ALTERNATIVE HOUSING DESIGNS THAT FACILITATE HUMAN ACTIVITY AT FOUR DENSITY SITUATIONS

by

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by

Todd Hamilton

ABSTRACT

This paper is concerned with people and the myriad of human activities which center about the dwelling and extend into the larger context of the neighborhood. Recently, much research has been devoted toward examining methodologies which adequately specify to the designer the particular needs of his client groups. Underlying such research in design methodologies is the assumption that much of the housing that fails to satisfy people is due to faulty or insufficient information at the onset of the design process. Many of the environments towards which designers most often aspire are those which were not initially planned in entirety, but grew spontaneously over time.

In order, somehow, to meet expected volumes of housing of satisfactory quality, methodologies must be surfaced to extract positive attributes from past and present local living environments. This paper provides an initial framework for assessing how present and past environments facilitate and/or inhibit the daily activities of individuals or groups within contemporary American culture. The task of the building industry should be to provide quality as well as quantity in housing. This paper recognizes the design profession in its contemporary role as a minor member of the housing team. However, the architect, in particular as a part of the design profession, must concern himself with the quality of life able to be supported within the housing to which he contributes.

I have chosen six human activity/setting relationships to review in four residential density situations. The choice of these six is due to personal interest and limited time.

1. Residential neighborhoods
2. Mother/child relationship within the home
3. Child development/play/and neighborhoods
4. The elderly/disabled/and neighborhoods
5. Neighborhood activities and open space
6. The interface between the home and the neighborhood

As the list of activity/setting relationships is open-ended, other, perhaps less obvious relationships in varying degrees of importance, need also to be reviewed. Most importantly, the activity/setting relationship is the method or framework to assess attributes in housing at all density situations. Following the discussion of each of the above relationships, drawings and charts sum up particular housing design or policy implications peculiar to that relationship. Included in these discussions is the association of visual information in the drawings with a text of documented social and psychological evidence of human needs.

The drawings which appear to be specific are, in effect, projected situations on hypothetical sites representing each of the four prevalent housing density situations. The underlying assumption is that most housing at any scale or density falls into general prototypical organizations which become identifiable and comparable with respect to land coverage, population density, and unit density. These prototypes are represented diagramatically as A,B,C,D and are presented throughout the paper as they apply to each activity discussed.

My attempt is to describe each of these six activity/setting relationships both graphically in new housing and with photographs of existing situations. I am conscious that the drawings project strong images about how I believe people might live. I am further aware that some readers might regard my images as narrow, overly subjective. In response to this, I can only suggest to them that they discover for themselves positive activity/setting relationships in existing neighborhoods and housing. I present the drawings: A/1, B/1, C/1 and D/1 as one alternative to obvious deficiencies and missed opportunities which appear to me again and again in mass produced housing.

The author recognizes that in addition to the spatial determinants of quality treated here, there are many broader issues involved such as minimal and optimal standards for acoustic isolation, mechanical systems, obsolescence, durability, etc. A tangential concern is the possible impacts that the material presented here might have upon housing policy and production within both the private and public sectors. It is hoped that the framework presented in this paper about people and their daily activities illustrates how little we know and how much needs to be understood in coordinating human activity and design in housing.

Name: John R. Myer
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ACKNOWLEDGEMENTS

I first thank all those anonymous people out there in the real world. Without them and their milieu of daily activities, it would be impossible to discuss housing and its bearing on people's ability to perform.

I next thank my advisors, John Myer and Bob Slattery, who have patiently scanned reams of text, much of which initially wasn't clear to them or me, but somehow seemed worthy discussing. They have persistently encouraged me to toughen up the text and clarify ideas. My hope is that this paper might influence their thinking about housing as they also are in the envious position of building buildings. I thank Julian Beinart, who meticulously scrutinized the draft and helped me to talk openly about ideas and sharpen them in the text.

Lastly, I thank Peggy Fox, who shared her insights into particular groups in the culture and their problems in housing. She spent countless hours editing my thoughts and translating them in a fashion that allowed others besides architects to understand their significance.

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CHAPTER I: INTRODUCTION

1.1. Shelter

The dwelling unit is that place where people live as individuals and as a structured group. Traditionally, this group was represented by the social unit, family, living in relative harmony in a place called house. The dwelling was house, not home. Home became the social atmosphere in which its members performed simultaneously both as individuals and collectively, as groups. Family was that home structure which brought about the interplay of grandmother, father, mother, sons and daughters. Central to home was a milieu of tasks and obligations, some pleasurable, others tediously domestic. Most importantly, home was where man kept his family and his possessions.

The concept of home as a social framework and house as the physical shelter hasn't changed radically over time. The social unit of family is slowly changing from the adult-child-grandchild hierarchy of the extended family tradition to include a number of adults and children from several nuclear families. The quality of house which shelters changing life styles and roles has only recently been re-examined. The impetus for this re-examination stems largely from the fact that much of the housing built for the masses by the housing industry in this century was found to be unsatisfactory.* One's identity or concern with his local environment or home involves numer-

* This is the author's consensus which developed gradually over several years of looking at housing and from formal education. People's dislike and consequential misuse of mass housing is blantantly obvious in the 1930 housing "projects" in every American city.

ous factors far beyond the physical arrangement of his home. Factors like neighborhood image (due to location), ownership vs. rental, mobility vs. stability, etc. will be discussed later. This paper is primarily concerned with the overall quality of interaction between desired residential activities and the physical settings available to facilitate these activities in the neighborhood.

1.2. Shelter as a Consumer Product

Man's attachment to where he lives is influenced by the control over and interaction of himself and his family with that place. This range of interaction is determined in part by his role as a tenant, owner, or squatter. The degree to which one affects and is able to invest a part of himself in his dwelling place is also directly related to how he feels about living there. Unlike man's ability to build shelter for his family with his own hands a century ago, today's opportunities for him to affect his house are largely cosmetic. Consequently, for most families as consumers in the housing industry, the degree of interaction with their living place is minimalized.

The house as a consumer product provides no mechanisms for involvement by the family or individual in terms of its design or its construction. Consumer involvement or interaction should mean the opportunity to choose between an appropriately broad range of housing choices, to influence decisions involving size, location of rooms, textures, materials, flexibility, etc. or to contribute to the actual building of the house. The question is how can the profit-making in-

terests of a complex industry like housing best allow manipulation by client groups both before and during the process of construction?

> A final reason that the impact of physical housing may tend currently to be understood has to do with the stage of sophistication of research into housing. The research that is available...is partial and requires to be pieced together. A conception has yet to be developed that sees man in relation to his physical environment. Until such a scheme is developed, and research adapted to it, we shall not fully perceive the relationship of man to shelter. Meanwhile, we shall build houses.[1]

1.3. Description of Biases

In the course of any research where strong commitments and interests are attached, one enters with basic preconceived values or biases. In this paper certain underlying concepts are present in varying degrees in the discussion of each activity/setting relationship. At this point an explanation of these concepts, in terms of their implications for activity/setting relationships in future housing, is worth looking at. The author's biases are loosely organized under three main variables which are then defined; no hierarchy is implied by their order, nor are they mutually exclusive.

The first variable is diversity/richness in residential neighborhoods. Richness has, of course, different connotations to different people. I wish to use the word with reference to physical form and human activities. Two example will illustrate this notion. Both are non-residential, but in the local sense are part of the context of neighborhood. Take, for example, any familiar place, preferably public, in which numerous activities coexist in and around physical

form or definition. A heavily traveled city street comes to mind:

> Cars race madly from one traffic signal to the next leaving trails of beeping horns, flashing lights, and an occasional shout from one car to another. Pedestrians scurry along, weaving in and out of a maze of street signs, pigeons and paper venders. A beggar calls out, a child screams, it begins to rain, people scurry along. The sidewalk becomes a microcosm of the street, ups and downs, stops and starts along the wall of shop windows brilliantly displaying anything imaginable.[2]

I see the above setting as one which is complex to the pedestrian in that he is unable to comprehend its entirety as an object from some external vantage point. In this example, one's understanding of richness involves daily kinetic experiences unfolding only to those who have the patience and ability to see and screen out undesirable stimuli. Photo 1 represents that kind of place.

In a second example, the physical images of the European models, the hill town, the piazza life, the canals...come to mind.[3] That place where one rubs shoulders with others and his surroundings rather than being hermetically sealed from them by car. These classics are acceptable if seen within the historical, socio-economic, political contexts in which they evolved over time. The duplication of rich form alone, as a prototype, devoid of cultural idiosyncrasies, political content, or popular acceptance is wrong. Some American cities have become blinded to the inaneness of this duplication.*

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*Recent American examples of this duplication are:
Copley Sq. Plaza, Boston, Mass.
Government Center Plaza, Boston, Mass.
Allegheny Center Plaza, Pittsburgh, Pa.
State University of New York, Albany, New York

Photo 1. Familiar American Street Scene

Diversity/richness, then, is physical form representing big to little, simple to complex, rough to smooth, identifiable to indiscernible. One's experience with a place that is strongly suggestive of richness, either internally or externally, can only be piecemeal on the first glance. For example, a place such as this comes to mind: A mysterious quality, maybe charm, invites you to walk around, leave and return again some day. My dislike for much of the built housing is the familiar "form for form's sake." Imagine a designer whose sensitivity allows him to more consciously form housing from the activity needs of his client groups.

With respect to housing, diversity/richness will develop in such a way presenting a wide range of spatial and functional compositions. Large, grandiose formal spaces will always exist as will quaint, womb-like places habitable by one or two people. However, within these extremes lie innumerable possibilities yet to be explored. My bias about diversity/richness is evident in most of the descriptions of activity/settings in this paper: we must provide the framework for spatial range in terms of use, form, image and participation whenever appropriate in housing.

A second variable used to discuss the activity/setting groups is what is popularly called plurality. Design decisions at any scale are made with reference to human use. Man and his daily activities become the reference. Subsequently, there exists a vocabulary of recognizable objects in any city fulfilling particular human uses or functions.

Take this simple example. People like to sit outdoors; we provide benches. Thus, the human action is to sit and bench is the word used to describe how we accomodate the need for sitting. If people use the bench then a match occurs between the anticipated acitivity and the form for that activity. Obviously, experience tells us this. However, if the designer's sense about how, why or where people need places to sit fails, then a mismatch occurs. Benches appear and no one uses them. A mismatch occurs between the product of a design process and the other part of reality. On a larger scale, we find similar thinking has given us plazas for people, institutionalized playgrounds (for children), streets (for cars only), etc. I define plurality with respect to physical form as that which is capable of accomodating not one, but three or four primary human activities.[4]

Plurality of use must respond simultaneously to many primary functions, not one use with numerous secondary uses. Thus, the simple example of the bench might be regarded in this way. The bench was conceived to respond solely to the primary function of sitting, but for reasons only known afterward, it went unused. A wall extending outward from a building happens to provide a horizontal surface on which to sit as well as serving as a planter, supporting a safety lamp and extending vertically becoming a column. It becomes difficult to discern which of the above uses is most important or primary.

Another example of plurality of use or activity focuses on large structures such as theatres, churches, lecture auditoriums, cinemas, etc. Those large volumes for mass audiences usually directly focus

on a point such as a screen or an alter. Essentially, the diagram of each of these places is the same. Each is directional, each is used for only a few hours of the day on a weekly or daily schedule. Each is present in the community acting as a physical shell for social interactions of those sharing similar beliefs, interests, or tastes. Despite different cosmetic facades, why then the redundancy of form? The answer, of course, goes beyond my simplistic analysis of similar spatial and directional needs. (We seek that redundancy in architecture which houses the theater, the church, the cinema, etc.). Any architecture, plural in conception, facilitating three or four diverse, yet similar, activities is acceptable by present standards. I can imagine this volume as a cinema featuring an x-rated film on Saturday night becoming a church a few hours later on Sunday morning.

The third variable, management control, implies an important concept - that of the administrative policy of any publicly used environment and the power to influence that policy. The controlling policy of both publicly and privately owned/operated environments must accomodate the behavioral/activity interests or patterns of those who use them. However, often in housing, management becomes the whim of a few unenlightened landlords whose interests differ greatly from those of tenants. More often than not, eviction and withholding rent are the only forceful means of persuasion used to bargain by landlords and tenants. Usually tenants, unable to influence the management's control over their environment, become resigned to such dictums as "Keep Off the Grass," "No Noise," etc. and to the infrequent,

if not unavailable, attention given to needed repairs. Tenants councils have begun to organize interests of tenents in order to acquire bargaining power and to legislate some of their interests, but the fact remains that there is still a disparity of interests between those who control (both economically and politically) housing at all densities, those who inhabit them and those of us who design them. Let's look at how those disparities might be overcome.

Initial organizational information is contingent on how the designer anticipates housing use and the extent to which he attempts to research, discuss and verify people's needs both as individuals and as groups. Unfortunately, a gap exists between those initial design decisions and what in actuality management permits over time. Classic examples of this gap are found in recent federally supported housing projects which were rather sensitively handled from a designer's standpoint, only to be later cluttered with No Trespassing signs, locked doors causing dead-end zones, vacant planters, misplaced sidewalks/pathways, inaccessible roofdecks, etc. Clearly the designer is wasting time in trying to accomodate human needs that later are not acceptable to the management.

