

ANDREW E. DAUCH.
SOCIETY AND THE BUILT
ENVIRONMENT

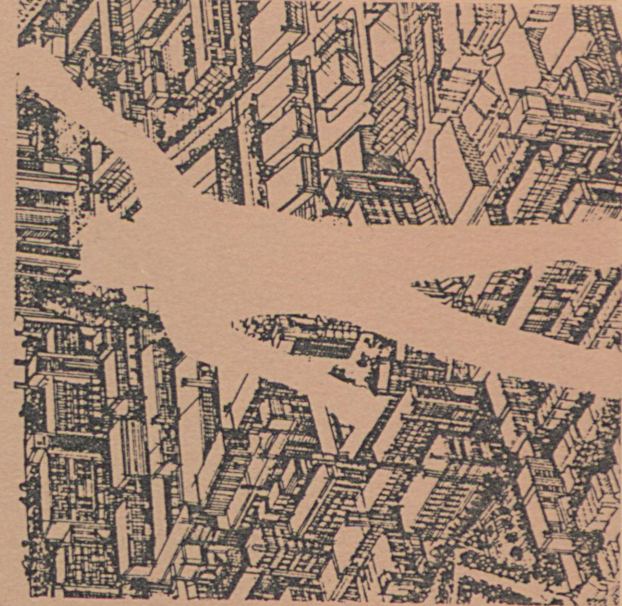
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Society and the Built Environment:

**a discussion of social
concerns in urban design**

andrew e. dauch

thesis '79



Society and the Built Environment:
a discussion of social concerns in urban design

by
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submitted in partial fulfillment of the
requirements for the degree

of
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Preface

The crisis of our cities today is not simply the inadequate number of parking places or the plague of pollution or the overcrowding or even 'bad architecture' per se. It is, instead, a lack of concern for the essential welfare of people and for the health of society in general. This insouciant attitude is manifest not in the amenities and comforts of life but for the health and happiness of the individual and the ability of society to produce desirable human types.

Our cities no longer provide a place of freedom and security for the individual or act as an incubator for communities. They are, instead, crippled by diseases which, continuing untreated, threaten not only these edifices of social endeavor but the individual and society as well. Today it is here, in the city, that society faces its gravest danger and the individual is most vulnerable. This does not imply that problems do not exist outside the city nor that these non-urban problems are of no concern. Only that these non-urban developments are inherently more accordant with personal needs and aspirations and therefore necessitate less of an immediate concern. It is my intent, therefore, to focus this study on the desideratum of urban man and the generation of design considerations which imply a more consonant synthesis of man and city.

The conclusions of this study shall form the basis of an urban design project (detailed in the final section of this book) intended to graphically exhibit an application of the theories and concepts developed in the following chapters. It is not my contention that my conclusions, or their applications, are the solution to today's urban crisis. I do argue, however, that this approach, outlined in the following text, is a step in a more fruitful direction than that which we are currently pursuing. The success or failure of these concepts can only be judged by their actual implementation. Until such time as this is realized, we are relegated to academic debate as to their intrinsic value.

It has been said that progress does not come by leaps and bounds, rather that the first inch, in any new direction, is the most difficult. Advancing logarithmically from this start, each successive innovation expands upon the prior until, at last, large strides can be made. It is my desire that the coalescence and application of material presented here may constitute an inch.



Most authorities in economics and sociology regard such an organization as a city an impossible structure, not only from the economic standpoint, but from the sociological and psychological as well. No creature of the highly nervous structure necessary to develop a culture, they point out, would be able to survive within such restricted limits. The result if it were tried, these authorities say, would lead to mass neuroticism which in a short time would destroy the very culture which had built the city.

- Rover

Introduction

Observing man* in his daily routines one cannot help but realize the substantial influence of design upon human behavior. Design not only controls how an object functions but also those emotions evoked in its functioning. In buying an automobile a person expects that by design the car will function properly. What is often more important, as witnessed by the billions of dollars spent on advertising each year, is the feeling that is invoked by driving the car; Ferraries 'feel' rich, sexy, flamboyant, etc. In a similar nature I expect my house, through its design, not only to afford protection from the elements but also to make me feel 'at home.' The effects of a city on the individual should be the same. A city, it has been said, should not only serve man well, but also please his senses and soul.¹ Therein lies the problem of design; for this nebulous quality is not achievable by a patent application of design principles nor is it definable in a strict scientific sense. If it were, we would no longer have design but something more analogous to statistical problem solving. This, I am sure, would be most efficient but would not abate the conflict of criteria for designing our cities which, I believe, is a major factor of our urban crisis.

*'Man', as used here and throughout the rest of this book, is in reference to the whole of human society. It is not intended as a negation or subjugation of women but merely as a commonly accepted abbreviation for the whole.

Our cities today no longer seem to fit the definition, 'a place where a person is at home.' Though humanistic design and personal 'fit' are asserted as values of modern architects, their work does not substantiate this claim. Rather, architectural design and urban planning appear to have become an intellectual exercise of pristine compositions. A perfect example of this can be found in the 'new city' of Brasilia. Here the technological advancements of our era have allowed the designer total freedom from the consideration of basic human physical requirements. Our designs need no longer respond to the requirements of man; any deviance between the design and the human need can easily be rectified by mechanical means. This indifference towards human needs has extended from the physical requirements to a general lethargy for the human element in design. Cities have always had congestion, crime, slums, and health hazards. The difference today, and it is distressing, is that modern planning is destroying the physical environment that made these onerous elements tolerable.

The disgrace of modern architecture is that in witnessing the failure of this present approach, such as the Pruitt-Igoe project of St. Louis,² we propose ever more inhuman, more technological solutions. Super-mega structures, mile-high towers, plug-in cities or mega-domes are not the answer to a more humane environment. What is required is a more logical and sensitive approach toward a homeostatic environment.

It is obvious that, in their attempts to achieve a more desirable urban environment, our governmental agencies have failed. Though billions of dollars were spent on government funded urban redevelopment projects, and billions more on planning studies, this has had virtually no affect on stemming the tide of decay within our city cores. With the recent announcement by the New York Council on Urban Redevelopment that the "problems of the inner city can no longer be solved in the inner city"³ it appears that government has given up on our existing cities and opted to try again in new ones.

With government's abdication of leadership in urban renewal, the stewardship of rebuilding ironically falls on 'Big Business' who is charged with purging this imbroglio, which for the most part, is a resultant of their own actions. I do not believe this homeopathical treatment of the urban 'disease' can effect a cure. The business approach to redevelopment and design is based on an efficient, cost-effective production of space and an analysis of that space based on criteria and values of persons other than those for whom the space is intended. It is not likely that the present approach of private enterprise will produce socially satisfying habitats. In an approach of motivation based on profit there seems to be no gain in an exerted effort to produce a 'fit' environment, suited to man's social behavior. This attitude can be epitomized by one executive's comment, "There is no profit in a park bench."⁴

This attitude is, in part, attributable to and propagated by architects. Today more than ever architects are dependent upon (and therefore responsible to) the desires of special interest groups rather than the general public. This fact, combined with present attitudes towards the rejection of historical concepts, has been a substantial contributor to our present urban condition. I do not accept that modern technology has suddenly made two thousand years of accumulated urban design principles obsolete. The urban environment has changed but essentially man has not; he still has the desire and need to travel (though today it is at fifty-five rather than five MPH); satellite communication has not lessened man's need for personal encounters; hundred story towers have not eradicated the requirement for personal contact with the earth; and the urban 'rat race' has increased, if anything, not lessened man's want for the respite of a tranquil place. We should also know from past experience (personal not historical) that a well fitted, clean space with some color and conveniences can lift one's spirit. Has not one of us moved into a less than desirable space, knowing we could make it livable with some cleaning, color, and a few personalizing touches?

This minor example is only one of many effects, long known to man, that certain environments have on human behavior. Since the times of Caesar the condition of the environment has been known to have serious and lasting effects on people. Even our 'modern' environments have been studied and researched for over thirty-five years with certain aspects being well documented.

Why then do architects and planners continue to ignore these facts? Such attempts as the new cities of Reston and Columbia should deserve much praise, but instead they stumble and fall into the quagmire of socio-economic problems which plague their traditional counterparts. This was exemplified by Columbia "opening its first village center, designed so residents can walk about freely without interference from automobiles, with a drive-in bank."⁵

Are architects truly becoming such elitists as to try and impose their personal tastes and invisioned way of life onto the populous? It is true that architecture is an art (therefore, to a certain extent, intuitive) and must be practiced as such and not only as a science. But if there are such things as social sciences, then I believe architecture must be a social art. To be contributive and responsive to human needs and behavior, architecture must have as its base those criteria which universally state man's requirements of his physical environment.

The evolution of any theory concerning humanistic* design must revolve around three fundamental concepts:

*A vague and over-worked term which has been inferred to mean anything from 'human scale' to 'pertaining to man.' My intent is that of Webster's definition of "devotion to human welfare or a strong concern for or interest in man."

1) Any discussion of urban design necessitates a rudimentary understanding of 'what is a city.' Not merely a physical description (if a generalization is possible) but an elucidation of the organizations, services, and networks (physical, sociological, and psychological) which, through their interrelationships, comprise a city.

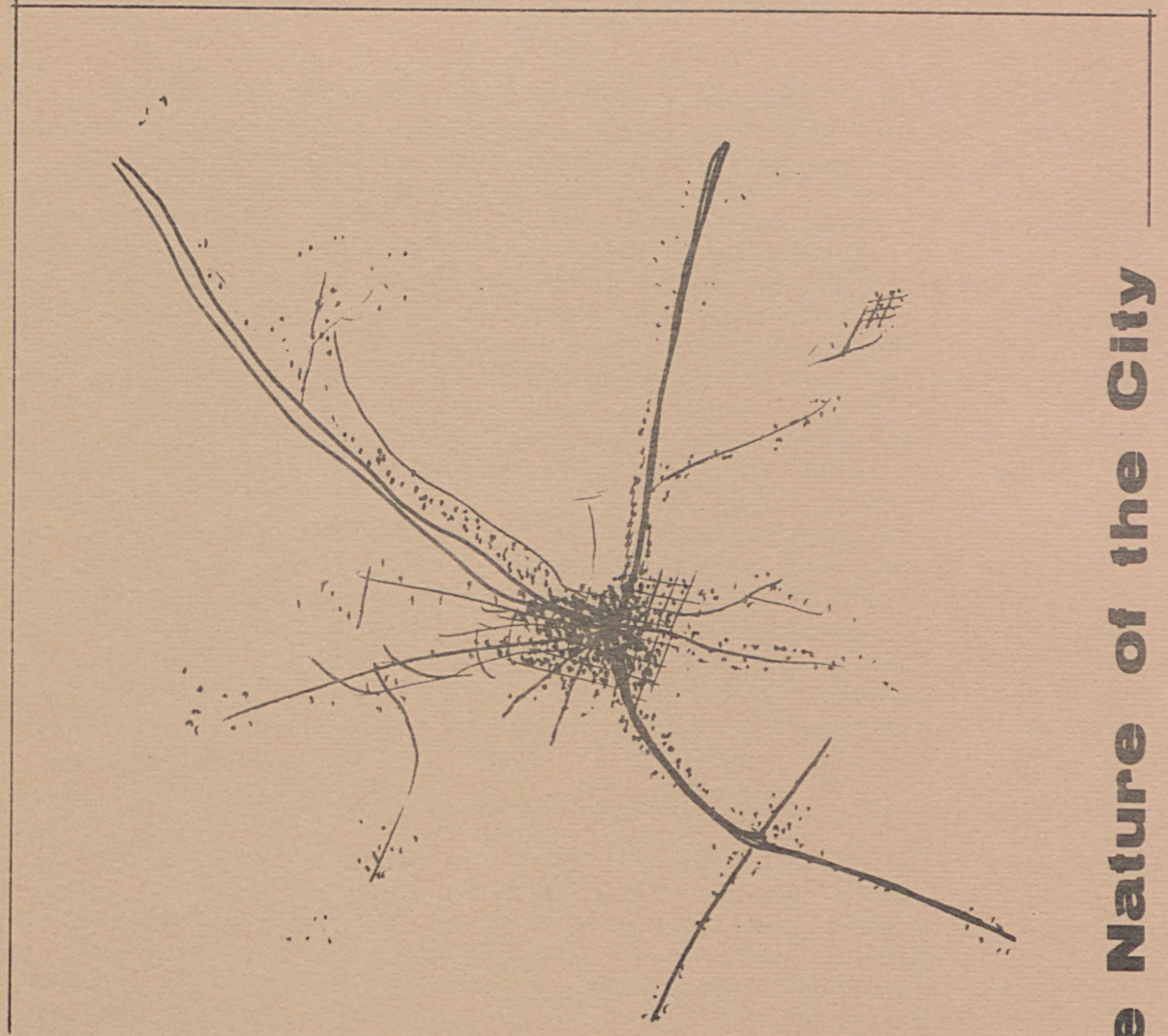
2) The design of cities, in relation to man, requires a cognizance of what are the needs of man in an urban setting. Though the concerns remain constant, actual requirements will vary according to the society, culture, and individual lifestyles of the people who will inhabit the city. From these generalizations are developed the specific goals toward which we design urban spaces.

3) The art of design is the process through which the city and men are enjoined. We must realize the implications and ramifications of what we are designing and its relationships to whole of the environment. Our actions must be conscious acts; for it is through design, either formal (i.e., planners, architects, etc.) or intrinsic, that the city is formed and man's interactions structured.

Thesis Statement

Man's built environments are a coalescence of similar phenomena which, once understood, can be used to enhance man's sociological and physiological condition.

Section I



The Nature of the City

The concept of 'city' has long been a quandary to philosophers and sociologists alike. Throughout history attempts have been made to elicit those qualities which differentiate cities from other settlement types. The result of this perpendsion being that today there are as many differing opinions of 'city' as there are people who have attempted to define it. The theory which most closely coincides with my own purposes is that of Max Weber⁶ in which he relates the economic practices of the urban residents to their locale; thus defining the city as a 'market place.' Applying this theory begins to suggest the social functions and historical origins of cities.

Refining this idea, Hans Paul Bahrdt suggests an interactionalist model of the 'city market' in which city life is formed into social aggregates of either "a public or a private sphere which stand in close reciprocal relationship without loss of polarity."⁷ From this perspective we begin to clarify the image of the city into that of a functional sociological unit. Bahrdt contends that the 'city as a market' principle is based not so much on the economics of trade within the market but the social interaction which developed as a result of the congregation of people. Let us consider this concept further by analyzing the genesis, and subsequent evolvment of modern cities.

Origins of the City

Prior to the inception of urban life most communities, though inclusive of most social traditions, were temporal in nature. This restricted all social rituals to a personal level; inhibiting their institutionalization or manifestation in a particular place or form. Through societal proliferation and technological advances a change was effected; no longer was the entirety of man's labor relegated to the sustenance of life. A division of labor occurred which fostered the development of trades, services and the arts and which set in motion the alteration of social structure.

With growing independence from a sustentative lifestyle, nomadism acquiesced to a more permanent physical structure--the village settlement. Characterized by a specialization of labor and the institutionalization of social traditions, the village established a hierarchy of spacially defined social relationships (religion, education, etc.). These spacial parameters delimit loci for personal interaction, the market place, which intensify and diversify accordant with population.

Within this continuum, reflective of demographic diversity, the village form evolved into the city. The point of demarcation between village and city remains indiscernible, emanating from a lack of formal definition, but appears analogous to the scale of the settlement, the economic practices of the inhabitants, their interactional patterns of behavior, and the values held by society. It is the heterogeneity of these factors which establishes the quality of life within a city, for it is by means of its diversity that a city accommodates the individual and generates cultural and recreational activities.

Our cities continue to function as a 'market place' for socio-economic activity. However, this function is of a much broader sense than historically. The basis of modern cities is not only the exchanging of merchandise, but of services, ideas, skills, personnel, and all other amenities attributable to a complex society. It is no longer simply the provision of the necessities of life which constitutes the market place activity but the satiation of individual and societal needs and desires, including the abnormal and aberrant. The success of any such city is directly correspondant to the multiplicity of choice it perpetuates in these exchanges.

Image of the City

When discussing a city, few people wonder at the complexity of urban life or marvel at its endless variety of opportunities. Rather, they perceive a more alien, hostile environment which, though acknowledged as necessary, is to be shunned and avoided. This, in part, is a problem of scale; buildings have become monuments dwarfing the individual, and cities have become a megalopolis whose territorial boundaries are nondescript.

Historically man has felt at home in the city, an integral cog in the complex workings of the human condition. One explanation for this is that urban design was an attitude, not a profession, of building, described by Pietro Belluschi as "a communal art, not produced by a few intellectuals or specialists, but by the spontaneous and continuing activity of the whole people, with a common heritage, acting under a community experience."⁸ As society changed, an imbalance occurred in this natural equilibrium as a specialized few undertook to formulate the growth and structure for the whole. Unlike their medieval predecessors, composed of a complex spatial continuum, our cities today have become an aggregate of individual bodies, each combating for visual dominance as if it were a sculptural piece in a Shinto garden.* The negativism of this situation has been accentuated by a schizophrenic approach to design. Oscillating between qualitative and quantitative architecture, dependent upon budget (private vs. public) and the occupant (Bureaucrat vs. poor), designers have created a physical environment which no longer satisfies the requirements of its inhabitants nor those of the society which developed it. The city has become a formal entity unto which man and society must adapt.

*This is not intended to suggest any similarity between the barren, desolate plazas of modern architecture and the exquisite art of Japanese landscape gardening.

This discussion of scale may appear to be a rather superficial, easily remedied problem. Upon closer analysis however, it may be viewed as a manifestation of deeper disorders meriting concern. Almost all of the problems which plague the city can be linked, in one form or another, to attitudes which currently pervade most of society. This is, as previously stated, an alteration of the image of a city. No longer are our cities seen, as Aristotle proposed, as a place where men come together in order to live the good life.⁹ Modern (post-industrial) cities are considered a malignancy on the landscape; dirty, ugly, polluted, and totally artificial and synthetic. I contend that cities are as 'natural' as any beehive, anthill, or prairie dog village. Each animal develops its own form of life and a physical structure to support such; man, as a social animal, inherently developed the urban form (as discussed earlier). Quite true, cities are dirty, polluted, and ugly, but these problems arise not from our concept of social structure but through our implementation and maintenance of it.

We maintain a "Hollywood western" attitude toward life; idealizing nature (wearing the white hat) as good and pure, ignoring hurricanes, droughts, etc., and delegating the city (black hat) to play the villain. Our attempts at 'converting' this dastard consist of encapsulating bits of 'nature' into the cityscape as if to cleanse it by association. As this fails, we retreat to the safety of suburbia (remaining in proximity to the city for its cultural advantages) to carve up little pieces of nature for ourselves, and in doing so, destroying that which we sought. These "American Dreams"* seldom exist more than a single generation. Where people move in, development follows, so that the suburbs, becoming despised by the people who inhabit them, degenerate and decay into the enlarging periphery of grey areas encircling the city. The entire cycle then repeats itself anew.

*This phenomenon had its genesis in the United States, but by mimesis it has become a universal occurrence.

This ritual has become so entrenched in modern society that it forms the basis for many of our cultural values. One example of such referred to as the 'rural myth' by sociologists,¹⁰ contends that given the chance any (and all) persons would prefer to live in the country, surrounded by the splendors of nature, unfettered by his fellow man.¹¹ Through their relentless application of this principle, architects have created vast wastelands (suburbia), connected to urban centers by broad slashes of arterial transportation, thus destroying the urban fabric. For those unfortunates who remain in the city, either by necessity or choice (which under this concept is incomprehensible), architects have provided residential slabs--isolated and segmented from the city as much as possible--that stand on plazas of green, which supposedly hark back to primordial pastoral settings, thereby satisfying one's needs for a rural environment. The myth is propagated and the architect is satisfied by the apparent success of these projects. What he does not realize, or in fact ignores, is that this is simply polemic; that this modus vivendi becomes accepted because the populous lacks alternatives.

Assuming a certain import and validity to these myths, reflecting their metamorphosis of current needs and aspirations, we must discern from them the impetus for the abandonment of cities in preference for the suburbs and how to achieve an abatement of this situation. It must be acknowledged that an urban lifestyle will not suit everyone; there will always be a need to accommodate many diversified lifestyles. To optimize the urban environment we cannot simply superimpose suburban forms into city life. This is both destructive to the cities' structure and unsatisfactory for the individual. A more profitable approach would be the integration of those attributes of suburban living, applicable to urban forms, into the diversity of urban structure.

The attractions of suburban living can be categorized into three generalized groupings:

1) The detached single family dwelling--founded in our history of individualism, and perpetuated by the rural myth, the ideal lifestyle for the majority of Americans is symbolized by owning your own home.

2) Security, individuality and privacy--the ability to personalize one's environment satisfies an intrinsic need for personal identity while the inherent form of the settlement, isolated and detached, fosters a sense of privacy by inhibiting public scrutiny of private space. The proximity and surveillance of this private space, available for both adult and adolescent recreation and socialization, also renders a sense of security.

3) Personal open space--any amount of personally controlled open space, regardless of size, is associated with healthy, active pursuits.

The creation of a mutually diverse and satisfactory environment, and optimizing the multiplicity of choice of those cosmopolitans who cannot or choose not to leave, necessitates the incorporation of these criteria into the urban fabric.

Cities Need Love Too

The city, in addition to satisfying the personal needs of inhabitants, entreats specific requirements of its own. Almost all densely developed locales exhibit sufficient demographic proportions and economic base to qualify as a city. Size and money, however, do not ensure the social interaction or diversity of functions and amenities which render vitality to urban living. Jane Jacobs, in her classic The Death and Life of Great American Cities, has articulated what many (including myself) believe to be the necessities for vital urban life. Jacobs contends that diversity is the keynote for city life and four factors to its generation:² 1) Mixed primary uses; 2) Small city blocks; 3) Aged buildings; 4) Concentration.

1) Mixed Primary Uses

A diversity of functions is required to maintain continual population of an area throughout the day. In addition to its social implications* a continuum of people establish the economic stability and consumerism which allow the development of more diversified secondary uses. The prime consideration here is not for the total volume of people which frequent an area but their variant scheduling throughout the day. The importance of this phenomenon can be witnessed in any mono-functional area, such as Wall Street, in which utilization occurs primarily during those specific hours corresponding to the operation of the principal function. An economic vacuum results, relegating the area to only those functions which correspond temporarily with the principal function. In response to this, only those people dealing with the prime function frequent the area, thereby decreasing the available market for diversity. Thus still further specifications of use result, degenerating the area into decay.

2) Small City Blocks

'Super blocks' or elongated blocks severely limit the intermingling of people from separate areas. The segregation of people, by lack of interconnections, from those of other locales creates an area which can support only those functions necessitated by the majority. Frequent connections, on the other hand, establish a spatial continuum allowing ease of access and greater mobility for people; fostering a greater variety of people and more diverse functions.

*The safety and security of people and property is directly proportional to the durations of use and surveillance of an area.

3) Aged Buildings

A conglomerate of building types, ages, and conditions in an area facilitates the existence of a variety of both primary and secondary uses as well as the genesis of new functions. Specialty uses or the establishment of new functions require lower rent locations in response to a minimal profit margin. At the opposite end of the scale should be high rent, luxury buildings which will induce the more successful ventures to remain within the area. It is difficult to design 'old buildings' but this concept is of particular import to renovation projects.

4) Concentration

For a city to function, it must of course, have people--large numbers of people for a given area. The more people that are in an area and the greater their variety and interests, the more diversified types of functions they are able to sustain.*

A quantitative statement of the correct density for an urban area is impossible. One difficulty with this is the lack of a standardized method for relating density (for my purposes I have selected units per residential acre). The primary difficulty in a quantitative answer is that the problem is qualitative; the correct density will vary and correspond to individual areas. Agreement has been reached, however, on a generalized guideline for density. Jacobs, and others, agree that suitable urban densities will range between fifty and one-hundred-fifty units/acre,¹³ thus allowing sufficient numbers of people to foster diversity in an urban environment. This does not, however, negate the need for small blocks or for the variant scheduling of people into the area.

*This is not directly equating numbers of people (density) with a respondent level of diversity. What I am stating is that the greater the number of people, the greater opportunity for diversity.

These then are the general criteria required by a city enabling it to function as an optimum environment for human habitation. These, of course, do not guarantee human welfare; rather, without them it is unlikely to exist at all. Now that we understand what a city requires, let us examine man in relation to the city.



TO HELL WITH URBAN RENEWAL!

