses. Classifaction of use zones established by

zoning such as residential, commercial, industrial, public and semi public, parks and play- grounds etc. (Fig. 4.1)

b) Height and Bulk Zoning :

This type of zoning establishes a relationship between the space inside the building and the space about the building. This helps to ensure adequate light and air inside the building and leave adequate parking area around the building. This type of zoning regulation is mostly applied to commercial areas.(Fig. 4.2)

c) Performance standard's of Zoning :

Establishment of zones on the basis of performance standards is a modern concept and is preferred over other concepts of zoning. It gives the quantitative assessment of the variables such as noise, smoke, odour, dust, heat, vibration, traffic etc. This type of zoning therefore helps in regulating the above variables in a precise and scientific way.

d) Aesthetic Zoning :

Aesthetic zoning concerns with appearance of urban environment. The difficulty of enforcing zoning regulations in the interest of aesthetics is the different aesthetic sensitivtiy.

4.2.3 Types of Control :

a) Set-Back Control :

It is a part of sub-division control. The set-back line is the distance between the building line and the plot line, the set-back line could be from the front, rear and sides of the plot. The aim is to provide space for widening of street, ensuring adequate light and air-space for planting, to prevent fire and obstruction at traffic intersection. (Fig. 4.3) The exact depth has to be determined by consideration of the character, height, and use of the building as well as by nature of street themselves in a given district. The front and rear yard depth are based on sun light projection and is related to height of the buildings. The depth of side yard is depended largely on the size of the plot and the character of proposed development.

b) Floor Area Ratio :

Floor area ratio is the ratio between the total gross floor of all floors of a building, including the area of all walls and mezzanine floors to the plot area. (Basement of certain type of storage, electric cabin, projection etc. are exempted from calculation of gross floor area). (Fig. 4.4a,b)

The rigid volume control that generally prevails in the zoning regulations of height and bulk is relieved by the method of floor area ratio. The flexibility in designing

and shaping buildings is an advantage of this method, but the inducement to reduce the lot coverage is an important component of floor area ratio provision.

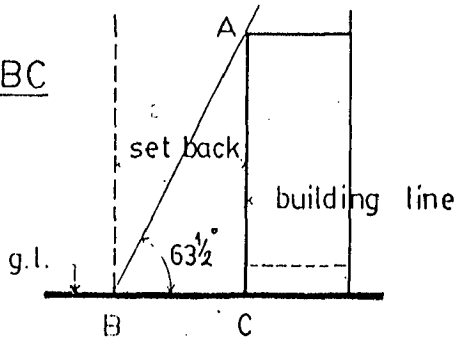
c) Sky Exposure Plane.

For commercial structures a 'sky exposure plane' is the basic control. The ordinance specifies the fixed maximum height at the property line for each zone and street width. Above the height the receding sky exposure plane controls the building set-back. This volume control is amplified by the 'bonus' of additional permitted floor space as compensation for building set-backs at the street level. The angle of additional permitted floor space as compensation for building set-backs at the street level, the angle of declination of the sky exposure plane rises more sharply from the fixed building height in proportion to the building set-back this increasing the permitted height and floor area. (Fig. 4.5)

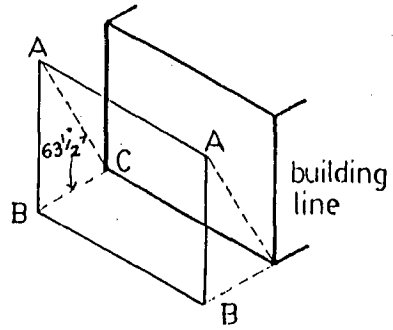
"Open space ratio" is applied to multifamily residential areas to encourage the reservation to greater open spaces at the ground level. A factor for the open space ratio is specified for each apartment zone by which the additional floor space is calculated in proportion to the open ground space. (Fig. 4.6)

These methods for regulation of building height and bulk recognize the importance of the relation between floor

$AC=2BC$



$AB=2BC$



The AIR PLANE rule requires that there shall be no erection, encroachment on the air space above the air plane to the vertical dotted line.

The LIGHT PLANE rule requires that there shall be no encroachment on the air space and dotted line.

TYPICAL AIR & LIGHT PLANE

Fig. 4.3

example: F.A.R. 0.8

Floor area 80% of plot area 8000m²

fig.1 4000m² /floor

fig.2 1000m² /floor

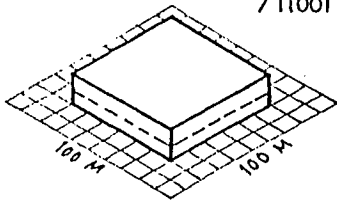


fig.4.4 a

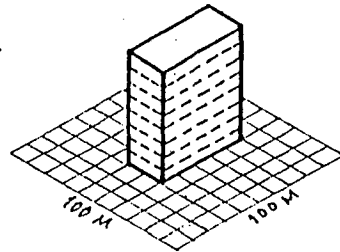
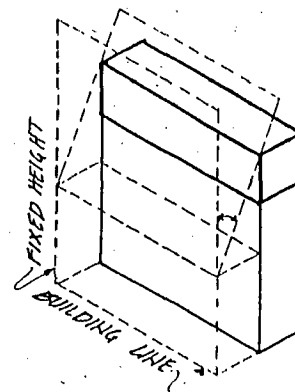
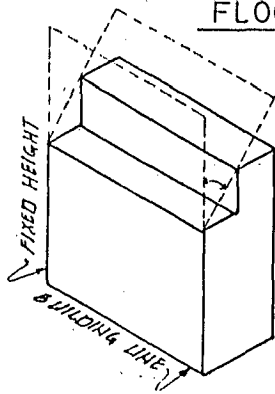


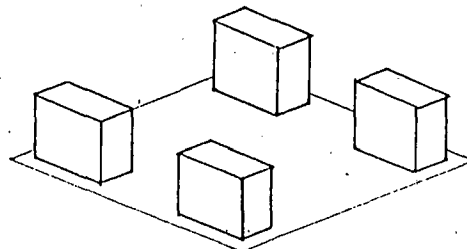
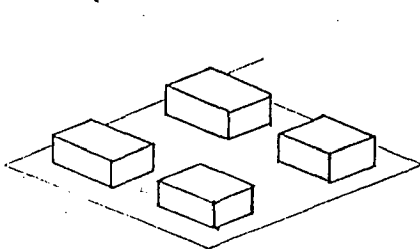
fig.2

FLOOR AREA RATIO



SKY EXPOSURE PLANE

Fig. 4.5



OPEN SPACE RATIO

Fig. 4.6

SOURCE: "Zoning & Urban Form" - (Thesis 1977) RANFRANKLIN, D.A.

space and ground area rather than a limitation on building heights. The key to their effectiveness is the extent to which the ratio of floor space to ground area achieves the needed balance with space for vehicles and normal human relaxation of mind and body. It is this balance which is yet to be achieved.

d) Architectural Control :

Architectural controls are local ordinance regulating the construction and design of buildings. This aspect of regulation usually deals with architectural features and frequently encourages a certain architectural style.

i) Facade Control :

This comprises of fixing of size for all the architectural elements which appear on the face of the building. The least manner of putting these forward is by means of drawings both for the person who has to introduce them because he can understand the implication better while drawing than while writing and for the person who has to use them. (Fig. 4.7)

ii) Frame Control :

Frame control comprises in fixing the extent of height and projection of party walls and the top course connecting, these thus forming a frame. The building portion which can be of any design stays behind these frame. Certain standard

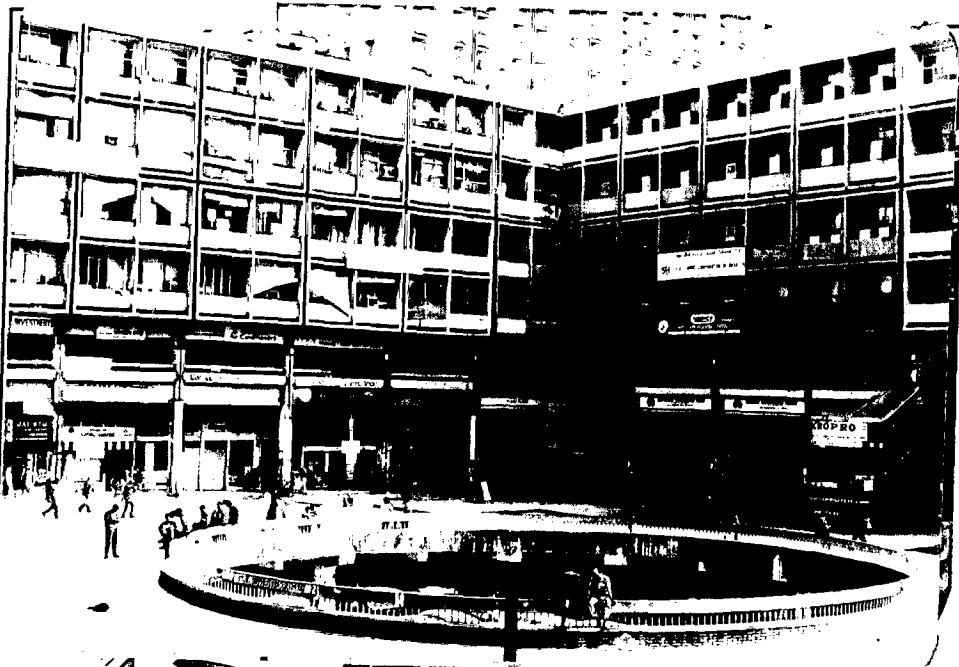


Fig. 4.7
FACADE
CONTROL



Fig. 4.8
FRAME
CONTROL



Fig. 4.9
MODULE
CONTROL

size of doors and windows are specified from which a person may choose and use in any manner he likes. (Fig. 4.8)

iii) Module Control :

Horizontal module fixation reduces the chance of heterogeneity and ambiguity of facade treatment and creates imageability. Vertical module fixation creates the balance of massing. (Fig. 4.9)

The principal objective of architectural control ordinance is to prevent excessive uniformity, dissimilarity in appropriateness or poor quality of design in exterior appearance of buildings erected in or in immediate vicinity. The ordinance often contains details of standard for measuring these factors. Although such control is based upon subdivision regulation, it is essentially private in character.

It is obviously one of the working parameters that until radical changes are brought about, much of the physical development in our cities is regulated by government, through planning regulations such as zoning, & through building codes & other devices which directly influence the forms produced. These are however, in general, entirely negative & non-creative, & must in the course of time yield more flexible systems.

4.3 URBAN FORM AND ACTIVITY PATTERN RELATIONSHIP :

4.3.1 Introduction :

"Activity system" is an umbrella kind of term as defined by Chapin for the patterned ways in which individuals, households, and firms pursue their day in and day out affairs in a metropolitan community and interact with one another in time and space.

But for the purpose of this thesis the definition stated in the introduction, that is, "the patterned ways in which the city residents pursue their daily activities and interact with one another in time and space" has been adopted. Patterned ways here refer to the "activity patterns" i.e. the 'commonly noticed behaviour' of the different segments of the population which has reference to time and space-in other words which has meaning in spatial planning.

The meaning can be further illustrated through an example, if a majority section of residents visit a certain shopping centre in their neighbourhood for their daily requirements, it can be recognised as one of the activity patterns of that neighbourhood. The former part of the statement i.e. the visiting of the shopping centre in a particular location of the neighbourhood, by the residents staying at different points of the same neighbourhood indicates the spatial aspects of the pattern, while the

latter part "daily requirement" indicates the frequency of usage of the said shopping centre.

With reference to the aspect of shopping sited, the neighbourhood pattern as conceived by the designer can be said to be meeting with the user's demands. The degree of the users demand latter reflect in the intensity of the activity which in turn reflects in the mass of the building that houses the activity. In view of the explanation given for activity patterns, to bring out the spatial relevance of the patterns more clearly, the meaning of activity patterns could be extended enough to consider it as the arrangement of the various interlinked activities in space and the entity thus formed as the 'activity system'.

Thus to identify the interrelation of activity systems with urban pattern and form and to facilitate assessing the same properly, it is essential not only to identify the various activity patterns but also the generators of these patterns, as these could predict the nature of future patterns.

4.3.2 Meaning :

Majority of human instincts and attitudes are expressed, both physiologically and psychologically, through actions. Just as infinite permutation of these instincts and attitudes are possible, there are infinite variations in

actions. None of them are performed in isolation nor can they avoid influencing other actions. Considering this close interactive nature comprehensively, actions are termed as 'activity pattern'.

Every person can be identified with a typical activity pattern, and so also a settlement. In the latter case, thanks to the wide range of space uses, and functions performed, it will be difficult to pinpoint the nature of activity pattern. Normally the dominant ones are documented and expressed in various terms such as a market area, residential area and so on. Many other related issues like intensity, consistency, or compatibility of activities form the qualitative part of the activity pattern while the actual action, spatial or temporal contexts etc. are the quantitative.

4.3.3 Generation of Activity Pattern :

As already stated, human actions are instinctive. Two broad types can be identified within :-

- a) Actions required by situational demands.
- b) Purposive actions in a given situation.

The fact that a person would act differently in a temple and in a cricket stadium or in a hotel would illustrate this point. All these variations within an environment occur to 'achieve the maximum fulfilment of needs and accomplishment of plans and goals'.

A third category of action that can be noted relates to the casual ones like passing time, which do not make as serious an impact as the above.

4.3.4 Causes And Consequences :

It is common knowledge that every activity pattern is the outcome of the motivation to fulfill a need or want but when there are more than one means of which determines the actual pattern. The choice depends upon various socio economic characteristics of the city residents and the other natural factors like climate, land form etc.

These guiding factors of choice of action on turn guide the space requirement of the activity, organisation of activities in space (depending upon the inter linkages) and the physical form that houses the activity.

Thus it can be stated that the activity patterns are directly or indirectly responsible for the organisation of activities in space, for the variance in intensities of activities and variance in significance of the activities.

The activity systems with their inter related component activities, inter linked by means of flow spaces in the form of linkage spaces, determines the spatial pattern and the building bulk which houses the various activities together with the flow spaces constitute urban form. However, it should be remembered that the activity patterns

are not static due to the generic nature of their motivating/restraining factors. Therefore, the pattern and form are not static too.

4.3.5 Components of Activity Pattern :

For wide applications, three levels of human activities have been identified : primary, secondary and tertiary. Primary relates to man's direct interaction with nature like agriculture, fishing, mining, etc. and normally is minimal or absent in cities. Secondary and tertiary ones refer to human occupation with man-made systems like manufacturing, service, administration, etc. They are broad and generalised terms.

Certain other activities like shopping need both indoor and outdoor spaces while many a games and recreational activities need only outdoor spaces. Evidently, such a classification is valuable in the analysis of functional details of built form and can be applied at macro level also.

1) The Activity Proper.

This is the main part of the action and is often related to the instincts. Hence they face very little change over time and can be a base for many comparative studies e.g. exchange of goods, i.e. shopping, etc.

2) The Specific Way of Doing It.

Performance of an activity would vary from person to person, yet has some generalisable nature within specified locales. The way of doing might change over time, and vary between places, hence would give clues to builtform differences i.e. linear bazaar, informal sector, etc.

3) The Associated Activities.

It is already noted that no action will be performed in isolation. Often they are supported by another serving activity or are joined by another complementary activity, both of which are associated activities. The associated activity at one place might be the activity proper at another. As time changes, they also change, accordingly influencing the built environment i.e. traffic in shopping area; refreshments alongwith shops.

4) The Meanings of the Activity.

An activity not only has a physically perceivable dimension, but also a latent dimension that can be perceptually perceived. Shopping basically indicates the system of consumption, surplus, and human mode of handling surplus.

This classification has wide application in studies in built environment for it facilitates a detailed study within a comprehensive base. For each delineated pattern, one can associate certain builtform characteristics such that a

built form - activity model can be derived under given contexts. During design process, such a model can be of great help. Whenever deep study is called for, the components of activities can also be studied.

4.3.6 Activities in an Urban Context :

Urbanity can be described as that state of a settlement brought about by the interaction of diverse human activities. Thus any urban area tends to be heterogeneous, complex and multi-dimensional. Certain activities require specialised aspects e.g. retailing needs high degree of accessibility. Like activities group together for mutual advantages i.e. as in central business districts.