Obviously the disparity of interests among managers, inhabitants and designers is a complex problem with no simple solution. Usually finances are a prime rationalization for the disparity. However, it seems possible to improve communications between planners, builders, real estate agents and future tenants/owners. The neccessary dialogue with emphasis on use possibilities must take place throughout the pro-

ject's planning stages and its completion. Also, managers must begin to review other ways in which tenant/owner cooperation may improve rather than retard control policy. These suggestions along with some sort of follow-up from the designer could help to open up ways in which activity interests may be better provided for. Funds should be available for such follow-up studies of a project's usage in order to provide badly needed information about people's responses to particular design specifics.

1.4. Federal Ventures into the Housing Industry

The President's Commission on Housing in its publication, A Decent Home, presents the statistics of the nation's housing needs for the next thirty years.[5] Their goal of 26 million new and rehabilitated units by 1978 is certainly beyond the capabilities of present production systems. Antiquated building techniques, as well as the many barriers like zoning, increasing union wages, high interest rates, high land cost, etc. complicate any sincere pursuit of that goal. The meeting of 3.5 billion housing starts annually is unobtainable by present standards. This figure represents a doubling of present output largely by the private sector. The commission's recommendations, for the most part, concentrate on the hardware of the industry. Some of their suggestions are summed up in this way:

1. Massive manpower training centers to provide adequate skilled labor. Such training centers will introduce a higher percentage of minority workers into the labor force. Responsibility for these centers must be shouldered by private housing producers as well as the federal government.

2. Associations of diverse corporations who possess the more sophisticated technologies and expertise to increase annual output. Legal mechanisms must facilitate these alliances.
3. Provisions for rent supplement for the lowest income groups.
4. Re-examination of the management policies of public housing.
5. State jurisdiction to prompt developers in the process of land acquisition hung up in local zoning and building ordinances.
6. Enactment of national zoning and enabling acts.
7. Availability of low interest home improvement loans.

The introduction of this information in the paper at this point is vital for two reasons. The first is to acquaint the reader with the magnitude of the problem of providing mass housing and secondly, to illustrate the intricacy of any process at the national level. The report urges Congressional support of private R & D efforts in building processes. HUD has allocated small amounts of money to corporate experimentation in cutting back unit distribution and erection schedules. In most cases, however, housing producers operate in a seller's market and gear themselves accordingly. Little incentive exists to innovate or deviate from consumer surveys. This has been mentioned previously.

The disparity between how the housing industry anticipates use and how, in fact, things are used widens each year. Private industry devotes little of its R & D efforts into qualitative analysis of its product, the house. Most of their research centers around new technologies, higher efficiencies, increased production and distribution,

greater standardization; all concerned with quantitative growth.[6] It seems those codes or standards we adhere to must be re-examined in light of how people have used similar environments in the past. In particular, codes like the FHA's minimal property standards clearly reinforce the point of obsolete standards still being applied today. One's ability to finance any "package" in housing through HUD is contingent upon the scheme's adherence to FHA M.P.S. stipulations. Programs like Title II 235/236 and others provide low interest mortgages to private developers to entice them away from luxury housing and into moderate or low income housing.[7] Obviously, more risks are involved with the latter: HUD provides the financial impetus by minimizing the risks. Unfortunately, the result of many built "packages" adhering to M.P.S. code are "minimal," barely adequate living environments. There exists, of course, pro and con arguments about the ability of federal programs to provide adequate housing for all people. My purpose here is to give the reader a glimpse at why much of this federally supported/subsidized housing often looks the same.

Antiquated processes are still being used to produce dwellings similar to those of our grandparents. The housing industry runs diametrically opposed to such entrenched American myths that progress is good, that "to have the future in one's bones is important." Instead, the industry produces housing which are stylized, giving buyers the needed image of belonging to a period in history even if it is one in the past.

> Within the last ten years there have been less than 350 architects who have been or are now involved in research to some degree...somewhat less than 1% of the registered architects in this country are active in research. The 49 agencies (universities, centers, institutes) covered list research projects over the last eight years involving just over $8 million.[8]

Proponents of the presidential commissions findings advocate the nationalization of the housing industry in the same way that the federal government regulates NASA or the AEC. Inherent in this suggestion is the establishment of new priorities to provide all citizens with a decent home. Under federal auspices, one would expect large sums of money to be pumped into research as has been the case in the aircraft and space industries. Many sophisticated community service systems exist but await implementation in new housing development and communities which satisfy the anticipated demands of projected population as well as current demands. Then, of course, the expanded housing industry would envelop related technologies ranging from sanitary waste disposal/compaction to movement systems such as goods and utility distribution.

> While working on Habitat I became increasingly aware of a basic shortcoming of the building industry. Its whole tradition is to build with what materials happen to be available. Every other industry defines its requirements and then develops the material best suited to the problem. They don't design an aircraft with steel just because they happen to have steel handy; if they come to the conclusion that they need a metal that's lighter, then they perfect the manufacturing of aluminum. When they discover that aluminum is going to melt at high supersonic speeds, they develop a material that has a greater resistance to hear, like titanium. Dupont, for example, came to the conclusion through market research that world resources of natural

> leather would be highly marketable. They poured something like twenty-five million dollars over a period of several years to develop Corfam. Rocket nose-cones required a material that could resist very high temperatures and to that criterion Corning Glass developed Pyroceram.[9]

It is unfortunate that the housing industry cannot develop materials or processes like other industries. From the recommendations of the Kaiser Commission and that research presently federally subsidized, it becomes clear that little attention has been given to the software side of the housing industry, that is, the side concerned with the quality of life in housing . Issues like the correlation between emerging life styles and unit layouts are seldom examined, the impact of family development with physical growth possibilities, the responsivity of new housing to existing social patterns in older neighborhoods. The issues are complex with somewhat ambiguous definitions making them difficult to deal with. As we have seen, references like FHA design standards were conceived decades ago and haven't been updated since. In most cases, these standards bear little relation to the local site or microclimate, the peculiar racial or ethnic trends, or the particular movement patterns.[10] These standards adversely tend to homogenize or destroy potential for uniqueness.

At present, only tenuous connections exist between what behavioral psychologists know of man's emotional and physical needs and the housing industry. Architects, as a dying breed in this industry, have done little to encourage information exchange among themselves, professional peers and allied professional workers. The wealth of information about

how man behaves in settings goes largely untapped, untranslated into any acceptable form vocabulary for the housing industry. Exceptions to this predicament stem from research efforts within architectural/ planning schools, "think tanks" like the Rand Corporation and World Future Society, and federal agencies like the National Bureau of Standards or the Department of National Resources and Community Affairs. Many of the findings from these two groups are not filtered into the product-oriented aspect of the housing industry for reasons too numerous to mention here.

1.6. Housing Density

The question of housing density is relative to the expected cultural norms in this society. Densities of up to 200 ppa in many of our largest American cities are minute compared to 2500 ppa in Hong Kong, yet we regard some of them as hostile, unbearably crowded places.[11] Academicians have long speculated as to why many of us either passionately love or vehemently hate our cities; there seems to be no middle ground. E.T. Hall surmises that if the American 'melting pot' myth is accepted, then we are a culture whose ancestory is largely Northern and Southern European.[12] The 'pot' becomes an assimilation of northern (monochromatic) tastes and lifestyles with the southern (polychromatic) Mediterranean culture. The former values individualism and privacy, while the latter Greek or Italian cultures flourish in denser, more communally oriented life (although this can only be accepted as a generalization).

While the measurement of density later described in this paper is complete and reasonably objective, it represents only one index of reference. One would need to look at other yardsticks like the optimal frequency of neighborhood contact, one's ability or choice to manipulate the interior of his unit, and maybe the relative nearness/farness of supportive facilities like shops, schools, and entertainment. The monotony of look-alike, regimented housing blocks has familiar problems. The anonymity of many federally built 'projects' has had a great impact on the way in which people use and relate to them. Beyond the obvious aesthetic considerations, diversity of housing types is essential to satisfy the variety of needs centering on age, income, and family composition. A project with a variety of types might be able to accomodate and encourage a mixing of populations which should be one of the social objectives of large scale housing development.[13] Ideally, we could build housing where the elderly, student, young singles and developing families could be mixed.

> The Greater London Council has recommended since 1965, that a well balanced project with mixed uses and a diversity of housing types should have a maximum net density of 200 ppa with 40% of the housing to be low rise at about 75 ppa for families with young children, and 60% of the housing to be hi-rise at about 150-200 ppa for childless couples and single people.[14]

Similar rigorous recommendations based on this wealth of research might be appropriately applied to both privately and publicly initiated housing in this country. Photo 2 illustrates how past environments often appear when mixing of densities are unplanned.

Photo 2. Bizarre situations are sometimes created when density situations overlap.

The implications and ways of mixing some of these groups mentioned above goes beyond the scope of this paper. It does, however, appear sad that our culture needs to "group" people as generalities in order to build places for them to live. Ideally, as architects, we wouldn't need to design housing for the elderly, student housing, low income housing, luxury housing...as separate entities, but understand how they need to be different from each other in terms of their use. We would need to know physical properties of attributes such as quietness or loudness, frequency of contact or lack thereof, openness vs. closeness, and a host of others. I suggest the working paper, Housing and User Needs, No. 1, June 1971, Urban Design Program, Harvard Graduate School of Design.

1.6. Method of Comparison

An explanation is needed as to how this paper compares activities within the density situations mentioned earlier in this chapter. An activity/setting relationship is the positive coupling of suitable spatial definition with human activity. The positiveness of this relationship centers on the ease with which the physical shell of both the house and neighborhood organizations allow people to perform their daily responsibilities. The significance of this relationship becomes more evident to the reader when trying to isolate activities from their physical context or reference. It is difficult; much of what we do in a sense is grounded to the local environment. In the context of this paper, the local environment is housing and the range of activities that its inhabitants perform.

This paper is structured to investigate these activity/setting relationships:

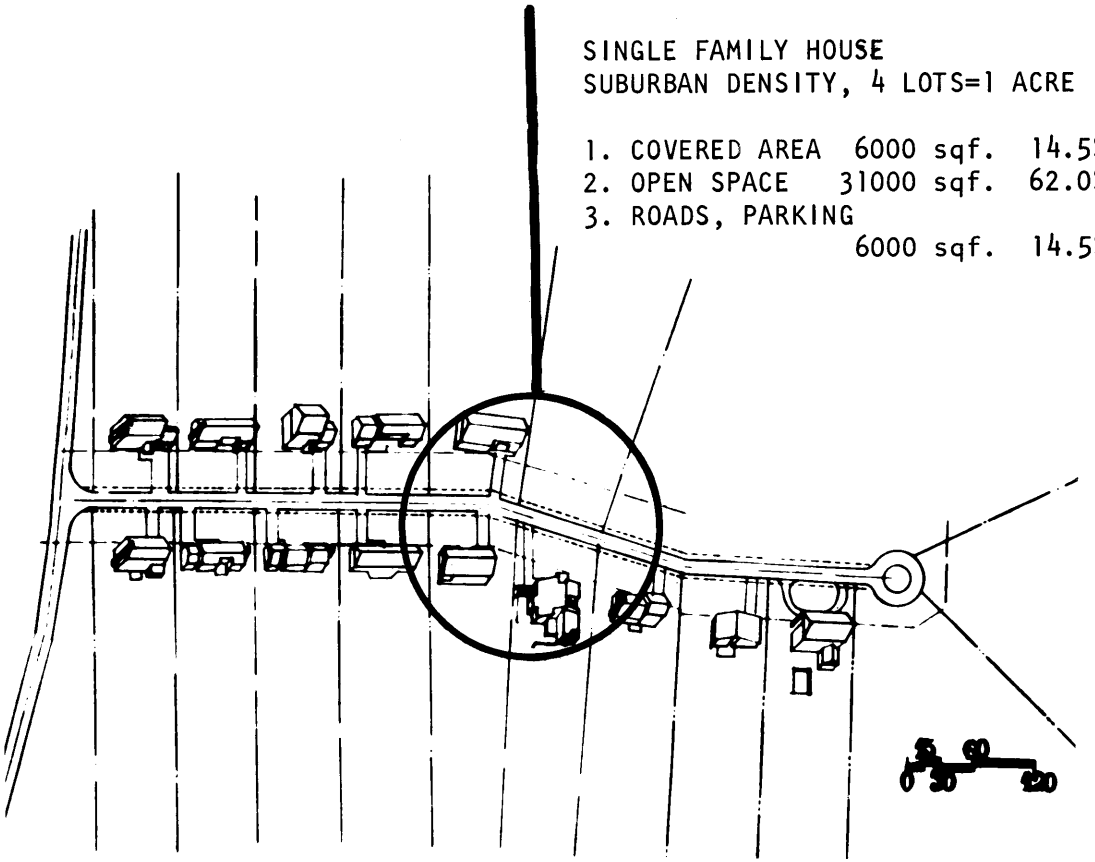
1. Collective activity in residential neighborhoods
2. Mother/child relationships within the home
3. Child development/play/and neighborhoods
4. The elderly/disabled/and neighborhoods
5. Neighborhood activities and open space
6. The interface between public and private zones

I believe one cannot comfortably plan housing at any scale until he develops a strong feeling about what his clients do and how they actually go about using their environment. One can design housing which, in fact, is designed specifically around appropriate relationships; they become the program. For example, situations often arise where the designer needs to anticipate activity at all levels simply to start designing. His clients are "typed" socially, racially and economically. Since dialogue with the projects' users is impossible, past experience and common sense heavily influence the working method. It is in these situations when information is limited, that the framework for the associative relationships discussed in this paper is vital. The six relationships mentioned previously are certainly not exclusive and overlap considerably in their descriptions, but they represent a way of looking at physical environments and the psychological needs of people dwelling in them. Basically, each chapter of the paper deals with one of the above activity/setting relationships ; however, the last chapter combines a discussion of the 5th and 6th relationships.