IT IS LEGALIZED THEFT OF PRIVATE PROPERTY
WE SHALL DEFEND OUR HOMES WITH OUR LIVES

- THE BOSTON REDEVELOPMENT AUTHORITY WITH THE SUPPORT OF MAYOR COLLINS AND MEMBERS OF THE CITY COUNCIL, DESIRES THE TAKING AND DEMOLITION OF THESE HOMES SO THAT A PRIVATE REAL ESTATE SPECULATOR MIGHT BUILD ON THIS LAND HIGH-RENTAL, LUXURY APARTMENTS FOR PRIVATE PROFIT
- IS THIS NOT DISCRIMINATION IN HOUSING?
- THEIR LYING PROPAGANDA CALLS THIS NEIGHBORHOOD 'BLIGHTED' WHAT DO YOU THINK?
- THE ONLY BLIGHTED PROPERTY BELONGS TO A NEARBY UNIVERSITY
- FORCED ENTRY TO OUR HOMES HAS BEEN MADE UNDER THREAT OF OFFICIAL REPRISAL.
- OUR WOMEN HAVE BEEN SHAMED AND HUMILIATED AND OUR PEOPLE PUT IN FEAR
- LIKE HEARTLESS COWARDS, ALL OUR CIVIC AND RELIGIOUS LEADERS HAVE DESERTED US
- THE PRESS HAS BETRAYED US AND THE PUBLIC AT LARGE REMAINS UNINFORMED OF OUR PLIGHT.
- *BUT AS FREE AMERICANS WITH GOD GIVEN RIGHTS THAT GUARANTEE THE SANCTITY OF OUR HOMES, WE SHALL PREVAIL AGAINST THE LAND THIEVES. NO MATTER WHAT THE COST*

Section II

Man in the

The socialization and development of an individual is affected by a myriad of interactional relationships dependent upon historical, cultural, and geographical context. Despite the extreme divergence, from society to society, of the physical manifestations of these socio-cultural factors, certain universally applicable characteristics may be elucidated. Principally, behavior patterns of an individual are delineated by three interdependent factors: genetic endowment, personal experiences of interaction with the environment and the existing phenomenal environment (Studer 1969). A schematic outline of the inter-relationships of these factors is presented in Fig. 1.

Of these three concerns, the genetic endowment of an individual exacts the least import for immediate consideration by the designer (excluding his own). Its utilization is rendered impractical by the overwhelming proportions and the abstract nature of the occupants to be designed for. More applicable to the designer would be a generalization (if any is possible) of the inherited characteristics of the society as a whole. But even these do not render implicit design connotations; rather they affect the possibilities and determine the limits of one's abilities.

An examination of the personal experiences and interactions of the individual provides the designer with a cumulative representation of behavioral patterns and responses. Though useful in ascertaining learnt responses, this information is historical and therefore must be applied cautiously. Here again a more applicable format for designers is a generalization from the specific to society as a whole.

Perhaps the most relevant, and least studied, of these factors for urban designers are the effects of the existing phenomenal environment, particularly those elements of the built environment, for it is through these that the designer is most influential. The accrument and correlation of this data will require assistance from experts

specifically trained in these areas--the architect cannot do it alone.

Architectural Sociology

Perhaps the heading of this section would, at first glance, be objectionable to architects and sociologists alike. Current attitudes dictate that architects do architecture and sociologists sociology, and 'nary the twain shall meet.' Pervasive throughout the architectural community, one discerns an attitude toward sociology not unlike a fear of drowning; the architect fears the suffocation of his aesthetic control and the death of his design freedom. Similarly the sociologist, having dealt predominantly with the empirical and statistical, has acquired a natural aversion to and mistrust of anything intuitive which, to him, is the basis of aesthetics and therefore design.

It is not my intent to suggest a new professional who would, by the duality of his expertise, eradicate the woes of the city. The volume of work and the diversity of information required of each vocation renders this idea absurd. A more advantageous proposal would be the stimulation of a working relationship between architects and sociologists, each enhancing the expertise of the other. By understanding the nature of learnt responses to specific phenomenon, the needs and aspirations of the individual and society, and the possible ramifications of his actions, the architect will be better suited to design for man. Through collaboration with architects the sociologist would be enabled to actively analyze the effects of design and the built environment on social interaction. This should not, however foster a prescriptive implementation of 'behavior pattern designs' nor supplant design with control factors for sociological experimentation. Rather, it suggests an idiomatic analysis, based on generalized criteria, of each new project illuminating its unique aspects for careful consideration in the design process.

Buildings vs. Society

Historically, architects have not been totally incognizant of the sociological effects of their designs. Numerous theories have been postulated explaining the cause/effect relationship between architecture and society. Predominantly these have espoused, as persists today, the tenants of architectural determinism. Exemplifying this approach, the Fourierist Movement of the late nineteenth century disseminated ideals and theories whose repercussions are still being felt today.

In the early 1800's Charles Fourier, a French social theorist, published an extensive treatise expounding his concepts and ideals for a Utopian society; a social order visualized through architectonic principles.¹⁴ These principles, and their physical embodiment--the "phalanstere"--presupposed the ability of architecture to effectively alter the constructs of society. Advancing from the Fourierist concept, Caesar Daly, in the late 1860's, attempted to evince his contentions of architecture as a universally cognizable and appropriate formal symbolism. By means of charting, exhibiting the interrelations between architecture, symbolism and society, Daly hoped to extrapolate a form and style which manifest the social consciousness (See Fig. 2). Continuing his quest for a socially appropriate architectural form, Daly undertook a study of the three most prevalent types of French residential architecture: the "hotel moderne," the "maisons a loyer," and the villa. His conclusions became the aphorism for all ensuing residential architecture. As a result, only the villa (detached, single family dwelling), its design affecting the "domestic functions," the "discretion of intimacy," and the "exterior relations of friendship," was socially suitable as habitat.¹⁵ Viollet le Duc, among others, embellished this ideal in his writing; " . . . nothing is better made to demoralize a population than these big "maisons a loyer" in which the personality of the individual disappears and where it is scarcely possible to allow the love of home."¹⁶

TABLEAU DE L'EVOLUTION DES STYLES D'ARCHITECTURE
EN REGARD DE L'EVOLUTION DES CIVILISATIONS CORRESPONDANTES

EVOLUTIONS	Eléments géométriques des STYLES	STYLES HISTORIQUES				DOCTRINES SOCIALES					
						Religion	Propriété	Famille	Politique	Étc	
1 ^{re} Transition (Germe)						Préhistorique et Sauvage (Gestation)	(Règne des Égyptiens) Fétichisme		Fraternité Régime d'Équité, Justice de la Femme Polyandrie		
Evolution du 1 ^{er} Degré Rectiligne (Simple et Complète)						Egyptiens Grecs					
2 ^e Transition (Mixte)						Romains	(Règne des Dieux Un) Monothéisme	Polygamie en Orient Monogamie en Occident			
Evolution du 2 ^e Degré Curviligne (Simple et Complète)		Byzantin	en Orient		Roman	en Occident					Epoque du Moyen-Age
3 ^e Transition (Mixte)		Ogival			Ogival			Renaissance et Epoque Contemp.			
Evolution du 3 ^e Degré Curviligne (Supérieure)	?	?				?	?				

4 Table of the history of form and society, from the article, "De l'architecture de l'avenir, à propos de la renaissance française," 1869.

Figure 2

The social contentions and theories of these men are well founded; Daly's hypothesis on residential types is still appropriate today. Their erratas has been the assumption of architecture to be a determining factor in social behavior. This attitude is perpetuated today by the egos of architects and social theoriest like Fourier, despite evidence (Schnore 1958; Wirth 1969) that architecture per se is not a primary element in modeling man's social condition. The physical environment is, at best, a conditioning factor extending the opportunities or setting the limits for sociological and physiological interaction and development.¹⁷ Thus your residence does not 'cause' the stress developed in living there but it may limit your responses to counteract stress. The inability to alleviate stress digresses into strain, at which time you change residences (which in itself is a stress) (Wolpert 1966).

The concept of 'architectural delimitation' will be the point of departure from which I will attempt to elicit the major sociological and physiological requirements of man in relation to those physical factors which directly affect their fulfillment in the daily routine.

Man in the Middle - His Sociological and Physiological Needs

An exploration of man's relationships to his surrounding will reveal characteristic necessities required to sustain the human condition. Although this is a vast area of inquiry and the information diffuse and uncoordinated, I have attempted to formulate a coherent system for the analysis and design of the built environment. The development of this system, through the formulation of generalized design criteria, evolved from the synthesis of past research efforts linking social characteristics with the built environment, and my own personal observations, investigations and opinions. In the articulation of these criteria I have found it advantageous to purport a false dicotomy (Even the most superficial analysis will reveal the strong interrelationships) between the sociological and the physiological criteria.*

The following concepts are what I believe to be the essential concerns for the design of suitable human environments.

Physiological Requirements:

Livable Shelter - all architecture, by definition, would hopefully satisfy this requirement. This includes consideration of such functions as adequate sanitation (Gilmour et al. 1970), provisions for food and water, bodily functions, reasonable warmth and security (Newman 1972), and functional suitability (Cooper 1975), as well as protection from the elements.

Effective Urban Services - provision must be made to accommodate the individual's needs through the community when he is unable to do so (elderly or children) or in locations beyond his control (public spaces). The actual functioning of these services may not be determined by the designer but their efficiency might be.

Reasonable Security - this applies not only to the safety of persons and property (Michelson 1968) but also the security of income, religious practices, and in general one's way of life. Contentment and satisfaction require a stable environment in which to develop; lack of constancy fosters social isolation, defensive behavior patterns, and anonymous violence focused at society. Even the act of compelled re-establishment into a 'better' environment may develop these symptoms (Fried 1963).

* This dichotomy remains harmless as long as its use is a tool for the development of a system of analysis and does not become confused with reality. By this segregation I have been able to dissect the overwhelming verbiage of sociological research into comprehensible groupings, allowing a more specific investigation and hopefully more useful conclusions.

Hope for Improvement - Conceptual models of habitation idealisms are differentiable on an intrapersonal level, but this discrimination is independent of social stratification. The cultural ideal of residential type for any individual, regardless of income, remains the single family dwelling, symbolic of all our euphemisms and glorifications of simplistic lifestyles (Michelson 1969). This implies the primary errata of multi-story residential structures; the assumption of equivalent sociological appropriateness and acceptability of high rise lifestyle for the socially affluent and a similar suitability, which has yet to be manifest (Harris and Lindsay 1972), for the socially suppressed. The divergent evaluation of residential type can be understood in terms of perspectives; socially upward mobile individuals perceive multi-story apartment life as a temporary inconvenience, the means to an end, while socially restricted individuals are forced to realistically evaluate this lifestyle as a terminus to their habitation improvement, insufficient for inbred expectations or culturally indoctrinated aspirations, resulting in apathy or animosity. Instead of an atmosphere of resigned failure, we must project hope, for little can develop in an environment of dissolution and despair.

Cultural and Recreational Facilities - Industrialized production has induced a leisure society necessitating passive and active foci for the expenditure of residual energies and productive diversions for the consumption of its time. Population expansion, and its resultant diversity, should be reflected in the cultural/recreational opportunities afforded by society. Provision of these amenities should not respond to the preponderance of social utilization but to the the variety and diversity of society; proportional relationships have been established between the number and variety of variables offered within a city and the pride in and identity with society by an individual. Cultural amenities not only enhance society but become a reflection of it as well. The heritage and pride of a society can be exhibited and fostered through its displays in museums, while art galleries express the ever-changing reality of social evolution.

Reduction of Waste and Inefficiency - Overabundance of materials and superfluous production technology has generated a society founded on excessivism. Such inconsistent behavior is deemed permissible at a personal level. However, as it becomes manifest as a societal attitude and pervades community practices, these indiscretions become a mental anguish as well as a monetary depletion on society and the individual. So familiar is the encounter of 'rush hour' traffic that few consider the monetary loss of productive man hours or the strain-induced physiological disorders (ulcers, heart attack, etc.) which burden society and individuals. This is but one of many examples of waste and inefficiency perpetuated through misconceptions and poor design (Rapoport 1969).

Source of Income/Sense of Belonging - The economics of subsistence necessitate an income of sorts, either by labor, subsidy or theft. Equally imperative, if somewhat more esoteric, the source of income often provides needed social interaction, a vent for the aspirations of the upwardly mobile, and a kinship within a homogeneous group,* all of which concert in the conscription of a niche; a sense of belonging for the individual. Examination will reveal that poverty per se is not the bane of cities; poor is only a relative term for a vacillating comparison, but instead, the social segregation and isolation from the mass of society resulting from their social inferiority. McNeil (1970) published his conclusions on the effect of social isolation on the individual, stating that the inherent mental stress and resultant retributive violence focused at society is directly attributive to social isolation.¹⁸ Thus the concept of place is critical in its effect on the individual (Smithson 1954); from it generates a sense of pride, stability, and contentment which cultivate a cohesive sense of community (Cooper 1975; Jacobs 1961).

*These are claimed by Smith (1973) as fundamental motives behind the resentment of housewives and the dedication of so many executives.

Transportation - The structure and form of urban environments predetermines a means of conveyance. The nature of these systems coupled with current modes of application have successfully wrought the fragmentation and disintegration of certain neighborhoods (those with less political clout) into vacuous segments of insufficient area or composition to perpetuate viable habitat. Diversity of choice, and thereby accommodating variety and individualism, can only be sustained through the implementation of effective means of access and circulation ¹⁹ without the systematic destruction of the existing morphology. The implication for design being transportational systems constituting integral elements, defining and facilitating the operations and integrity of neighborhoods, rather than designed as afterthoughts, bulldozing through communities, obliterating the social networks.

Minimum of Pollution and Ecological Disruption - The despoliation of the 'natural' environment severely impinges on two fundamental concepts of vital human life: the health and welfare of the individual and his attitudes and opinions toward life, society, and the environment. By his participation in the deflocation, the architect is accountable for the visual, olfactive, and auditory pollution* of his designs. Quantitative, not qualitative subjective evaluation formulates the criteria for visual pollution; people prefer open vistas of tree and human activity to even the most stimulating building (Shankland, Cox 1967). Auditory pollution has long been an acknowledged fact. The fact and fiction, however, have often been confused by designers such that their proposal for the problems have dealt with audible noise levels. It is not volume per se (except in extreme cases) but unwanted and uncontrollable noise, regardless of level, which results in tension and stress (Kuper 1953). The olfactive environment is extremely sensitive to conditional variations. Great caution must be exercised to prevent the activation of psycho-physiological reactive mechanisms.

*Pollution may here be defined as those things deemed undesirable by the occupant.

Thus it appears sufficient to state that an interrelationship exists between physiological health, psychological health, and pollution.

Sociological Requirements:

Personally Appropriate Space - A sense of place, the objectification of self and the symbolic representation of values and identities, becomes exigent within the city to counterpoise the anonymity created by its scale. The effectiveness of personal territory is predicated on the personification of individualistic traits, through personalization of environment, and differentiation from the mass. Spatial allocations of such territories must, in themselves, accord with personal anthropometrics of lifestyle; over-accommodation induces physical and emotional isolation counteracted by extreme collectivism, while insufficient spatial parameters nurture defensive social mechanisms tending toward animosity and violence. Hypothetical approximates have been postulated for appropriate spatial conscriptions. These, I feel, are prescriptive and incongruous with individual people and societies. An acceptable prescription, which also appears more substantiated, codefies the suitability of residential types. Farris and Dunham, in examining the relationship between housing type and mental illness, reported findings of 52% higher incidences of psychological consultations among high rise apartment dwellers than those of private homes.²⁰ Similar studies have concluded that physical health is affected by housing conditions (Schorr 1963) and that neuroses vary, dependent on building type, but the incidence of neuroses increases proportional with building height (Fanning 1972).

Non Static Environment - Change is life. The constant adaptation and evolution of form provides the vitality of life. The environment, like life itself, requires change and decay, with perpetual regrowth to accommodate change and replace decay. The multiplicity of choice and trade, which are the life-blood of the city, cannot exist without the vitality of change (Jacobs 1961).

Visually Rich Environment - Psycholigists have found that animals living (raised or placed) in rich environments tend to exhibit problem-solving capabilities superior to those animals located in less rich environments (Resenzweig 1966). Clearly, organisms exhibit a need for stimulation. This does not imply a continuum of "the more the better" application of visual stimuli; rather a substantiation of Wolpert's (1966) hypothesis of optimum levels of stimulation (though overstimulation is preferred to understimulation). This concept presents an inversely proportional relationship between the magnitude of stimulation and degree of comfort. Sensory overload creates physiological and psychological stress, whereby the individual withdraws from the stimuli (and society as well), hence the loneliness and depression of large cities (Riesman 1970). Mental seclusion, resulting from sensory overload often counter-reacts into stimulus deprivation, creating adaptive behavior similar to sensory overload with one major distinction; total lack of stimulation disorganizes mental processes, rendering indistinguishable the boundary between sanity and insanity (Solomon et al. 1961). Thus urban behavior patterns can be viewed, in part, as respondent to the corresponding complexity and/or monotony of the phenomenal environment.

Legibility of and Identity with Environment - Man is by nature a territorialist. The dominance and control of personal space is something we will pugnatically defend. Evaluation of this space relates to its basic function; achieving the optimal spatial distribution of people such that each possess a minimum stress free area for operating.²¹ The degree of control one effects over any given area can be determined by its proximity and relationship to the individual. These spatial deliniations can be classified into three attenuating spheres of influence (Fitch 1968):

1) Microspace - This is the enclosing 'bubble' of space immediately surrounding a person, oscillating between zero (intimate) and twelve feet (public). Within this sphere one is able to maintain self identity,

the safety of one's psychic health, and maintenance of an optimal level of social interaction.

2) Mesospace - a slightly broader area encompassing one's home and defined neighborhood. This area is generally stable in size and provides a further sense of security and identity as well as being an outward symbol of self.

3) Macrospace - an extremely fluctuating area, dependent on the nature and habits of the individual, with no effective boundaries. Unlike the previous two territories (private domain) this area is a shared domain with only sporadic, temporal use. This territory defines the associations of the individual and delimits his range of interaction.

In general, the control of space provides the individual, or group, with security and identity. Protection of vulnerability is the most obvious form of security; conspecifics generally concede the right of territorial control to even the weakest individuals (Essex et al 1965). Whereas the dominance hierarchy is essentially a social mechanism, territorial control mediates dominance by emphasizing the rights of the individual. The conformation of an individual's self conception of his identity as well as his relationship to society is the primary function of territoriality in fostering identity.

Selection of personal space is a decisive factor in the establishment of territory. Deasy (1974) has shown that a strong correlation exists between selection of environment and personal health and happiness; if people are able to choose their locale they are much more willing to accept failings in trade-off for other amenities and more likely to identify with that area.

Control of Quantity of Interaction - Dense concentrations of people are a prerequisite for urban life; it is also the city's principal disadvantage. Inherent in the proximity of vast numbers of social participants, interactional overload, manifest in the loss of privacy and territorial suppression of unwanted social contact (Miligram 1970),

desensitizes us to society and substantive relationships vis-a-vis our fellow man. It is not the density per se of populace but rather the nature of their separation which elicits our social behavior. Thus a sense of privacy, influenced by design, arises from an ability to control the physical, aural, and visual access to one's private space; the freedom of behavior from intrusion and from unmitigated social encounters with neighbors and strangers (Shankland, Cox 1970; Dauch, Olson 1978).

Summary

Though diffuse and inconclusive, the topics elucidated here may serve as guidelines for the development of more specific social information for practical design application. Hopefully the implementation and examination of these concepts will render new attitudes toward a variety of issues (such as urban renewal), principles (such as the rural myth), and standards (such as density). Though focused on the urban environment, these principles, if taken generally (as intended), apply to most of man's environments.

These guidelines, to be of any further value, must precipitate the development of specific design criteria through the accruelement of specific sociological data. This then shall be the intention of the succeeding chapters.

THE FUTURE

THERE'S A BIG
NEW WONDERFUL
TOMORROW FULL
OF MONUMENTAL
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UNHEARD OF VISTAS
OF PROGRESS AWAIT!
BETTER WORLDS ARE
BEING BUILT! EVERYONE
WILL HAVE ALL OF
EVERYTHING! LET'S
LOOK AT SOME OF
THE THINGS WE'RE
GOING TO GET IN
THE YEARS TO
COME!



The Art of Design

Through design, ideas and goals become a pattern of reality. Urban design is thereby intrusted the obligation of coalescing the needs and aspirations of man with the physical form and structure of the city. The preceding chapters have discussed 'what constitutes a city' and 'the essentials of man's social existence.' The subsequent sections of this book will be an exploration into the means and ability of design to enjoin the two.

The Need for a New Approach

The 'art' of design is the ability to satisfy strongly divergent (and at times even contradictory) requirements within a given solution. This is particularly true of urban design whose founding tenants, the uniqueness of each man and the common humanity of all men, are in themselves antithetical. Perhaps this is why, in the past, architecture has been recognized as such a powerful force; it both satiated the needs of man and at the same time expressed the ideals of society. Designers today, upon examination of the problem, discern such an overwhelming milieu of paradoxes and contradictions that they hardly know where to begin. The response, in general, has been a circumvention of the situation by an over-simplification of the problem; a tactic attributable to Ebenezer Howard and his 'garden city' proposals of the late nineteenth century. The fallacy in his proposals was the assumption of a direct relationship corresponding urban problems to a simplistic solution; equating 'X' number of jobs, homes, schools, square feet of open area, and services as the solution to problems caused by over-population and under-employment.

Although functionally sufficient for small populations or simplistic relationships, this approach proves inoperable at greater scale and complexity, such as the rebuilding of Paris. In response, Le Corbusier devised a more pragmatic approach, founded on the 'garden city' ideals, applying the theory of probability. Statistical

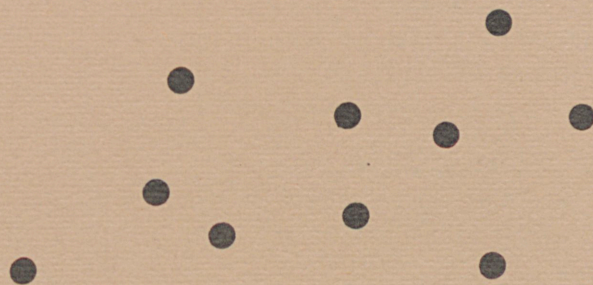
probabilities of population indices, reducing man to a percentage, made possible the total disassociation of the human element. Society or social structure was nonexistent, particularly for the poor. 'Family' remained as the only social unit; assumably autonomous, it was small enough to be located at will.

The principles of modern planning have deviated little from these simplistic statistical origins. Even the 'Modern Movement,' in all its rhetoric, has been ineffectual in altering the spatial scale or social sense of the urban environment. Garden City and Radiant City were the hypotheses of intellectual searching for solutions to the societal problems of the time. Their ideals are unquestioned; only their assumptions are subject.

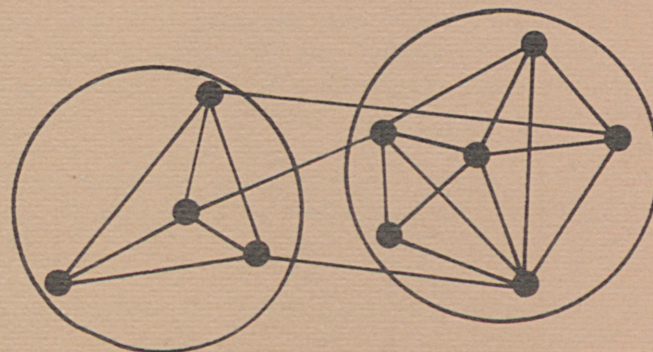
If the future holds any promise it must be the pursuit of these ideals, but through the formulation of new approaches founded on current knowledge.

Approach - A Different Point of View

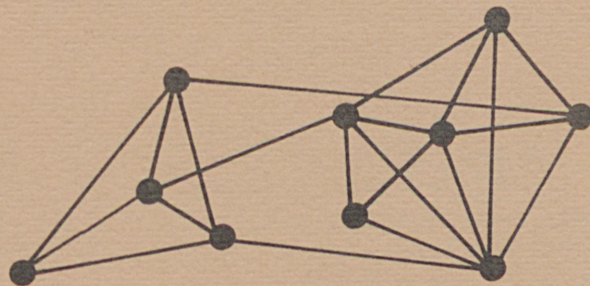
The ability to satisfy the basic human necessities of life through the provision of a few essential services is a dangerous misrepresentation. Indeed, some basic requirements are simple problems of logistics, but once these have been satisfied a complex network of sociological needs (varying upon society) must be fulfilled to ensure an optimum environment. Comprised of an intricate set of variables, inter-related in a multitude of combinations, the city represents a state of 'organized complexity'.²² The approach to such a problem assumes a recognition that no single factor, once understood, can ameliorate the whole; the organization of problems and their interrelationships must be analyzed.