Most urban enclaves lack outstandingly prominent characteristics. Further, complexity in an urban enclave should not be mistaken for confusion. Urban complexity-the intense intermixture of complementary activities-is one of the major reasons for cities & the spice of urban life. One must also distinguish between uniformity amounting to dullness, & unifying architectural & landscape elements constituting visual cohesiveness, especially in the face of great variety. There is a logic to the location of activities & there are definite visual results in their deployment & interrelationships.³⁹

4.3.7 Activity Related Aspects :

Variations in the activity pattern between places and between times is a universally seen phenomena. The cause factors bringing about them normally are what we considered as the determinants of built form. These determinants, before influencing the built form, influence the activity pattern which then accordingly modifies the environment. Hence, any reference to activity pattern would also refer to built form and its determinants.

In many generalizations of activities, the like compatibility to the environment, are not properly distinguished. Everything else being same, varying intensities can create different looking environments. Specially in the case of movement, the speed is a major consideration.

4.3.8 Basic Considerations :

Both activity pattern and builtform are products of human society who are also their users. Often, the user population might be different like tourists who with same activity pattern, might mean different. Then, their behaviours and mode of using the built environment is bound to be different. Hence, analysing the user population characteristics before analysing the relationship between activity pattern and the builtform is necessary.

About the relationship, A.D. King has some remarks. "Buildings result from a society's needs and accommodate a variety of functions. As changes in society occur, so too does change in its built environment. New building types emerge, some buildings modify and take on different functions, others may simply vanish".²⁵ If we have to understand buildings and environments, we must understand the society and culture in which they exist.

Every building, has 4 major purposes i.e. utility, design, aesthetics and meaning, which appear in an order of priority.

4.3.9 Relationship at Macro Context :

The activity pattern as described earlier can be viewed both at macro and micro contexts. Within the fabric, each area develops its distinctive characteristics. Collectively they form the character of the city, individually they form points of reference and identity.

Every centre has certain spatial configuration of activities which would decide the nodes, major corridors, and the like. Accordingly the urban form gets defined. At a local level, both, the builtform and activity pattern draw from this comprehensive urban form and pattern. Illustration of movement can clarify this point further. Due to the location of nodes, a certain area might have

considerable non-destined movement apart from its own destined movement. Both the modes of movement would yield their own influence. While the destined movement would encourage activities and make buildings more elaborate, the non-destined would let bulkier buildings appear. The builtform and activity pattern would together lead to the image of an area.

4.3.10 Relationship at Micro Context :

At an earlier chapter, certain components of activities, the activity proper, specific way of doing it, associated activities and the meanings, were elaborated. It is the difference between these four aspects of apparently simple activities which lead to specific form of setting etc., in fact all the kind of things which effect builtform. It will be possible to directly relate a detail of builtform to other component of activity pattern and indirectly to other components or other activities. The conclusions will be a clue to predict what activities will a built form encourage.

Closely related is the emergence of landmarks. Here both the form and function get together to give a functional significance, volumetric dominance, aesthetical superiority of widely accepted value to a building, turning it to a landmark. For example, the Central Business Distt. (Connaught Place), Distt. Centres etc.

Similar to the factors that are responsible for the quality of the land use and urban pattern, transfer of urban pattern into form through physical manifestations is not mechanical either. It varies in quality, character and quantity according to the variation in the same factors that influence the urban pattern viz. economic, social and public interest which in turn regulate the users response and the psychological satisfaction.

Another facet of relationship between activity system and urban form is the 'urban image' as the activity systems are directly related to the user's response which in turn depends on the functional and visual satisfaction.

Thus ultimately it is the users response, his demand, in the form of 'activity systems' as regulated by the socio economic and public interest factors that influences the urban form and vice versa.

4.3.11 Impact of Change :

It has already been stated that it is the changes in society that initiate changes in builtform. Certain component elements or any aspect or the total form might change as the context changes. Certain definite modes of changes in builtform can be identified.

a) Introduction of New Forms :

Any drastic change in the activity pattern or introduction of a new function like regional administration

would demand emerging new buildings and initiate new builtforms. New Delhi is a good example for such a process.

b) **Mutual Adjustments :**

When the change is only minor, it would not force any change in the buildings, rather would adjust with the existing. Even if the builtform change, it would be only by minor degrees. Earlier most of the changes were only gradual, and the built form used to change very slowly giving a static impression.

c) **Modification :**

This is a normally seen typology in India where the buildings are done with some permanent changes to accommodate a different activity. If time, money and other factors do not permit major changes, then also modifications are resorted to.

d) **Alteration :**

There considerable changes are done in the buildings giving it almost a new shape and form, thus maintaining compatibility between form and activities. New thoughts about form are also incorporated during such a process.

e) **Duplication :**

Certain elements or details of builtforms are repeated though they may not directly relate to the activity. They

might have utilitarian, aesthetical or symbolic meanings, already established thus prompting the duplication.

Thus we see that under natural conditions, the compatibility between activities and form are maintained. If during conscious planning an incompatible form is proposed, then the people and their actions would have to adjust to the building resulting in conflicts as it is happening at Delhi. Hence it is imperative to study various activities form relationship issues before proposing built forms.

4.3.12 Some Critical Views :

"Society produces its buildings and buildings although not producing societies, help to maintain many of its forms"²⁵ (A.D. King, 1980). These processes are indirectly controlled by people and are directly seen in activity pattern - built form relationship. To understand the processes, we are interested in the noticable differences in the urban environment due to activities and consequence is then significant not only between activity and physical form but also between activities and those signs of them which can be grasped'.³² (Rappoport 1977). Thus desirable relationship are expected at all levels of activity pattern-built form interation.

Nothing is more disappointing in a work of civic importance than to find that the results of our efforts are dull & lifeless, devoid of human presence & activity. No works are more deserving of criticism, for their lack of vitality stems from the fact that they discourage people from using them. While it may seem presumptuous to think that patterns of urban life can be shaped, that is exactly what we are doing every time we make major changes in the city. The arrangement of urban activities is a basic element of urban form. The key to design of patterns of activity is intelligent disposition of major activities in relation to the routes of movement, while trying to achieve maximum diversity.³⁹

On a small scale, as in an urban plaza, we seek to locate diverse types of buildings, so that the square is animated by people moving about in the plaza. We must remember that a large institutional or governmental office building has minimum inflow & outflow of personnel during the day, while a general-purpose rental office building has much more. Hence urban areas consisting solely of large single-use office buildings are often lifeless, while areas of multiple-use office buildings are usually the opposite. The principle of multiple-use is well extended to plazas.

4.4 HUMAN ASPECTS OF URBAN FORM :

4.4.1 Urban Environment & Human Motivations

a) Components of Human Needs :

The needs of human beings in the context of an urban environment and its physical manifestations could be termed as :

- i) Biological - more basic and predominantly physical in its fulfilment.
- ii) Intellectual - more in the nature of social, cultural and community requisites in that they are slightly more sophisticated in their fulfilment than the biological needs and in its manifestation has more variability than mere physical shelter,
- iii) Psychological - the psychological aspect of the human needs is a combination of both biological and intellectual needs in that its role is that of physical as well as of the mind.

The psychological aspect of human needs are understood in terms of the interaction between the man and environment. These interactions are 'affective' in nature, in that certain characteristics of the environment 'affect' human-beings to elicit a kind of reaction that is dependent on the environmental background of the persons as well as the strength of those characteristics which evoke response, their quality whether positive or negative.

In this respect, different persons may have variable responses and this is manifest in the images, the persons have of spaces and other features of the environment which, in turn, is a function of their social, cultural and physical background and tradition. Since the environmental features fit the psychological conditions of the inhabitants only under 'ideal' conditions, which for a variety of reasons seldom exist, then the aspect of 'adaptation' assumes significance.

Another feature of the psychological factors would be, how differently the environment is evaluated by the inhabitants and the outsiders, which means that the environmental preferences differ as per its locale.

b) Concept of Environmental Determinism :

As a consequence to stating that the environment does have effects on human life, through the three aspects mentioned viz., Biological, Intellectual and Psychological, it follows then that the interaction is two-way and each forms a determinant for the other. In this context, the concept of environmental determinism gives significance.

The three general principles in this concept are as follows :

- i) **Environmental Determinism.** The view that the physical environment determines human behaviour.

ii) Possibilism. The view that the physical environment provides possibilities and constraints within which people make choices based on other, mainly cultural, criteria.

iii) Probablism. The current view that the physical environment does, in fact, provide possibilities for choice and is not determining, but that some choices are more probable than others in given physcial settings.

The current view is that the built environment can be seen as a setting for human activities. Such settings may be inhibiting or facilitating. Using the distinction between fixed feature space (walls, doors, etc.) semi-fixed feature space (furniture, furnishings, etc.) and non-fixed feature elements (people, and their dress, gestures, facial expression, proxemic relationships, posture, etc.) it is possible to fit them into a model.

c) Space Meaning and Communication :

The environment is a series of relationships among elements and people and their relationships have a pattern. It has a structure and is not a random assemblage of things. The relationships in the physical environment are primarily spatial - basically objects and people are related through separation in and by space.

i) Space:

Space is experienced as the three dimensional extension of the world which is around us - the intervals, relationship and distances between people and people, people and things and things and things and space is at the heart of the built environment.

ii) Space - Human Element :

Space is not a simple or unitary concept, it is more than three dimensional physical space. The most basic distinction within the meaning of the term space is between human space and non-human space, the space with which planners and designers are concerned is human space. With the frame of human space, it can be distinguished between designed and non-designed space. Designed space meaning ordering according to some rules and reflecting some ideal environment. Other connotations that are attached to space are "behaviour space" or "action space" which is related to movement space.

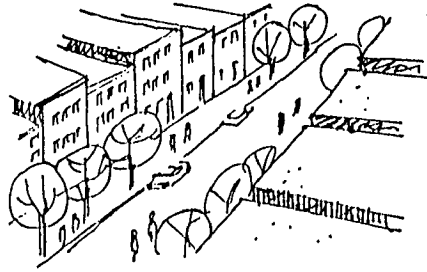
Within the physical or geographical environment there is an operational environment within which people work and which affects them. Within that is the perceptual environment of which people are conscious directly and to which they give symbolic meaning and within that is the behaviour environment of which people are not only aware but which also elicits some behavioural response.

iii) Urban Spaces & Open Spaces :

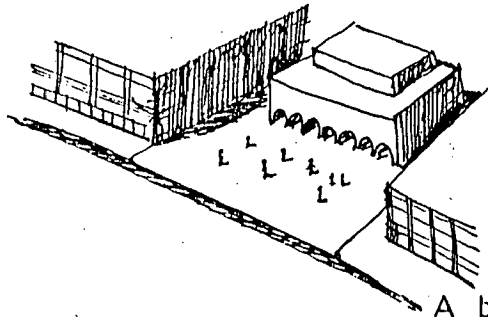
Basically an urban space must be distinguished by a predominant characteristic, such as the quality of its enclosure, the quality of its detailed treatment or outfittings, & the activity that occurs in it. An urban space should, ideally, be enclosed by surrounding walls, have a floor which suits its purpose, & have a distinct purpose to serve. If, however, any one of these qualities is sufficiently strong, it alone may establish the sense of urban space.³⁹

For example, a group of office buildings may contain a space around a poorly designed plaza or a complex road intersection, the floor space being devoted entirely to traffic. This is an urban space which has a sense of place in the city. It is both a landmark & a traffic node as well as an office node. An urban square may be beautifully landscaped as a restful park, but it may lack entirely the peripheral building facades which are needed for a sense of enclosure.

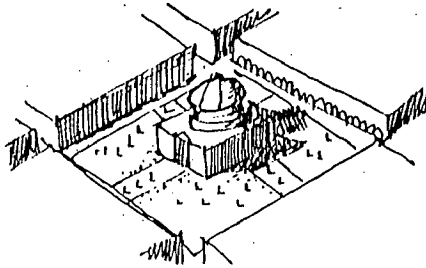
Urban space can be linear corridors. Avenues & streets are linear urban spaces if they are enclosed on two sides or have some element of unifying character-trees or uniform buildings. Corridor spaces are spaces for linear movement. (Fig. 4.10).



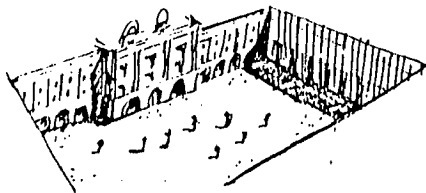
A corridor space.



A building projecting into a space.



A building in a space.



A building on a space .

SOURCE: SPRENGER, PAUL D. - "Urban Design: The Architecture of Towns & Cities."

Fig. 4.10

iv) Perception of Architectural Space:

In essence, the sensuous experience of a place is spatial, a perception of the volume of air that surrounds the observer, read through the eyes, the ears, the skin. While outdoor space, like architectural space, is made palpable by light & sound & defined by enclosure-overhead, along side, & under foot-it has peculiar characteristics of its own. In contrast to the architectural space, site space is much larger in extent & loose in form. The horizontal dimensions are normally much greater than the vertical ones.²⁹

4.4.2 Man-Environment Interaction :

a) Meaning and Components :

The man-environment interaction can be defined as the phenomenon which involves the mutual interaction of people and their built environment.

In its concern with arriving at a human criteria for design based on an understanding of man-environment interaction, the most important aspects that are dealt are as follows :

- How do people shape their environment, which characteristics of people, as individuals or groups of different sizes are relevant to the shaping of particular environments ?

- How and to what extent does the physical environment affect people i.e. how important is the designed environment and in which contexts ?
- What are the mechanisms which link people in this two-way interaction ?

A study of the man-environment interaction necessitates the consideration of knowing (cognitive), feeling (Affective) and acting (conative) with regard to the environment.

- 1) Cognitive : Involving, perceiving, knowing, and thinking, the basic processes whereby the individual knows his environment.
- 2) Affective : involving feelings and emotions about the environment, motivations, desires and values.
- 3) Conative : Involving acting, doing, striving and thus having an effect on the environment in response to cognition and affection.

The term perception embraces various kinds of connotations and is general. Perception includes the aesthetic experience, where the dialogue between perceiver & object is immediate, intense, & profound, seemingly detached from other consequences. But it is also entangled with many other purposes: comfort, human interaction, orientation, & the communication of status, for example. We attend to technical features, but often pass over their integration

into a visual whole. So there is a need to make distinction and this distinction can be made in three ways (viz.) Evaluation, Cognition and Perception.

1. Perception is used to describe the evaluation of the environment i.e. the perception of environmental quality.
2. Environmental Cognition is used to describe the way in which people understand, structure and learn their environment.
3. Finally, perception describes the direct sensory experience of the environment for those who are in it at a given time.

chapter **5**

Case Study & Analysis

CHAPTER - V

CASE STUDY AND ANALYSIS

5.1 CRITERIA OF EVALUATION :

We think of urban form of district centre in the following way :

It is generally thought of in terms of size - its population and physical extent. Size is closely linked to shape - the physical outline in horizontal plan form and vertical profile or contour. Size and shape are qualified by pattern - the underlying geometry of its form. Size, shape, and pattern are further modified by density - the intensity of use of land by people and building. Density is determined by urban texture and grain - the degree of homogeneity or heterogeneity of use by people or buildings. We can usually identify the parts of district centre by their dominant visible activities. Often these activities are complementary, yet sometimes they are conflicting. It is important not to mistake complexity for conflict; complexity is the spice of urban life. The bustling district centres are magnets of the city. People are the generators which require magnets around which to rally. Feeders are the links and paths which connect the two.

These areas of dominant visible activity exist in sequence as lined accents. The periodic occurrence of accents in sequence is rhythm. The disposition in a

sequence has, of course, visible manifestations. Thus, accents in a sequence produce a modulation of visual intensity - varying degrees of richness of visual experience.