While the housing industry in general produces a moderate variety of "types" in all four densities, the prototypical organizations of densities A and B are similar while densities C and D are horizontal organizations with vertical shafts of stairs and elevators. It became increasingly difficult to describe these relationships as pieces of larger housing organizations by referring them solely to the prototypes in the drawings on pages 30-34. The relationships I found most valuable and worth duplicating consistently came from older residential environments. In particular, much of the recent housing at densities C and D in this country contained few positive actvity/setting relationships, at least on the surface. Many of my examples at these densities came from British and western Europe housing, much of which was built after the second world war. The housing, while employing fairly sophisticated processes of production and assemblage, reflected a better understanding of how people live at the unit and neighborhood scales. My observations were confirmed by research in many of these instances. The European references appear largely in Chapter 4.

The description of each relationship is graphically illustrated by a series of drawings for each density. As stated earlier, the drawings appear to be specific, but are intended to represent images on hypothetical sites. They should always be seen as pieces of some larger organization within a community. Consistent within these density situations is a home for a family of four people. The unit/home/apartment is about 1400 sq. ft. consisting of three bedrooms, kitchen,

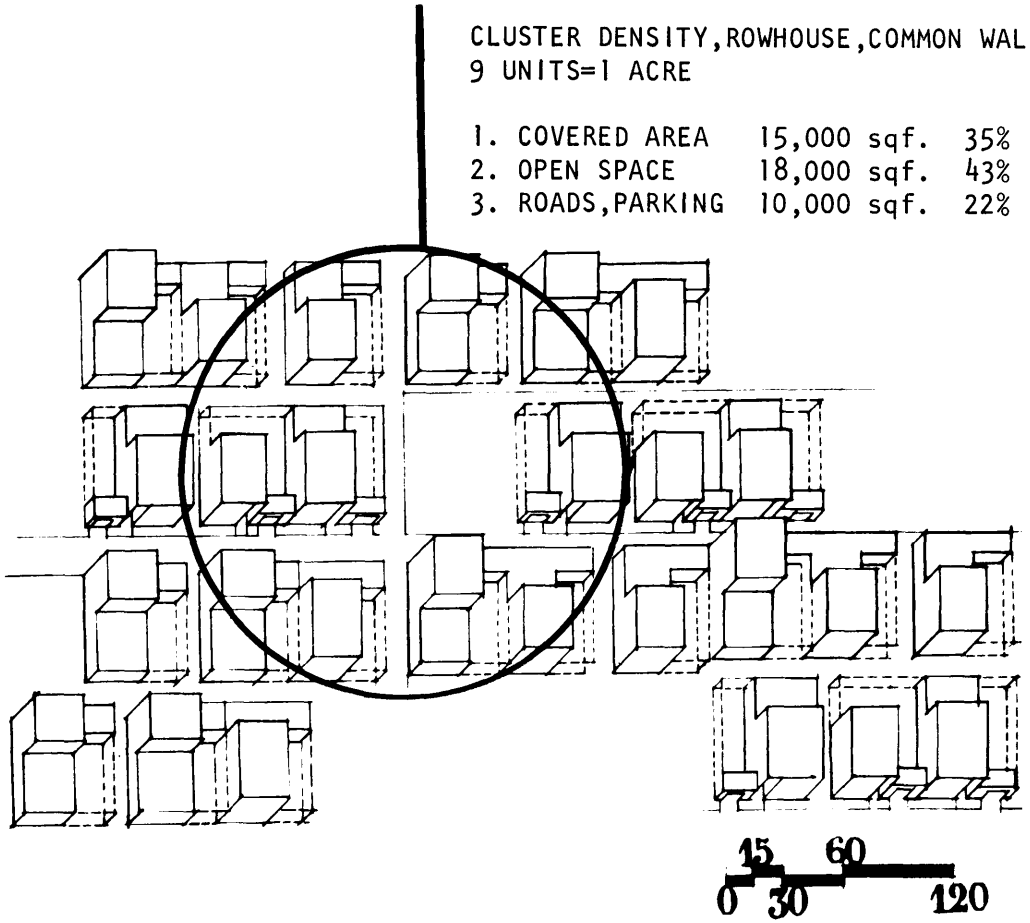
baths, living-room spaces and private outdoor space. The units are either leased or owner-occupied. Each family is assumed to own at least one car. A description of the density situations follows in the next four pages including a prototype drawing of each density: A,B,C, and D.



A

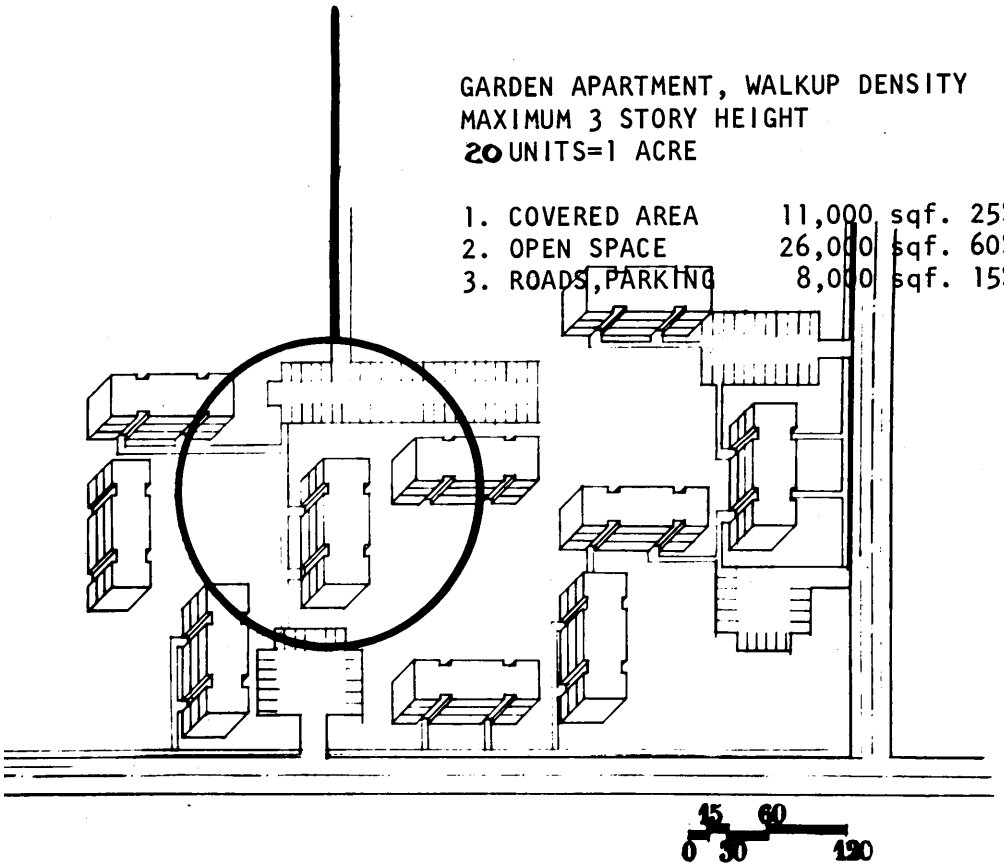
Description of density A

Density A discusses the seemingly endless pattern of single family houses we find in suburbia around every American city. The drawings, A/],A/2...A/6 illustrate a particular house which was designed by the author and built in a suburb in Western Pennsylvania. The organization of this house and its relationship to the context of neighborhood make it suitable for this paper. Unlike most familar suburban prototypes, the design of the house takes advantage of the views and privacy offered by the site. The site is a 1/4 lot located on a cul-de-sac road. The average density is 16 ppa.



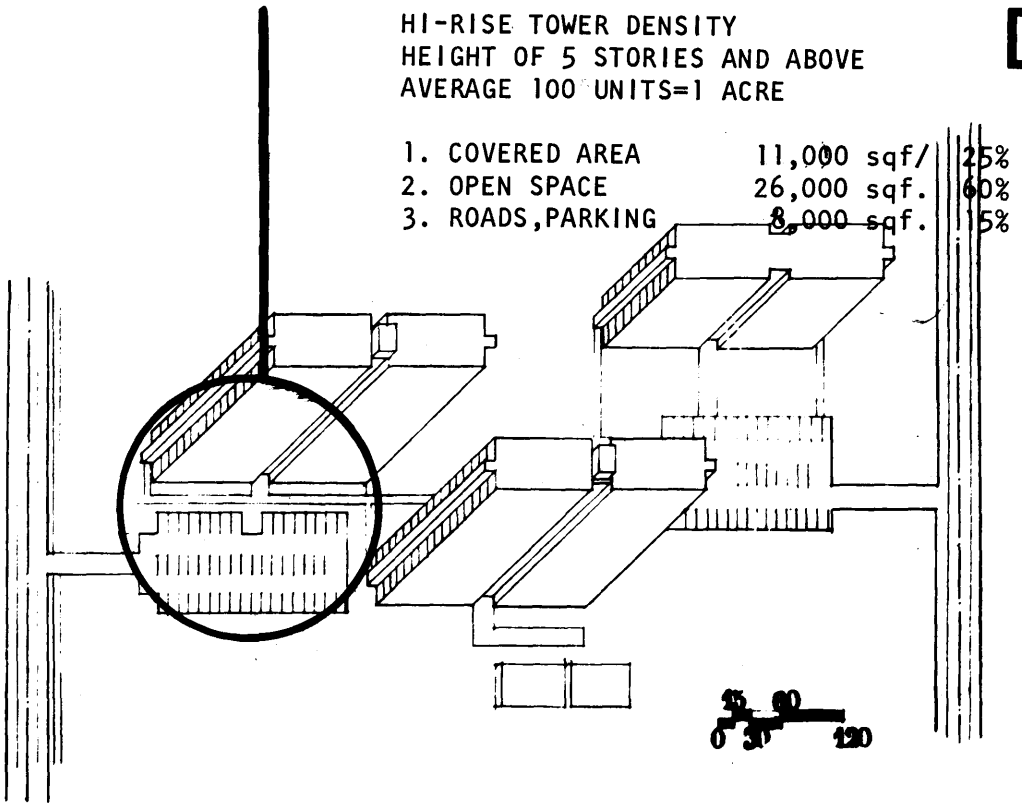
Description of Density B

Density B discusses the grouping of single family houses which are arranged in manners other than the suburban pattern of density A. In general, housing at this density of 12-15 units/acre or 40-50 ppa, is found in the form of row housing, planned unit development, or clustering. The units are either owner occupied or rented/leased. In general, adjacent to each unit is a private garden and parking stall. Additional open space is shared by all the units. A major fault of this housing is its inflexibility to expand or contract spatially. That is to say, the owner cannot add a room or subtract unuseable space. In most cases, the ability to grow can only occur in a manner parallel to the fire/masonry wall which separates adjacent units.



Description of density C

Density C discusses the pattern of garden apartment buildings which ring most American cities and have grown in number considerably over the past decade. In general, the apartments are ordered in three or four stories and contain no elevator. The building blocks are organized around the required parking and open space on the site. Again, in general, no provision at density C is made by the developer to accommodate any mini social, religious, or commercial institutions on the site. The garden apartments offer no physical connection to the larger notion of neighborhood; tenants depend largely on the car or public transit for this connection. The density is approximately 20 units/acre and 60 ppa.



Description of Density D

Density D illustrates housing densities currently found in American cities in the form of hi-rises. The prototype is a horizontal organization of apartments, either owned or leased, whose circulation to the ground plane is the elevator. Differences in the organization generally only occur at public spaces, particularly on the roof/common rooms and the lobby/parking areas. Any mixed use occurs only at the lobby level, and most often is of similar families at developing stages. In general, the housing at this scale ranging from low income to luxury is organized in the same manner; the differences occur cosmetically in materials, presence of amenities like swimming pools, and and in location. Drawings D/1, D/2,...D/6 illustrate hi-rise housing at this horizontal organization for stories above five. All exterior space on the site is shared, devoted to parking or required open space.