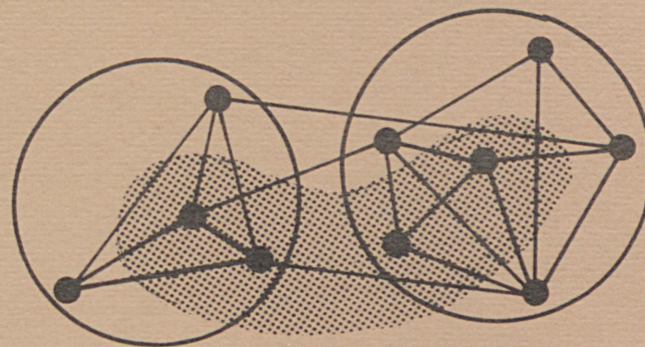
① enumeration



③ organization



② interrelations



④ selection

Figure 3

Any one of a number of various methods of organization may be applied in the analysis of such a problem. The method I have outlined is an attempt to illuminate the most predominant factors affected by the environment while minimizing the influence of my own subjectivity. The procedure is composed of four successive operations (See fig. 3).

- 1) The elicitation of as many specific problems as possible; this description must be in terms of the socio-physiological criteria but in relation to the city.
- 2) Each factor then must be examined to determine possible relationship to other factors.
- 3) Based on a hierarchy of relationships, reflecting the specific design problem, the factors are organized into comprehensible super-related groups.
- 4) The design solution, representing a varying degree of satisfaction of selected criteria dependent on project restrictions.

Mediatory Variables

In sections one and two we have defined two areas of conflicting considerations which now must be coalesced into a single concept for design consideration. Any attempt at simultaneously solving these concerns only results in confusion and frustration, thereby necessitating some form of common denominator. For this nexus, a series of variables applicable to both topics, have been defined. These consist of density, flexibility, symbolism, continuity, and order/disorder (See fig. 1).

Density

An ambiguous term for application or discussion, density may refer to anything from the populace per square foot to surface coverage of structure per square mile, neither of which have any similarity in effect. Problems attributable to the 'effects of density' are, in fact, misrepresentations. Density is only a relative term, correlating numbers of objects vis-a-vis spatial confines. It is not density per se but the perception of density (a sense of crowding) which affects individual social behavior (Dauch, Olson 1978). In gauging these effects, statistical densities are of little import; the nature of separation, not physical densities, influence the perception of density. Manipulation of separation techniques must be in consideration of functional distances (actual distances traveled) rather than direct distances (straight line distance) to restrict unmitigated social contact (Michelson 1969). Lack of visual privacy, in conjunction with other sensory intrusions, accentuate one's sense of crowding, the results of which are social inhibition and reclusiveness.

Flexibility

The diversity of individual types intrinsic to urban densities predetermines a multiplicity of needs relevant to environmental conditions. Optimal responses to these needs, given restrictions of form and scale of the city and without the mediocrity of ambiguous design for statistical averages, necessitates provision for some means of adaptability; not only in terms of space, though this is essential, but in regard to functions within the space, structure defining space, and even the meaning of the space. The ability to alter the confines of the environment by an individual, through personalization and amelioration of space, provides inherent sociological compatibility of habitat vis-a-vis personal expression, identity of self, and durational

appropriateness of habitat. The inhabitational stability, the result of such concordance, nurtures the formation of community identity and loyalties (Jacob 1961). Enhancing these communal patriotisms, flexibility of meaning permits structural expression of communal ideals and the reflection of socio-cultural permutation.

Order/Disorder

A sense of space and movement, through the composition of structures, affect our phenomenal environment. The diversity of functions implicit in a city, are enhanced by their accompanying mosaic of visual experiences. Elements of mystique and surprise entice a person through an area, stimulating both the individual intellect and the economics of the area.

In conjunction with complexity, a sense of order is required. Not a redundant codification of elements monotonizing the cityscape, but a hierarchy of systems establishing a symphonic unification of the diverse elements of the city. The relationship of structure to structure and man to structure compose an interrelational unity; a sense of belonging, of place, and of orientation being the net result.

Continuity

The modern cosmopolitan feels adrift in space. 'Future shock' is a reality. Stripped of his heritage and torn from his ancestral roots, urban man is no longer restricted by ties that bind. Cultural freedom is a dubious blessing; one no longer has restrictions that inhibit one's lifestyle, but neither does he have the sense of security nor stability afforded by the familiar. An otherwise tumultuous lifestyle may be

given meaning and order through historical connections to a common past. Homogeneity, perceived through a continuity of form, may also be used to cultivate a sense of community.

Symbolism

Intrinsic to man, and his social order, is the necessity to identify not only self but possessions, place, and ideals. Through these identities man is able to identify himself and his relationship to society. The conveyance of identities assumes a transmittable representation (symbol) which will have meaning to those for whom it is intended. Symbolization thus occurs on both a universal and personal level.

Identification with an object presupposes an ability to clearly differentiate that object from others. Conversely, a clearly differentiated object can be associated with a specific person or group. This precipitates an ordering of spaces (both public and private), based on symbolism, defining territorialities.

Step 1 - What Problems

At this point we must depart the realm of theoretical preliminaries and begin the accrument of practical design criteria.* Thus far the principles have necessarily been general and thereby of little immediate value to the designer. The development of specific design goals requires identification of those people whom the design is for and an in depth social-cultural examination of these people, the locale, their culture, and their society (See page 34). This effort, in particular,

*For purposes of illustration I shall refer to my own analysis done for the project included in the final section of this book.

requires the close collaboration of architect and sociologist; for the more intensive and specific the research, the higher the probability for a successful environment.

Correlating statistical demographic research with our universal criteria by means of our mediatory variables, the design team must now formulate the specific sociological and physiological requirements for the inhabitants of their project, which will form the basis of our design criteria. In the germination of these criteria, care must be taken such that they remain design goals and do not become prescriptive design solutions.

To elucidate the multitude and diverse requirements that must be considered, I have enumerated 68 factors, based on the socio-physiological characteristics of intended occupants, which represent the design considerations for an optimal environment in this situation (See Table 1).

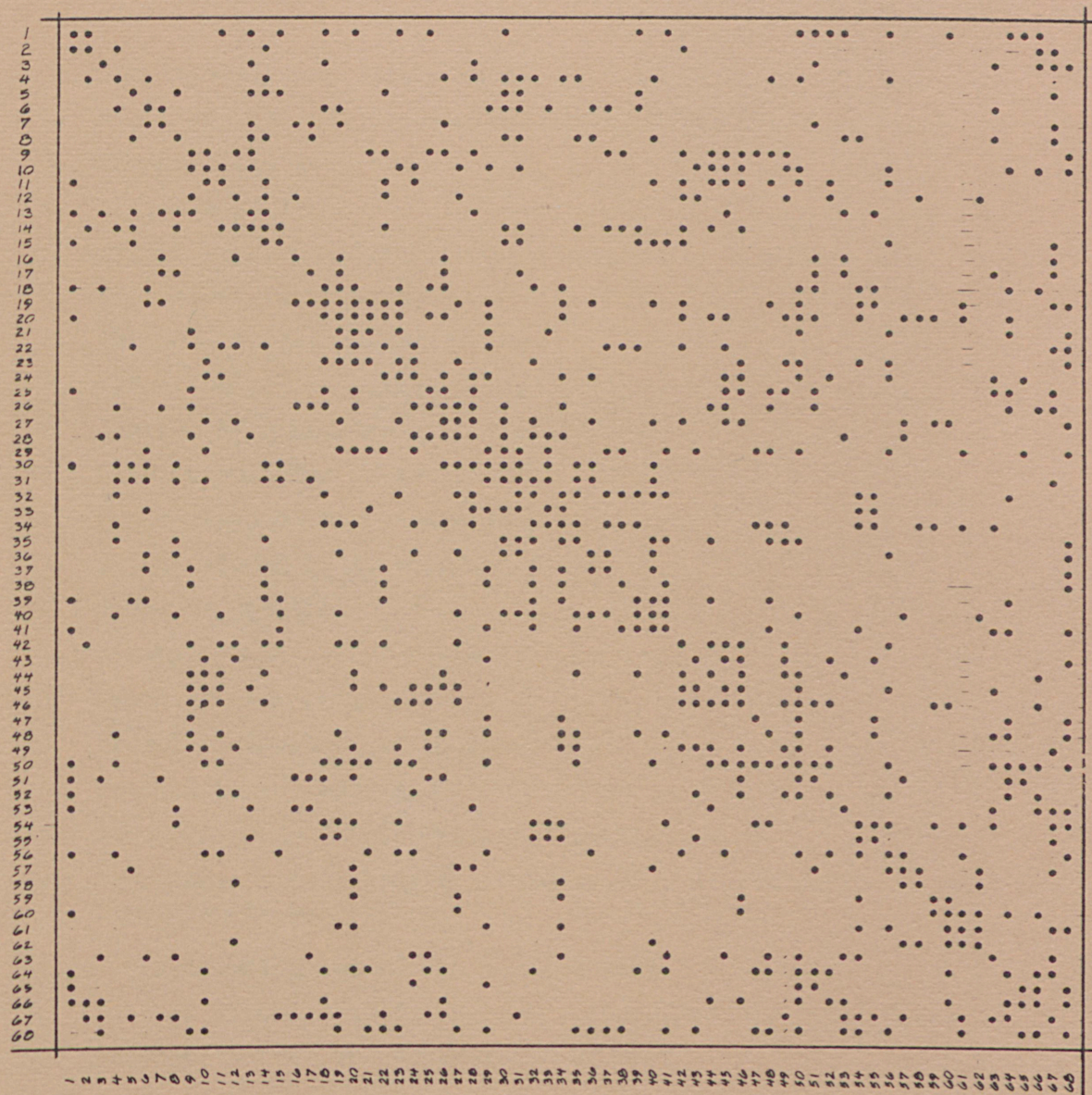
Step 2 - Interrelationships

At this stage, basic concepts for the project have been developed which, however, remain inapplicable; implementation of such a complex aggregate of variables is impossible. As a means of further organization interrelationships and interdependencies, both contradictory and complementary (one will have as much effect as the other), must be determined; not only for the obvious relationships, such as factors 9 and 60, or 61 and 27, but the more subtle filiations, such as 66 and 60.

This process is, by nature, very subjective. Objectivity is possible in relating the obvious direct relationships, but the interdependencies based on more circumventuous relations are subject to personal biases. Lacking empirical data, and dependent on present inconclusive theories, it is impossible to postulate any rigid

Figure 4

Interrelationships
of criteria



1. Functionally sufficient space
2. Provision for basic human necessities (food, water, etc.)
3. Economically feasible
4. Suitable sanitation
5. Effective protection (police, neighbors, etc.)
6. Convenient to resident
7. Suitable education facilities
8. Effective government agencies
9. Control of micro and meso territories
10. Clear boundaries of territories
11. Restriction of non-residents
12. Visual access to surrounding areas
13. Sense of stability
14. Safety of person and property
15. Means of emergency exit
16. Visual possibility of improvement
17. Capability to improve
18. Adequate space for recreational activities
19. Reasonable access to and proximity of cultural and recreational activities
20. Recreational areas within central area
21. Control of unwanted noise from cultural/recreational areas
22. Adequate safety and supervision of area

Table 1

23. Clear definition between non-residential and residential areas
24. Clear definition of function of space
25. Areas for group activities
26. Public spaces that encourage interaction
27. Relationship of spaces creating a sense of unity
28. Provision of character to identify with
29. Functional relationship of spaces
30. Clear, simple, free flowing networks
31. Logical organization of services
32. Minimal impact on natural setting
33. Energy efficient
34. Sensitive to environmental conditions
35. Responsible handling of wastes
36. Efficient public transportation
37. Access to public transportation
38. Access to private transportation
39. Provision for emergency and service vehicle access
40. Efficient access to and circulation around area
41. Adequate space for vehicular functions
42. Restriction of access to unwanted outsiders
43. Consideration of 'functional distance'
44. Control of access to meso territory
45. Supervision of action in meso territory

Table 1 (cont)

46. Clear identity of territory
47. Protection from private noises (others)
48. Protection from local noises
49. Restriction of visual access
50. Ability to separate functions
51. Provision for communal meeting place
52. Provision for privacy in public places
53. Personal choice of habitat
54. Intermix of 'man-made' and 'natural' elements
55. Personal contact with nature
56. Clear ordering of spaces
57. Provision of foci for orientation
58. Provision of a variety of vistas
59. Lack of monotonous repetition of form
60. Variation in use of elements
61. Element of surprise and unknown
62. Alteration of perception of object through time/space
63. Provision of variety of functions
64. Provision of space capable of a variety of uses
65. Provision for alteration of function
66. Space adaptive to personal lifestyle
67. Provision of services to enhance one's lifestyle
68. Juxtaposition of space/function based on lifestyle

Table 1 (cont)

analytical process. Thus, as a system of formulation and to maintain a semblance of objectivity, I have matrixed my criteria (See fig. 4).

Step 3 - Organized Collectives

Formalizing the predominances and concentrations of interrelationships manifest in the matrix, I have conjugated criteria into interdependent subgroups depicting primary design considerations. These subgroups are not mutually exclusive, segregated design problems but rather collective factors exhibiting strong interdependencies with relation to a common design aspect (See fig. 5 through 14, a and b, inclusive).

Step 4 - Design Objectives

The groupings presented here have been arbitrarily arranged in order to facilitate their organization and analysis and to compel the designer to consider all possible aspects. Under no condition should the order be taken to imply any system of hierarchy of relative value relating either to individual factors within a group or of the groupings themselves. The intent has been to elicit design criteria formulated from sociological and physiological requirements, relevant to the phenomenal environment, and present such in a comprehensible and working form. The creation of an optimum environment would, ideally, satiate all of these concerns. However, even a cursory examination will reveal conflicting and often opposing requirements. It is then the responsibility of the individual designer to prescribe relative values to criteria in consideration of his specific project.

Prioritizing criteria in accordance with program requirements, client demands, site restrictions, and other function realities which affect design, is to a large extent subjective. To rationalize this

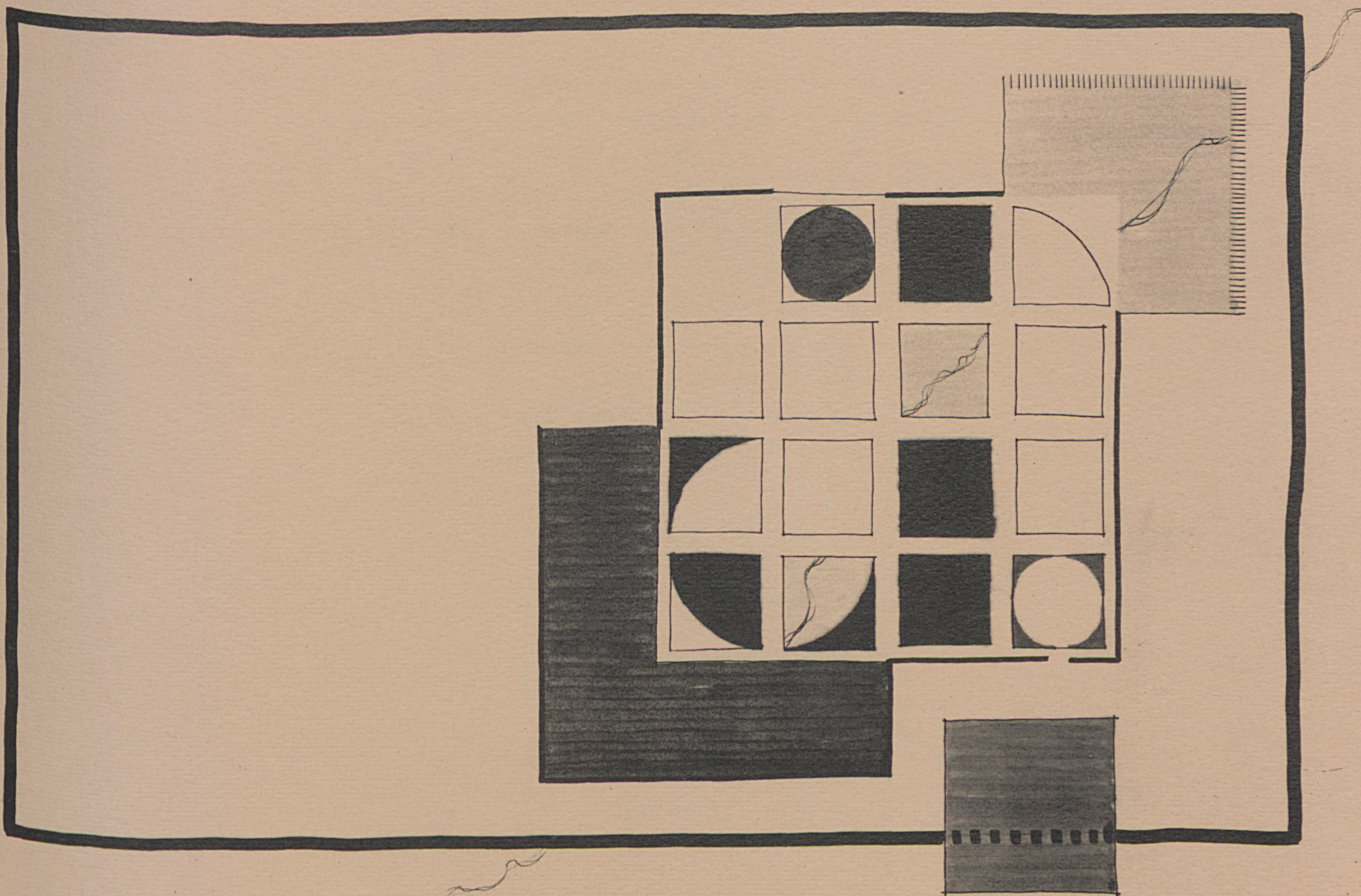


Fig Schematic Criteria

- 18. Adequate space for recreational activities
- 22. Adequate safety of person and property
- 33. Energy efficient
- 46. Clear identity of territory
- 48. Protection from local noises
- 49. Restriction of visual access
- 54. Intermix of 'man-made' and 'natural' elements
- 55. Personal contact with nature
- 64. Provision of space capable of a variety of uses
- 66. Space adaptive to personal lifestyle
- 68. Juxtaposition of space/function based on lifestyle

Table 2

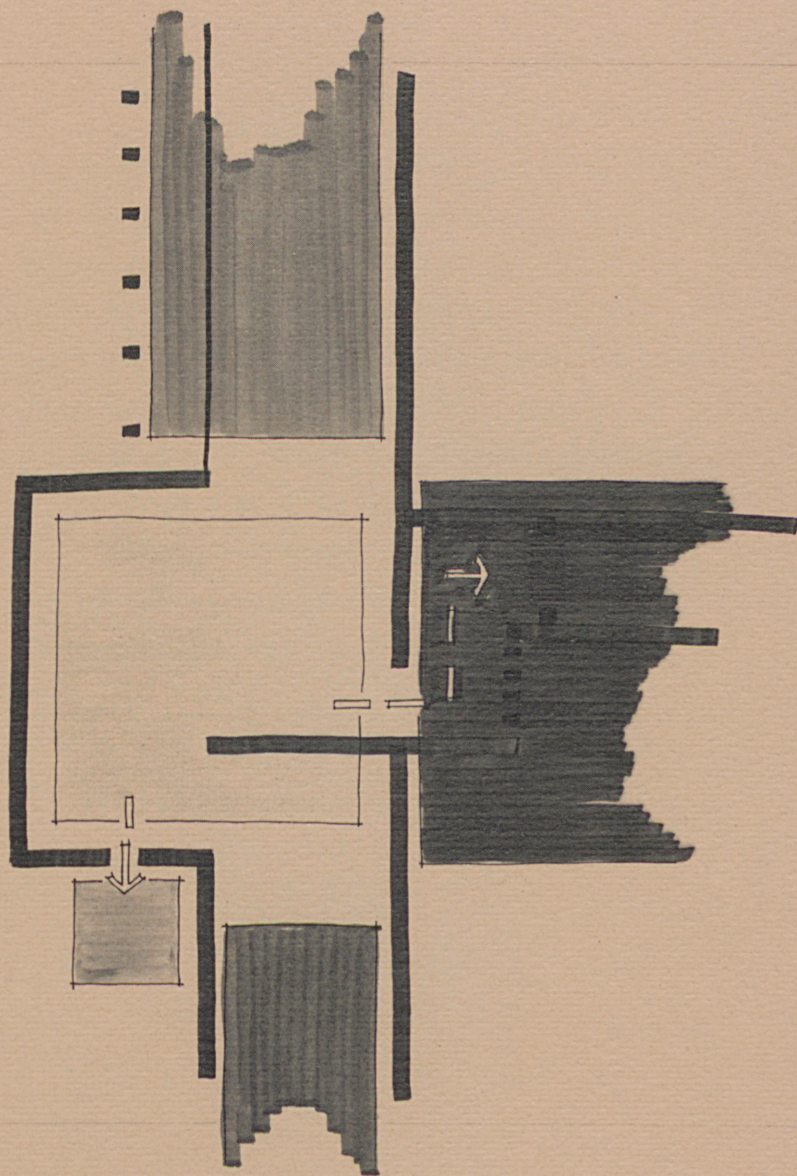


Fig Schematic Criteria

- 10. Clear boundaries of territories
- 14. Safety of person and property
- 15. Means of emergency exit
- 22. Adequate safety and supervision of area
- 42. Restriction of access to unwanted outsiders
- 43. Consideration of 'functional distance'
- 45. Supervision of activity in meso territory
- 46. Clear identity of territory
- 48. Protection from local noises
- 60. Variation in use of elements
- 65. Provision for alteration of function

Table 3

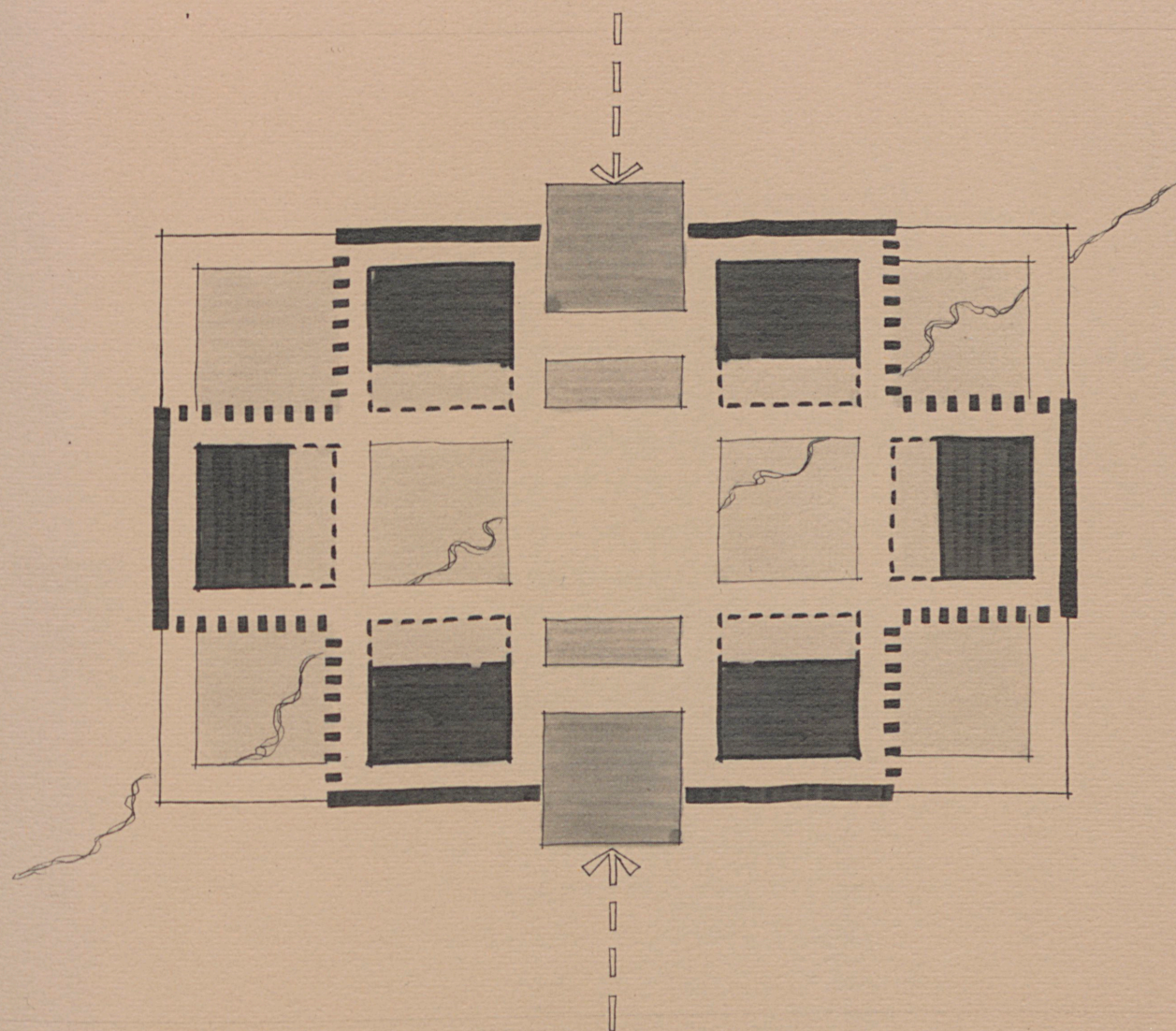


Fig Schematic Criteria

9. Control of micro and meso territories
12. Visual access to surrounding areas
25. Areas for group activity
27. Relationship of spaces creating a sense of unity
29. Functional relationship of spaces
31. Logical organization of spaces
33. Energy efficient
34. Sensitive to environmental conditions
43. Consideration of 'functional distances'
45. Supervision of action in meso territory
46. Clear identity of territory
48. Protection from local noises
50. Ability to separate functions
54. Intermix of 'man-made' and 'natural' elements
56. Clear ordering of spaces
57. Provision of foci for orientation
60. Variation in use of elements
63. Provision of a variety of functions
64. Provision of space capable of a variety of uses
65. Provision for alteration of function