Our use of the various parts of a centre depends upon their degree of accessibility. Demands for accessibility produce channels of flow. Channels of flow vary in intensity, according to the time of day, week, or season, and thereby establish patterns of movement. Visible activity, road signs, store signs, building signs and symbolic objects are messages to us which convey purpose. They are clues to the organization of urban form. Buildings are the immobile masses of a district centre. Arrangements of buildings form patterns of masses. Arrangement of buildings also forms urban spaces which exist as patterns of channels and reservoirs.³⁹

(PAUL SPREIREGEN)

The criteria for evaluation of the above relationships may be considered under broad headings as below :

1. PHYSICAL :

a) Size :

- * The size of a district centre-its shape, density, texture, space.

b) Appearance :

- * regarding their physical appearance,
- * the characteristics of building forms, building density, signs, materials, landscape, route-pattern,
- * the nature of the mixture of different building types.

c) Form :

- * the physical form of the place-form and structure in three dimensions and in broad outline,
- * the spacing of the buildings and their character.

d) Relation :

- * relationship of different parts of the district centre,
- * areas that lack cohesion in form and character,
- * the physical patterns of the place,
- * the patterns and the linear and focal points or urban spaces within the district centre.

2. SOCIAL :

a) Activity :

- * regarding visible activity, the principal clues of the activity of the

area-the kind of people, when and how they move about?

- * the key visual elements-the things principally seen-which establish the character of a district centre,
- * the natural groupings of different activities within the centre,
- * the activity pattern according to the time of day, week, or season,
- * liveliness of the district centre,
- * the detrimental aspects of the place,
- * the affect of local climate in the centre.

b) Linkages :

- * the principal paths of movement in the district centre,
- * how do they serve the people there?
- * the physical dimensions of the paths, whether adequate or excessive?

3. Aesthetics :

- * on urban mass,
- * on urban space,
- * on congruence.

5.2 CASE STUDY I: CONNAUGHT PLACE :

5.2.1 Introduction :

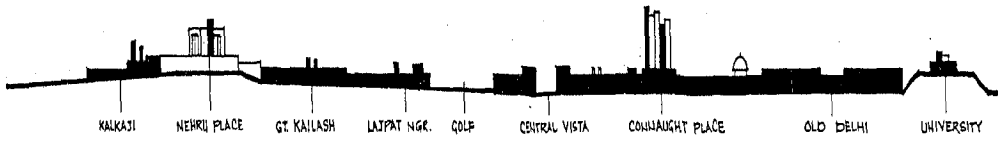
Lutyens conceived of Connaught Place as a quiet and dignified shopping centre for a meticulously planned and lavishly endowed capital city. (Case study I: photo C1) If New Delhi was one of the very few professionally planned cities in Asia in modern times, Connaught Place was one of the exiguous cases of systematically planned market centres in India - the very antithesis of typical Indian bazaars. Designed by Robert Russel, Chief Architect to the Government of India, it was a monumental work for the age for which it was planned and built. Its muted classical detailing and cool arcaded loggias made a pleasant and relaxing environment in which to leisurely stroll and shop. (Case study I: photo C2) Besides being an elitist shopping centre. It was also meant to meet certain social and recreational needs of the population.²⁴ (See Appendix 'A' for details).

5.2.2 Evolution :

In addition to the vista from the Council House to Shahjahanabad in the final plan of the Delhi Planning Committee, another giant circle marked the map of New Delhi, which came to be known later as the Connaught Place, after the King-Emperor's uncle following his farewell visit to India in 1921. The site was originally a part of Jaipur Estate - Madhoganj near Jaisinghpura on one side and

Barakhamba on the other. In their final report, the Committee had envisioned a monumental plaza at this focal site, ringed by shops, hotels and businesses and dominated by a terminal railway station, that expressive emblem of British progress and centralising power in India.

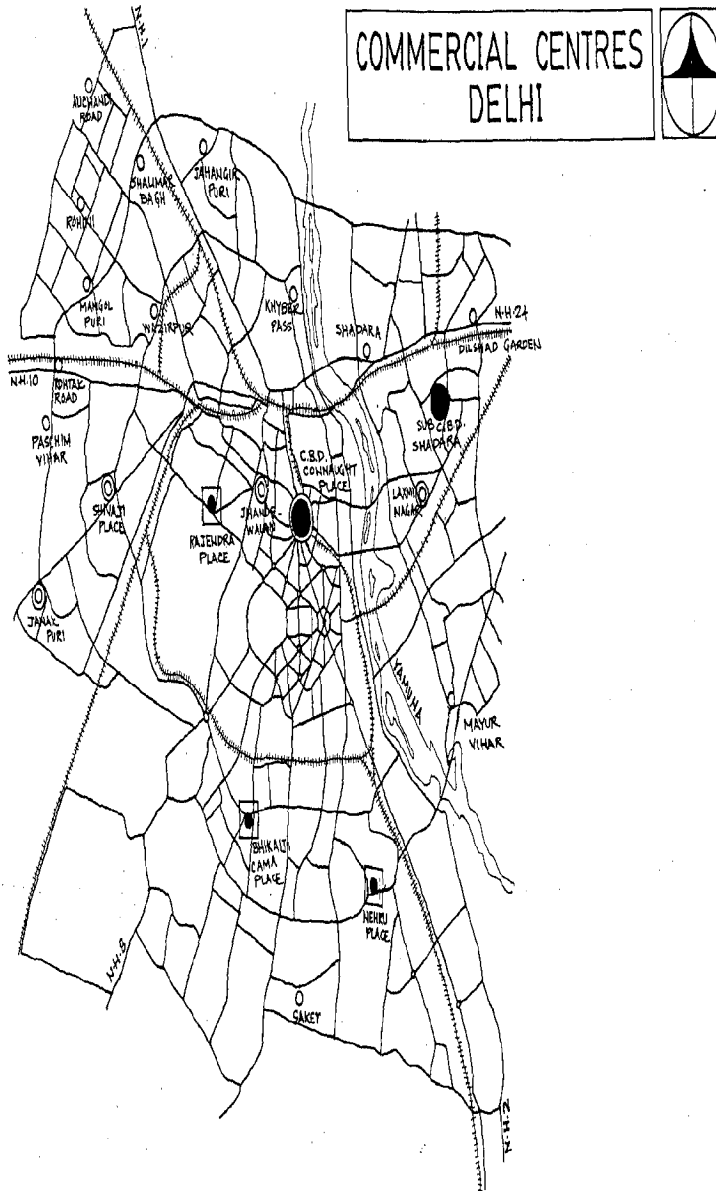
The Imperial Delhi Committee, which considered the plaza next in importance to the Raisina acropolis, strongly seconded this ambitious scheme. Members suggested municipal and local administrative offices as well as a post office on the projected circus but acknowledged that private enterprise must provide most of the buildings. (See Appendix 'B' for details).



SKY-LINE north-south



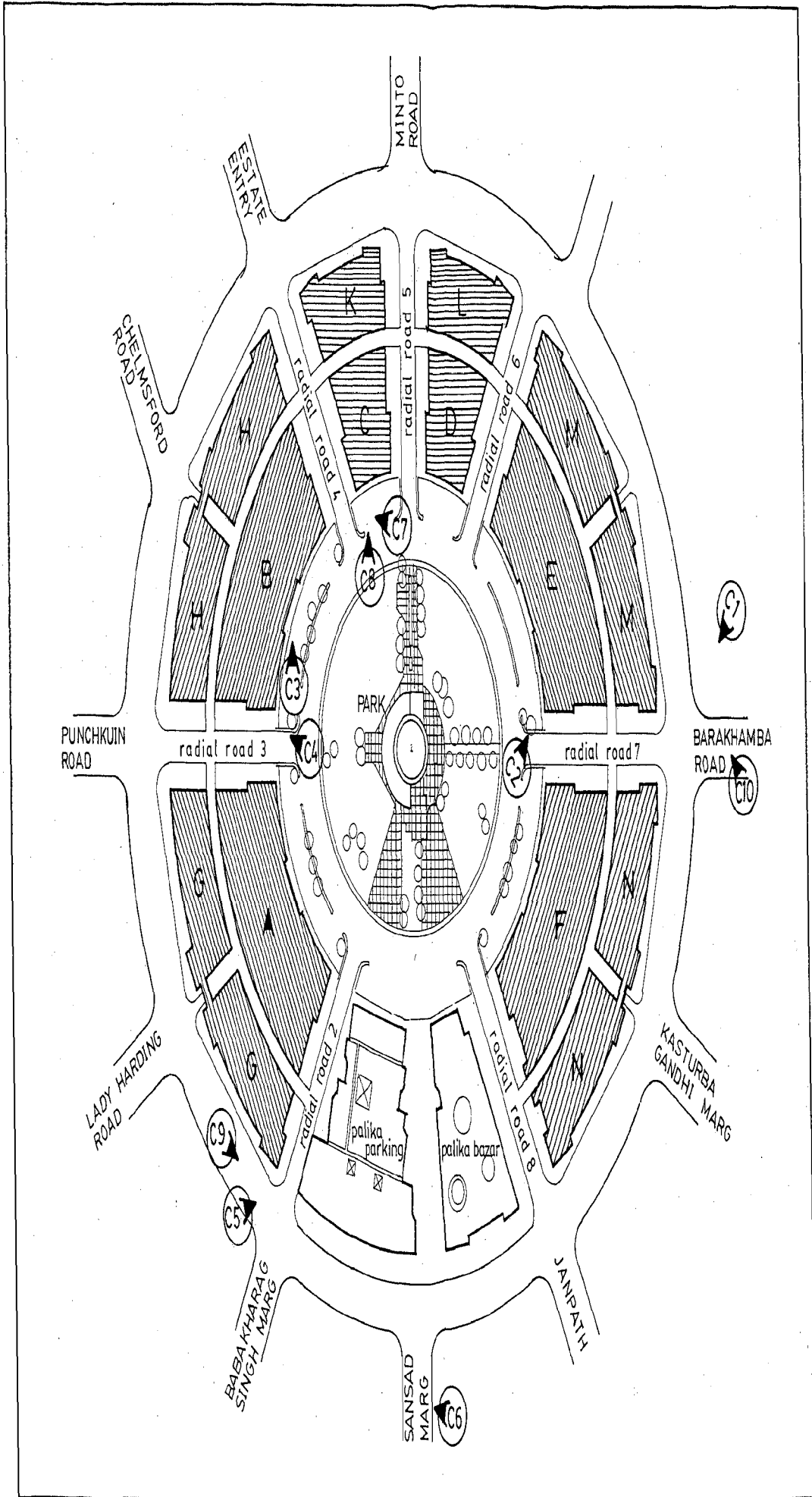
SKY-LINE east-west



DISTRICT CENTRES

- PROPOSED
- ◎ PARTIALLY DEVELOPED
- DEVELOPED

URBAN FORM DELHI



LAYOUT PLAN

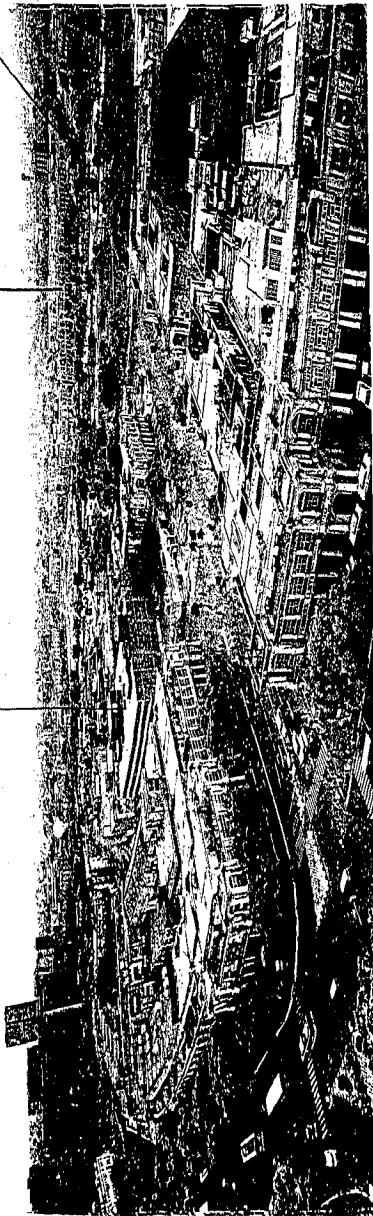
SCALE 1:3000

CASE STUDY I

CONNAUGHT PLACE

Haphazard modifications & intensive rebuilding along the middle circle has resulted in a series of untidy protrusions above cornice level.

C1



The circular Plaza of Connaught Place with its colonnaded facade punctuated with arches had strong sense of unity.

The central park, once a landscape retreat, has been reduced to a giant traffic roundabout.

Lutyens conceived of Connaught Place as a quiet & dignified shopping centre of a meticulously planned & lavishly endowed capital city.

A systematically planned market centre - the very antithesis of typical Indian bazars.

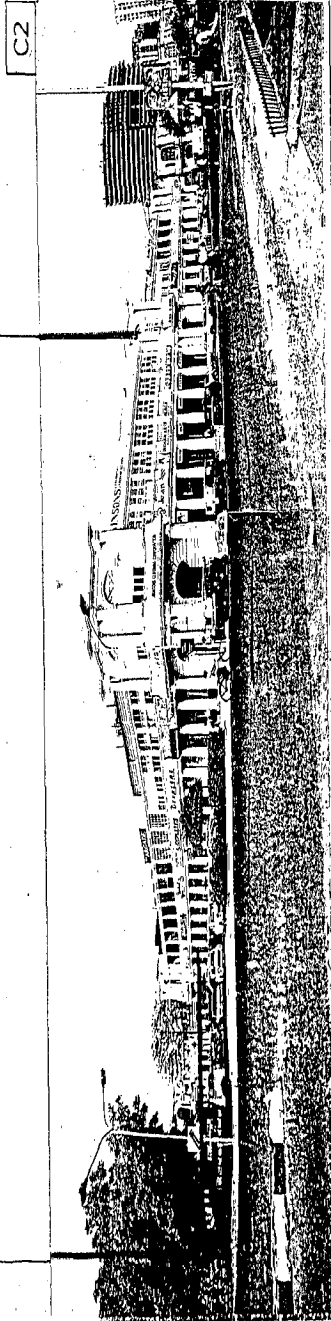
Unity achieved by simple & symmetrical plan with dominant shape.

Symmetrical disposition of solids & voids on an axis balance the composition.

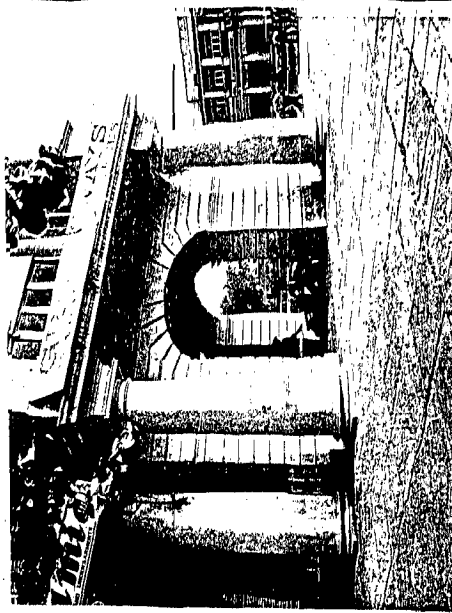
PART VIEW OF CONNAUGHT PLACE

Airy stuccoed colonnades, punctuated by Palladian archways & unified horizontal lines at one level for its overall visual integrity.

Muted classical detailing & cool arched loggias make a pleasant & relaxing environment.



VIEW TOWARDS RADIAL ROAD 7



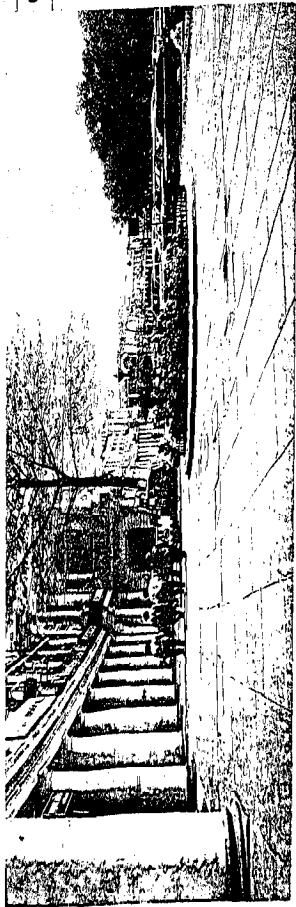
ARCHWAY DETAIL

CASE STUDY I

CONNAUGHT PLACE

ANALYSIS

Tremendous sense of space enclosure, with sweeping curvature of colonnades, brings in a kind of visual drag, a sense of depth in perspective & a desirable continuity.