Footnotes

[1]Alvin L. Schorr, Slums and Social Insecurity, Research Report No. 1, Division of Research and Statistics, U.S. Government Printing Office. 1963, pg. 32.

[2]The description is one by the author and reflects what one might witness along any commercial street. One's adjustment to the abundance of stimuli is largely dependent on his ability to screen out parts of it.

[3]What immediately comes to mind are the familiar Greek islands like Mykonos. Canals like those entwinced in Venice or those following geometric patterns as in Amsterdam. Italian piazzas like Sienna or Torino offer qualities of richness and diversity.

[4]The American College Dictionary defines plurality as that which is more than half the whole or the state of large numbers or a multitude.

[5]Kaiser Commission Report on Housing, A Decent Home, U.S. Government Printing Office, 1968.

[6]Information source in student reports, M.I.T. Urban Design spring studio, 1970, focusing on industrialized housing issues.

[7]Kaiser Commission Report on Housing, A Decent Home, U.S. Government Printing Office, 1968.

[8]Benjamin H. Evans, AIA Research Survey, Washington 1965. The little amount of research within the architectural profession is indicative of national trends for expenditures relating to R & D in the housing industry.

1968 Federal Budget Expenditures in R & D:

Dept. of Transportation	$294 million
Dept. of H.E.W.	$1331 million
N.A.S.A.	$4625 million
Dept. of Agriculture	$281 million
*Dept. of Housing and Urban Development	$7 million
Dept. of Defense	$7796 million

from Urban America, Inc. Publication, The Ill Housed.

*It is obvious where priorities lie and why such little research is done in the housing industry and subsidized by the federal government.

[9]Moshe Safdie, Beyond Habitat, M.I.T. Press, 1970, Cambridge, Mass., p. 104.

[10]Federal Housing Authority, Minimal Property Standards for Multifamily Development, Department of Housing and Urban Development.

[11]David Parry, Fritz Stuber, "High Density Living," Connection, Harvard GSD, Fall 1968-Winter 1969, p. 17.

[12]E.T. Hall, "Human Adaptibility to High Density," Ekistics, October 1965, pp. 191-193.

[13]David Parry, Fritz Stuber, op.cit., p. 19.

[14]Ministry of Housing and Local Government, "The Densities of Residential Areas," Planning Bulletin, Great Britain, 1962.

CHAPTER II: COLLECTIVE ACTIVITIES IN RESIDENTIAL NEIGHBORHOODS

The first chapter of this paper dealt with a number of issues worth mentioning again. An effort was made to acquaint the reader with an overview of the housing industry. First, shelter was discussed as a "piece" of the local environment which could fundamentally change over time through some action by tenants. The paper then presented three variables, diversity/richness, plurality, and management as favorable amenities for activity/setting relationships in all housing. Thirdly, the chapter looked at recent federal efforts in housing and current research. Finally, a method of comparison was described which allows one to seek out consistencies in activity and physical settings applicable to various density situations.

This chapter briefly looks at the traditional and changing importance of residential groupings in neighborhoods. We shall review a recent history of the neighborhood as a social structure and how it might change based upon current trends. It is necessary to clearly see the neighborhood as a vehicle offering choice and potential for growth beyond what we presently know. Following this review, drawings A/1, B/1, C/1 and D/1 are presented as an interpretation of the information in chapter 1.6. It is imperative that the reader view the drawings as representative of housing types within a neighborhood context. They must be seen in this manner. Neighborhoods are complex beasts, and my interest in housing quality is only part of that complexity. Highways, commercial services, topography, historical context, etc. all add up to what we recognize as neighborhoods.

The reader needs to view the neighborhood as a nesting place for many relationships nutured outside the home.

2.1. Definition of Residential Neighborhoods

After the family unit, the neighborhood is the next important distinguishable level of residential organization. Endless volumes of planning literature define the concept of neighborhood in physical, social, economical and political terms. Most often, the components of any neighborhood are clear to the inhabitants but ambiguous to those outside. The politician looks at the neighborhood in terms of potential votes at election time, while a child sees his limited play area as the neighborhood; both perceive the neighborhood according to his needs. Suzanne Keller, a sociologist, strongly interested in a concise definition of neighborhood for the design professions, describes the neighborhood as: a distinct territorial group explicit by its physical, geographical and social characteristics of the inhabitants.[1] Let's look at the ways in which people "read" neighborhoods.

We learn at a young age to recognize and judge the social climate of any place by the visual clues it presents. These clues are reinforced by our formal education and family background in such a way that we form very strong associations between the physical clues of a neighborhood setting and our mental sets of expectations of how people live and behave there. For example, boarded up storefronts, sidewalks strewn with garbage, a broken wine bottle, background jazz, a few black and brown faces, are all part of an image that may represent home to us if we live there or "slum" if we don't. When we are able

to recognize and define a type of neighborhood, preconditioned associations come to mind concerning the quality of life of the people. It becomes easy for us to be able to recognize at a glance "where we are" when we go into a neighborhood. Often there is a physical divider between neighborhoods such as a street or railroad track; something real which becomes symbolic of the differences. We may even joke about what we assume to be obvious characteristics of a particular neighborhood. These physical clues give us a wealth of information about life in that neighborhood, but most importantly, whether we "belong" there or not. If neighborhoods divide people they also represent how people are divided from each other.

It is a cultural value that cities have both "good and bad" neighborhoods to live in. Most of us view the urban neighborhood as a place within the large context of the city; a place with physical, social and symbolic boundaries where streets, rivers, railroad tracks become social dividers. Historical and social traditions likewise allow people to view neighborhoods as distinctive units. Within these physical boundaries people live as individuals in houses on streets or blocks of the neighborhood. Herbert Gans says, "A community must be seen in terms of what really happens in it, and how people feel about it, which may be irrespective of what it looks like." The fact that a variety of interests and personalities can coexist in some fashion gives a collective character to neighborhoods. I think we could agree that this "variety of interests and personalities" is a richness, a positive attribute of that place. As a result, we have skid rows, student ghet-

tos, rural villages, middle class suburbs, transient districts, etc. - all "neighborhoods" and identifiable by those people who live there.

Despite how neighborhoods appear, all in varying degrees nurture activity and provide physical shells for their development. In this paper, the material in Chapter 6 describes how a designer might treat those "leftover spaces" between building masses. The next section of this chapter shows how neighborhoods are changing as social and physical concepts.

2.2. Viability of the Neighborhood

Traditionally, planning standards regarded 5000-10,000 people as the ideal population of a neighborhood unit.[2] This number was needed to economically support transit systems, commercial services, and institutional facilities. To the planner this optimal number allowed people to function (i.e., to shop, to entertain, to use institutions like churches, schools, libraries) within their immediate community and yet retain an identity, a closeness, to particular neighborhoods. Obviously today with regional shopping centers, improved communication systems, and generally a higher standard of living for all, people's activities largely fall outside the confines of the neighborhood. In the past, many prime social networks existed within neighborhoods from the kinship of extended families to professional ties and shared cultural/religious experiences. Many people view this as a prime mechanism for meeting others. The neighborhood unit was essentially a protest against the way the city was forcing people to live. Ebenezer Howard saw the neighborhood unit as capable of the following:[3]

1. introducing physical order into fragmented urban chaos;
2. reintroducing local face-to-face contact among people;
3. encouragement of loyalties and attachments to the community; offsetting rising mobility;
4. stimulating the feelings of security, stability, rootedness.

In effect, the neighborhood unit was both a social and planning concept. I think what is most interesting about Howard's pioneer thoughts on planning are the questions of morality. It is implied that having "rootedness", loyalties, attachment to place, etc. is vital to community welfare. Today, some seventy years later, we find these terms no longer are applicable. We seem to value mobility, not strong attachment to place, we regard "rootedness" as inhibitive, and we see thousands of young people whose "loyalties" are no longer tied to existing institutions but to themselves and to a vision about how the world could be. Still, we find a rising social concern for community action.

Clifford mentions a sense of possibility or purpose on the neighborhood scale as a prime determinant of one's self-motivation.[4] People sense what possibilities do or could exist in their immediate locale. Under the generality of purpose lie other Victorian qualities of self which seem to surface - a sense of individual dignity or pride and personal concern for order amid chaos. What is being said, in effect, is that the neighborhood evokes particular positive vibrations which are "socially good." The neighborhood identity serves the psychological need of the individual and his immediate family to connect to a larger organization where he can have influence and control over its maintenance.

2.3. American Housing Density Preferences

Dr. Keller calls one who lives in a neighborhood a neighbor or a member of a number of overlapping social networks, each challenging or reinforcing one another. The neighbor maintains a close ring of contacts in the surrounding 20-30 houses of the neighborhood.[5] The degree of contact with these 20 families is limited, often ranging from activities such as borrowing something to the collective signing of a petition in the neighborhood's interest. The frequency of this contact can be correlated with its intensity. One's contact with an acquaintance is most often informal stemming from a meeting in the grocery store or parking lot. The importance of this contact is sometimes dependent upon the existence of some neighborhood issue or concern. Contact will occur at all levels to varying degrees and to a greater degree when facilities or spaces are available for such purposes.

Some differences between social classes exist in regard to the amount of neighborhood activity or social contact between neighbors. "Middle class individuals place relatively greater stress on sociability; upper class residents on the preservation of class codes and traditions and working class people on help in crisis."[6] The suburban individual in general tends to be more selective and personal in the choice of his friends.[7] A determinant of many neighborhoods is the degree to which any one family has the choice to be self-sufficient and autonomous or to be part of a larger neighborhood community.

A number of studies prove kinship to outweigh "neighboring" in certain communities. The extended family relationship proved to be the

prime social contacts for many while having only a limited number of other friends. One example is cited by Herbert Gans, verifying the strength of the extended family. A recently married young woman moved to the New Jersey suburbs with her husband leaving her family in Brooklyn. Her entire life was spent at home; she worked in the neighborhood; her social activities always included some of the vast number of brothers, sisters, cousins, aunts, grandparents also living in the area. The transition to the sparser suburb left her alone and bored during much of the day. Gans discovered the woman spent an average of forty five minutes on the phone each day speaking to her relatives in the city. Due to her previous narrow scope of friends outside the family in Brooklyn, she lacked the confidence and tact to meet other of different interests outside that world. Gans advocated reduced telephone rates for women in similar kinds of situations.[8]

The American preference for the single family house continues. According to a recent survey representing a cross section of social and income groups, all categories of family development responded favorably to the single family house (see Charts 1.A and 1.B).[9] Interestingly, both the young and elderly singles expressed the highest need for alternative housing types, notably apartments requiring little upkeep. Families with children, both those presently living in the city and those residing on the periphery, shared a desire for the single family house. Ninety percent of those groups whose income was greater than $15,000 expressed this desire. At the moment, little evidence supports any radical departure from the familiar suburban sprawl in the

Preference for Single-Family Homes
by Stage in Family Life Cycle

(all families)

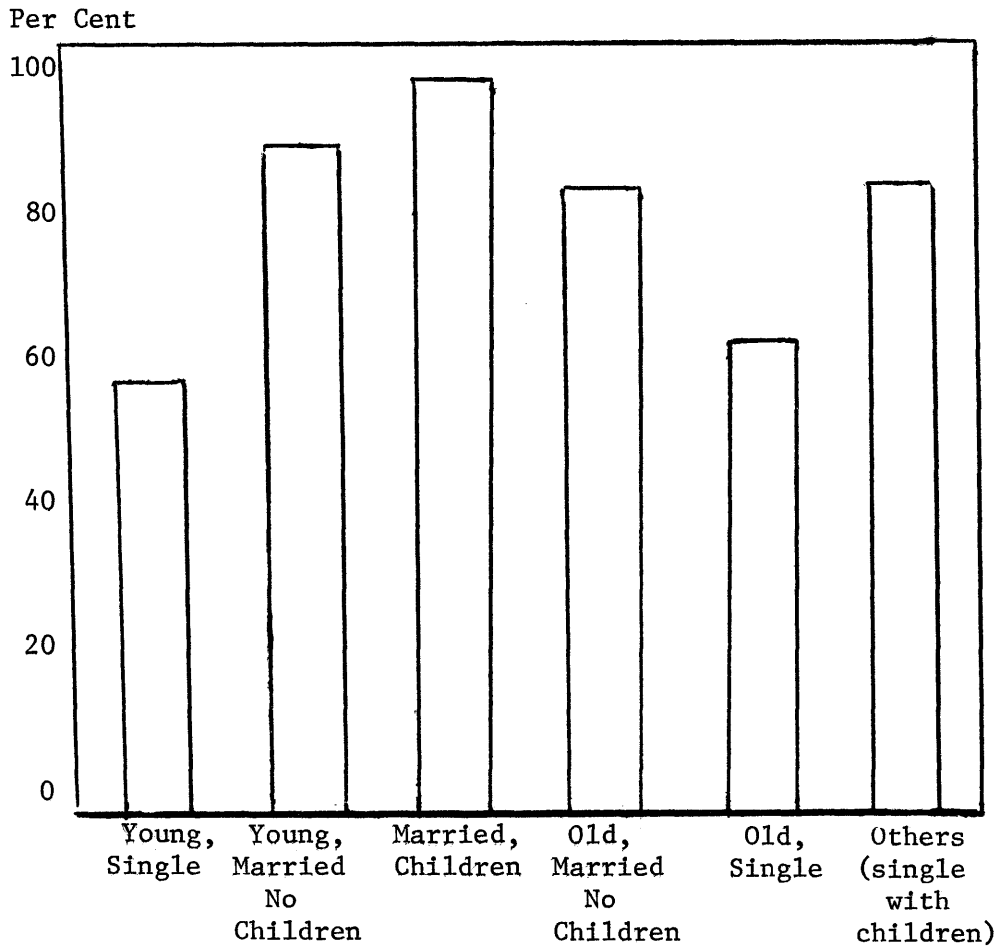


CHART 1.A

Type of Housing Now Occupied by Family Income

(percentage distribution of dwelling units)

Type of Housing Presently Occupied	Family Income: All	Under $2000	$2000 -2999	$3000 -3999	$4000 -4999	$5000 -5999	$6000 -6999	$7500 -9999	$10,000 -14,999	$15,000 and over
Single family house	69	41	48	42	65	67	74	78	84	90
Multiple family house	31	59	52	58	35	33	26	22	16	10
Two family house	12	22	10	21	51	15	13	10	2	6
Three-four family	4	6	*	10	2	4	3	6	1	2
Row house	1	11	6	6	4	4	1	*	2	*
Apartment building of five units or more	10	18	32	19	8	10	5	5	4	2
Apartment in partly commercial structure	2	2	4	2	6	*	4	1	2	*
TOTAL	100	100	100	100	100	100	100	100	100	100
Number of dwelling units	714	61	54	57	56	70	113	109	120	65

*Less than one-half of one per cent.