Table 4

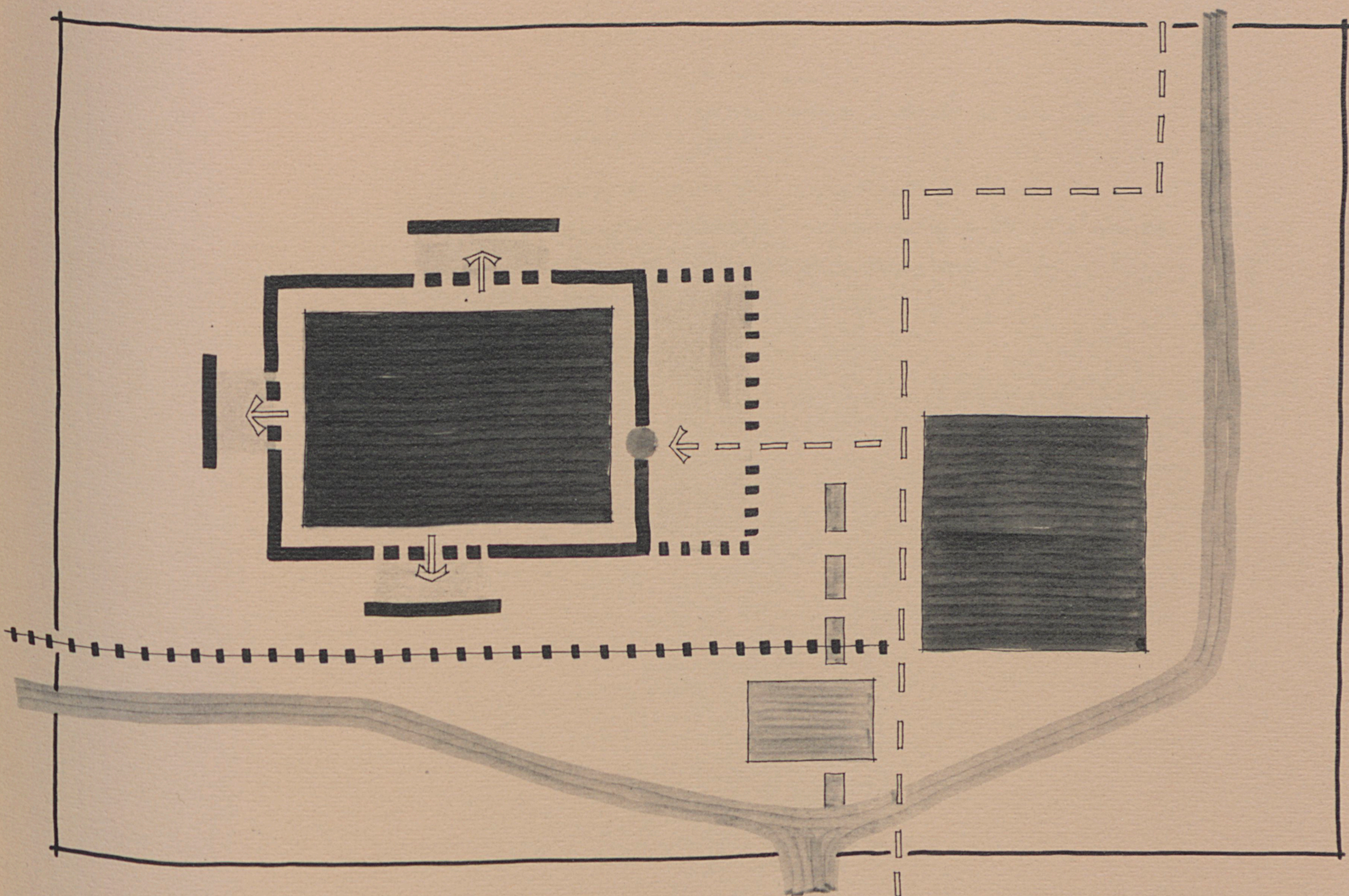


Fig Schematic Criteria

- 11. Restriction of non-residents
- 15. Means of emergency exit
- 21. Control of unwanted noise from cultural/
recreational areas
- 22. Adequate safety and supervision of area
- 39. Provision for emergency and service vehicle access
- 44. Control of access to meso territory
- 46. Clear identity of territory

Table 5

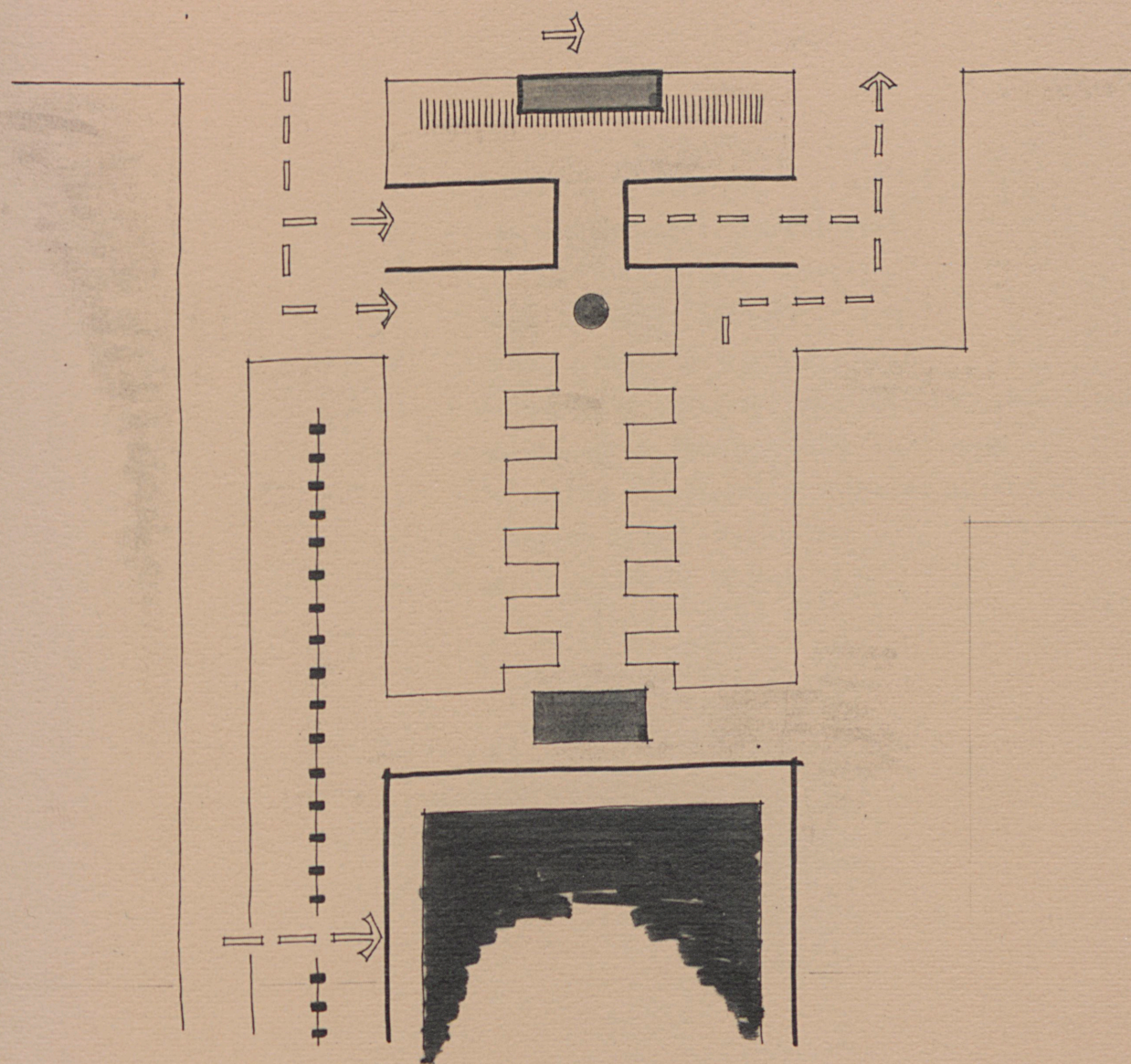


Fig Schematic Criteria

- 5. Effective protection
- 6. Convenient to resident
- 10. Clear boundaries of territories
- 14. Safety of person and property
- 37. Access to public transportation
- 38. Access to private transportation
- 39. Provision for emergency and service vehicle access
- 41. Adequate space for vehicular functions
- 42. Restriction of access to unwanted outsiders
- 48. Protection from local noises
- 56. Clear ordering of spaces

Table 6

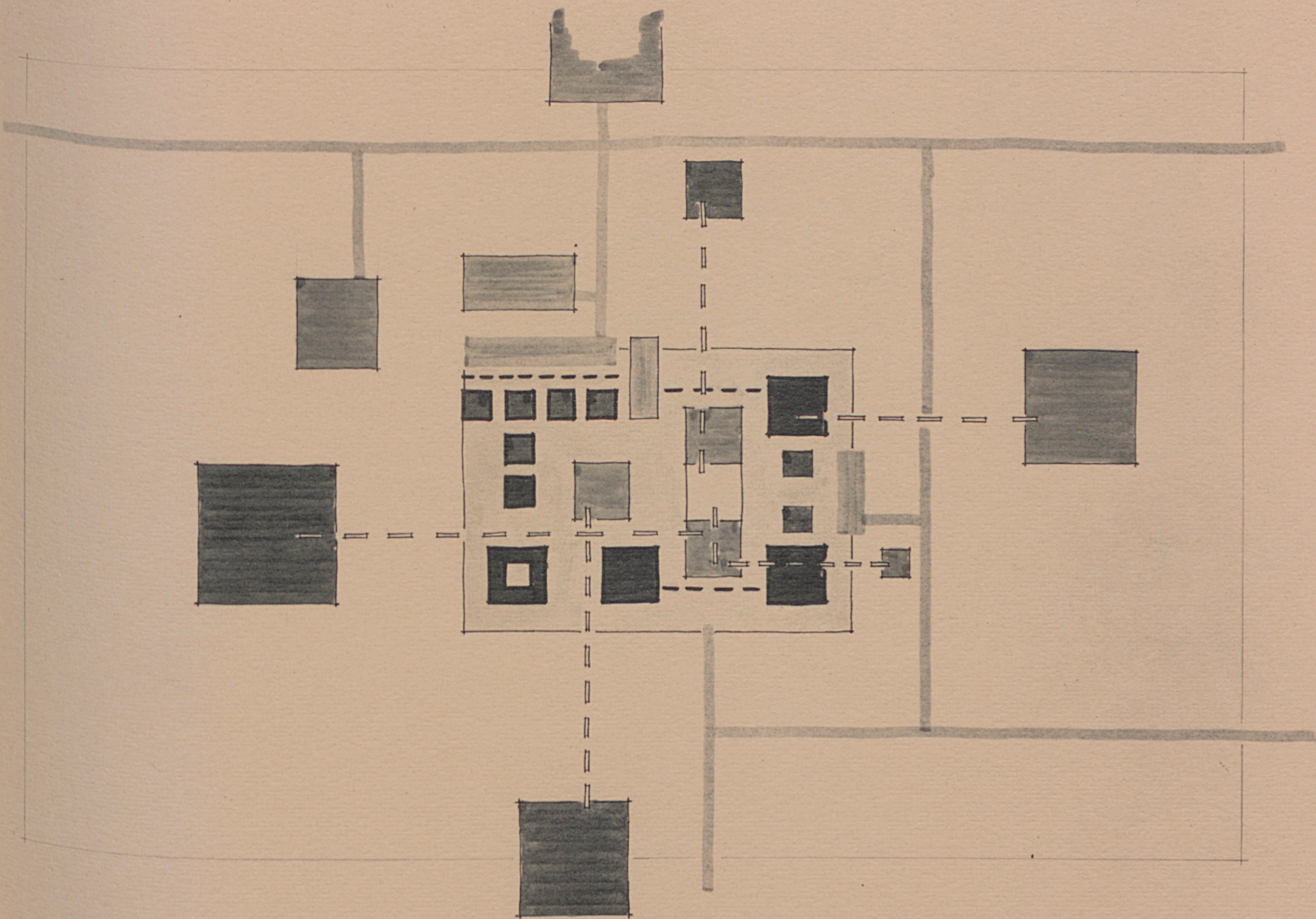


Fig Schematic Criteria

- 5. Effective protection
- 14. Safety of person and property
- 19. Reasonable access to and proximity of cultural and recreational activities
- 30. Clear, simple, free flowing networks
- 31. Logical organization of services
- 32. Minimum impact on natural setting
- 36. Efficient public transportation
- 40. Efficient access to and circulation around area
- 57. Provision of foci for orientation
- 62. Alteration of perception of object through time/space

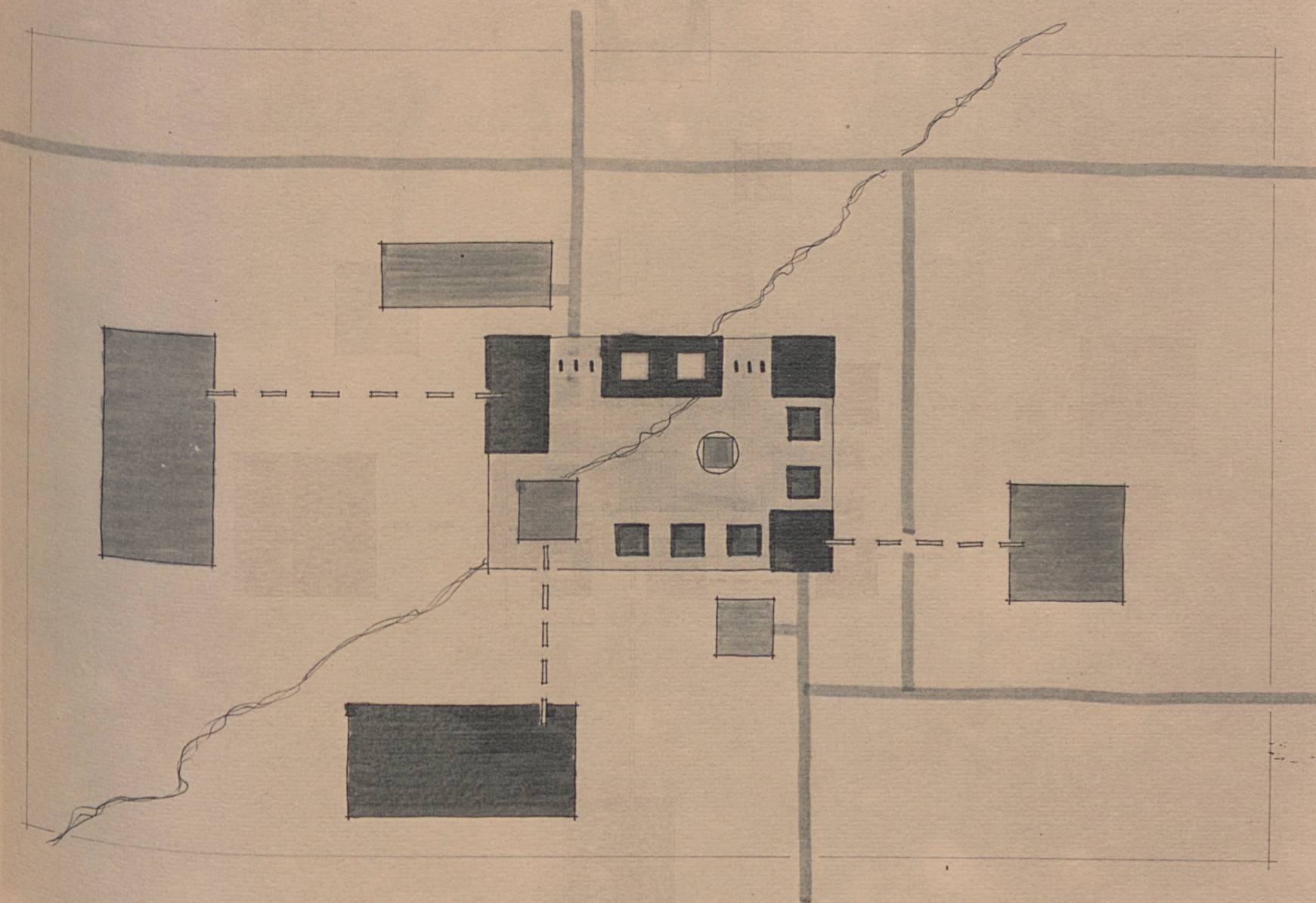


Fig Schematic Criteria

15. Means of emergency exit
19. Reasonable access to and proximity of cultural and recreational activities
26. Public spaces that encourage interaction
30. Clear, simple, free flowing networks
37. Access to public transportation
38. Access to private transportation
40. Efficient access to and circulation around area
49. Restriction of visual access
57. Provision of foci for orientation
58. Provision of a variety of vistas
61. Element of surprise and unknown
62. Alteration of perception of object through space/time

Table 8

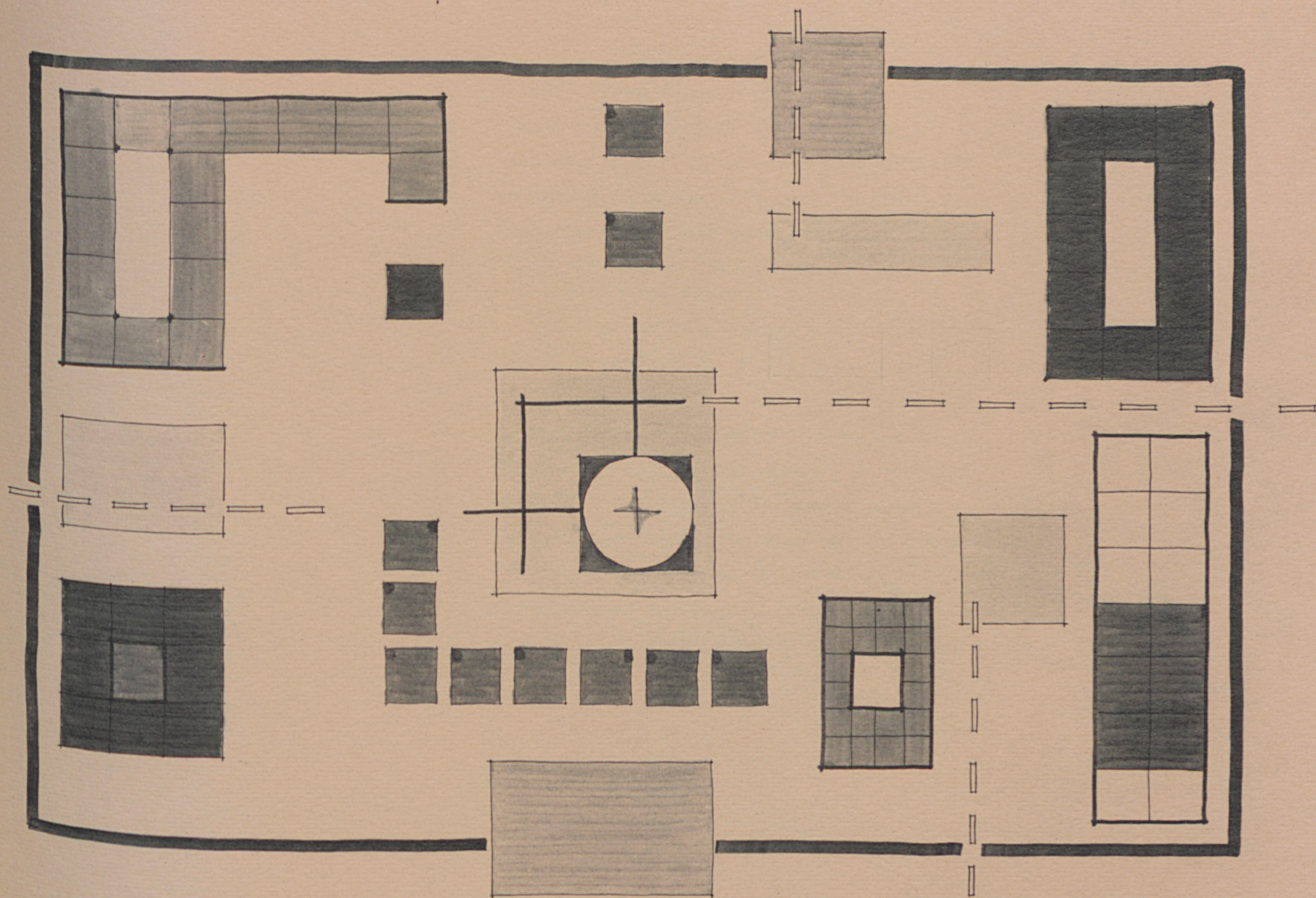


Fig Schematic Criteria

12. Visual access to surrounding area
16. Visual possibility of improvement
18. Adequate space for recreational activities
20. Recreational areas with central area
22. Adequate safety and supervision of area
23. Clear definition between non-residential and residential areas
25. Area for group activities
- 31 Logical organization of services
33. Energy efficient
34. Sensitive to environmental conditions
51. Provision for communal meeting place
52. Provision for privacy in public places
54. Intermix of 'man'made' and 'natural' elements
57. Provision of foci for orientation
63. Provision of a variety of functions
64. Provision of space capable of a variety of uses

Table 9

3. Economically feasible
4. Suitable sanitation
5. Effective protection
7. Suitable education facilities
8. Effective government agencies
13. Sense of stability
17. Capability to improve
36. Efficient public transportation
53. Personal choice of habitat
67. Provision of services to enhance one's lifestyle

process, thereby enhancing the final outcome, the designer can establish a hierarchy of need, similar to that defined by Abraham Maslow for psychological needs.²³ These might be as follows (in descending order of importance):

1) Shelter - presumably, perhaps unjustifiably, the need for shelter would be accommodated in any architectural endeavor (of that purpose) regardless of sociological suitability.

2) Security - This includes physical and mental safety, of person and property, from dangers either real or imagined.

3) Comfort and Convenience - Concern for amenities arise only when a person feels reasonably secure in his environment.

4) Self Expression and Socialization - Once safety and 'creature comforts' are obtained, an individual asserts his need for self-expression, personalization of environment, and controllable interaction with others.

5) Aesthetics - Once all social and physical needs and desires have been satiated, only then does an individual show concern for the external appearance of his habitat.

These items are very generalized and not intended to give specific guidelines to specific problems. Each situation is unique and therefore demands its own study and solution. These items are presented only as a reference of common human tendencies.²⁴

Design Implementation

Under current conditions, design implementation of socio-physiological criteria is the delinquency of this approach. Architects

are not at fault so much as the sociologists; specific data and studies providing authoritative information have simply not been done. We do not know, for example, the spatial requirements of people; do these requirements fluctuate, or how fluctuation in personal allotment of space might influence behavior patterns. Thus the architect is relegated to solutions by personal opinion (or trial and error), attempting to be cognizant of all needs (theorizing cause and effect) and formulating rational answers. These opinions are then affected by architectural elements: the manipulation of scale, volume, and orientation and the determination of configuration, construction, materials and the related details.