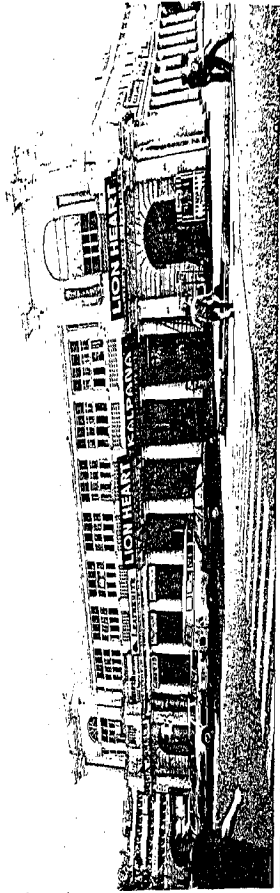


THE COLONNADE

C3

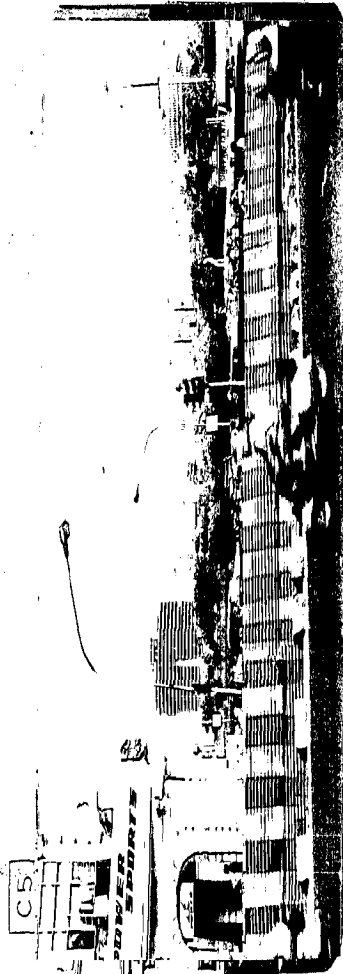
Polished & refined treatment of corners, bottom & top provide rhythm in the building.
Proportion maintained by the shape & size of openings.

C4



VIEW FROM RADIAL ROAD 3

C5



SKYLINE OF NEW HIGHRISE BUILDINGS

C6



SANSAD MARG

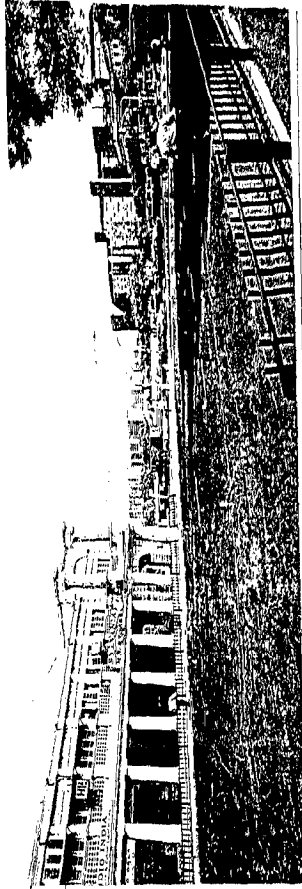
CASE STUDY I

ANALYSIS

CONNORNAUGHT PLACE

C7 Successive changes in use & need created new constructions resulting in loss of image when we walk through the radial road.

Foreground, once the province of strolling shoppers, is now a chaotic parking area. The squalor has effectively destroyed what was once a handsome urban space.



OLD & NEW FORM RELATIONSHIP



OUTER CIRCLE & SURROUNDINGS



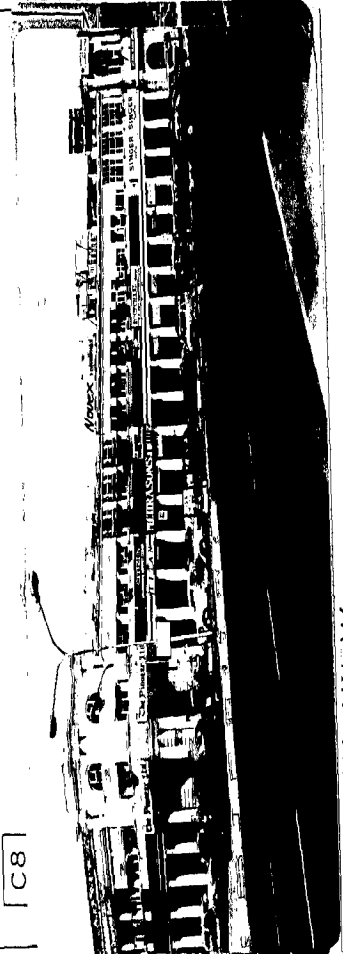
NEW CONSTRUCTION WITHIN OLD

With the change in time & need, uses (new) are being planned. But the material & lack of architectural controls disturbs the whole setting. This has distorted the urban looks of this central place.

Urban Graphics - no hierarchy of signs, proper system is lacking.

Visual Overload - projected signs destroy the overall architectural character.

C8



C-BLOCK VIEW

ANALYSIS

CASE STUDY I

CONNORNAUGHT PLACE

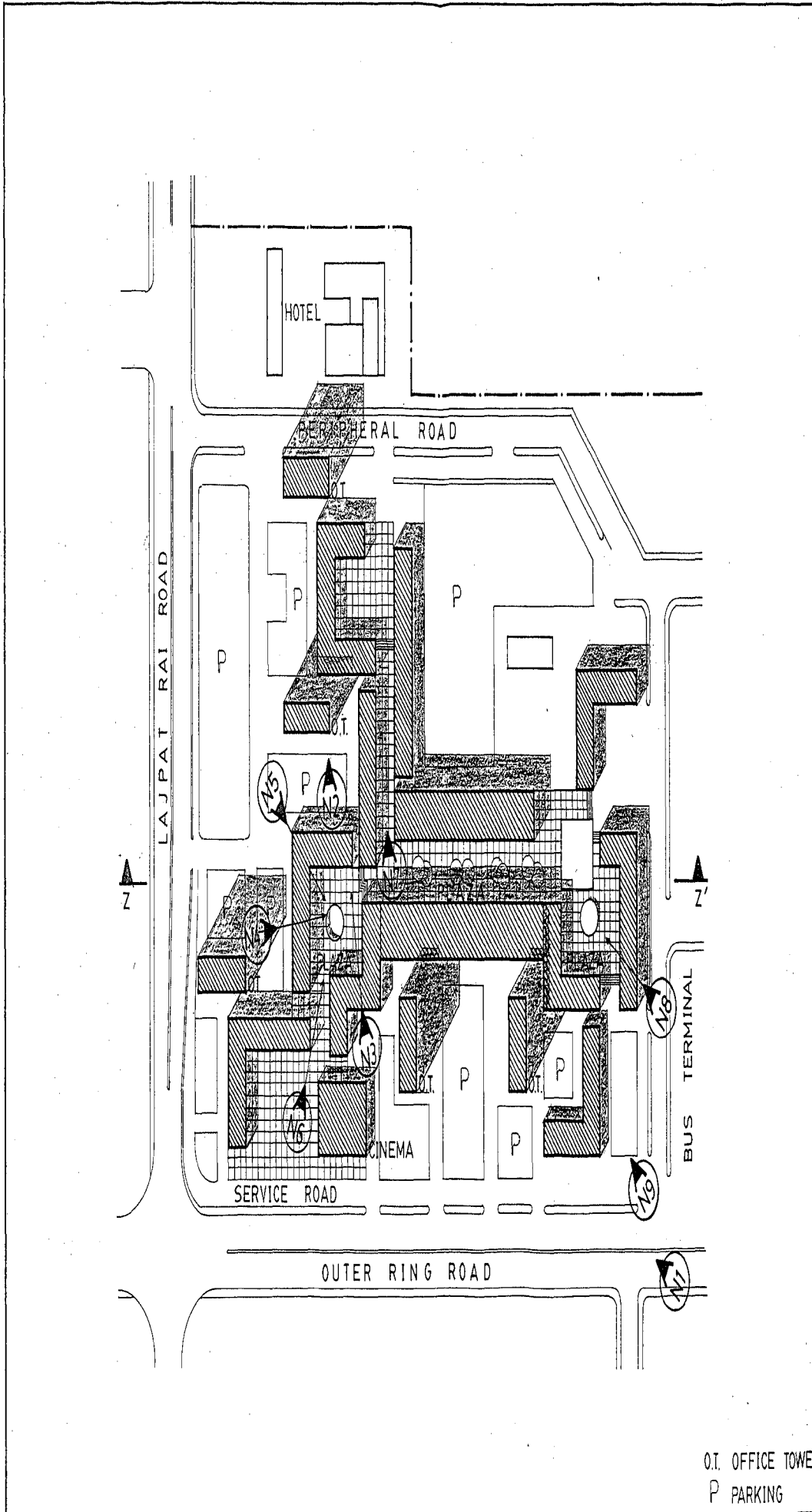
ANALYSIS

ANALYSIS

ANALYSIS

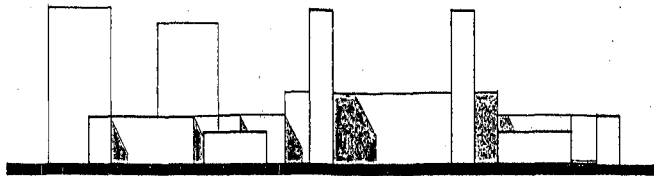
ANALYSIS

ANALYSIS

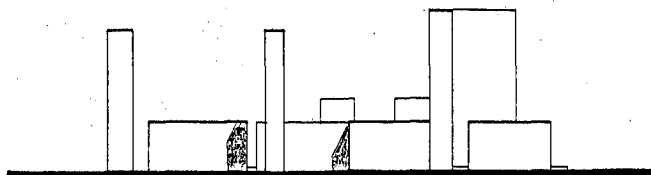


LAYOUT PLAN
SCALE 1:5000

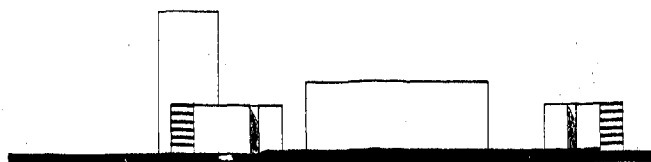
CASE STUDY II
NEHRU PLACE



SOUTH EAST ELEVATION



SOUTH WEST ELEVATION

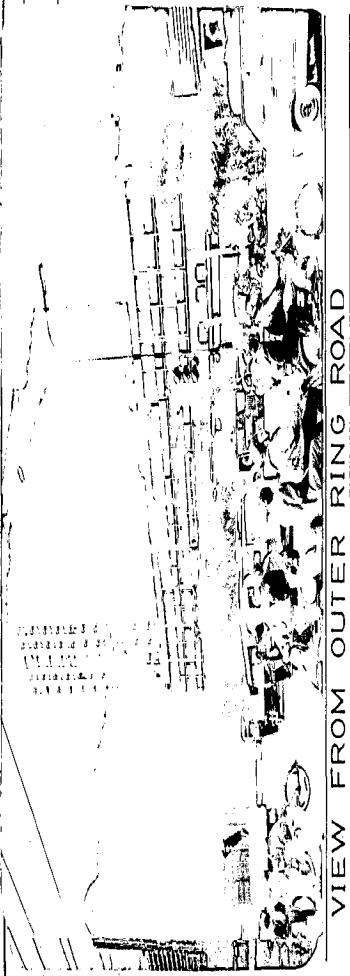


SECTION ZZ'

ELEVATIONS
SECTION

SCALE
1:5000

CASE STUDY II
NEHRU PLACE



VIEW FROM OUTER RING ROAD

N1

The complex lacks the unity, with a series of towers rising from sea of cars & with a bleak, windswept & pedestrian central plaza.

There has been considerable departure from the total concept of its being an integrated centre due to the clash in the philosophies between those who conceived the design & the independent architects.

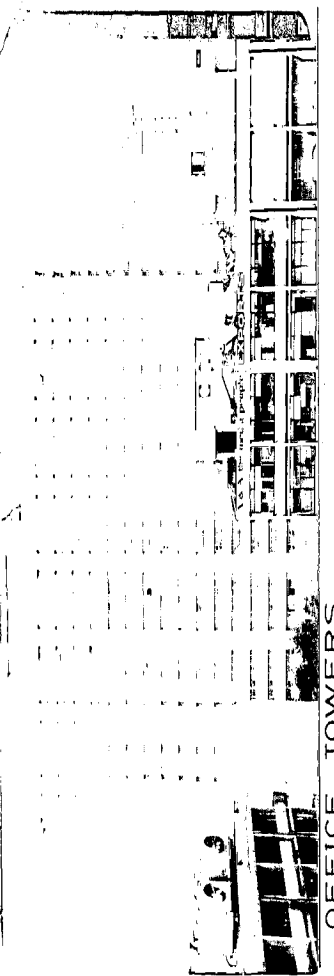
Pedestrian & vehicular traffic has been segregated & specific parking lots has been earmarked at the periphery.

Towers break the monotony created by architectural control in the buildings around the plazas.

Towers are treated differently & establish identity of the centre.

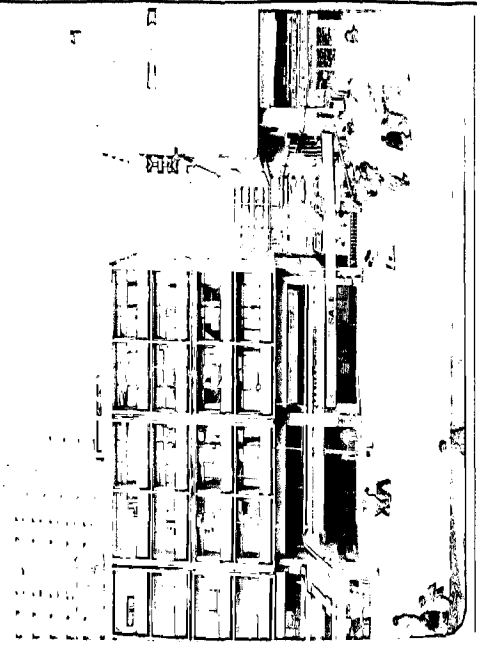
Two types of building - independent, multi-storey buildings (offices) 12-16 storeys.
shops/offices along the plazas 4, 9 storeys.

N2



OFFICE TOWERS

N3

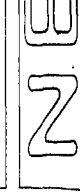
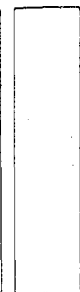


LINKAGES

CASE STUDY II

NEHRU PLACE

ANALYSIS



Conceived in Indian context, design evolves around shopping bazaars & chowks which form a continuous movement through shopping plazas.
 Dominant visible activity.

N4

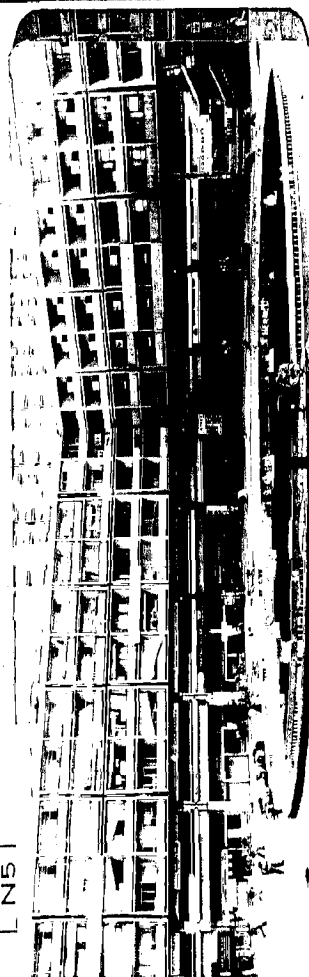


HIERARCHY OF ACTIVITIES & FLOW SPACES

Linkage at upper floors of different buildings is broken due to the discontinuity at first floor.
 Discontinuity due to individual development.