CHART 1.B

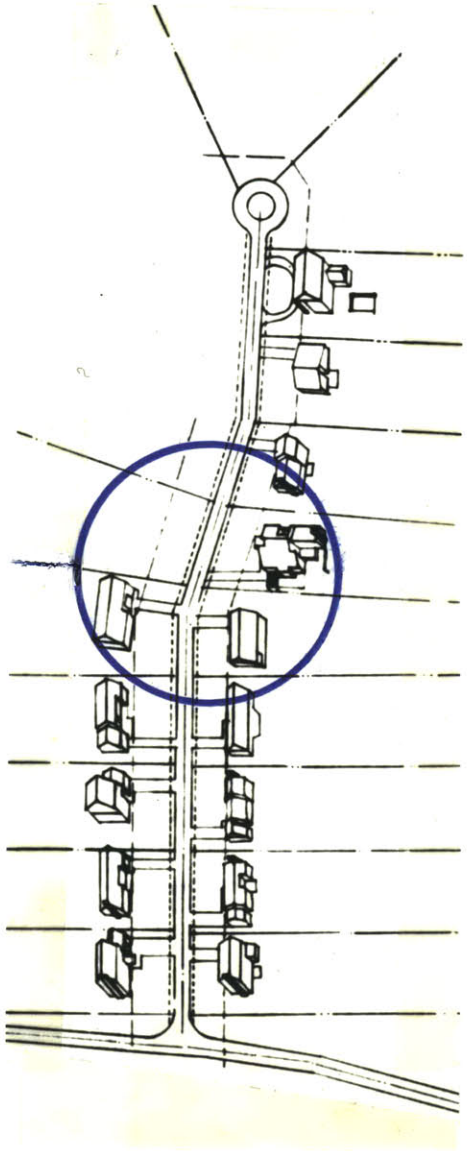
future. The sprawl, in effect, has become another American institution. The concern of this paper is to investigate alternative residential growth patterns, and illustrate why the current ones are so popular and how they might be incrementally improved. The next section of this chapter deals with design alternatives to the density situations presented in Chapter 1.

2.4. A Word About the Drawings

Following a potpourri of topics in this chapter ranging from what constitutes a neighborhood or clusters of dwellings to how we view and feel about existing neighborhoods, I need to introduce my drawings which interpret densities A,B,C, and D. The drawings A/1, B/1, C/1, and D/1 are the first of a series of drawings which illustrate the text in each chapter (or activity/setting relationship). For example, when discussing open space in chapter 6, I use drawings A/5, B/5, C/5, and D/5 as a method of examining the relationship of people and open space at the four density situations. The first set (1) of drawings in the following pages illustrate the constructable housing unit within a neighborhood context (immediate surrounding neighborhood or housing environment). An explanation of each density is also presented as it relates to the drawings in this chapter and those in the remaining chapters.

Everything shown in the drawings is buildable with respect to current building technologies and industrialized systems. The housing shown in A and B are what is popularly called "one-off building." That is to say, the building process takes place on the site using traditional structural systems of nominal parts and manual labor. Series

C and D drawings are of a higher density in terms of number of units/ acre and would probably rely on some industrialized building system to provide a quicker assemblage of parts. C/1 and D/1 show the combining of familiar precast concrete wall panels to lightweight linear frameworks. The drawings are a modest expansion of present building systems and should be seen as such by the reader. In a sense, they are an attempt at humanizing mass housing.



Density A Drawings

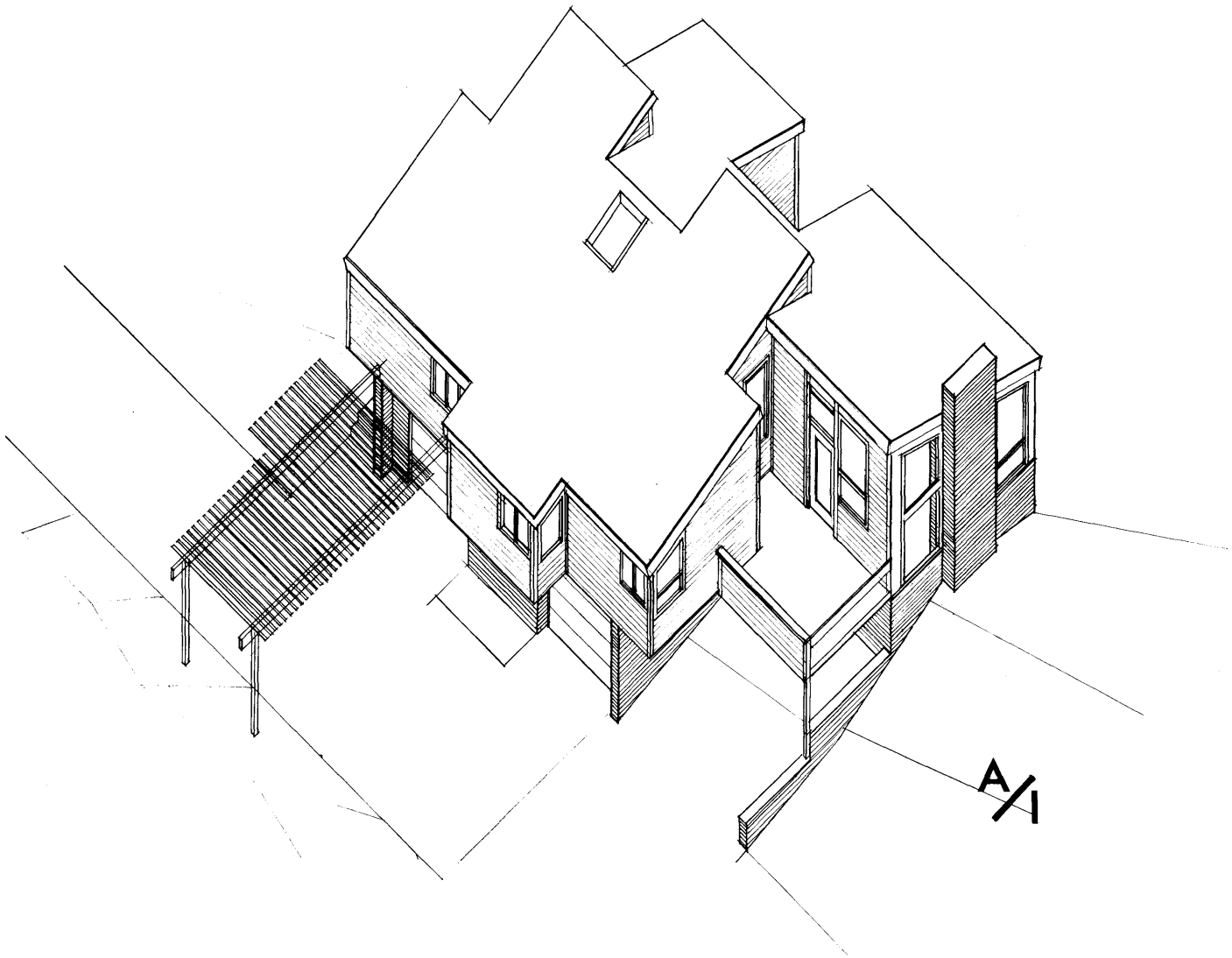
The single family house shown below acknowledges particular local site conditions and is planned to tie them with family activity. It does this in a manner that many suburban detached houses do not. The A series of drawings describe in detail how the house is an incremental improvement over many of its neighboring houses at this density.

A/1 Image of the house as an object

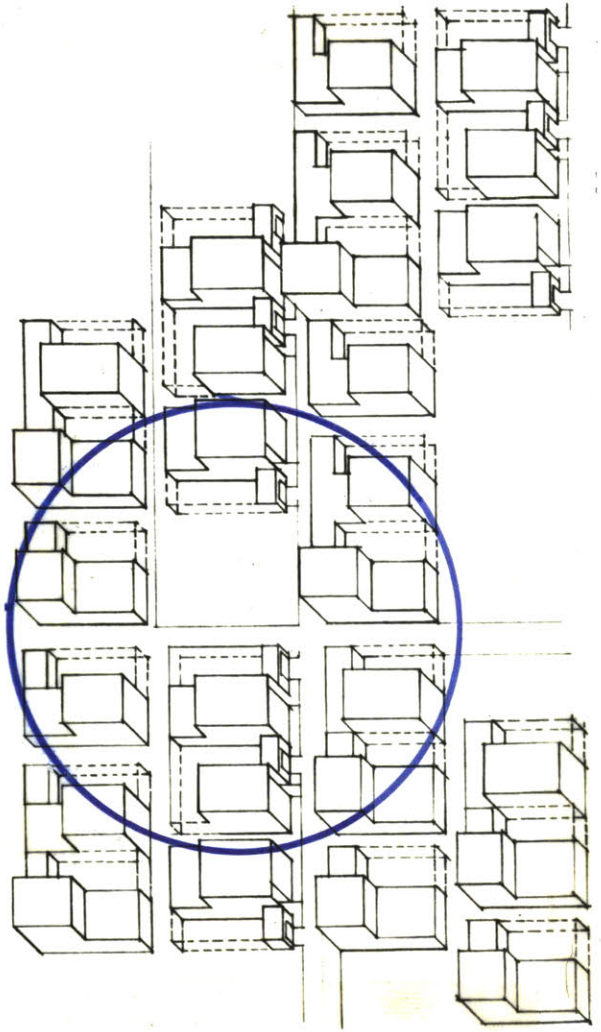
A/2 Proximity of living/food preparation areas to children's play spaces

A/5 Open space in the suburban neighborhood

A/6 Relationship of suburban house to outside activities and services



Drawing A/1 is the first of a series A/1...A/9 describing the single family house in suburbia of density A