Popular acceptance of this methodology is contingent upon two dramatic challenges, the first being current attitudes, held en masse, from which this method must gain acceptance. Old ideologies die hard; a constant battle against conflicting laws or arbitrary 'boards' can be anticipated. The second challenge is of economics; we may hypothesize about improving man's condition and the negative effects of our cities, but it will be economics that will objectify these ideals. Therefore, while meeting all of man's sociological and physiological requirements, the project must also be cost-competitive with other projects.

If subsidies are to continue as a principal means of funding, drastic alterations of procedure are required of governmental agencies. The opinion currently held is that poor people cannot be housed by private enterprise. This is total misconception. There is no special need or form that low income families require that private enterprise cannot supply. It is simply that poor people cannot afford private enterprise housing. Government does not take control of other subsidized operations (train, airlines, etc.); why do we feel the necessity to control housing? As a result we have enhanced the segregation of residential income levels such that all low income residents are neatly corded off from the middle class who are discretely separated from the

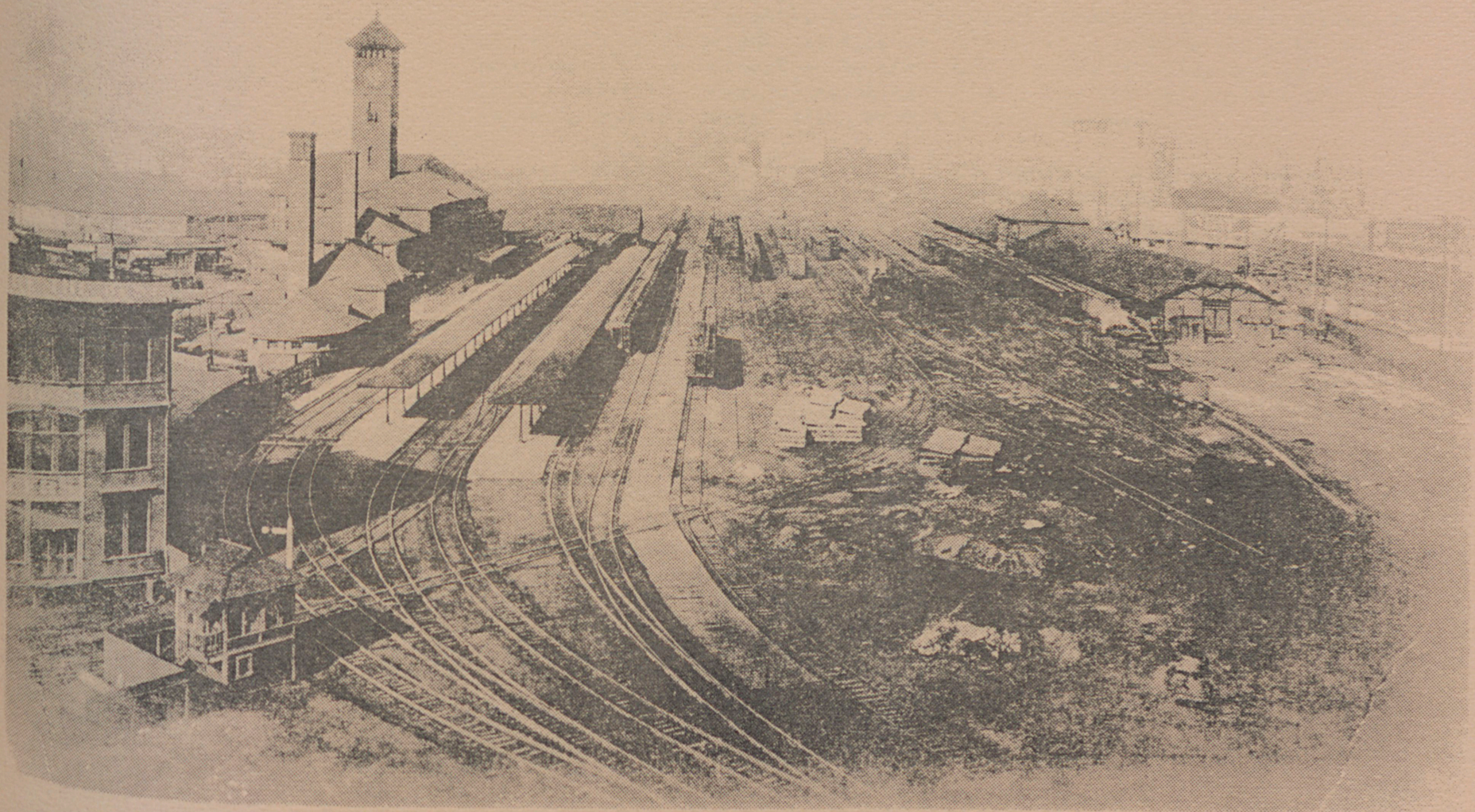
wealthy, bringing with it a discrepancy in the amenities and services provided.²⁵ There is no 'separate but equal.'

Summary

This project, in its final outcome, might look like any other project; the people could be the same and the means of funding could be the same. Except for possibly the attitudes and outlook of the residents, no outwardly visible sign would foretell a difference in design, for there are no physical attributes which specifically signify this variation in approach. The only difference in this project from any other is the methodology and the nature of the criteria applied.

Section IV

Design Application



Intended to illustrate an application of the preceeding methodology, this project is the design and development of a lively, downtown, urban community, integrated with the city through a spatial continuum. An urban atmosphere will be maintained through the combination and juxtaposition of housing, restaurants, public spaces, shops, studios, private areas, and specialized recreation in an urban density.

To achieve this goal, the project will encompass the revitalization of certain existing and historic architecture in combination with new and compatible construction to institute a sense of pride and heritage in the community created; establish a focus for the development of commerce and the preservation of a historic landmark.

The target group for which this design is intended will be a generalized derivative of the populace that now inhabits the area which surrounds the project site, the intent of this being to minimize disruption and stress due to displacement, while possibly providing for further redevelopment and a continual upgrading of current conditions.

The focus of the design shall be an attempt to satisfy those sociological and physiological requirements, as determined for the people and area affected or influenced by the built environment.

Project

Since its construction in 1870, the Union Station in Portland, Oregon has acted as a focus for both the urban core and the surrounding area. As the loci of downtown activity drifted away from the riverfront and station district, the area fell into disuse and decay. In 1974 massive 'urban renewal' projects began to exorcise these blights, replacing them with 'glass cubes' and a waterfront park. After

demolishing hundreds of these cultural vestiges, a different attitude was adopted--urban renewal. The surviving structures of 'Old Town', extending from the Skidmore district to Union Station (see fig. 1) are being rehabilitated to create a vital, functioning community, while enhancing the city as a whole.

The intent of my project is to enhance this revitalization and to re-establish the station as a focus for activity. This is to be achieved by extending this urban redevelopment into the station area. By analysis of this site (figs. 15-20), we can establish the physical parameters or limits and criteria for design.

Rather than simply proceeding into design, utilizing only the physical criteria of the site, we must supplement these guidelines by means of the methodology articulated in the previous sections with the sociological requirements necessary for suitable habitat and the formation of community. To achieve this end we must elucidate those characteristic needs and desires of the intended residents which pertain to the built environment.

My initial attempt at coalescing this information was a sociological investigation of similar resident types in the Portland area, to be implemented by means of a questionnaire and interview (see appendix D). This approach proved to be inadequate, resulting from the minimal response and insufficient scope. Justified by the theoretical nature of the project, the alternative approach was to establish a hypothetical type, simulating the actual residents, with specific social characteristics (see fig. 21).

Criteria

From these characteristics, in conjunction with the physical condition, we may formulate the specific goals toward which we will develop our design. As discussed previously, my method to elicit these

criteria has been a matrix (fig. 4). Based on these interrelationships, I have formulated organizations of criteria applicable to design (figs. 5-14).

At this point, design proceeds in a similar fashion to that of any other project. Design remains an intuitive art. However, the end objective and the intermediate decision processes are to be evaluated in terms of these criteria.

Thus the following design represents my own personal implementation and satisfaction of these criteria.

An aerial photograph of a city, likely Portland, Oregon, showing a river (the Willamette River) flowing through the center. The river is flanked by industrial areas, including warehouses and rail yards. The surrounding urban area is densely packed with buildings and streets. The photograph is in black and white, with a slightly grainy texture.

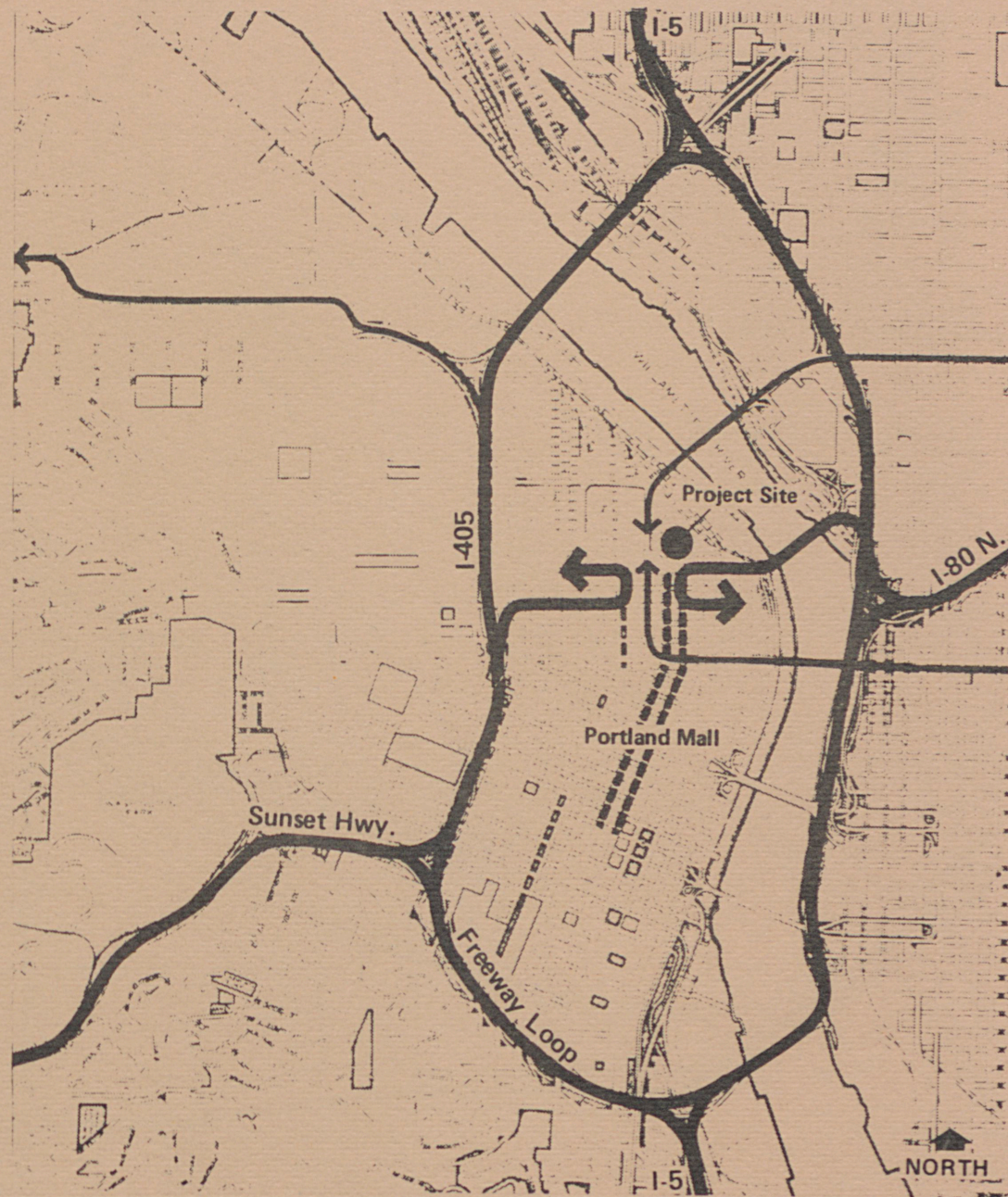
As the northwest terminus for urban development, Union Station and its surrounding area function as a transitional zone between the Skid Row/Burnside District, a highly imageable (historic architecture, wharves, 'winos', and oriental businesses), though socially negative area; and the Railyards, vacuous open space (visually defined by linear tracks) devoid of social activity. The site's 43 acres are segmented into three primary zones: The riverfront, consisting of antiquated warehouse facilities and condemned industrial buildings, presents an eyesore but offers the ability to relate urban functions and residential habitat to aquatic activities. Representing the southern terminus to six miles of industrial, rail activity, the railyards act as a deterrent to pedestrian activity and a visual drain. Forming the nexus between the city and these wastelands, Union Station is axially aligned on N.W. Sixth Avenue, providing the terminus for socio-commercial activity and a visual 'stop' to define the area.

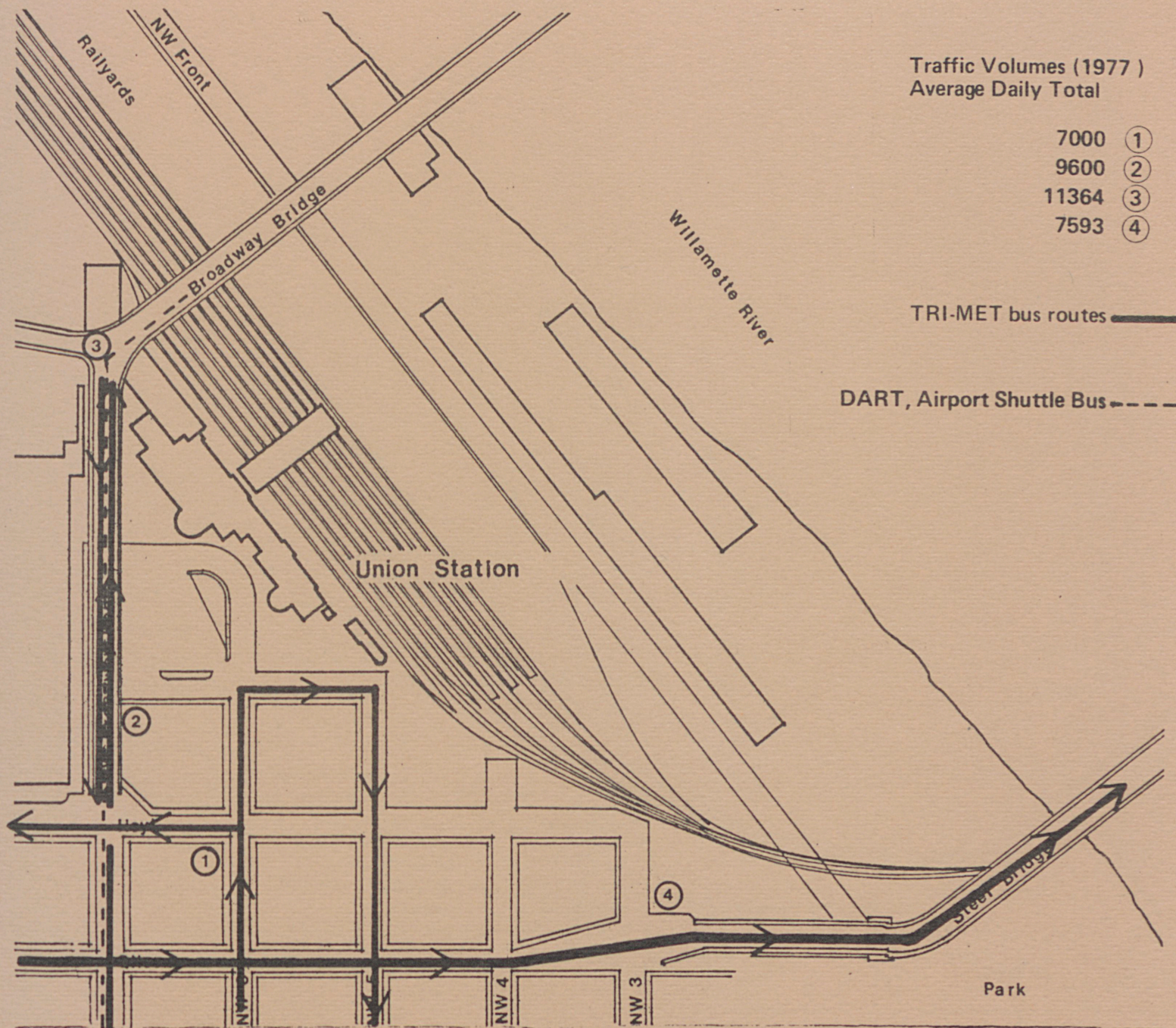
Isolated from the city on three sides by bridges and ramps, the site is further demarcated on a fourth side by the Willamette River. Being the only connection to the city, four blocks of decaying commercial enterprises and vacant lots must become the physical and visual integration between project and city. Being virtually level (except a riverside embankment) and devoid of the outstanding structure, the station.

Though within an active area of historical architectural renovation, the immediate vicinity of the site lacks landmark or even reputable buildings. Therefore it is necessary to develop Union Station as the focus and theme of the redevelopment of the area.