The cut-out reveals the car parking below. Lack of landscape of plaza spoils the visual quality of the plaza. It also lacks the physical contact.
 Linkage at the ground floor through the plazas.

N5



PLAZA WITH CENTRAL CUT-OUT

N6



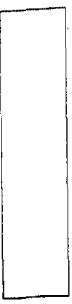
QUALITY OF SPACE

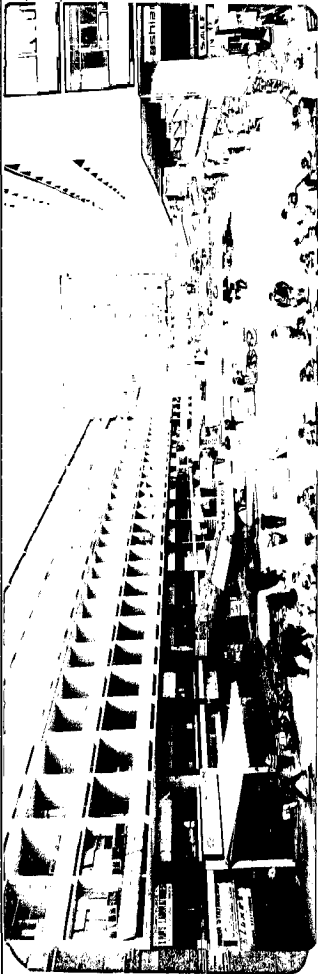
Interest in movement created by placing plazas at different levels.
 Horizontal & vertical sun-screens on the facade define the architectural control besides cement, concrete, exposed brick tiles & glazing material.

CASE STUDY II

NEHRU PLACE

ANALYSIS



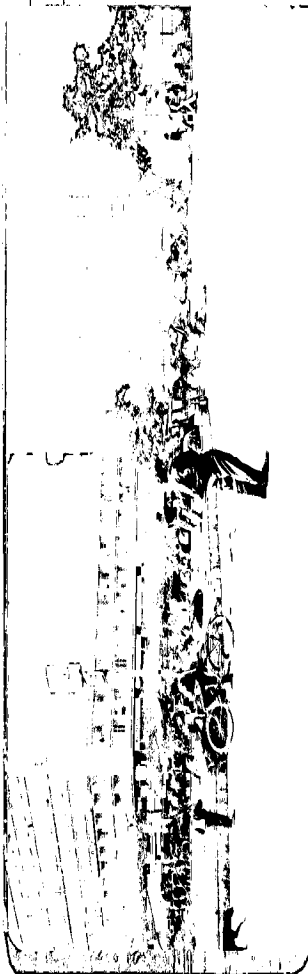


N7

Hard landscaping of ground surface by paving only provides discomfort to eyes & body, in summers.
Urban graphics - lack of proper system.

VISUAL LINK THROUGH PLAZA.

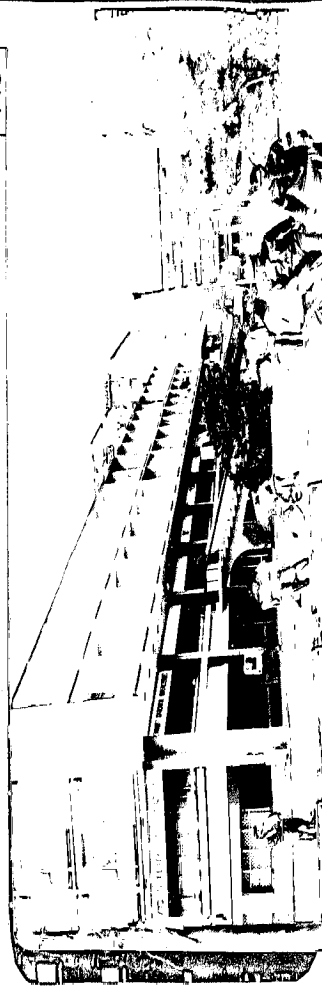
In scale, plaza appears as a wide corridor.
Continuous mass has strong directional quality.



N8

VIEW FROM PLAZA

Plaza with bad linkage with office cores results in inactive area.
Lack of dominant visible activity.



N9

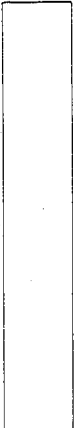
Careful treatment of corners & bottoms of buildings is missing.

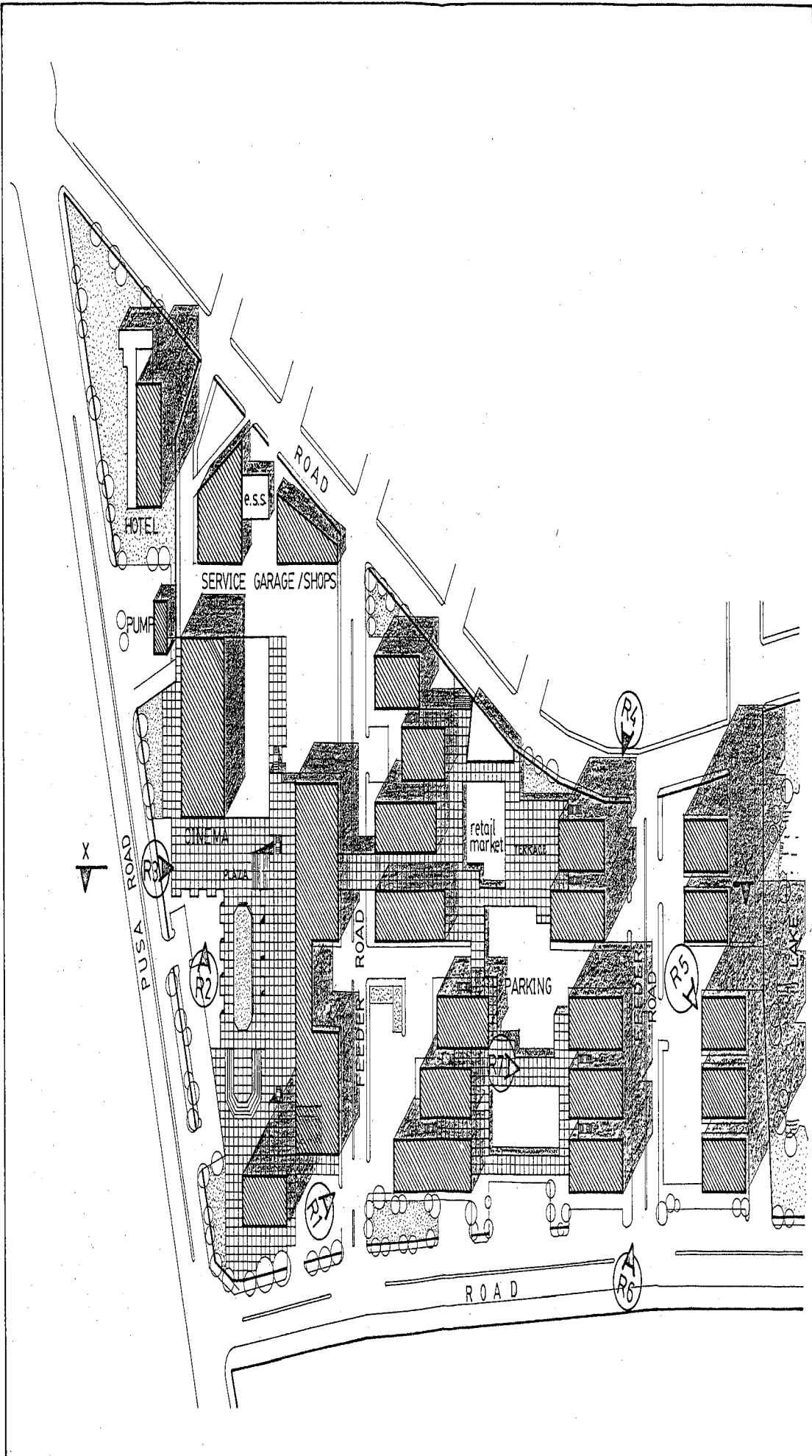
ACCESS FROM BUS TERMINAL

CASE STUDY II

NEHRU PLACE

ANALYSIS





LAYOUT PLAN

SCALE 1:2000



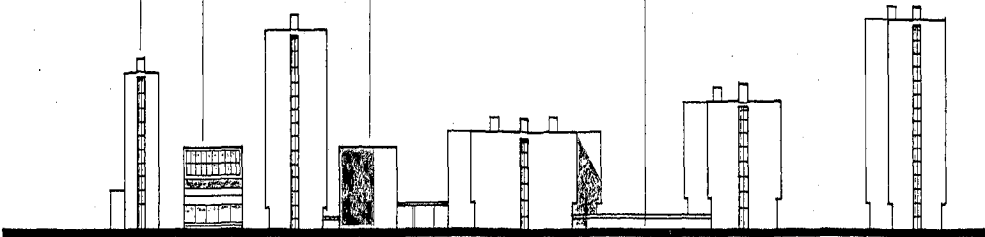
CASE STUDY III

FRAJENDIRA PLACE

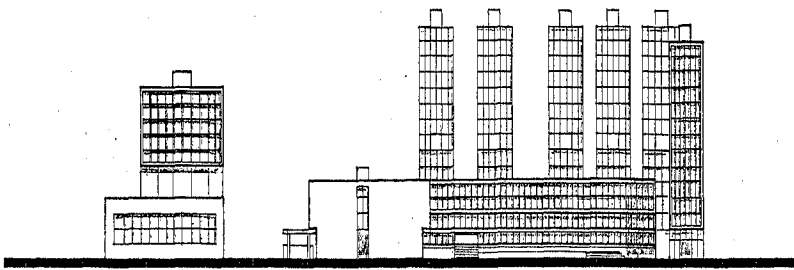
HOTEL CINEMA

SHOPS / OFFICES

RETAIL MARKET



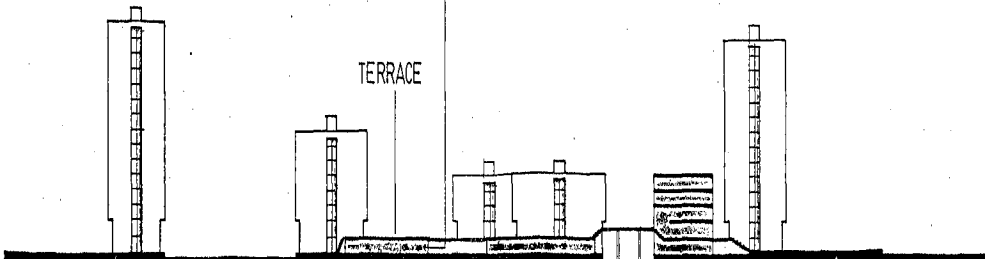
EAST ELEVATION



SOUTH ELEVATION

RETAIL MARKET

TERRACE



SECTION XX'

ELEVATIONS
SECTION

SCALE
1:2000

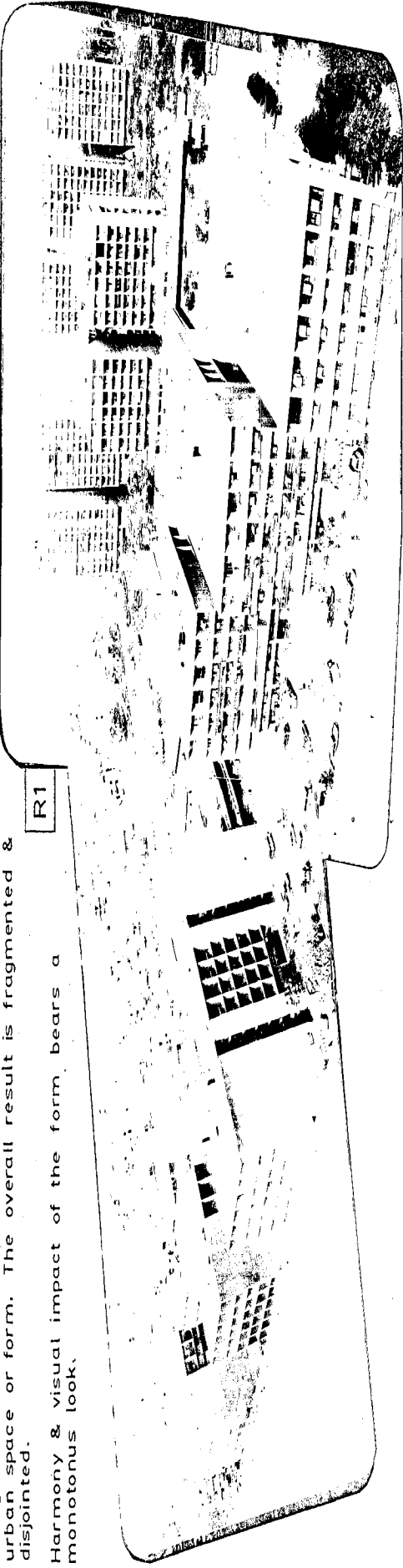
FRANJENORA PLACE

CASE STUDY III

The complex consists of a series of office buildings pleasant enough in themselves, but which fail to create any sense of urban space or form. The overall result is fragmented & disjointed.

Harmony & visual impact of the form, bears a monotonous look.

R1



VIEW OF RAJENDRA PLACE (from south side)

Architectural, functional & environmental considerations have kept the height of buildings facing Pusa Road at only

five storeys; the buildings rise from 5-7 storeys in the centre, while at north end, they go to 10-15 storeys high.

Height of built form & volume are in relation to the size of entrance plaza.

Inviting & visually appealing urban space of the complex.

R2



CINEMA

Architectural expression through entrance steps, direction of movement, visual linkages & scale of built mass to the open space.

Plaza enhanced by street furniture to human scale.

R3

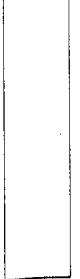


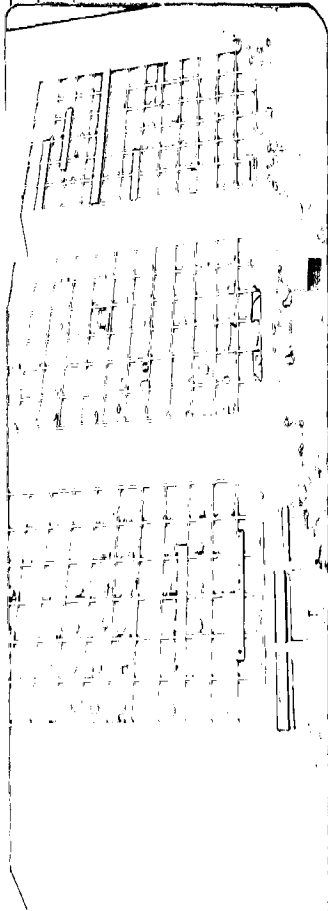
ENTRANCE PLAZA

CASE STUDY III

RAJENDRA PALACE

ANALYSIS

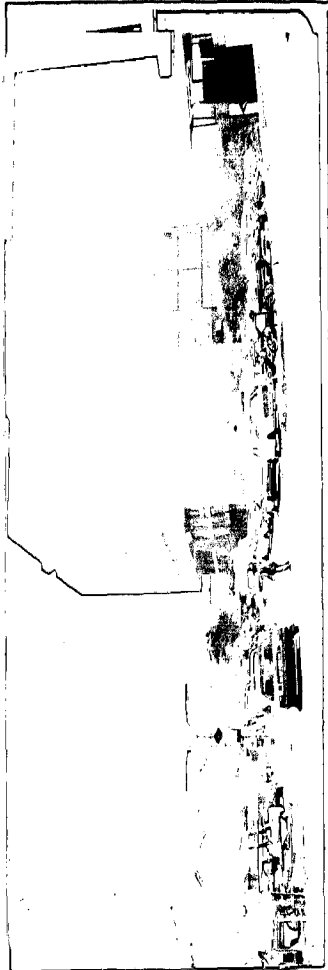




15 STOREY BUILDING

To achieve uniformity & civic order, elements are introduced on the facade maintaining architectural control.
To achieve homogeneity in colour & texture, the facade has brick cladding.

There is no defined space for sign-boards.