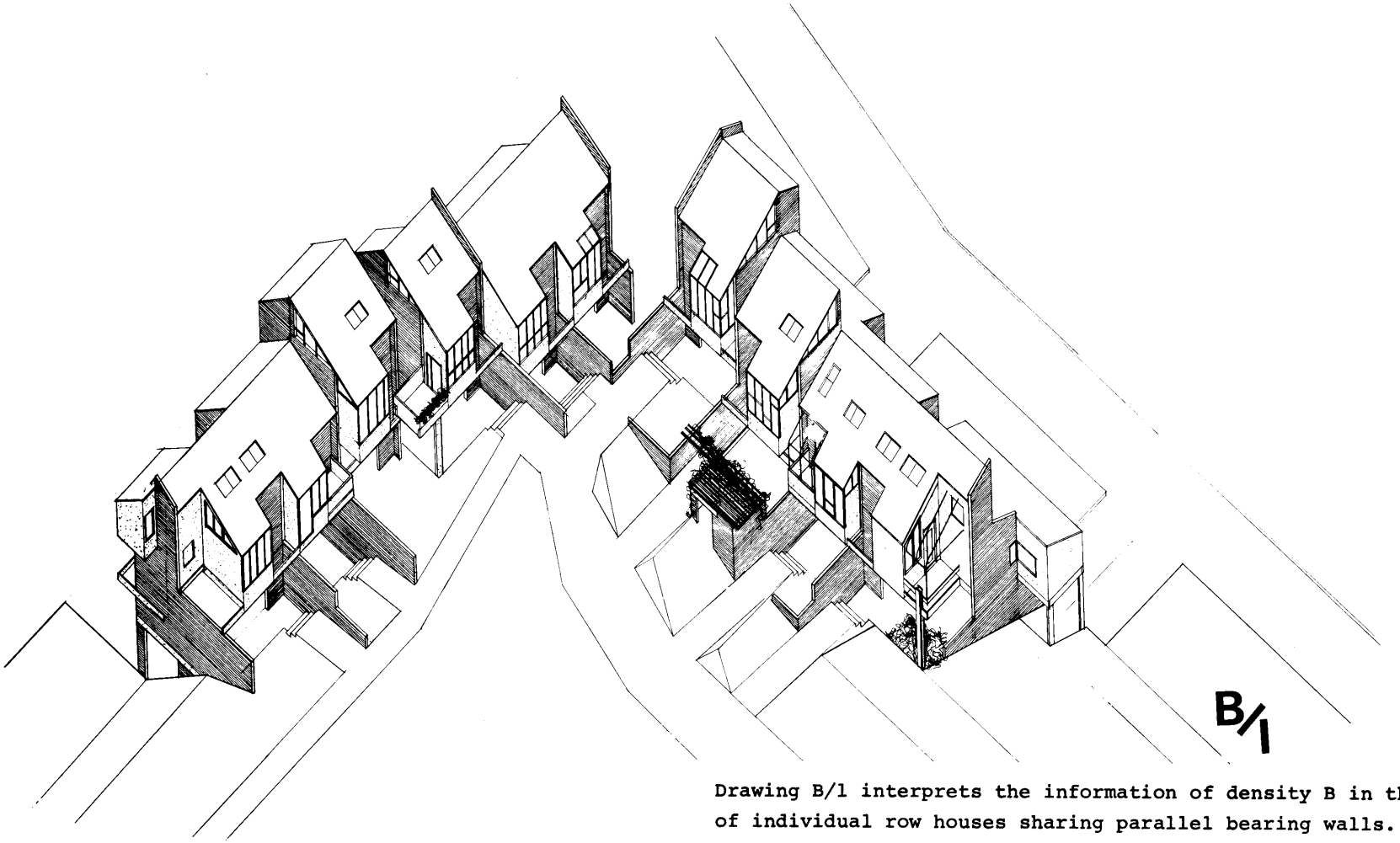
Density B Drawings

The drawing below is one interpretation of housing at about 10-15 units/acre. This density could be developed as row housing, cluster development or planned unit development. Each unit allows the tenant an option to enclose either personally or permanently part of the house. It is expected that the supportive facilities like stores, schools, playgrounds, health clinics, etc. would be within walking distance in the neighborhood. The inclusive drawings of the B series are:

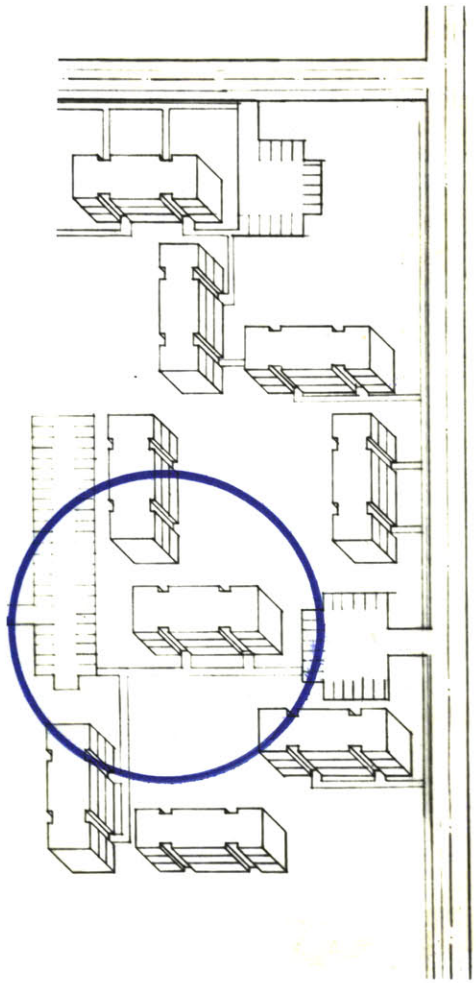
B/1 Image of the housing unit as a part of the housing density

B/2 Proximity of living/eating spaces to outdoor children's play

B/6 Relation of circulation spaces to housing organization



Drawing B/1 interprets the information of density B in the form of individual row houses sharing parallel bearing walls. This drawing is a small part of much more at this scale. Storefront facilities are scattered about, parking is adjacent to the units, and each has a private garden space extending to the communal open space at the rear. A concious effort is made to separate pedestrian movement from traffic.



Density C Drawings

The housing shown below is inserted within an older neighborhood. A small commercial street with housing above storefronts becomes a pedestrian mall linked to the pathways in the new housing. An old church, a local landmark, becomes a community center and its bell tower is converted to a stairwell. The inclusive drawings of this series at density C are:

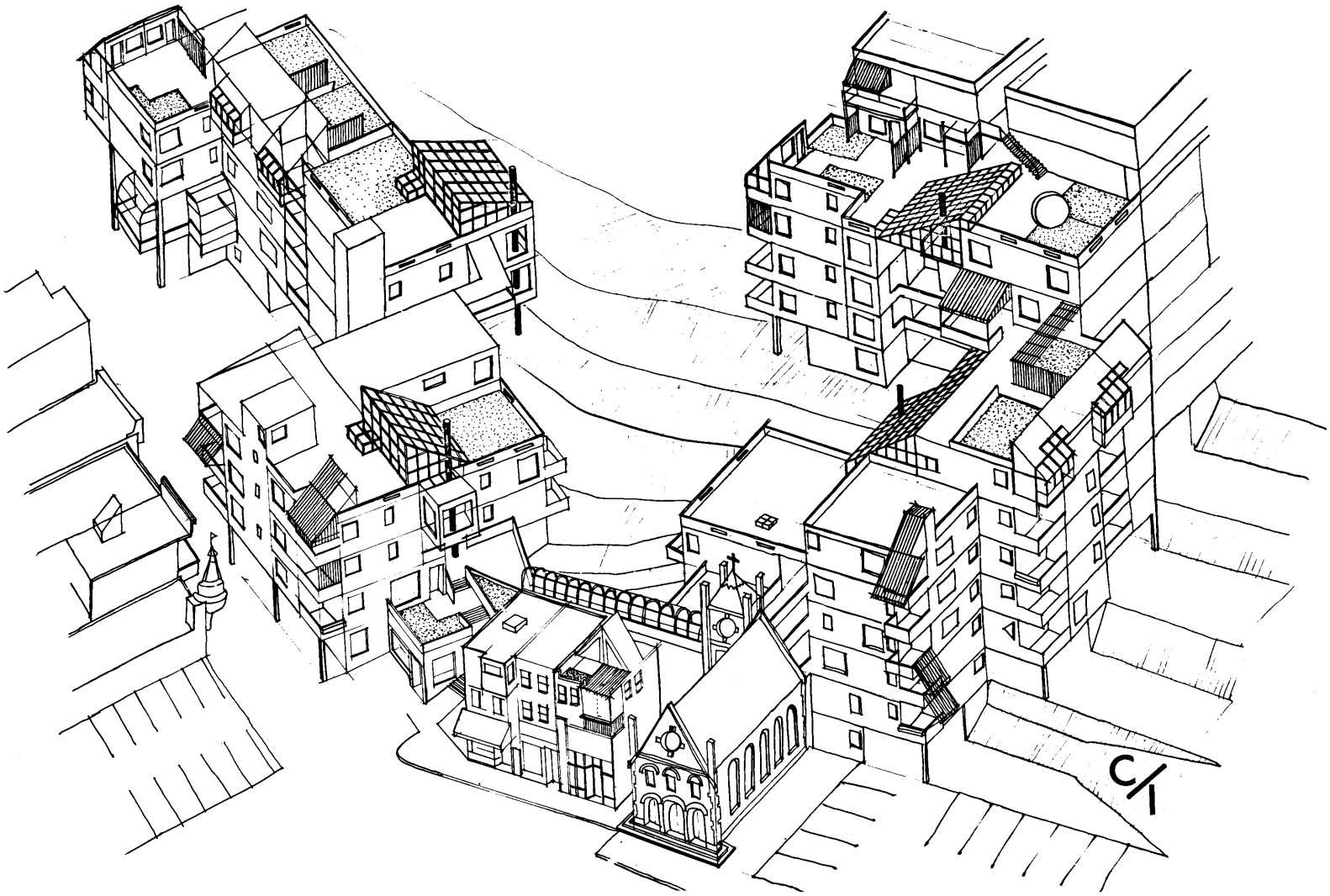
C/1 Image of the housing unit as part of an older neighborhood environment

C/2 Connection between units and corridor/ Multi-purpose rooms

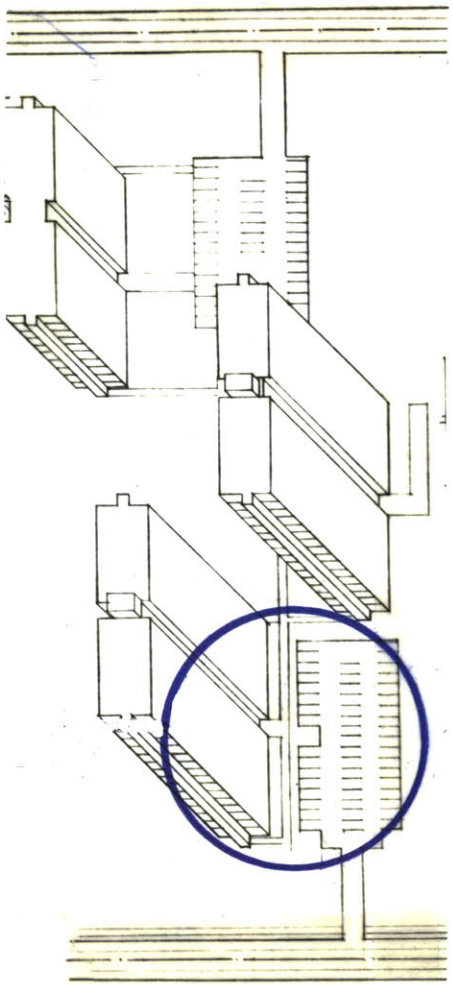
C/3 Activity profile through the pediestrian mall and housing levels

C/5 A look at how one might treat open space among building masses

C/6 Relationship of dwellings to the larger organization



Drawing C/1 is an interpretation on a hypothetical site of the information within density C. The site illustrates how one might inject new housing within an existing neighborhood by capitalizing on positive and negative qualities indigenous to that place.



Density D Drawings

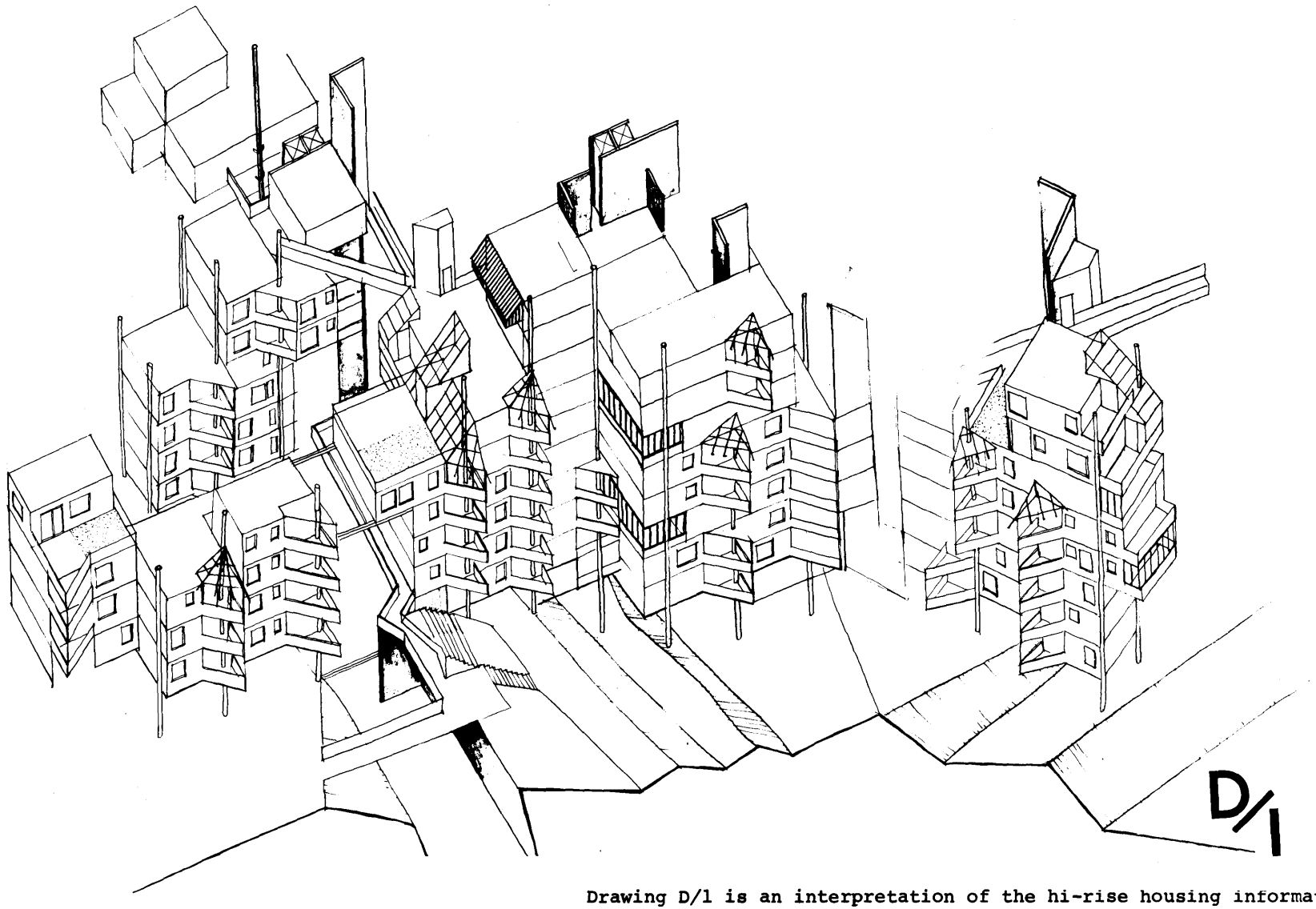
The drawing below incorporates familiar precast wall panels as the method of assemblage with a number of linear frameworks at various levels. The introduction of these frameworks, either open or closed, opens up greater possibilities for using rooftops, balconies, etc. The housing has a complexity, an excitement about it which is missing in comparable tower housing on the left. The inclusive drawings of the D series are:

D/1 Image of the housing unit in the housing density

D/2 Proximity of living/eating areas to outdoor play spaces

D/5 A look at how one might treat the supportive services and open space in density D of up to 100 units/acre

D/6 Relationships of the dwelling to the larger organization



Drawing D/1 is an interpretation of the hi-rise housing information discussed in density D. The site is a sloping piece of land capable of supporting the needed parking facilities, commercial and street institutions. Drawings D/2...D/9 describe pieces of this housing

Footnotes

[1]Suzanne Keller, The Urban Neighborhood: A Sociological Perspective, Random House, New York, 1968, p. 88.

[2]Ibid., p. 126.

[3]Ibid., p. 126.

[4]Ibid., p. 70.

[5]Ibid.,p. 71.

[6]Hendricks Lansing, Automobile Ownership and Residential Density, University of Michigan Press, Ann Arbor, 1966.

[7]Clifford Moller, Architectural Environment and Mental Health, Horizon Press, New York, 1968.

[8]Herbert Gans, People and Plans, 1968.

[9]Hendricks Lansing, op.cit.

CHAPTER III: THE FAMILY UNIT - DESIGN CONSIDERATIONS FOR THE MOTHER-CHILD RELATIONSHIP

3.1. Introduction

> We begin as children; we mature; we leave the parental nest; we give birth to children, who in turn grow up, leave and begin the process over again. This cycle has been operating so long, so automatically, and with such implacable regularity, that men have taken it for granted. It is part of the human landscape. Long before they reach puberty, children learn the part they are expected to play in keeping this great cycle turning. This predictable succession of family events has provided all men of whatever tribe or society with a sense of continuity, a place in the temporal scheme of things. The family cycle has been one of the sanity preserving constants in human existence.[1]

Only recently has the ecological challenge of controlling our population growth had any bearing on the above proposition, for we no longer live in an age where reproduction has survival value. The projections into the future in terms of population growth and the social implications for the family have been numerous and forewarning. One of the more popular future analysts, Alvin Toffler, has made some startling predictions of future trends affecting how the individual will come to terms with family life and the traditional roles that go with it. "The family has been called the 'giant shock absorber' of society - that place to which the bruised and battered individual returns after doing battle with the world, the one stable point in an increasingly flux-filled environment. As the super-industrial revolution unfolds, this 'shock absorber' will come in for some shocks of its own."[2]

Pessimists tell us the family is racing towards oblivion - but seldom tell us what will take its place. Family optimists, in contrast,

contend that the family, having existed all this time, will continue to exist, and some maintain that people will begin to rely more and more on the family structure for security. Whatever the final destiny of the family, we can be sure that in the near future the family will undergo novel changes in structure as the social/emotional needs of individuals change. This is already in evidence as we witness the rapid increase of family mobility, separation and divorce, and new communal developments. However, it appears that for the next few decades at least, the family nucleus, parents and offspring, will comprise the bulk of the American population. This chapter takes into account the expected changes in the traditional family structure and yet attempts to deal only with novel changes as they seem relevant for today's living. Any design strategies presented here are based only the apparent, not speculative needs of the present American family.

In the past, little research has centered on the family dwelling as to how each member of the family uses available facilities to his end or the collective end of the family. We know that a family comprises several role relationships and that the stability of the family depends on the harmony of these relationships. One of the most revered and studied relationships is the mother-child relationship which is thought of as the cornerstone of the family. In this chapter and in the next, incremental changes in the design of living units in each residential density are presented based on psychological and sociological evidence of the needs of children, particularly the needs arising from the mother-child relationship in the home.

As designers of the local environment, we need to broaden our understanding of the social needs of the family in order to help abate the rising discontent with family living. We have only time and space to focus on this one aspect of the family in terms of housing design, but the implications are broad and can be generalized beyond the range of the mother-child relationship when we consider those design innovations that accommodate a multiplicity of social needs in a density where family units are adjacent to one another.

3.2. Family Types and Trends

With industrialism came the streamlined nuclear family which became increasingly more mobile and flexible to environment demands. As we have seen, in spite of apparent new family innovations, the nuclear family has remained a stable social unit as it still is the only institution that sanctions legal ownership of children. To be sure, families differ from each other as much as individuals differ from each other. There are, however, some general types of family complexes that seem worthy of mention which will help clarify how design of housing cannot be "standardized" to meet the needs of that unit called family.

Dean, in Urban Housing, discusses a few general trends in family organization.[3] In this case, the family tends to be directed inward to themselves and a small circle of friends. The parents and their friends have similar educational backgrounds, recognizable similar values, consider the church vital to family life and, for the most part, still believe in the American dream. Traditional values related to social class, family name, wealth, position, etc., hold true.

The parents realize the importance of their offspring having a 'better life,' thus emphasizing education and career as the prime track to follow. This type appears to be the dominant middle class prototype of the American family.

The second type Dean calls the integrated individualized family, which is diametrically opposed to the first group in its social concerns. Emphasis here is placed upon climbing up the social ladder, advancing one's career, and developing self-interests and hobbies. The parents are usually formally educated; each pursuing a limited professional career. Likewise, the children have divergent interests and are encouraged to pursue them. The mothers in this type spend less time with the children once they are past early youth. Interests focus outward and are shared around the dinner table. The family enjoys many moments together despite active individual social lives.

A third family type is the emancipated family whose members pursue their personal goals to the exclusion of family relationships. The family is generally affluent, highly mobile, and often physically separated much of the time due to business priorities, children away at boarding school, or simply due to lack of common family interests. Obviously, this type is more susceptible to separation or divorce; from problems related to personal hostility, high social expectations and a limited amount of time spent together as a family.

While it may not be relevant to discuss the communal trend in family living per se, it is important to look at the phenomenon of collective living arrangements in order to analyze how housing can better accommodate family units that share spatial proximity and also share

common social needs particularly those pertaining to the care of young children. Whether groups of families choose to live collectively, such as sharing a large house or apartment building, or happen to form bonds due to common interests and location, there are numerous possibilities for designing dwellings that would appeal to people who basically want a nuclear family identity. Yet, due to financial and social needs, they would also cooperate in maintaining a complex of shared living or working space. This seems feasible when speaking of urban housing and yet it doesn't seem totally remote from communal needs in suburbia even if housing proximity decreases. Expand the notion of the country club to include facilities for more hobbies such as gardening, film developing, and to incorporate more of the basic family functions such as day and evening care of children. However, the concept of increased social cooperation in suburbia as it affects housing facilities will undoubtedly remain in the control of the community leaving little innovation for designers except upon request. But for higher density communities, the design of housing complexes should begin to anticipate that adjacent family units sharing similar socio-economic needs would benefit from having access to mutual facilities other than laundry mats and basements, such as centralized safe-play areas or work spaces.

Examples of the cooperative family living arrangements are easily found in urban environments such as Cambridge, Mass. Often several small families opt to buy a house together, each maintaining its own functions and yet each cooperating in some fashion to maintain the

house. This kind of cooperative family unit would be of great value to the mothers who would have easy access to other adults for watching over young children instead of leaving them to hazards left alone (see photograph below). Often the main reason for desiring such cooperative structure is the provision for shared supervision of children. This need is becoming more evident as more women choose to hold jobs or find social outlets outside the home. In an urban environment where more woman are likely to be working, the design of housing units should take this into account. Rather than having to build a day-care center somewhere near a group of housing units after the need for one is expressed, it should be anticipated that groups of families with small children are likely to live near each other anyway, so why not meet their child-care needs in the design stage? This would help solve the problem of transportation that often accompanies the day-care center proposal.

Photo 3. The Street as Playground

Since the role of women in the home has undergone rapid change in the past it can be expected to change even further in the future. Women today who complain of being "trapped" in the home often cite the cause as being not enough cooperation by other adults in the caring and supervision of children (usually the husband is the target of criticism). The mother-child relationship once deemed the supreme joy of womanhood is under criticism by psychologists and feminists alike. The mother instinct once taken for granted as fact is now suspect, and the option to not bear children is becoming more socially acceptable. But, for those women who continue to bear children there remains the redefinition of "mother" to contend with. As we have seen, it is apparent that more women are voicing the desire to have cooperation in the childbearing process which will free their personal lives from the total responsibility for caring of the young child. If this is a trend of the future within or without the family structure, structural changes in housing facilities seem only necessary to meet the new roles of women in society. For today's young mother, whether in suburbia or the inner-city, the constant vigilence over a small child is not only time-consuming but physically exhausting and anxiety-provoking. The need for greater peace of mind in the home when a young child is about can be met by certain simple organizational changes in housing illustrated in the drawings.

3.3. Structural Adaptation to Family Needs

It is important to recognize that all families or family structures change over time. A spouse dies, children leave, an in-law moves in, etc.

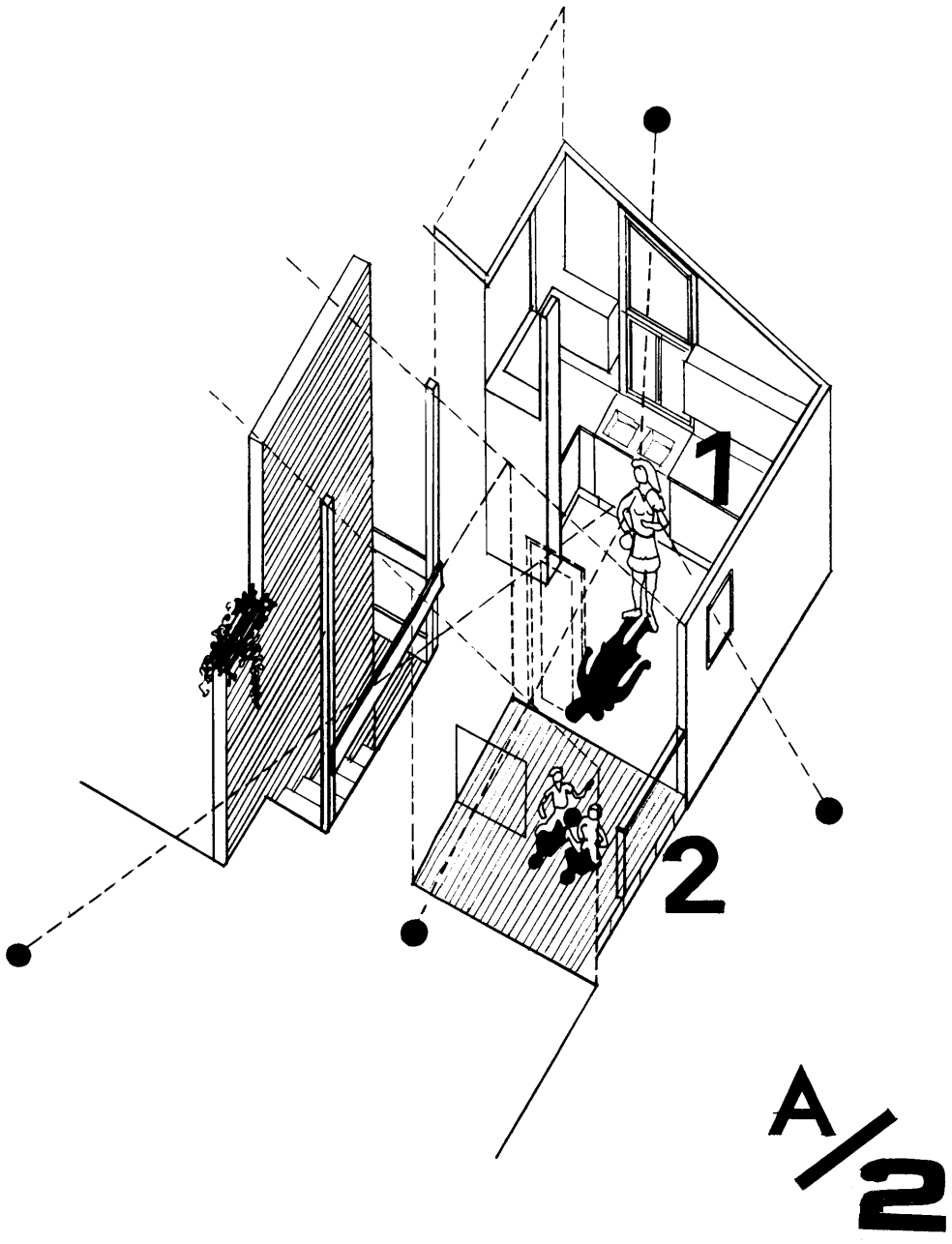
The additive and subtractive capability for change in most housing stock and popular systems is minimal; it is often difficult to add a room, glaze a wall, utilize a roof. Often when a family structure changes the house remains the same, serving the sentimental rather than the functional needs of the family members. Strong attachment to form inhibits change even when new forms would serve the family better.