Figure 13

Project Site and
Primary Access





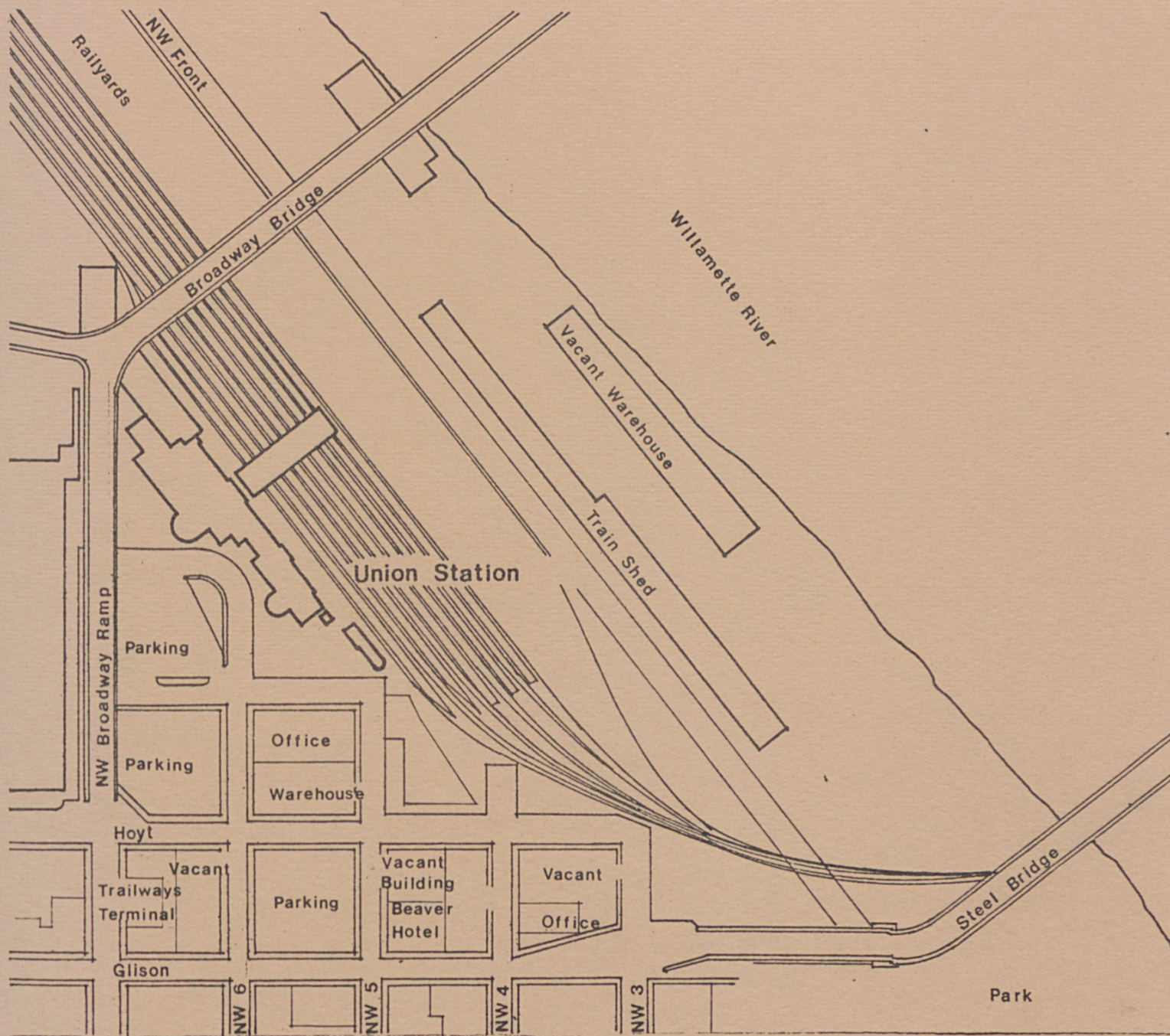


Figure 15
Existing
Uses

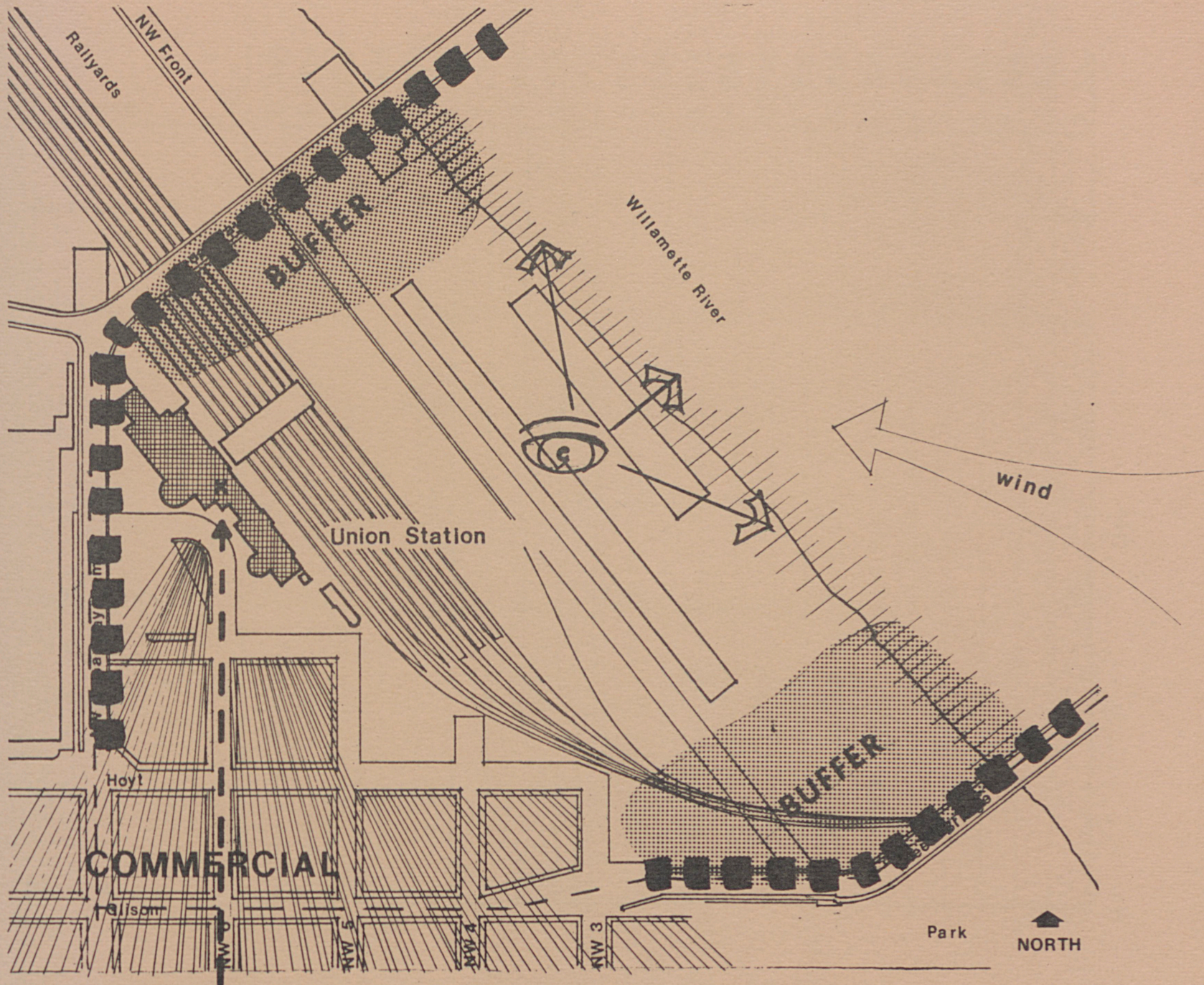


Figure 16
Site
Analysis

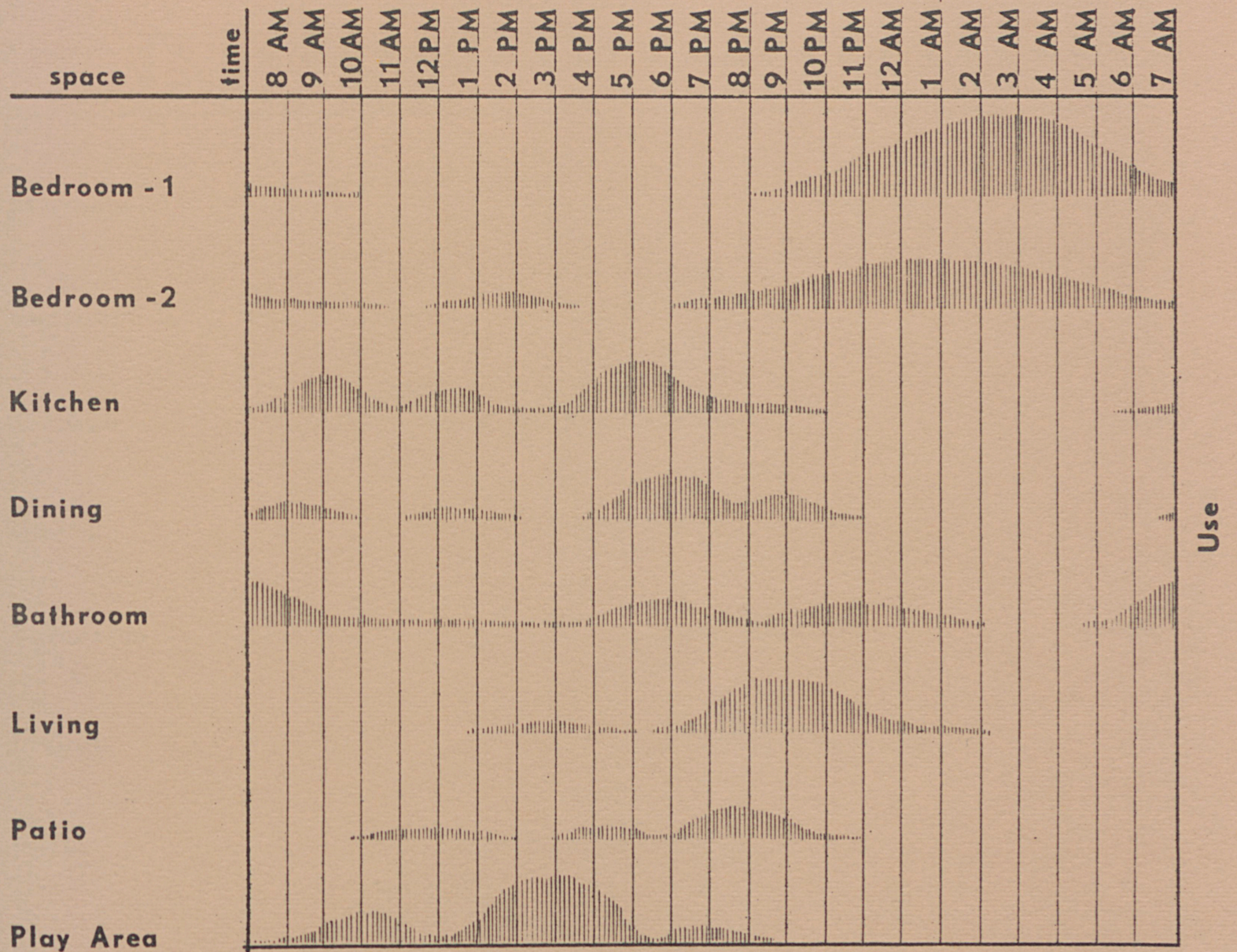
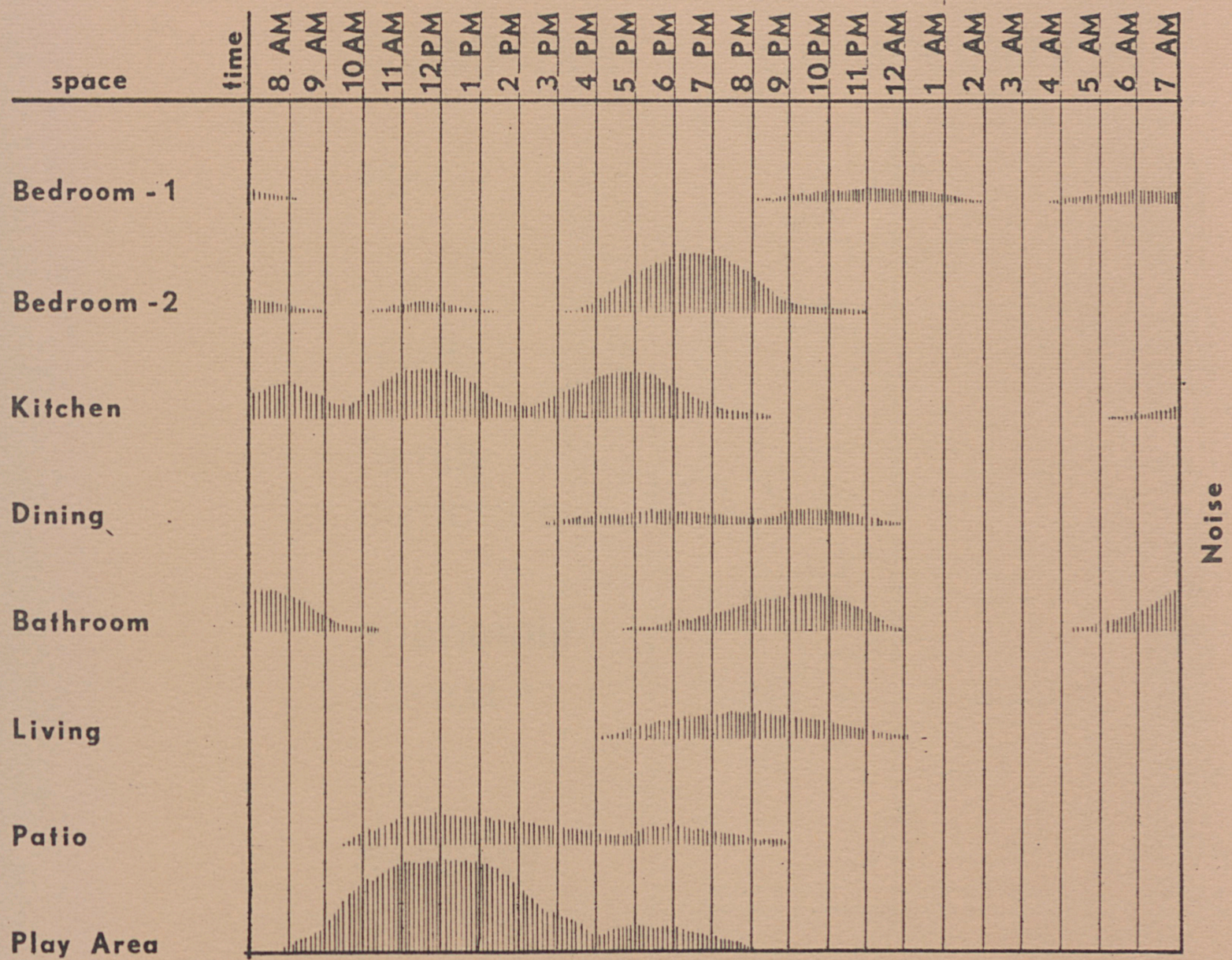


Figure 17
Time/Use for
Juxtaposition
of Functions



Noise

Figure 18
Noise/Use for
Juxtaposition
of Function

COMMUNITY COMPOSITION

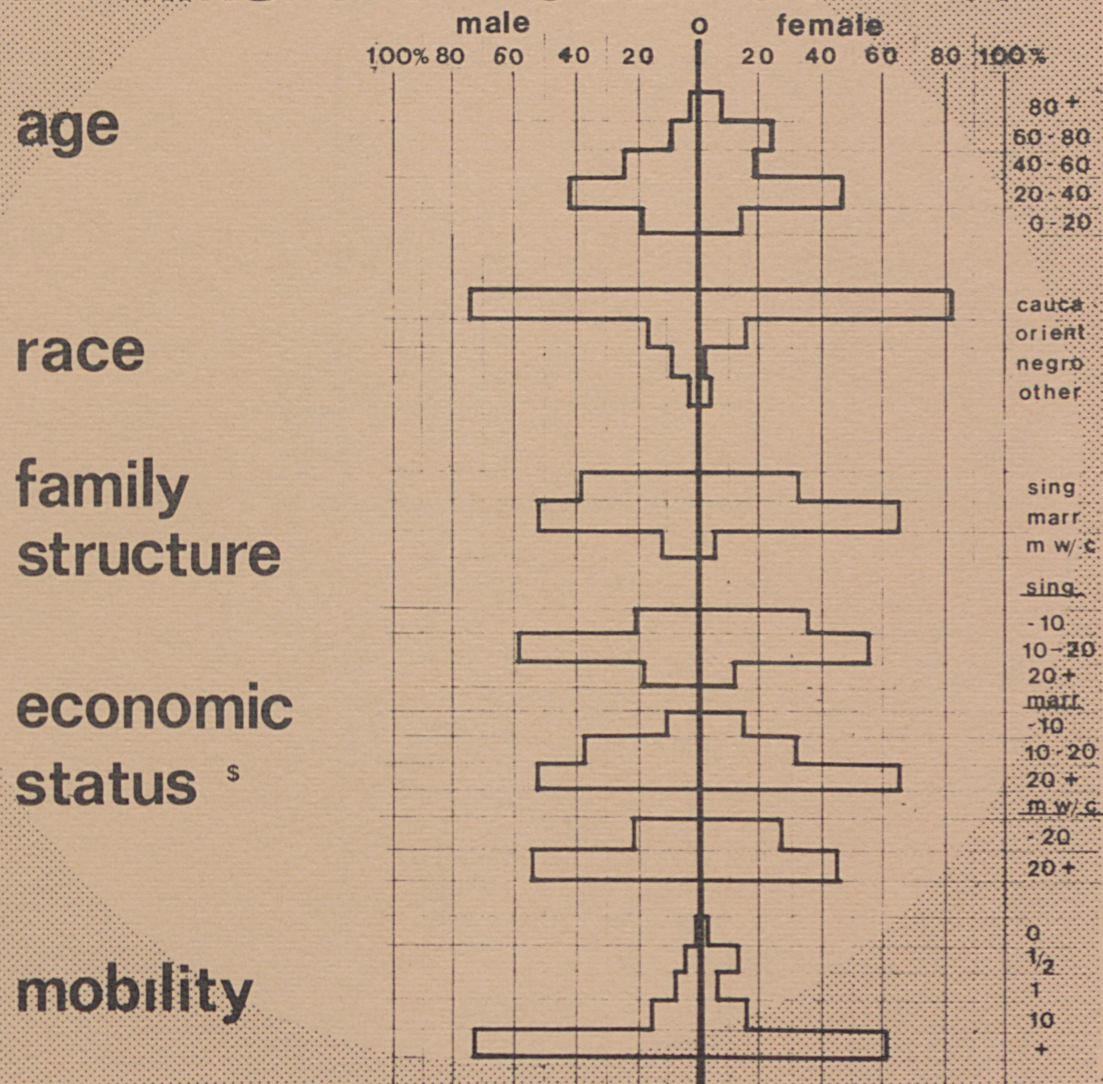


Figure 19

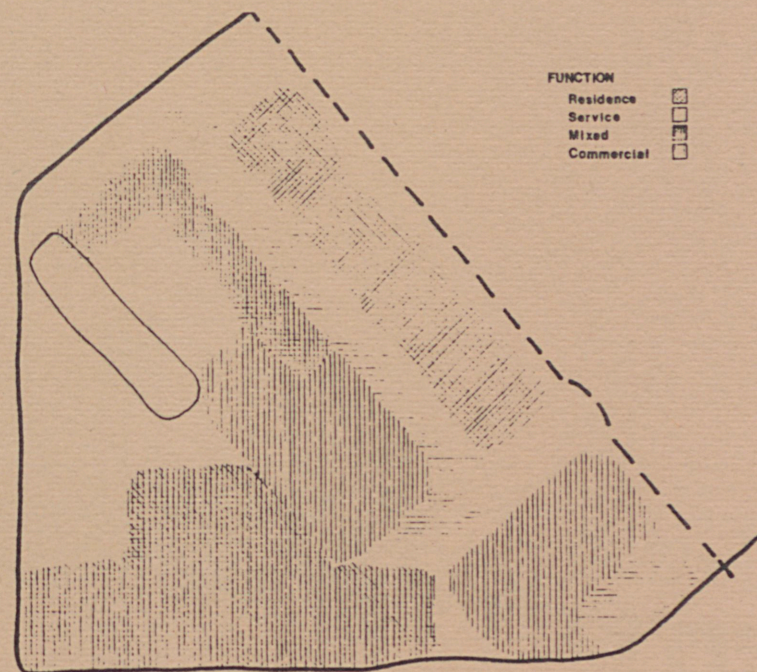
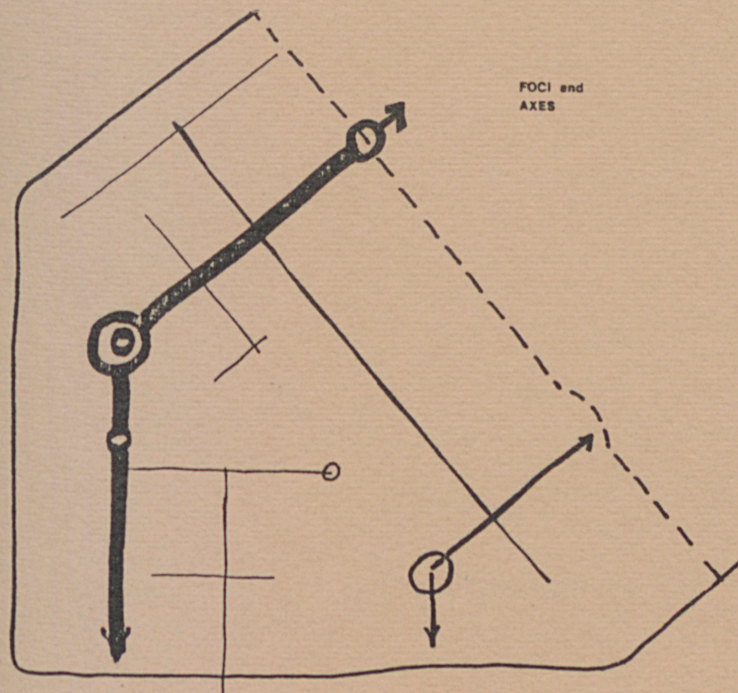
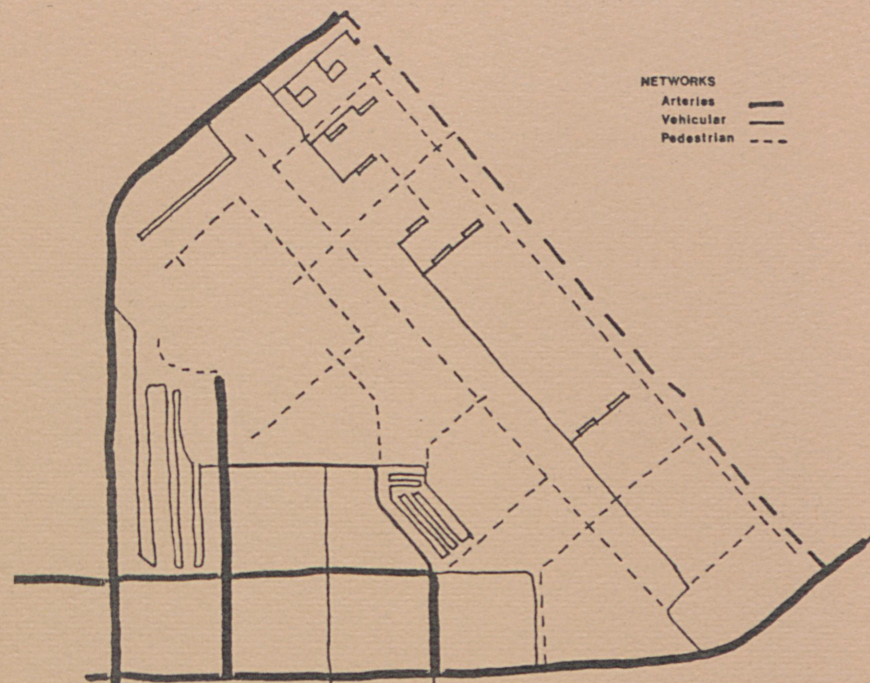
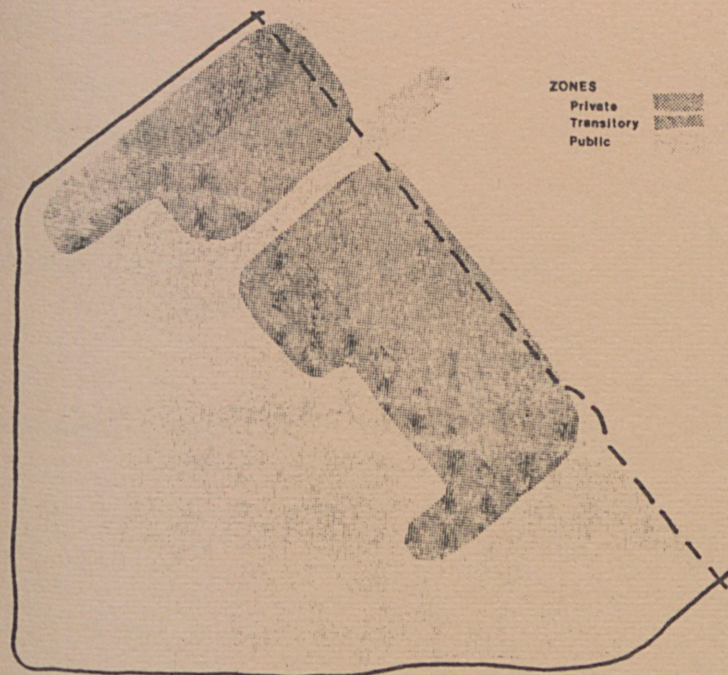


Figure 20
Site
Morphology

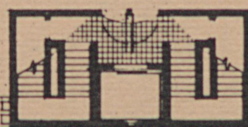
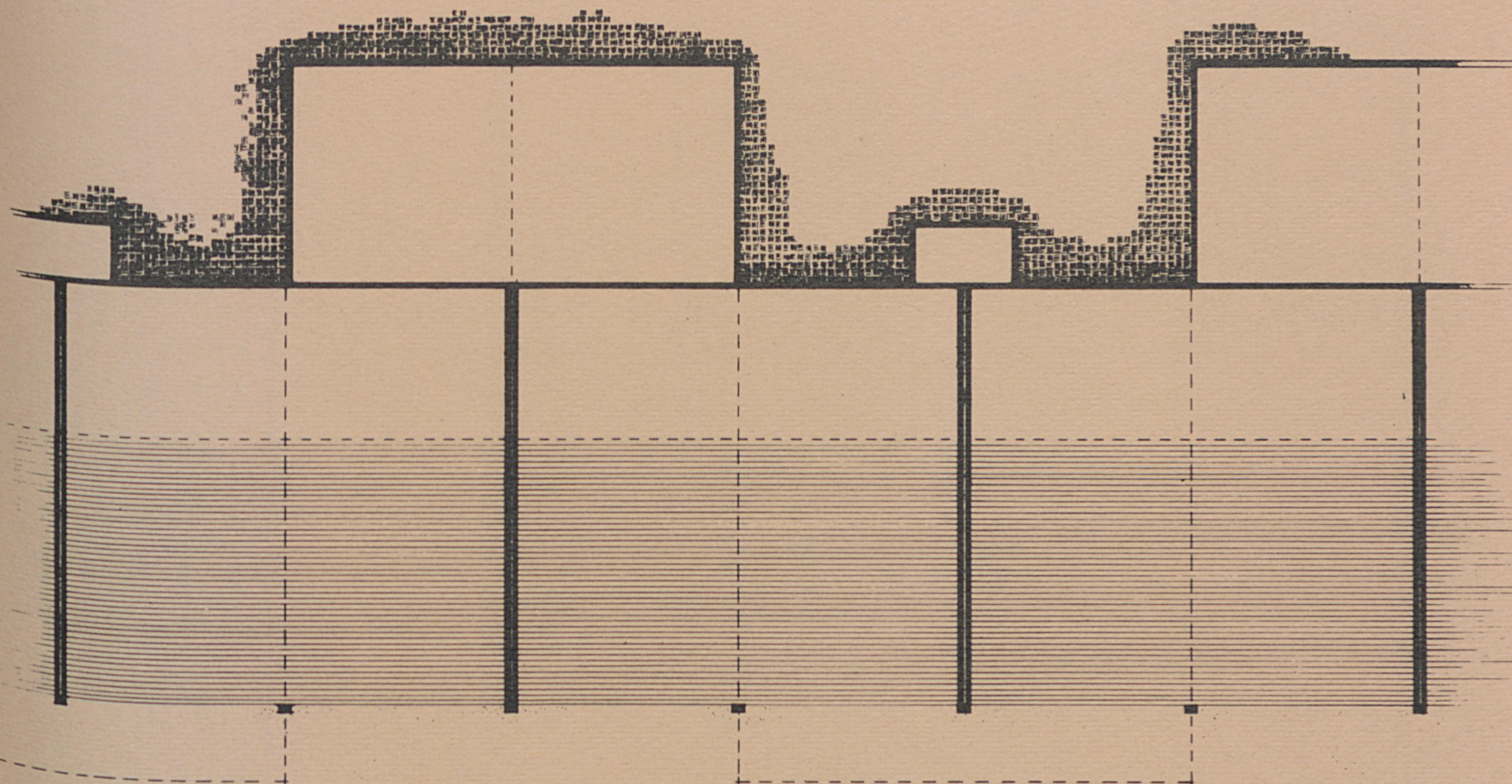
Society and the Built Environment:

a discussion of social
concerns in urban design

Project. Union Station Development
Portland Oregon

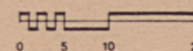
Theater: Andrew E. Douch

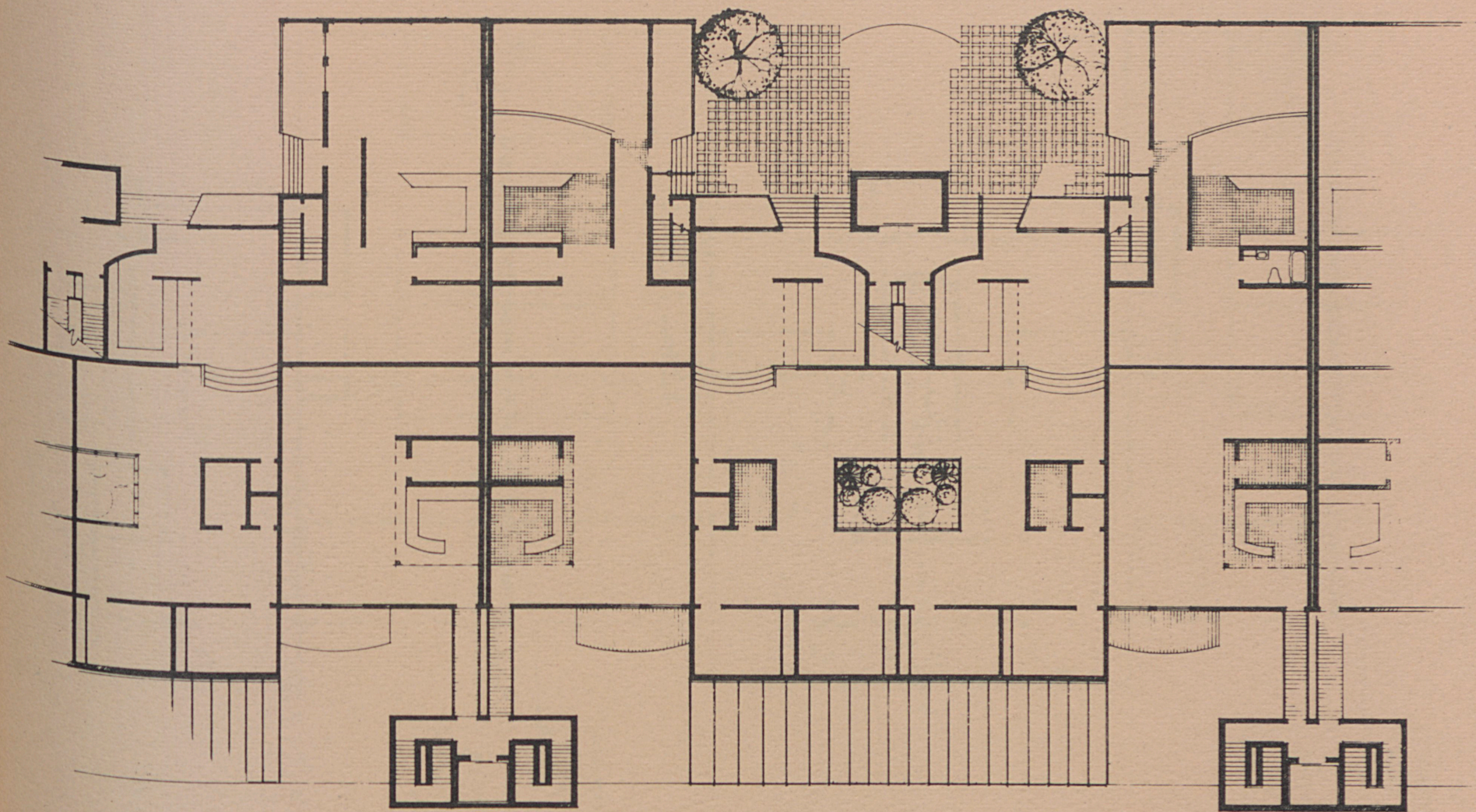




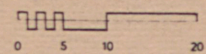
SCHEMATIC TYPE -
COURTYARD

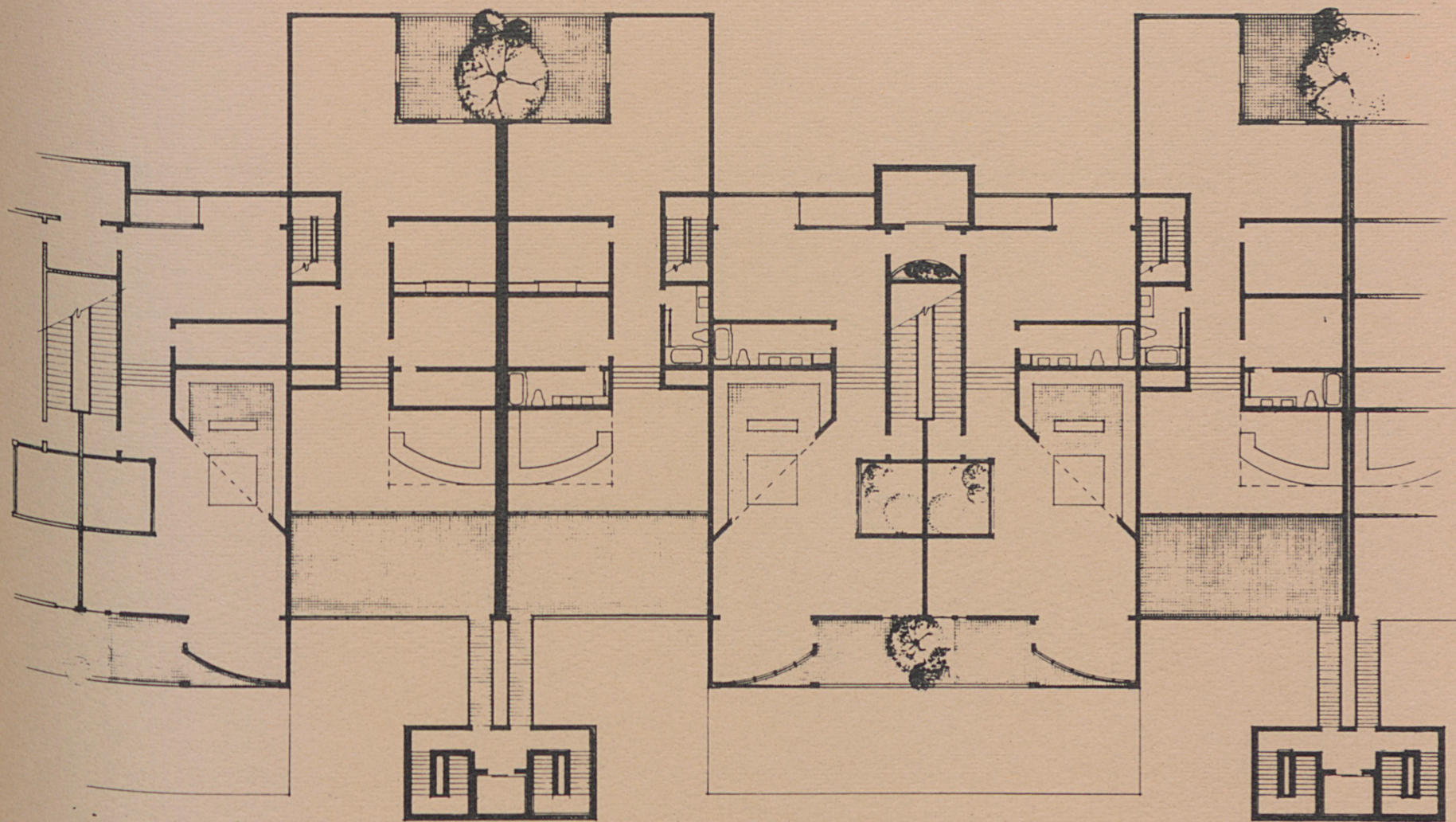
GROUND FLOOR -
commercial



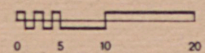


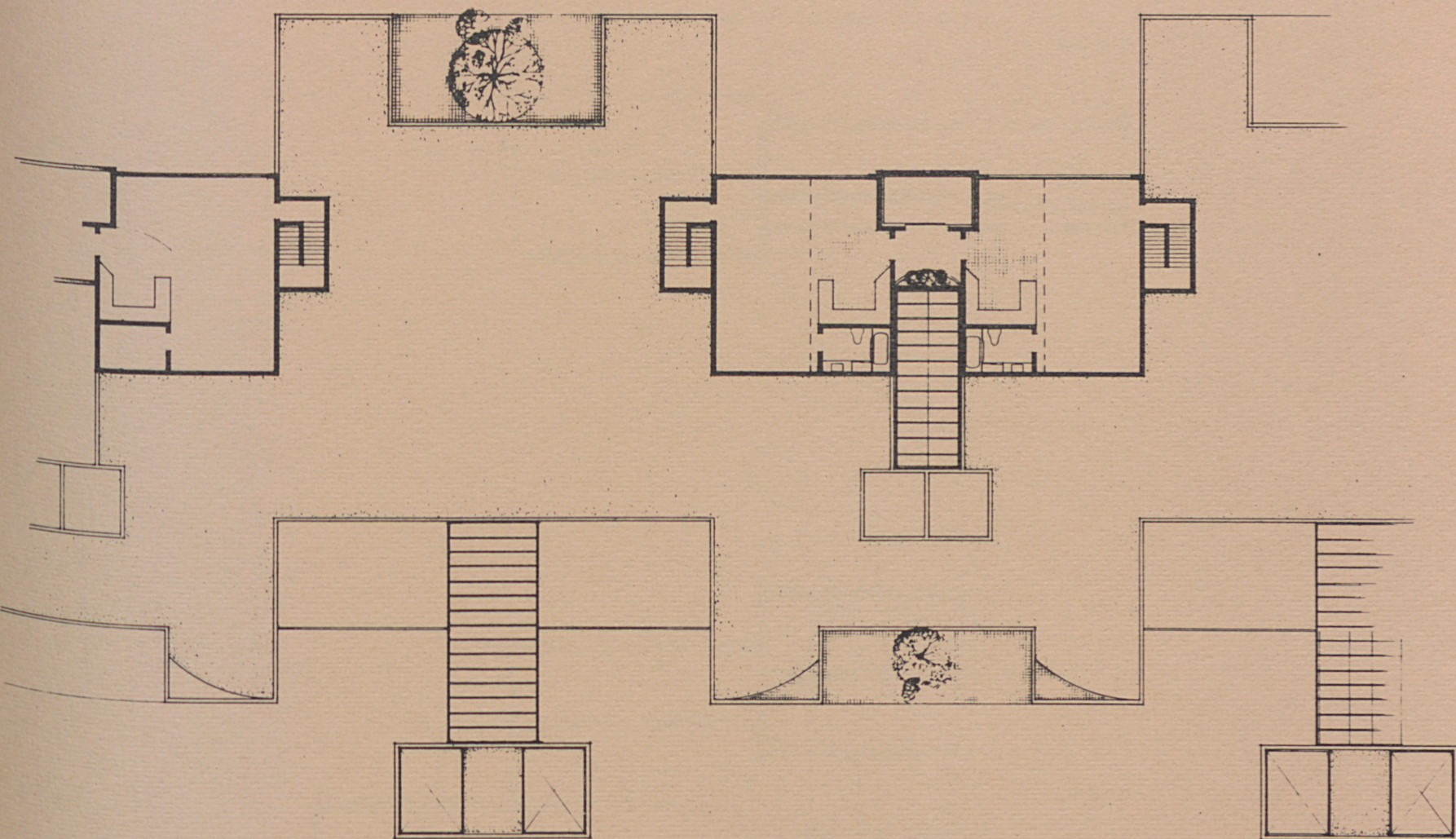
FIRST FLOOR
residential



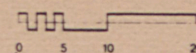


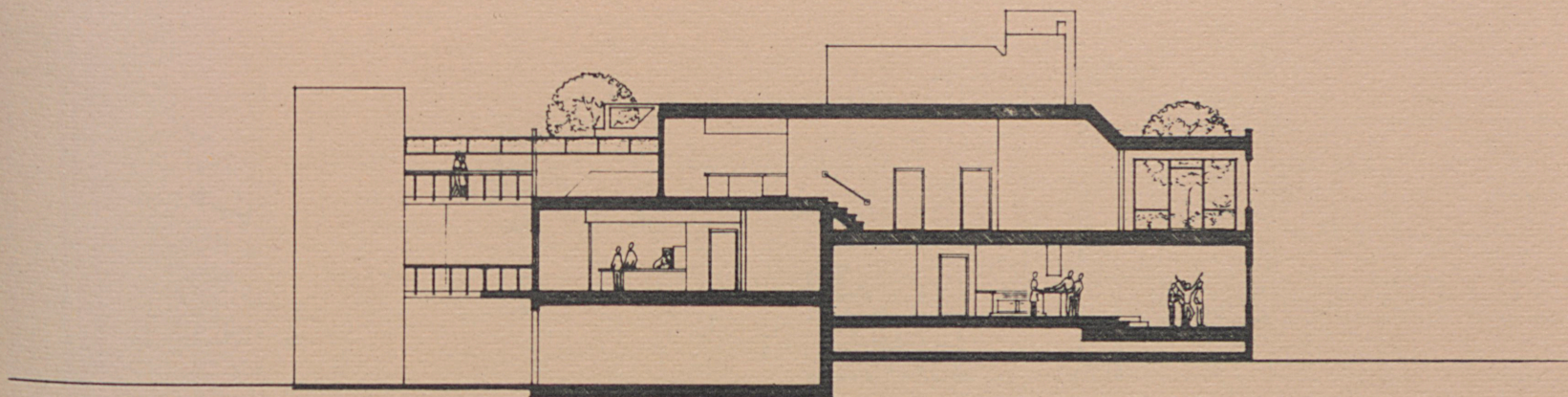
SECOND FLOOR
residential



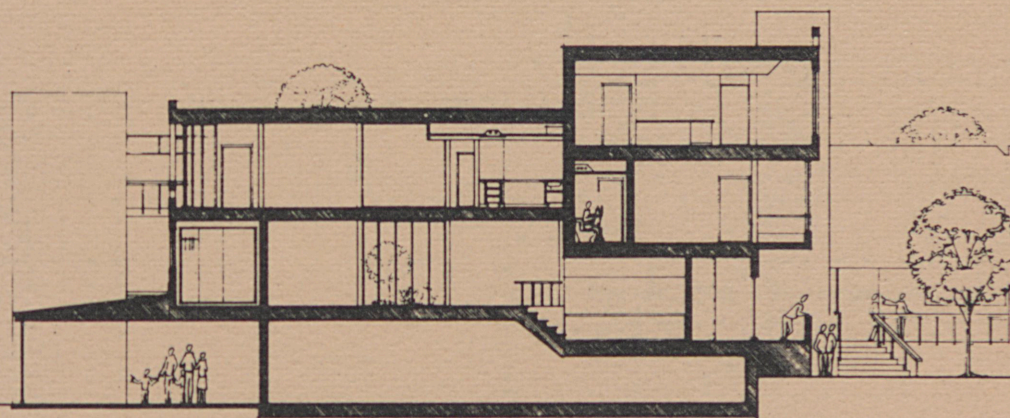


THIRD FLOOR
residential



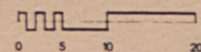


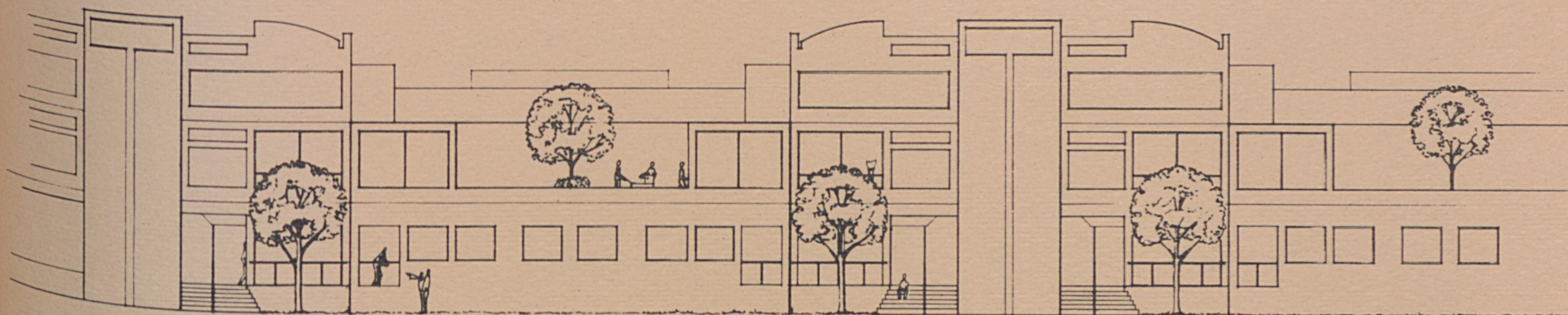
SECTION a-a



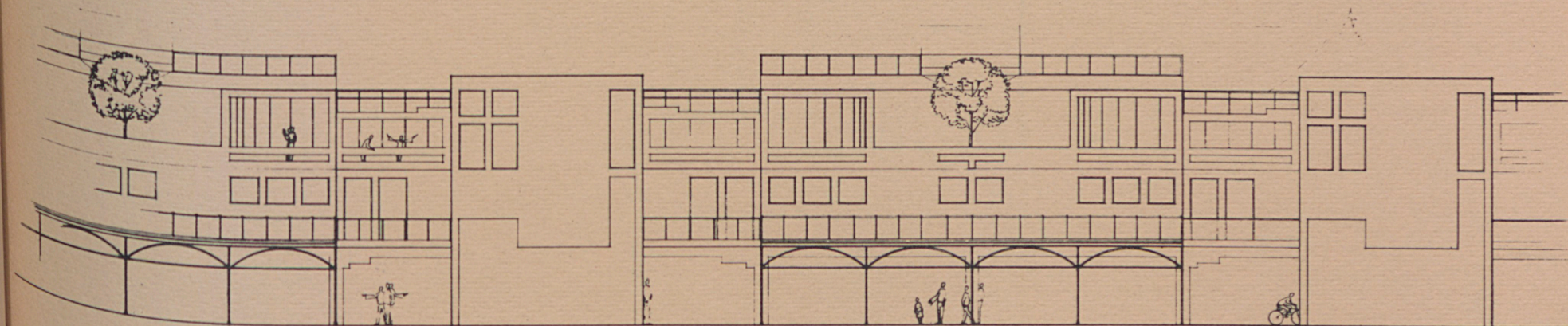
SECTION b-b

SCHEMATIC TYPE -
COURTYARD



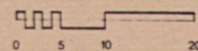


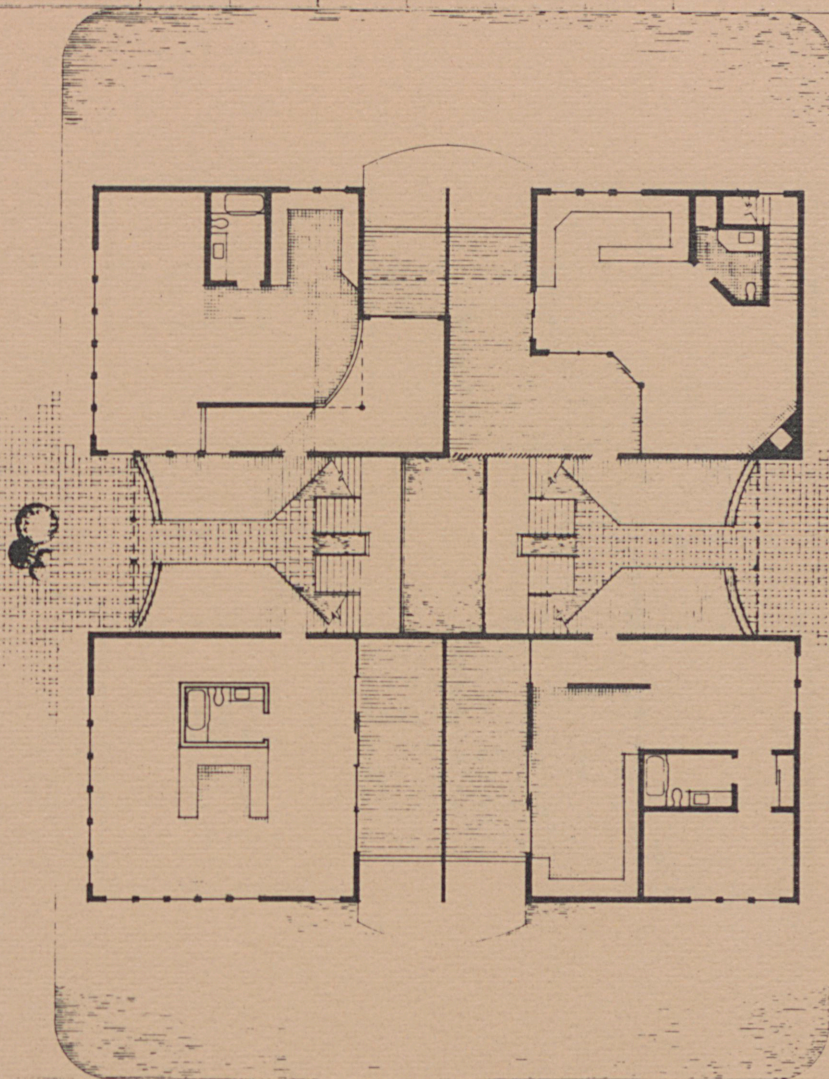
RIVERFRONT



SCHEMATIC TYPE -
COURTYARD

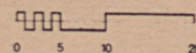
COURTYARD

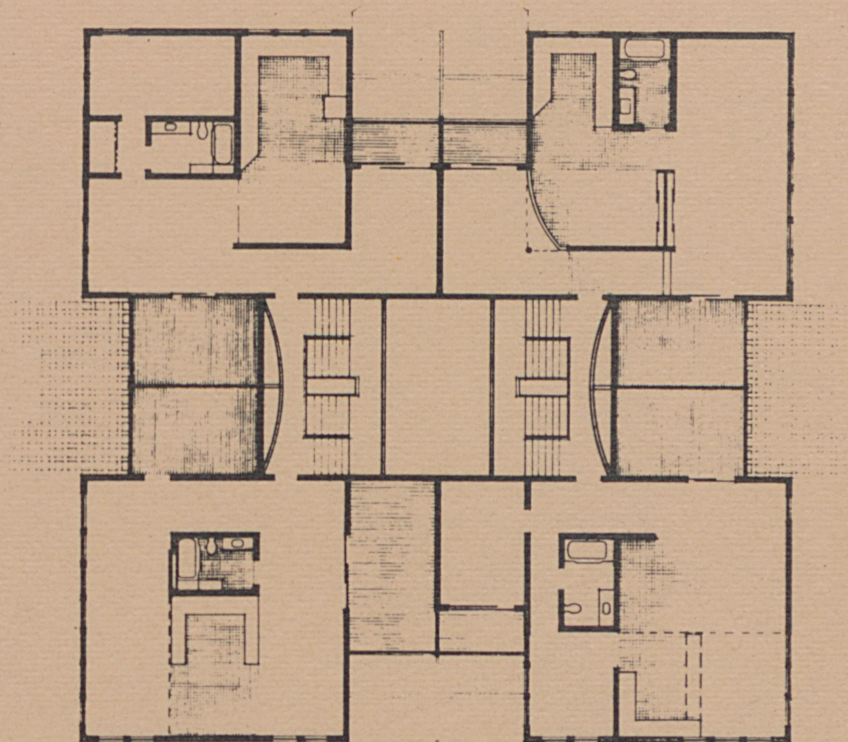




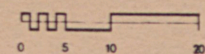
SCHEMATIC TYPE -
INDEPENDENT

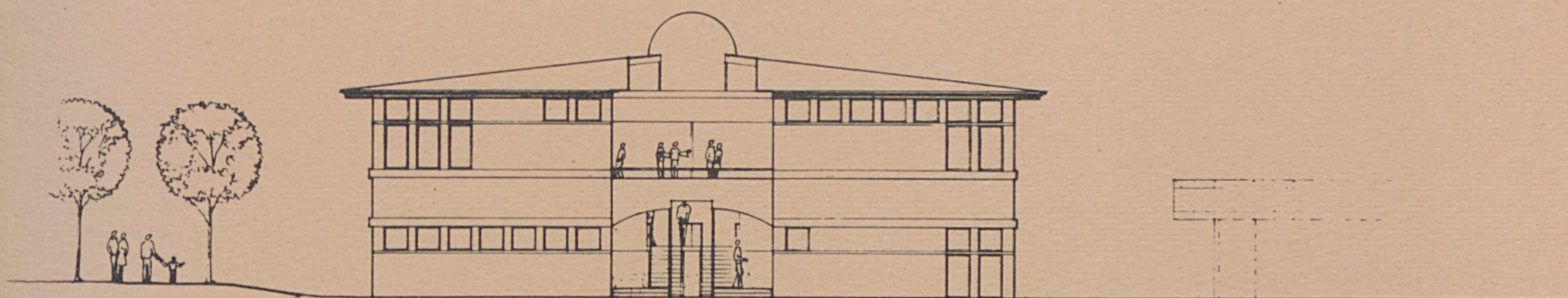
FIRST FLOOR
residence



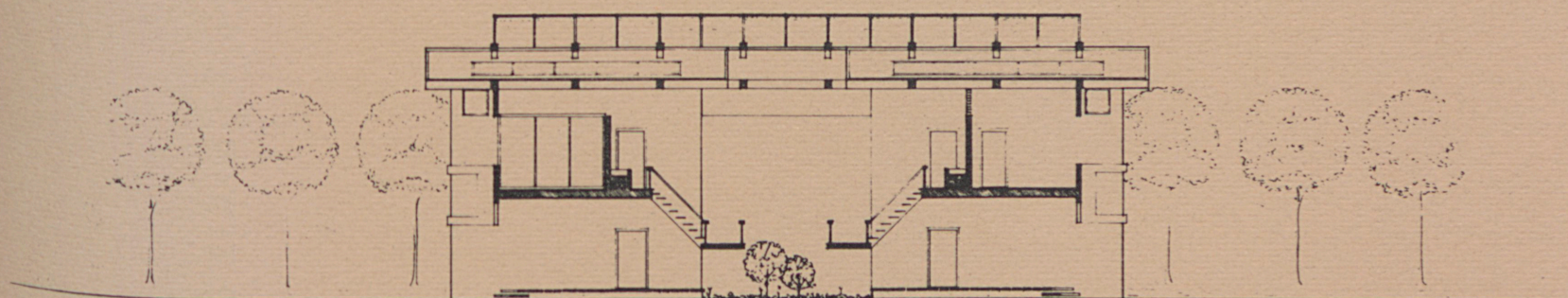


SECOND FLOOR
residence





ENTRANCE ELEVATION



SECTION C - C

SCHEMATIC TYPE -
INDEPENDENT

Footnotes

¹John Ely Burchard, "Utilitarianism as a Basis for Determining Urban Joy," Man and the Modern City, Elizabeth Geen (ed.) (Pittsburgh: Pittsburgh University Press, 1963) p. 8.