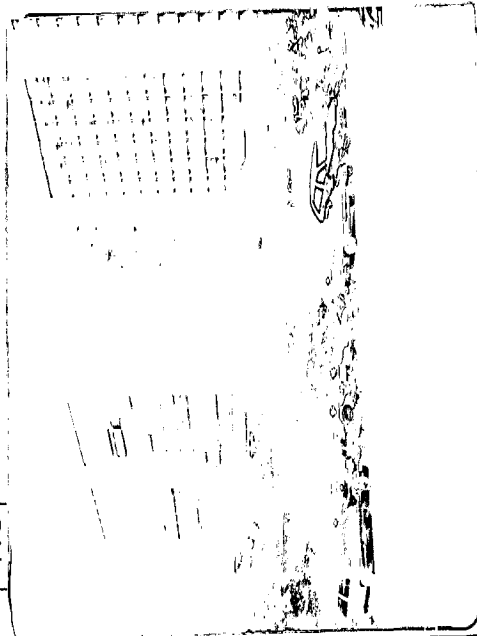


7 STOREY BUILDING

Solid walls provided with only limited & functional openings on East & West side walls.

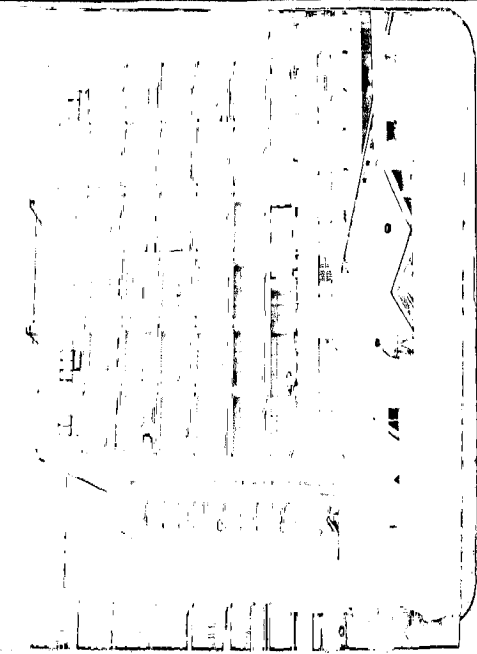
Large & full height openings provided with horizontal & vertical sun screens on North & South side walls.

R6



VIEW FROM EAST-ROAD

R7



TERRACE LINKAGES

Built form has a low quality which gives the idea of direction.

Structural module used is 20' X 20', thus giving 10' X 10' openings.

Continuity of flow is maintained by plaza (terraces) connecting various offices at first floor.

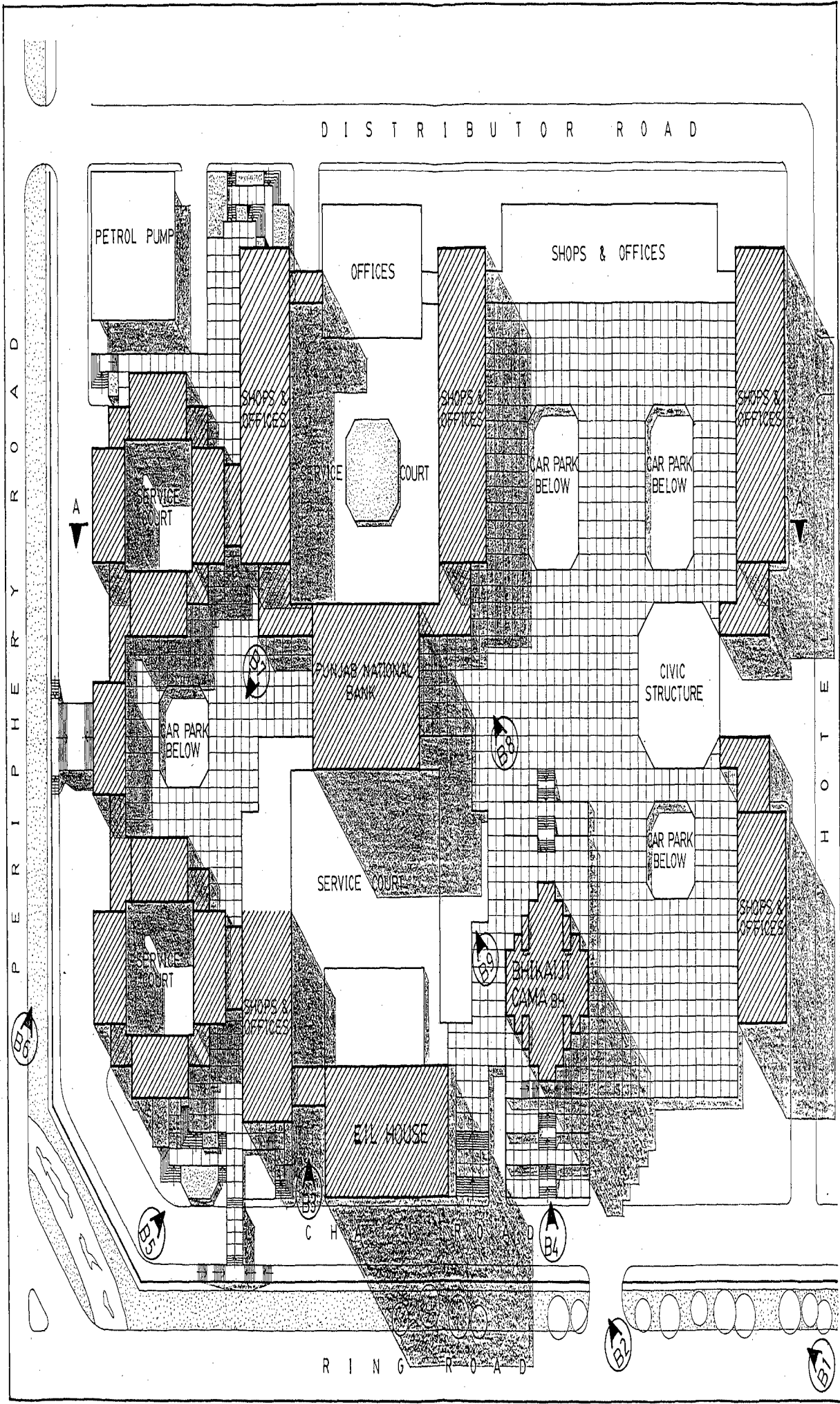
Offices looking into the plaza & (terraces) have nice visual & physical connection.

CASE STUDY III

FRAJENIDRA PLACE

ANALYSIS

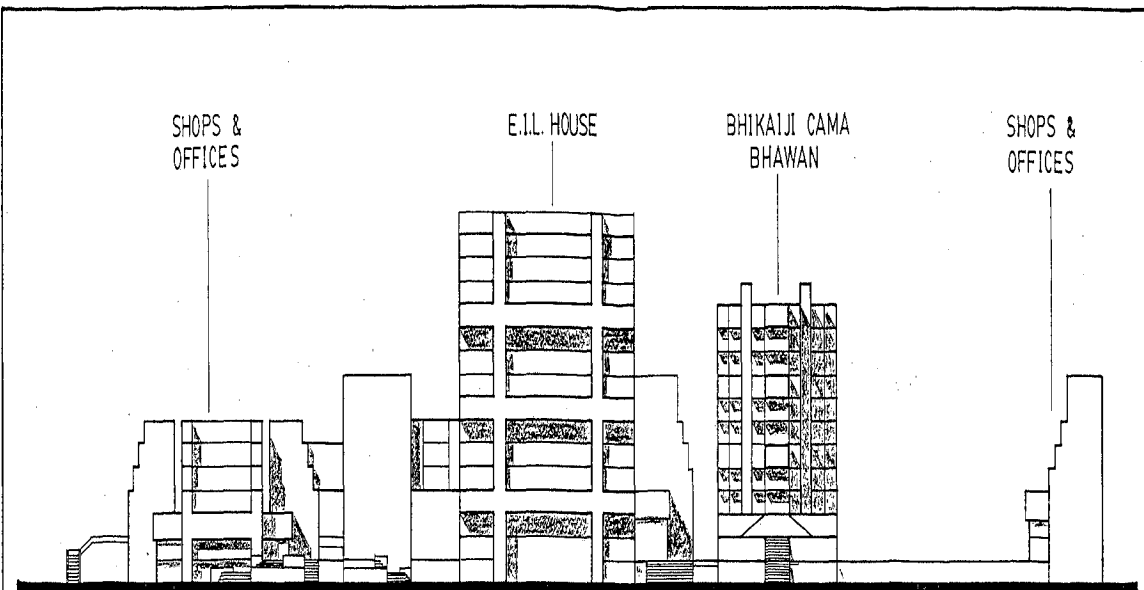




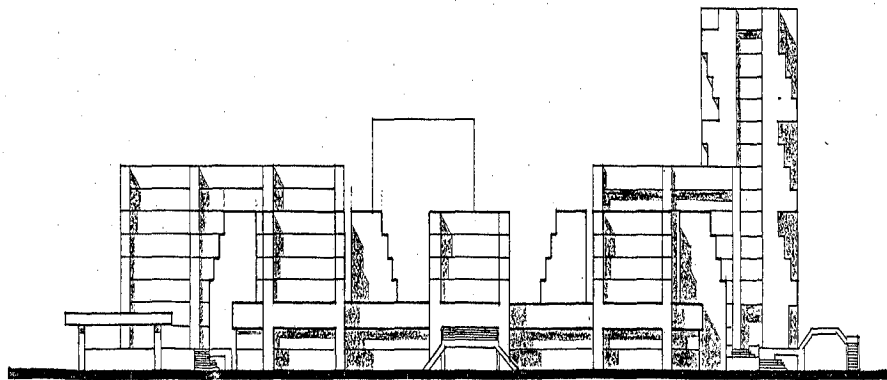
LAYOUT PLAN
SCALE 1:1000

CASE STUDY IV

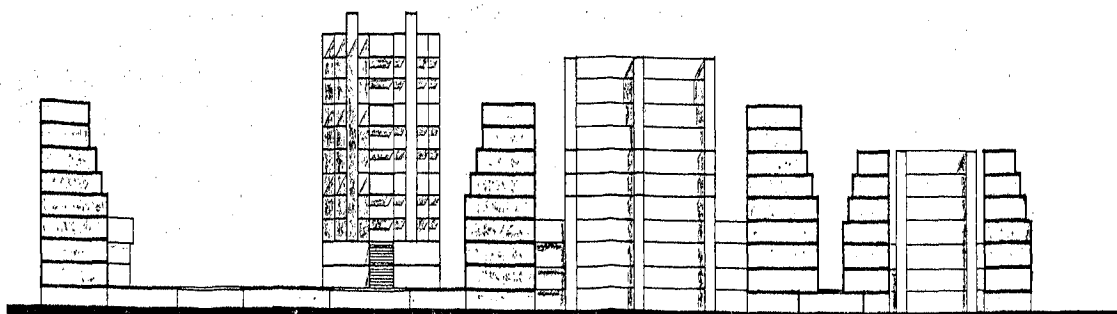
SHIKHAIJI CAMA PLACE



NORTH ELEVATION



EAST ELEVATION



SECTION AA'

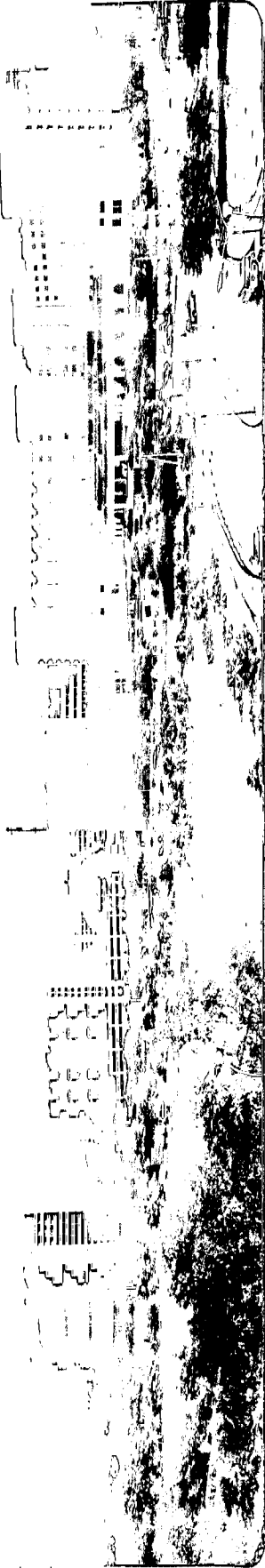
ELEVATIONS
SECTION

SCALE
1 : 1000

CASE STUDY IV
BHIKAJI CAMA PLACE

The scheme, as built, overplays the sculptural form of the buildings & by breaking them down into isolated blocks, fails to provide a logical framework of urban design, or effectively deals with the problem of traffic, parking & pedestrian movement. The individual building, while pleasant in themselves, fail to provide or create a definite sense of urban space. The entire built form is taken around the periphery of the site.

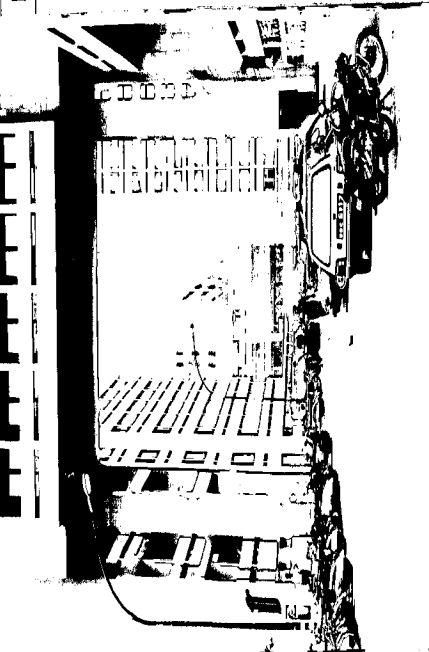
B1



VIEW OF BHIKAIJI CAMA PLACE (north side)

Architectural control effectively used to express the individual building & to create a unity in overall visual character of the complex. The use of the material is a unifying element.

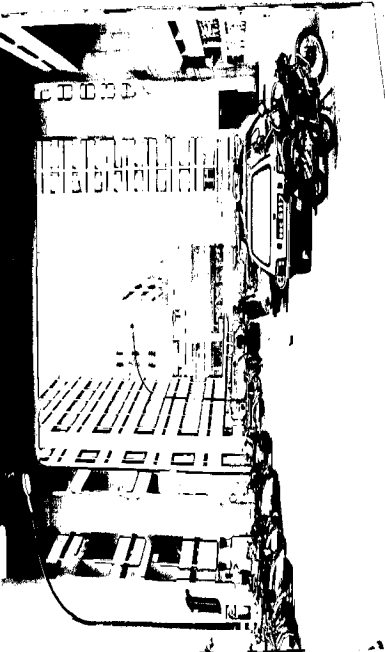
Variety in built masses provided the essential solids & voids for the total composition.



ENTRANCE

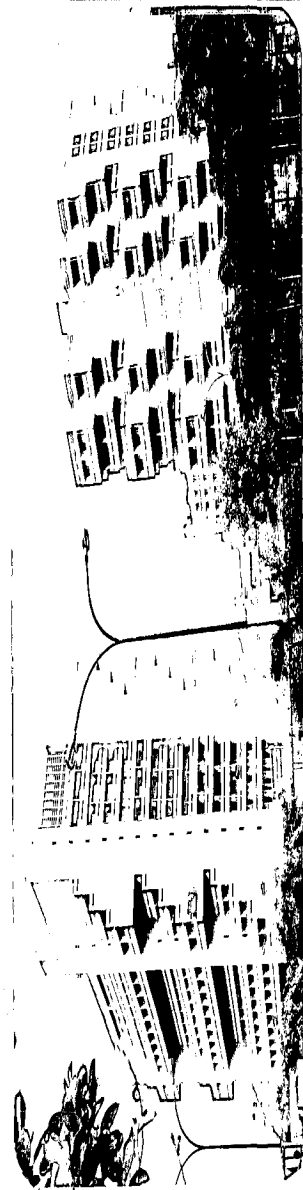
B3

Built form is used to emphasize the entry. Provides a strong visual link & directional quality.



B2

Variation in skyline achieved by stepped form of the buildings. Varied building forms & play of light & shade.



E.I.L. HOUSE

BHIKAJI CAMA BHAWAN

CASE STUDY IV

BHIKAJI CAMA PLACE

ANALYSIS



NEW CONSTRUCTION WITHIN OLD

With the change in time & need, uses (new) are being planned. But the material & lack of architectural controls disturbs the whole setting. This has distorted the urban looks of this central place.

Urban Graphics - no hierarchy of signs, proper system is lacking.

Visual Overload - projected signs destroy the overall architectural character.

C8



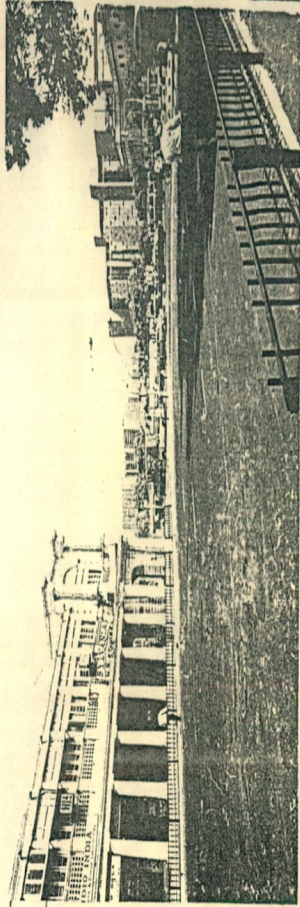
C - BLOCK VIEW

C7

Successive changes in use & need created new constructions resulted in loss of image when we walk through the radial road.

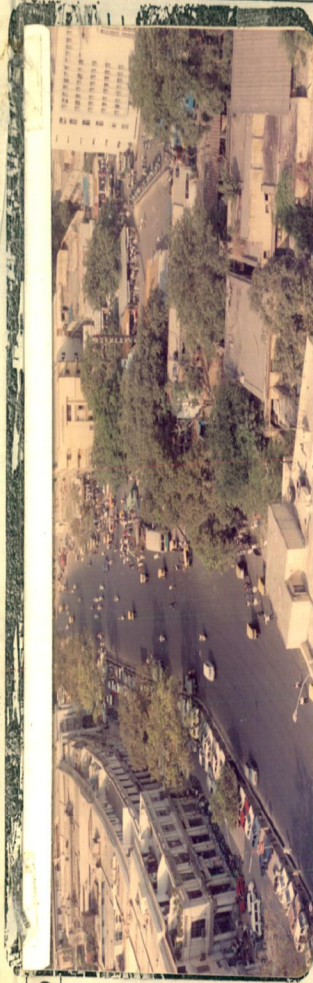
Foreground, once the province of strolling shoppers, is now a chaotic parking area. The squalor has effectively destroyed what was once a handsome urban space.

C9



OLD & NEW FORM RELATIONSHIP

C10



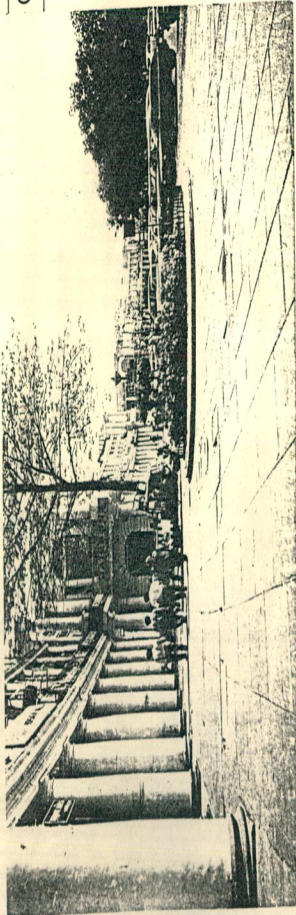
OUTER CIRCLE & SURROUNDINGS

CASE STUDY I

ANALYSIS

CONNORNAUGHT PLACE

Tremendous sense of space enclosure, with sweeping curvature of colonnades, brings in a kind of visual drag, a sense of depth in perspective & a desirable continuity.

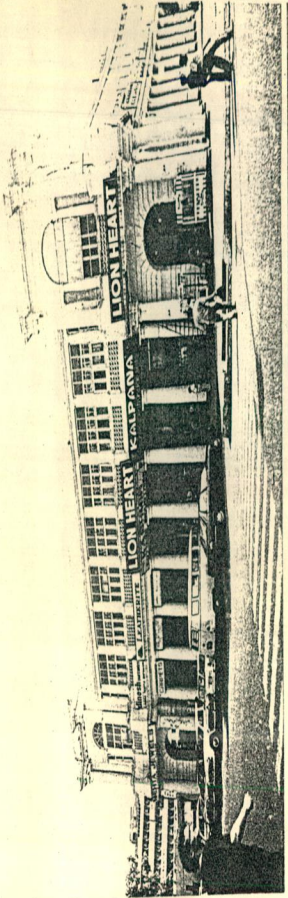


C3

THE COLONNADE

Polished & refined treatment of corners, bottom & top provide rhythm in the building. Proportion maintained by the shape & size of openings.

C4



VIEW FROM RADIAL ROAD 3

C5



SKYLINE OF NEW HIGHRISE BUILDINGS

C6



SANSAD MARG

CASE STUDY I

CONNORNAUGHT PLACE

ANALYSIS



N7

Hard landscaping of ground surface by paving only provides discomfort to eyes & body, in summers.
Urban graphics - lack of proper system.

VISUAL LINK THROUGH PLAZA.

In scale, plaza appears as a wide corridor.
Continuous mass has strong directional quality.



N8

VIEW FROM PLAZA

Plaza with bad linkage with office cores results in inactive area.
Lack of dominant visible activity.



N9

Careful treatment of corners & bottoms of buildings is missing.

ACCESS FROM BUS TERMINAL

CASE STUDY II

ANALYSIS

NEHRU PLACE

Conceived in Indian context, design evolves around shopping bazaars & chowks which form a continuous movement through shopping plazas.
Dominant visible activity.

N4



HIERARCHY OF ACTIVITIES & FLOW SPACES

Linkage at upper floors of different buildings is broken due to the discontinuity at first floor.
Discontinuity due to individual development.

The cut-out reveals the car parking below. Lack of landscape of plaza spoils the visual quality of the plaza. It also lacks the physical contact.
Linkage at the ground floor through the plazas.

N5



PLAZA WITH CENTRAL CUT-OUT

N6



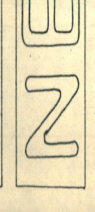
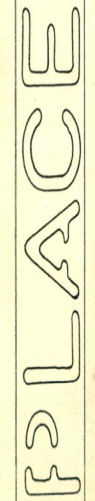
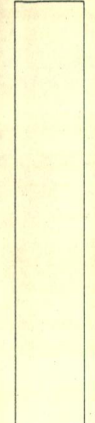
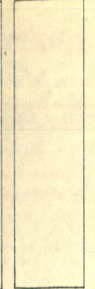
QUALITY OF SPACE

Interest in movement created by placing plazas at different levels.
Horizontal & vertical sun-screens on the facade define the architectural control besides cement, concrete, exposed brick tiles & glazing material.

CASE STUDY II

NEHRU PLACE

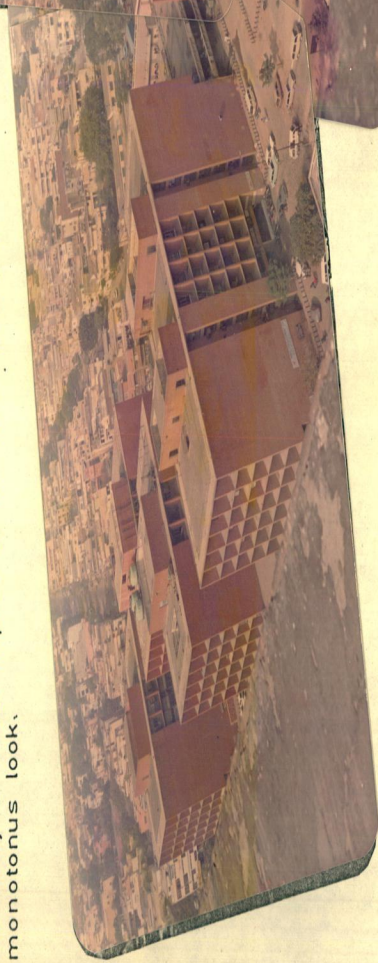
ANALYSIS



The complex consists of a series of office buildings pleasant enough in themselves, but which fail to create any sense of urban space or form. The overall result is fragmented & disjointed.

Harmony & visual impact of the form bears a monotonous look.

R1



VIEW OF RAJENDRA PLACE (from south side)

Architectural, functional & environmental considerations have kept the height of buildings facing Pusa Road at only

five storeys; the buildings rise from 5-7 storeys in the centre, while at north end, they go to 10-15 storeys high.

Height of built form & volume are in relation to the size of entrance plaza.

Inviting & visually appealing urban space of the complex.

R2



CINEMA

Architectural expression through entrance steps, direction of movement, visual linkages & scale of built mass to the open space.

Plaza enhanced by street furniture to human scale.

R3

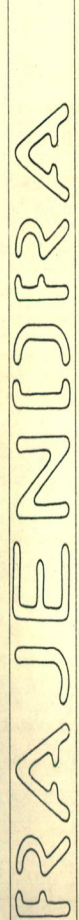


ENTRANCE PLAZA

CASE STUDY III

RAJENDRA PALACE

ANALYSIS



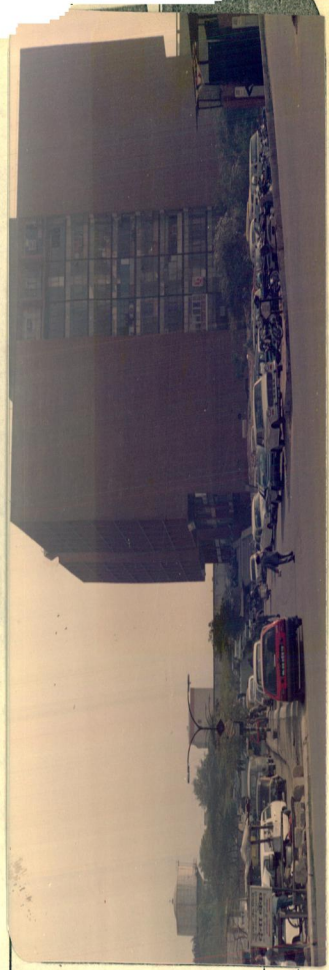


R5

15 STOREY BUILDING

To achieve uniformity & civic order, elements are introduced on the facade maintaining architectural control. To achieve homogeneity in colour & texture, the facade has brick cladding.

There is no defined space for sign-boards.



R4

7 STOREY BUILDING

Solid walls provided with only limited & functional openings on East & West side walls.

Large & full height openings provided with horizontal & vertical sun screens on North & South side walls.

R6



VIEW FROM EAST-ROAD

R7

Built form has a row quality which gives the idea of direction. Structural module used is 20' X 20', thus giving 10' X 10' openings.

Continuity of flow is maintained by plaza (terraces) connecting various offices at first floor.

Offices looking into the plaza (terraces) have nice visual & physical connection.



TERRACE LINKAGES

The scheme, as built, overlays the sculptural form of the buildings & by breaking them down into isolated blocks, fails to provide a logical framework of urban design or effectively deals with the problem of traffic, parking & pedestrian movement. The individual building, while pleasant in themselves, fail to provide or create a definite sense of urban space. The entire built form is taken around the periphery of the site.

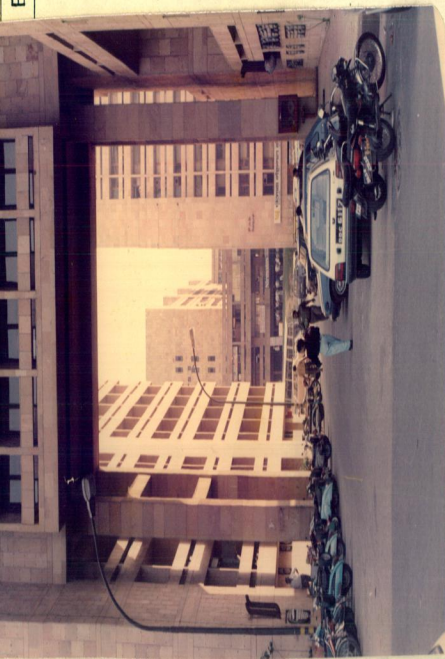
B1



VIEW OF BHIKAJI CAMA PLACE (north side)

Architectural control effectively used to express the individual building & to create a unity in overall visual character of the complex. The use of the material is a unifying element.

Variety in built masses provided the essential solids & voids for the total composition.



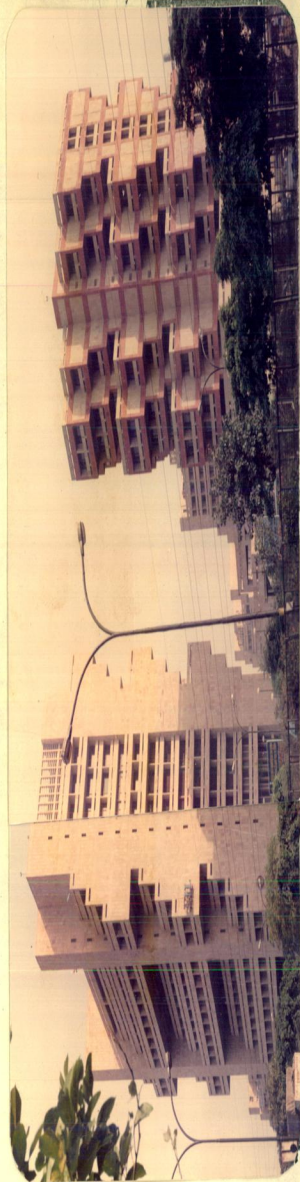
ENTRANCE

B3

Built form is used to emphasize the entry, Provides a strong visual link & directional quality.

Variation in skyline achieved by stepped form of the buildings. Varied building forms & play of light & shade.

B2



E.I.L. HOUSE

BHIKAJI CAMA BHAWAN

CASE STUDY IV

BHIKAJI CAMA PLACE

ANALYSIS

The very location of the steps makes it under-utilized & its dominance is lost.
 No linkage or relation with the entrance to the site for pedestrians or with the parking.



B5

ENTRANCE STEPS & PEDESTRIAN BRIDGE (north side)

Continuity of space & hierarchy of activity dominant. B4
 Well linked corridors provided for continuous and unhampered movement at upper floors.
 Break in built masses continuity provides a break in monotony.

B6



PART VIEW EAST SIDE



ENTRANCE STEPS (Bhikaji Cama Bhawan)

Architectural expression created through entrance steps, direction of movement, dominance in mass & visual appearance creating visual interest.

ANALYSIS

CASE STUDY IV

BHIKAJI CAMA PLACE



B7

PLAZA WITH CARPARK BELOW

Offices overlooking into the plaza providing a nice visual connection & physical one.
 Activity linkages through the plaza for continuity of movement at ground floor.
 Built-up volumes have the height in scale to the plaza. Sense of enclosure; street furniture & landscape elements to human scale.

Continuity of built mass has directional qualities through plaza.
 Scale of built form gives meaning to urban space.



B8

DETAIL VIEW

Linkage & unifying element at upper floors.
 Connection of various blocks.
 Careful treatment of corners & bottom of the built-up volumes is missing.



B9

VIEW SHOWING ZONING & RELATIONSHIP OF DIFFERENT BUILDINGS

CASE STUDY IV

ANALYSIS

EBHIKAIJI CAMA PALACE

5.6.A1. Image of the Centres :

- A1.1 To know & mentally structure the physical environment of the district centres, people looked for clarity in the building in terms of entrances, way of access to different parts of the complex, through corridors, plazas etc.
- A1.2 All the centres lacked well defined focal points or nodes in terms of places of activity concentration. They also lacked defined landmark features, though office towers provided some contrasting effect to the rest of the complex. (Photo N2)
- A1.3 Elements identified in these centres are the open spaces in terms of so called 'plazas', change of levels as space definers, concentration of activity at the cultural node as 'cinema'. (Photo R2, R3) Variety in built masses provided the essential solids and voids for the total composition. (Photo B1)

5.6.A2. Aesthetic Aspect :

- A2.1 Entrances to the buildings in Nehru Place are introvert towards the plazas and parking provided the other way round. Thus, people felt difficulty in locating the entrances. Remaining district centres faced the same problem but to a lesser extent.