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³Ibid. p. 294

⁴Martin Kuenglen, Playing Urban Games (Boston, Mass.: Press Inc., 1972) p. 42.

⁵Brent C. Brolin, The Failure of Modern Architecture (New York: Van Nostrand Reinhold, 1976) p. 94.

⁶Max Weber, "The Nature of the City," New Perspectives on the American Community, Roland L. Warren (ed.) (Chicago: Rand McNally College Publishing Company, 1973) pp. 22-25.

⁷Hans Paul Bahrdt, "Public Activity and Private Activity as Basic Forms of City Association," Roland L. Warren (ed.) (Chicago: Rand McNally College Publishing Company, 1973) pp. 25-33.

⁸Pietro Bellaschi, Architecture Without Architects (United States), n.d., n.p., n.pag.

⁹Aristotle, "Essence of the Ideal City," Man and the Modern City, Elizabeth Geen, op. cit. p.73.

¹⁰Jane Jacobs, The Death and Life of Great American Cities (New York: Vintage Books, 1961) p. 342.

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¹²Jane Jacobs, op. cit. pp. 145-150.

¹³Ibid. p. 210.

¹⁴Denise Scott Brown, "On Architectural Formalism and Social Concern: A Discourse for Social Planners and Radical Chic Architects," Oppositions 5, Summer 1976, pp. 23-50.

¹⁵Ibid. p. 63.

¹⁶Ibid. p. 102.

¹⁷William Michelson, Man and His Urban Environment: A Sociological Approach, (Reading, Mass.: Addison Wesley, 1972) p. 24.

¹⁸Ibid. p. 179.

¹⁹Jane Jacobs, op. cit. p. 345.

²⁰William Michelson, op. cit. p. 180.

²¹John Douglas Porteous, op. cit. p. 162.

²²Jane Jacobs, op. cit. p. 432.

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Appendices

A Study of the Effect of Spacial Organization
Upon Interpersonal Relationships

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A Study of the Effect of Spacial Organization Upon Interpersonal Relationships

Originally man created shelters to protect himself from the external environment. In so doing he surrounded himself with a second environment especially suited to his needs. Because of population expansion and the ever increasing need to shelter more and more of man's activities, standards have been established to regiment the mechanical qualities of one's built environment.

Buildings are designed by an elite few following the minimum requirements of these standards with little consideration and no relationship to those who will eventually inhabit this environment.

A fundamental weakness when discussing the qualities of a building is a failure to relate the building to its matrix of experiential reality. The relationship between the building and the human occupant is discussed as though its impact on us is purely a visual phenomenon. Buildings are judged by critics on how they appear or look, which doesn't convey the whole truth about our relationship with the built environment. In architecture there are no spectators, there are only participants. According to Fitch (1972) the architect "cannot erect a wall or enclose a room or pave a path without affecting some of those vectors of force which play a role in modifying the behavior of the occupants of his space." Therefore, it is the experiential relationship that should be of major concern to designers and not the visual. The building, even in its simplest form, engulfs man, surrounds and encompasses him at every level of his existence.

The ultimate task of architecture, in relation to man, is to interpose itself between man and the natural environment in such a way as to reduce the environmental load and allow man to expend his energies upon the activities which are the essence of the human existence. Thus the essential function of building--and by extension, cities--is to lighten the stress of life (Fitch, 1972).

The design of architecture is a problem of successful adjustment between the organism and its environment. Architecture is a container for given activities, but it also influences and even generates a specific mode of behavior. A classroom is for studying; light is for reading; a sidewalk is for walking. Some spaces are designed to promote interaction, contact, and communication; such as classroom, workshop, office, etc., while others are designed for privacy and isolation; such as the bathroom, bedroom, and library.

Through observation and research, sociologists, anthropologists, and psychologists (Edward Hall, The Hidden Dimension) have determined that for each type of social activity or process there are upper, lower, and optimal levels of spacial dimensions appropriate to that activity. Any violation of those dimensions will be reflected by stress in that relationship or activity. Dr. Humphry Osmond found that these parameters of size appear to be relative, not absolute, and vary with the culture and especially with technology.

Optimal levels of density, however, appear to be relatively fixed, no matter what the cultural make-up of the society is. These levels affect the quality of life afforded by an environment and are both quanti-

tative, but by no means guarantee the quality of life. They are, more or less, constructive and instructive guide-lines.

All of man's perceptions occur in space: environmental, mechanical, and psychological forces act upon man as he moves through space. The way in which these spaces are organized, both architecturally and urbanistically, will be an influencing factor on the experience of such a space.

We realize that to any architectural problem there is more than one solution. Through manipulation of walls, plan, and layout one can create a variety of solutions within established parameters. We therefore believe that, given certain requirements and a desired density, an architect can (and should) control the sociological effects of his design by manipulating the apparent density and thereby reducing the resultant stress on the individual inhabitant.

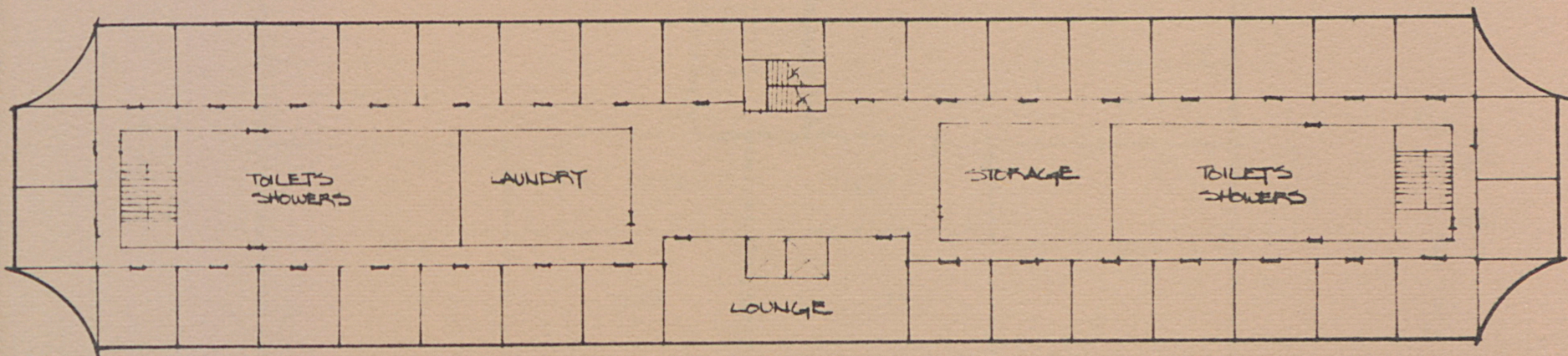
In an attempt to verify these hypotheses on architecture, design and its influence and effect on people, we have developed an experiment to try and test one aspect of this 'control'. The test does not prove the influence of architecture per se; rather we eliminate or minimize all other factors, test for the hypothetical effect, and thus infer its causation is due to the architectural design.

Our basic premise is that different architectural solutions to the same 'problem' can result in differing effects on people which will influence their daily lives and therefore exhibit marked differences in sociological testing. We propose to study the effects of spacial organization of certain housing projects upon the interpersonal relationships of its inhabitants.

The procedure we used to test the effect of social density, its resultant stress, and the acquisition of public space for private usage, was to study the opinions, feelings, and behavior of the residents of two different types of campus housing facilities. The two specific dormitories used were selected in an attempt to minimize all variables except those distinct interior architectural differences. The first dorm type (corridor) consisted of thirty-two rooms, housing sixty-six residents per floor, laid out on a perimeter rectangular plan with laundry, bath, storage, and a lounge located in the center (see fig. 1). Entry/exit was by means of the central elevator or stairs or by the two end stairwells. A large central lounge and a T.V. lounge are provided for the entire 650 students of the dorm as well as a central eating cafeteria. This layout creates large groups of students who must share laundry, bath, lounge, and eating facilities.

The second type of dorm (suite) is a traditional apartment style building. This type of dorm was similar in that it housed fifty to sixty residents, as did a floor of the corridor type dorm, but differed in that the 'rooms' were laid out as apartment groups (see fig. 2). This type of arrangement creates smaller groups that share bath, cooking, and lounge facilities. The only thing the entire group shares is the laundry rooms. Entry/exit is by means of a 'front door' to each apartment that opens onto a semi-public landing.

Thus the major functional difference in the two types of dormitories was the manner in which the 'rooms' were laid out around common areas and the amount of sharing required by residents.



CORRIDOR TYPE DORMITORY

Figure #1

NO SCALE

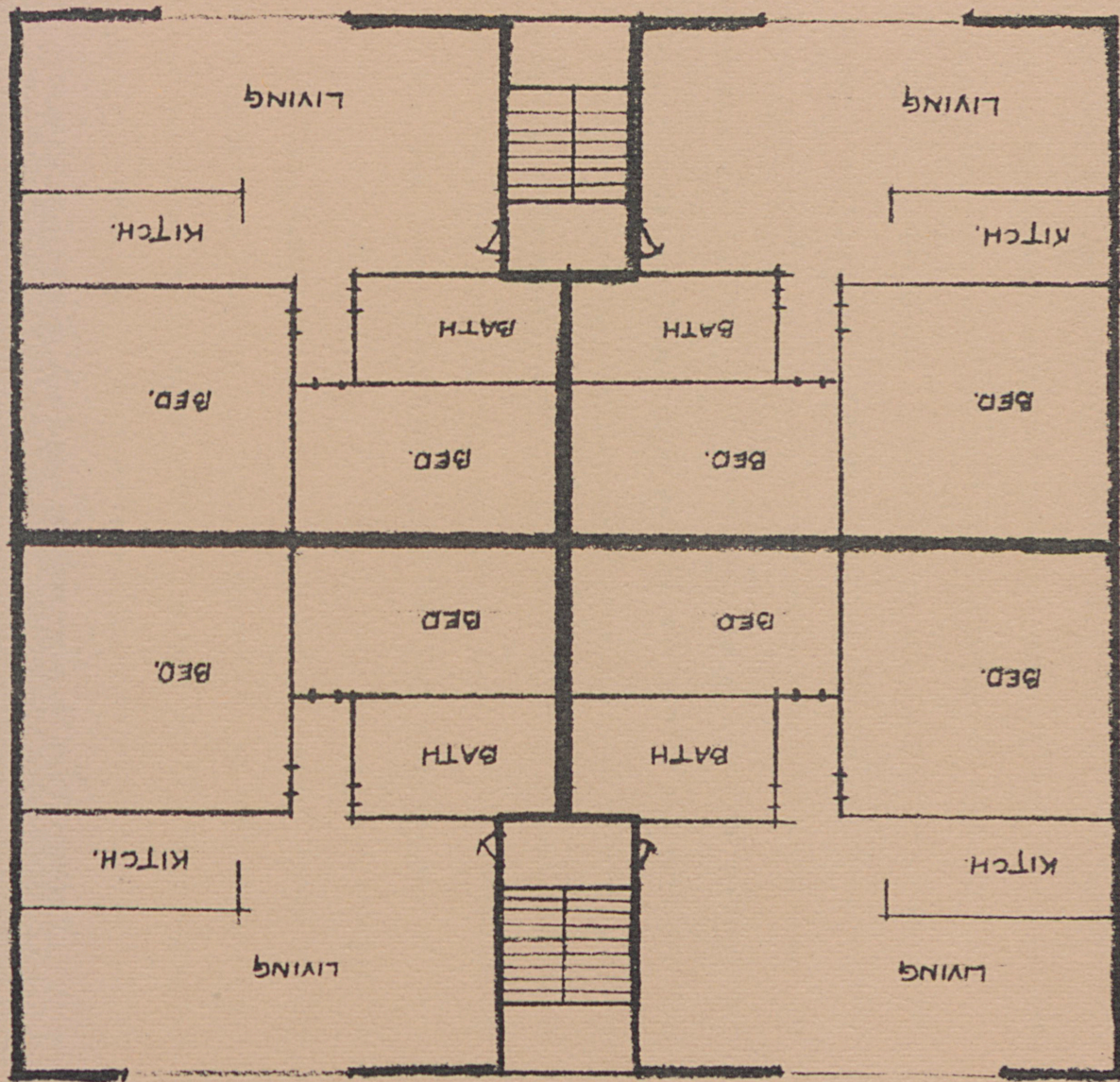


Figure # 2
suite type

While the number of people, between a floor of the corridor type and a complex of the suite type, is comparably equal, the corridor type forms large groups of people--they all use the same bath, laundry, and lounge and even a larger number eat together. On the other hand the suite type creates intermediate groups, smaller than the total, that share facilities, thus reducing the number of people interacting. Though the occupancy of the suite type dorms varies from two to four residents and the corridor type has a maximum of two, the relative population density of both study groups, with respect to people per square foot, is approximately the same.

The subjects used for this study were a random sampling from the two dormitory types. Both groups consisted of male and female undergraduates, unmarried and living with at least one roommate the same sex. In all instances the roommate was by choice. The subjects ranged in age from seventeen to twenty-six and had an extremely varied background, ranging from an urban to extremely rural up-bringing. The only subjective basis used in selecting participants was that of achieving relatively equal numbers of male and female students. Residents were selected from dormitory housing lists and no remuneration was given.

The data gathering methods used in this study involved all three basic types of sociological research available; questionnaire, field observation, and laboratory situation. The questionnaire was handled in three separate phases. One part was distributed to the students at their place of residence. They were asked to fill it out and return it either to the dorm desk or the sociology office. This questionnaire

dealt with such topics as attitudes with respect to an acceptable density level, amount of privacy required, and their actions to achieve this optima. The second questionnaire was handed out at the beginning of the lab situation. It inquired as to their physical and emotional state at that time. The final questionnaire was passed out at the end of the lab situation and attempted to survey the participants' own evaluation of their part in the situation and their normal acts of socialization. These questionnaires were intended to ascertain how the subjects felt about the density of their living arrangements and how they acted as a result.

The field observation consisted of watching the participants' actions in their daily routine at their place of residence. This was intended to establish how they actually socialize (or avert interaction), and the amount of social contact possible in their daily lives.

The laboratory experiment was set up to determine what affect the density of the living conditions had on the participants' socialization, if any, outside their residence. The experiment was conducted in two adjoining rooms connected by a two-way mirror. The mirror allowed observation of the entire room and a video tape machine was positioned so as to record all action. Furnishings in the 'subject' room were minimal: seven standard classroom chairs (see fig. 3). There was also a 'hidden' microphone to record all verbal exchanges.

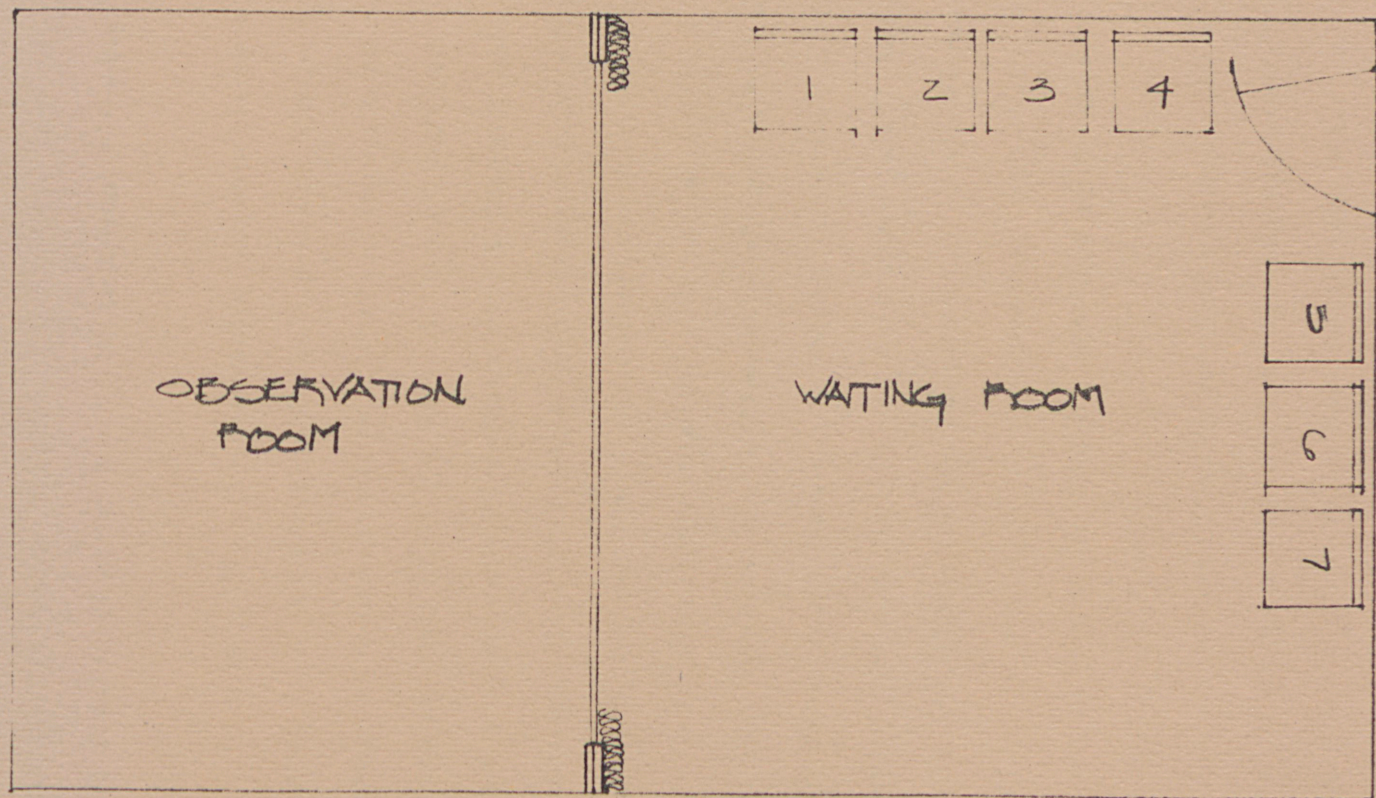
The subjects consisted of thirty corridor and suite residents at random, except that half were male and half were female, from the resident housing list. Subjects were recruited by telephone and no

remuneration was given. In addition to these, two college-age students, one male, one female, acted as subjects (confederates) in the situations in which residents waited with another 'subject.'

Upon arrival at the lab, residents were greeted either by the experimenter, or the experimenter and a same sex confederate, depending upon which group they had been assigned to. No introduction was made between the subject and the confederate. In the alone condition subjects were told they were going to participate in a 'task performance' study, asked to select a seat and fill out the first questionnaire. Observation began once the subject entered the study room.

In the 'together' condition the subjects were again told they were going to participate in a 'task performance' experiment and asked to fill out the first questionnaire. In this instance, however, the confederate entered the room first and selected a predetermined seat (always the second seat from the mirror - see fig. 3). The subject then entered the room and selected a seat.

Upon completion of the questionnaire, the experimenter entered the room and informed the subject(s) that the apparatus was not quite ready yet and would they please wait a few minutes. After eight minutes of observation the experimenter returned to the room. He stated that things were ready and would begin as soon as the subject(s) completed the final questionnaire. After completion of the final questionnaire the subject was led out into the hall and to another room. During the walk the experimenter asked the subject if he would prefer to participate



LABORATORY SET UP
Figure #3

in an experiment alone or with another person. After this, the subject was told the experiment was over, debriefed, thanked and allowed to leave.

In the together condition, confederate behavior was predetermined and consistent: he was told to be apathetic; that is, he was not to initiate conversation nor was he to be unsociable--just speak when spoken to.

Milgram (1970), in discussing the experience of living in a city, stated that " ... in adapting to an overloaded social environment a willingness to become involved with those who have no personal claim on one's time is less likely." We felt that if such were true that this should be an observable phenomenon in the together condition. Facial expression and eye contact were observed as indices of avoidance since they generally reflect one's willingness to engage in social contact. In addition to this, body position and seat selection (the distance of the seat selected from the confederate) allowed a further computation of avoidance behavior. Finally, the number of times subjects initiated conversation was used for the actual computation of the amount of interaction and the desire for social contact. In the alone position the number of seats away from the hypothetical seat of the confederate and observation of the other behavior was used as a basis of how all subjects would act alone.

Stress was analyzed by arbitrary observation standards of the subject's condition and by the two questionnaires which surveyed how comfortable the subject felt, both before and after the test. Here again the alone condition was used as the basis for comparison.

Results:

The amount of questionnaires returned by the suite residents was too minimal to establish an accurate evaluation of the attitudes of persons in this living situation and therefore offered no comparison between residence types for this aspect of the study. However, some conclusions may be arrived at pertaining to the attitudes of individuals of the corridor situation concerning their living conditions.

The majority of people responding to the questionnaire had chosen the dormitory type they were living in and had lived there for almost a full academic year.

When asked for a description of their relationship with their immediate neighbors, most seemed to define their neighbors as only social acquaintances. The second most popular attitude was that of acknowledgement or recognition by appearance only, without knowledge of their names. More people had absolutely no relationship with their immediate neighbors than had an 'intimate' or close relationship.

When asked about their attitudes about the social opportunities created by their living situation most people felt that there was adequate opportunity but only occasionally did they participate in these activities. The majority also expressed sentiments that at times there is an over-abundance of unwanted social stimuli. This overabundance of unwanted social stimuli is a stress factor we thought might be prevalent in both groups studied.

Overall there was a general acceptance of the living situation. People seemed to feel the density factor was as could be accepted in this

type of housing and an equal number of people felt crowded as did not. This brings up an interesting question--are we trained by our society to expect and adapt to this type of living situation? We felt, when asking the question concerning density, that many would feel crowded in the corridor arrangement. Again we have nothing to compare this against and therefore the responses are not truly conclusive in themselves.

The last area of questioning concerned privacy. More time was spent in one's own room than in any of the public areas offered. Persons expressed a general lack of privacy in the corridor type dorm and preferred to spend their solitary moments outside ("anywhere but ..." as one student put it) the building. When asked to put a numerical value to their feelings toward the amount and quality of privacy afforded them by their residence, answers were mostly in the less than satisfied or extremely dissatisfied range.

The lab situation results differed slightly from our predictions. As predicted, both residence types when in the alone condition expressed similar behavior modes: mild stress, nervousness, and boredom, but their mood and behavior varied when in the together condition; corridor residents, when placed with a confederate, experienced an increase in stress and nervousness, while the suite type residents showed a more relaxed and less nervous appearance. When asked to wait by themselves, corridor and suite residents, on the average, chose the same position. When asked to wait with another person (seated in seat 2 - see fig. 3) most people from the suite type dorms chose seats closer to the confederate (seat 3). In two instances, subjects from the corridor type dorm chose seats

farther from the confederate (seat 6). We predicted that there would be a large space difference between the seating position chosen by the corridor subjects and the position chosen by the suite subjects. This did not prove true. We also felt that the results we got would be different if we could have located the chairs all in one row--we feel that directly facing the mirror was more disconcerting to the subjects than sitting next to another person.

Based on observation, we believe corridor residents were more apt to avoid social contact than were suite residents. In nine out of fifteen situations of corridor resident and confederate there was no verbal communication. Subjects in these situations tended to look around the room and then stare straight ahead, appearing to be lost in their own world. In five corridor resident situations there was minimal verbal communication and this was generally initiated in the last two minutes of the time period (10 minutes). Subjects avoided eye contact when speaking to the other person and only in one instance was there verbal communication through most of the eight minutes. General uneasiness and unrest were expressed by all subjects.

With suite residents the situation was markedly different. In all situations verbal communication was instigated. In only one situation did the subject not begin speaking until the last few minutes of the period. In all situations the subjects verbally acknowledged the confederate. In three situations, all female subjects, conversation began with the acknowledgement and did not cease until the experiment was over.

The subjects expressed, both verbally and non-verbally, a greater degree of comfort and ease than did those subjects from the corridor type dorm.

In conclusion, we feel that the differing behavior of the subjects in the laboratory situation can be inferred to be a result of the living conditions and that this verifies our belief that the architectural design of our environment affects our social behavior. Therefore, architects should be aware of these effects and design man's environment with an attitude towards reducing the physical and psychological stresses of life.



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