The movement through the flow spaces and linkages were deliberate. Circulation is not clear. Thus, the buildings lack commodity.

A2.2 The centres lacked the desired unity in terms of overall composition. The only unifying element existed is the use of material and the texture provided by it. All the centres lacked continuity through different spaces and unity in built-up volumes. But the excessive and unimaginative use resulted in monotony in case of Rajendra Place. (Photo R1) In Bhikaiji Cama Place this problem is resolved through varied building forms and play to light and shade. (Photo B2)

A2.3 Balance is maintained through the careful disposition of solids and voids in case of Bhikaiji Cama Place, through the blocks on the periphery. Break in continuity provide a break in monotony in this case. (Photo B1, B6) Only a part of the other centres maintain a balance in solid and voids.

A2.4 Careful treatment of corners and bottom of the built-up volumes is missing thus breaking the rhythm, though the buildings are pleasant in themselves. (Photo B9, N9)

A2.5 Some parts of the centres lack definite scale and proportion in terms of relation between building and building and building and space around. (Photo N7)

- A2.6 The visual structure of the centres misses the rhythmic repetitions in terms of appearance of open spaces or dominant masses at regular intervals. (Photo N9)
- A2.7 Contrast is provided by variation in height and built form by the office towers. (Photo N1) But excessiveness, as in case of Rajendra Place, lessens it and increases the chances of monotony. (Photo R1)
- A2.8 Hierarchy, dominance or centrality of activity location is missing in terms of central space or building with others related to it or a dominant circulation system linking major functions.
- A2.9 Enclosure is established by the built-up volumes in case of Bhikaiji Cama Place and Nehru Place in the shape of plazas. (Photo B7 & N5 respectively) The transition of different spaces is through change in level and ground pattern. (Photo N6)
- A2.10 Dominant visual suggestions are missing that unify the built-up volumes to one another. Discontinuity at upper floors results in breaking the linkages. (Photo N4) Only Bhikaiji Cama Place has the continuity at upper floor from one block to another. (Photo B6, B8)
- A2.11 Scale relation is established by the use of few "man-sized" objects such as street furnitures. (Photo R3, B7) This is missing at Nehru Place.

A2.12 No consideration of direction and quality of light is taken which determines the character of space/building. Only Rajendra Place has building orientation to receive the natural light gracefully. (Photo R1) But this has restricted the built-up volumes to fit in other composition at the site.

A2.13 Visible activity is enhanced where there is concentration of activity and people see each other involved in various activities. This aspect is found more or less missing in the complex except in the plazas, that only for a specified period of time.

A2.14 View point to some focal point (building or concentration of activity) is missing in terms of direction of paths/linkages as the clarity in the entrance is not well defined in the district centres. Only provision of inviting wide steps does not solve the problem. (Photo B5)

A2.15 All the centres unfortunately, lack in sufficient landscaping. Scantily used plant material and few street furniture does not solve the problem of good landscaping. Hard landscaping of ground surface by paving only provides discomfort to eyes and body, specially in summer. (Photo N7)

A2.16 Urban graphics or signs are dominant, ugly, chaotic and in direct conflict with the architectural

character of the buildings, other structures or spaces in the centres.

They obstruct the movement of pedestrians, proportions are out of scale to the structures and spaces, create visual blight by which the aesthetics of the area is lost or further deteriorated and amidst the confusion, no information is received by the viewer. No system is used and hierarchy of signs lacking, thus building seems to be huge hoarding of visual clutter and visual over-load. (Photo R5)

5.6.A3 Urban Form Related Aspects :

A3.1 Some parts of the centres are actively used and others are under utilized due to the use and utility related to the building and space related to it. This way the built form guide the generation of activity as in case of a restaurant or office. (Photo N8)

A3.2 Unauthorized structures have come up at various points in the district centres which have been a result of the human needs and catering to specific functions not met by the centre as a whole. The so called "encroachments" are serving to the immediate requirements of the centres and people. (Photo R4)

A3.3 Elements identified are solids (built-mass), voids, activity spaces related to built form, flow spaces (movement and linkages) and open areas (plaza).

A3.4 Space-building relationship is defined by the size and shape of the plaza and enclosure provided by the surrounding buildings. The meaning conveyed is different at different places. The central plaza at Nehru Place appears more or less a "corridor" or linking space between two plazas at extreme ends. (Photo N7)

A3.5 Varied built-up volumes and changing profile at the top defines the skyline of the centres. Variation in skyline is achieved by stepped form in Bhikaiji Cama Place.

A3.6 Nehru Place also have varied skyline due to presence of office towers at strategic positions. Uniformity is maintained at Rajendra Place by having low height buildings at the front (main road) and highest at the opposite end.

5.6.A4. Activity Related Aspect :

A4.1 Actions and related activities guide space requirement, organization of activity in space and physical form that house it. This has resulted in different type of activity systems and spatial patterns occurring in the plazas of the centres.

A.4.2 Individual activity, the way of doing it and the associated activities decide the degree of use and liveliness of the place. Empty space means it is not conducive to support a particular action/activity in

it. Under utilization of plazas is a result of this aspect. (Photo N8)

A4.3 The district centres have got the urban complexity through intermixture of complementary activities. But excessive uniformity has resulted to dullness as in the case of Rajendra Place.

The centres do not have visual cohesiveness as they lack unifying architectural and landscape elements.

A4.4 The human aspect of urban form has been reflected by the district centres in the way that the built environment affects human behaviour through their activities. People decide the priority of utilizing space during the day, specially, with the movement of sun. The space provides possibilities for different activities to be performed. The use of plazas, the corridors at first floor have been observed.

A4.5 People have shaped their environment according to their needs and will. Encroachment and change of function and use made people to do alterations in the built form. Use of shop space for offices and sometimes vice versa are the live examples.

chapter **6**

Inferences & Conclusions

INFERENCES AND CONCLUSIONS

General:

The district centres are lacking the features that people notice for identity and the image, that people know and mentally structure. This is due to the lack of focal points/nodes/landmark features.

Aesthetically, the centres are more or less devoid of the clarity regarding the accessibility to different areas and sequential spaces for continuity of movement with in the centre. The senses are subjected to excessive uniformity in form and the use of material (texture). Unity is lost due to complexity in composition and design. Individuality of buildings and their disposition create imbalance and loss in rhythm. Unifying elements, visual suggestions and sequence are missing. Surprisingly, neglect to proper landscaping is the matter of concern.

Use influence the form which is expressed in design. The design is supported by aesthetics; together they would convey meaning. Functional considerations form the basis on which the designer superimposes his artistic conception. Form may be generated through the repetition of functional elements. Sometimes urban form is dominated by vertical elements which penetrate space without shaping it. At the personal scale, the compositional arrangement of urban space retains its traditional importance. This establishes scale relation between man and a vast space. Urban form of the district centres reflects this aspect.

Activity patterns interlinked by means of flow spaces in the form of linkage spaces determines the building bulk which, together with flow spaces constitute urban form. The activity patterns in the plazas and associated buildings prove this aspect. The compatibility between activities and form should be maintained, because, if an incompatible form is proposed, then the people and their actions would have to adjust to the building resulting in conflicts. Thus, people or society at large, initiate changes in built form.

Often it is noticed that whenever the aspects of man's intellectual and sensory needs are discussed in the context of an urban environment and suggestions made for their fulfilment, they are considered secondary in importance. It is observed that human element cannot be removed from the environmental characteristics, since they have a close interaction and they form determinants for each others promotion, in other words, the actions of the persons are determined by the environment, which initially was the result of series of actions by human-beings.

Proper consideration should be given to satisfaction of centres internal functions, its social purpose, planning and design to a desirable density, appropriate height and other specific design criteria relating to the buildings purpose. While the centre may be seen at pedestrian level most of the time, it should be viewed from the surrounding areas in a manner that makes massing and grouping, leading to a satisfactorily organised skyline or profile, which is even more important.

Specific Conclusions:

It can be hereby, concluded that regarding the image of the centres, well defined focal points/landmark features in

terms of building elements or landscape elements could have established the identity of the centres. Furthermore, the clarity regarding the accessibility and continuity of movement to different areas depended largely on clarity in circulation.

Judicious use of materials (texture + colour) and built form could have unified the varied built-up volumes and avoided monotony at the same time. Aesthetically, balance between unity and diversity i.e. variety could have maintained the visual structure & cohesiveness through the rhythmic repetition of solids and voids, besides providing definite scale and proportion to the open spaces & built-up volumes. Proper landscaping could have thoughtfully incorporated as an unifying and integrating element. Consideration of the direction and quality of light could have enhanced the character of space/building by play of light and shade.

Urban form could have generated responsive, interactive space & pleasurable aesthetic environment by associating activities related to the buildings to enhance visible activity and create liveliness.

The urban form is under direct attack from the self-centred developers who have a little concern for aesthetics and creating end products looking monotonous. Rarely, any new character identity had been created.

There must be increasing encouragement for architects to respect the urban environment and to recognise the aesthetics of urban form. Rather than showing unreasonable resentment, they should be able to ensure that each individual building asserts itself reasonably within its context & ensures overall harmonious relationships.

Without exception, it is the fact that aesthetic perception of urban form is in totality a sensory experience through a series of conditional responses in which movement, scale, distance and variable patterns are of vital significance and that intuitive judgements are the only means by which we are likely to be able to arrive at satisfactory design criteria.

chapter **7**

Future Guidelines

CHAPTER VII

FUTURE GUIDELINES

While it is not possible to draw up a comprehensive set of criteria which will meet all the needs of any problem concerned with aesthetic standards, it is possible only to proceed part of the way. Such criteria, if they are to be valid, must embrace the multiplicity of needs and must be directly related to form; their principle object must be that of enabling a series of proposals to be evaluated in comparison with one another.

After going through the various elements and factors that affect and generate urban form, it is desirable to think always in terms of total design, that is, apart from organization and disposing of use and activities, we must care for the resultant urban form simultaneously. With a definite theme befitting to the locational, functional and aesthetical aspects, the future pattern and urban form should be perceived three-dimensionally in time and space.

The following aspects establish future guidelines that would assist in building a responsive environment and generating overall aesthetics of urban form :

- i) If the purpose is to create something aesthetically appealing, then anything that disturbs balanced, singly dominated unity must be avoided.

- ii) Careful disposition of solids and voids, preferably, on an axis would ensure balance and rhythmic repetitions would be established with polished details.
- iii) Order must be brought about for the clarity in the perception of the centre, both between the elements of visual scene, in the form of the buildings themselves and the spaces between buildings constituting the setting. Landscape should be made an integral part of the setting. Landscape, together with intervening spaces can assist greatly to unify urban groups and compositions.
- iv) Desirably, all the individual parts should be unified in scale and in their use of building materials so that the effects of combined architectural imagination and comfort becomes apparent.
- v) For the urban graphics, specially signs, define the optimum level of visual load that the environment of a particular area can take i.e. all visual messages should be transmitted clearly with clarity and simplicity. Appropriate space and a system for signs should be defined.

We should achieve unity, good proportion and adequate scale for the major elements of the urban form besides polishing the details.

- vi) To create liveliness and interest, it is desirable to have some overlapping of functions in the centre, thus, resulting in contrast in architectural character and in the drawing together of people using the centre for different purposes.
- vii) Circulation should be crystal clear and continuity of sequential spaces should be maintained. The space should be fine with appropriate furnishings, change of levels etc.
- viii) Some hierarchy, dominance or centrality should be there, like a central space or building with others related to it or a dominant circulation system linking major functions.
- ix) The human needs should be satisfactorily catered to. For this, the urban form should not be determinate. Personal scale should be maintained.
- x) Persons should not be categorized as the users and observers of things, but as a part of the visible environment. This could be achieved by concentrating and mixing the location of different activities so that they are intervisible.

- xi) It is implied that, to be meaningful, any concept of a conducive urban environment should always consider the man as the focus of the environment around.
- xii) For each delineated pattern, one can associate certain built form characteristics. A built form-activity model can be derived under given contexts through the study and analysis of users population characteristics, form-activity relationship and man-environment interaction comprehensively.
- xiii) Regulation must not come as senseless monotony but rather sensitive grouping. It should specify the criteria for location of blocks in individual plot and should control the form and location of buildings when they affect the skyline.

The regulation on facade, frame, height and content should be flexible enough to allow changes in them to create an accent.

We should be aware of the fact that every building must be much more than a purely functional, self-organized set of interrelated decisions in physical form. If it is worthy to be considered as architecture, it must be strong, intuitive, artistic interpretation of the essential facts of its purpose.



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APPENDIX 'A'

The grand concept that it was, would have probably remained for, so long, but for the adverse circumstances it had to face soon after. War time exigencies initially interfered with the development of the centre as originally conceived, but it was in the post independence period that Connaught Place received its worst blows, leading to steady decay. At first, the massive refugee influx swamped the place; by the time they were settled in make-shift markets in the peripheral areas, some of Connaught Place's sheen had been lost and the spread appeared discordant and tentacular. In the subsequent period, the uncoordinated growth of the city inevitably had its impact on the Connaught Place complex. In the process, not only its basic character underwent major changes, but lack of aesthetics and crass commercialism in the face of acute pressure on built-in space in the highly prized city centre has resulted in acute degeneration beyond recognition. The once elegant shopping arcade now shows its decay. Lack of will to maintain its form and character, more than anything else, contributed to this state.

Cities, no doubt, have to grow with time and the demands on it become more numerous and complex with each succeeding decade. But then, the growth can be regulated to advantage and its direction set on well-conceived, predetermined pattern. Much of the reasons behind the

present restlessness of the complex - to the point of being chaotic can be traced to lack of vision and inaptitude in enforcement of development guidelines. The future looks grim, unless we decide now what we wish Connaught Place to be and set an agenda for action.

intended effect of urban enclosure, even before trees in the central park grew to obscure view acrosss the circus.

Furthermore, the shear width of the avenue entrances interrupted the desired circular continuity & rendered the boundaries of the plaza ambiguous. But these visual defects did not hamper the magnetic popularity of the stylish shops. Thus, Connaught Place full of hustle & glamor, had become the Delhiete's abiding image of his city.

present restlessness of the complex - to the point of being chaotic can be traced to lack of vision and inaptitude in enforcement of development guidelines. The future looks grim, unless we decide now what we wish Connaught Place to be and set an agenda for action.

APPENDIX B

W.H. Nicholls, the Committee's architect from 1913 to 1917, emphasized the need for uniformity to ensure a dignified architectural effect. To enclose the circus, 1,100 feet in diameter, Nicholls proposed seven colonnaded facades, each 177 feet in length and at least three storeys of 60' in height, symmetrically treated, with their main horizontal lines at one level. Since the average 110 feet width of the seven roads piercing the ring impaired its visual integrity, Nicholls recommended spanning three avenues by great archways and a continuous upper cornice. Financial realities, he recognised, would permit nothing approaching the magnificent spirit evident in Akbar's Fatehpur Sikri, but he hoped that the projected structures, while simple and straightforward, might display good workmanship and durable materials.¹⁷

In practice, however, the grand concept failed to get off the ground in its entire originality. Robert Tor Russell, chief architect to govt. of India prepared the detailed designs for Connaught Place along lines which Nicholls had advocated before leaving Delhi in 1917. Airy stuccoed colonnades, punctuated by Palladian archways, afforded protection to shoppers from sun & rain alike, and the elegant, understated classicism prompted admiring comparisons with terraces at Bath & Cheltenham. Built only two stories tall, however the blocks failed to achieve the

intended effect of urban enclosure, even before trees in the central park grew to obscure view acrosss the circus.

Furthermore, the shear width of the avenue entrances interrupted the desired circular continuity & rendered the boundaries of the plaza ambiguous. But these visual defects did not hamper the magnetic popularity of the stylish shops. Thus, Connaught Place full of hustle & glamor, had become the Delhiete's abiding image of his city.