The drawings A/2, B/2, C/2, and D/2 illustrate various means by which tenants/owners could change their homes when the family structure changes. Assuming some economic constraints, the method for manipulation would still be inexpensive. The drawings of density C advocate a multi-purpose space be part of every unit; an unlabled place physically capable of supporting endless activities. The multipurpose room is shown on p.72. Simply, the space should have exposure on two directions, sunlight for 40% of the day, and most importantly, have the capacity to change to suit particular family whims at various stages of its development. For the growing family it may become another bedroom; for the retired couple it may be a solarium, and for the bachelor a spot to entertain or sun-bathe. Living in densities C or D, one's contact with the ground is minimized. Little incentive exists for one to descend twelve floors to lie in the grass and read the evening news. Higher rentals might provide a few with a penthouse/roof garden, but what is to replace the soft textures of the landscape and water also relished by the poor? The drawing D/ 2 suggests the multi-purpose room as a place accessible to the family and yet private if need be.

With regard to residential environments at any density, we need to ask how design configurations might facilitate or inhibit a mother's care for her child or children. If considering only the single family unit there are ways of designing rooms or partitioned areas that allow for maximal activity of the mother while maintaining visual contact with other parts of the house. This would aid immensely in accommodating an active mother's daily schedule while allowing her to watch over a small child. Drawings A/2, B/2, C/2, and D/2 illustrate how in four densities a mother can be in visual proximity to other activities in or outside the house. In housing complexities where several mothers with young children live, use of common space for children's play may add to greater freedom for the mother and benefit the child as well. More will be discussed on the needs of children as applied to their development in Chapter 4. Summary charts will outline some design plans for families with children.

Families and other communal groups are often considered as static social structures, whereas in reality they are constantly changing and shifting, as individuals advance in age or as they change their personal relationships and habits. "The population does not consist of so many bachelors, so many childless couples, so many families, so many old people, as the statisticians would have us believe. It consists of individuals moving progressively through these phases."[4] It should be possible either to design dwelling units of components that permit flexibility and change in the internal spaces, or to provide enough variation of dwelling unit types within a reasonably small area to allow for in-

creased choice, and change, of living spaces in accordance with the residents' changing needs and circumstances.

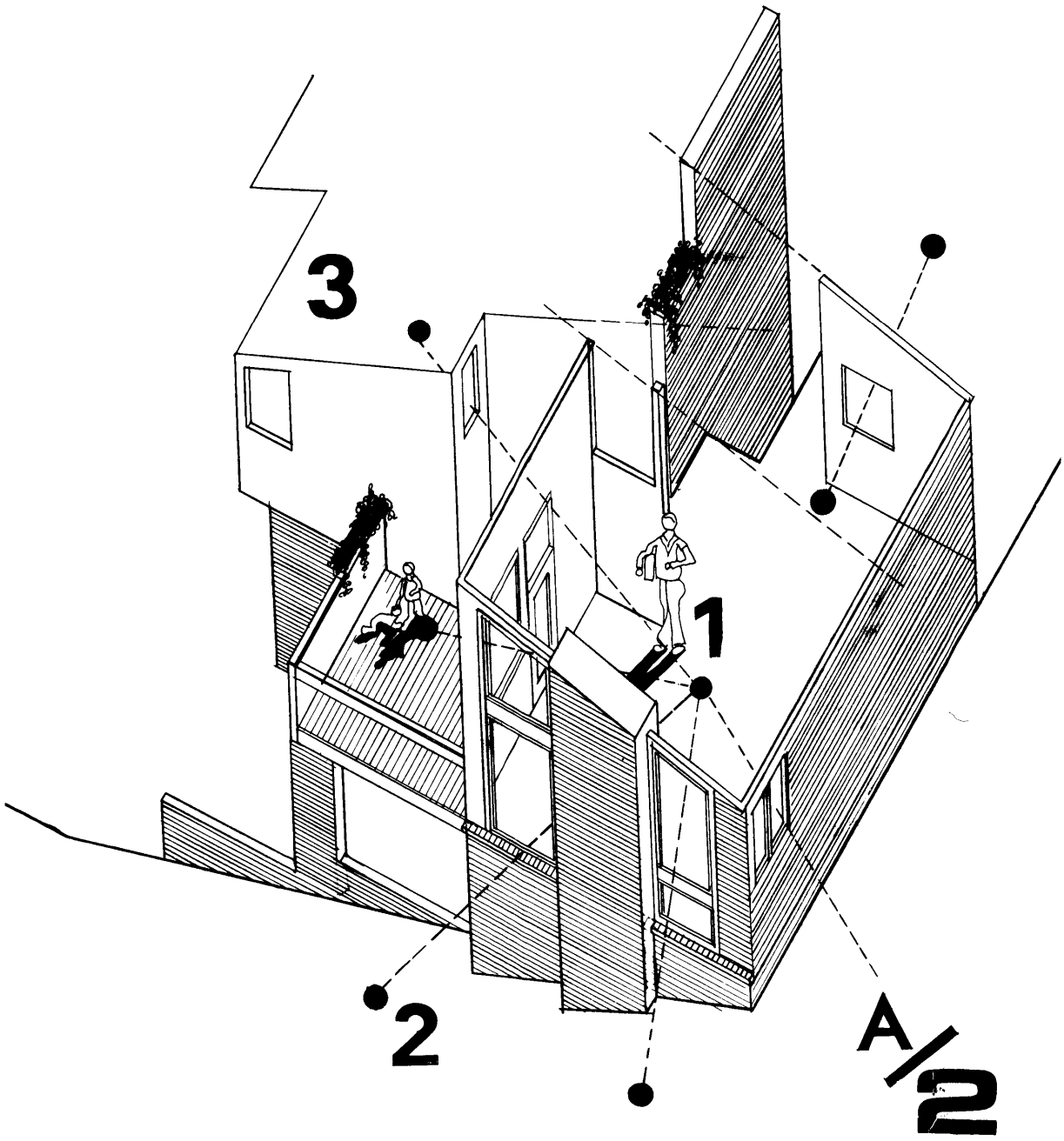


Proximity of Kitchen to Children's Play

Drawing A/2. Proximity of Kitchen to Children's Play

1 This suburban house recognizes the fact that the woman/wife/mother in developing families spends much of her time in and about the kitchen. The unit organization must allow her to watch over small children, prepare the meals, have visual control over the street/entry/front door, answer the telephone while preserving some degree of sanity. The house must provide outdoor sheltered playspace off the kitchen, allow her the audio-visual connections to parts of the house. This is accomplished by creating interior transparencies, that is partitions which don't necessarily run floor to ceiling, but perhaps stop short to allow some sense of openness beyond the room, to allow sunlight to pass through rooms into others, and to maybe help people sense rooms to be a part of a larger organization.

2 The small deck off the kitchen provides a sheltered, secure exterior for small children. Ideally, such a place could contain soft materials, perhaps plants, and receive sunlight 50% of the day. CHildren must be allowed some sense that the deck is theirs and can be manipulated by them. One might provide some removeable greenhouse-like structure to winterize the play deck if need be. At least the option or choice to do so must be present.



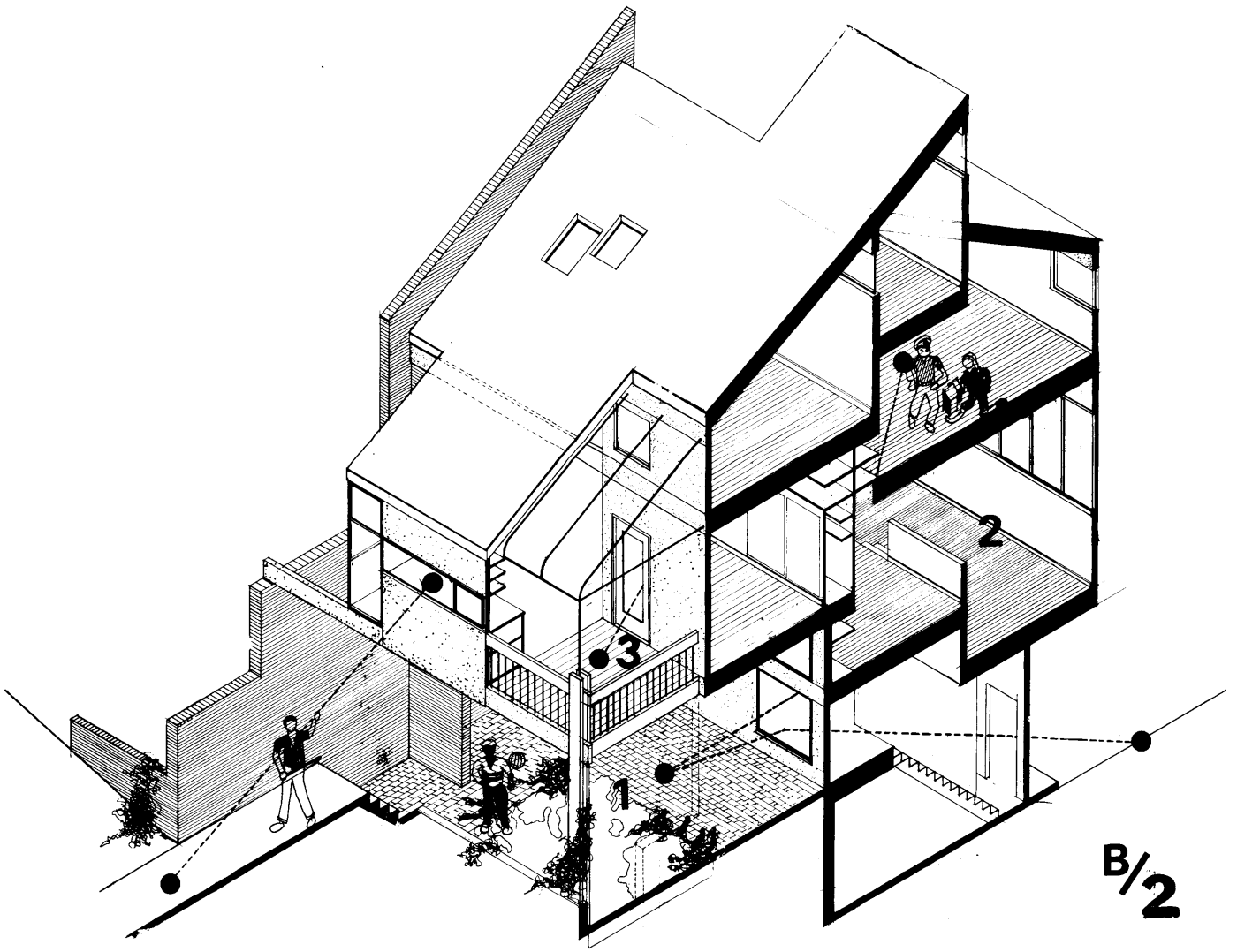
Proximity of Living Spaces to Children's Play

Drawing A/2. Proximity of Living Spaces to Children's Play

1 Much in the same way that the kitchen/food preparation area allowed visual connection for the mother to the rest of the house, the living space must provide for possible segregation of adult/child activities. The drawing shows the living space connected to an outdoor living space/deck. Ideally the next connection should be to the ground and perhaps a private garden. The quality of openness is important here as in the kitchen. The arrangement of windows/fenestration/glass obviously allows the ability to focus on or screen out.

2 The question of 'views' is often the rationale for placing windows. Too often, the suburban street has no great vistas and that needs to be acknowledged at the onset. What it does offer are 'backyards' buffered from the street/public which one mightturn into an inward kind of garden/atrium/planted place. That is where any potential vistas lie.

3 The notion of interior transparency is illustrated by the connection visually of the child's loft within a bedroom to the remaining areas of the house. My feeling is that we need to provide places like the loft scaled to children that are made of materials able to withstand the abuses of growing up.



Proximity of Living/Eating Spaces to Children's Play

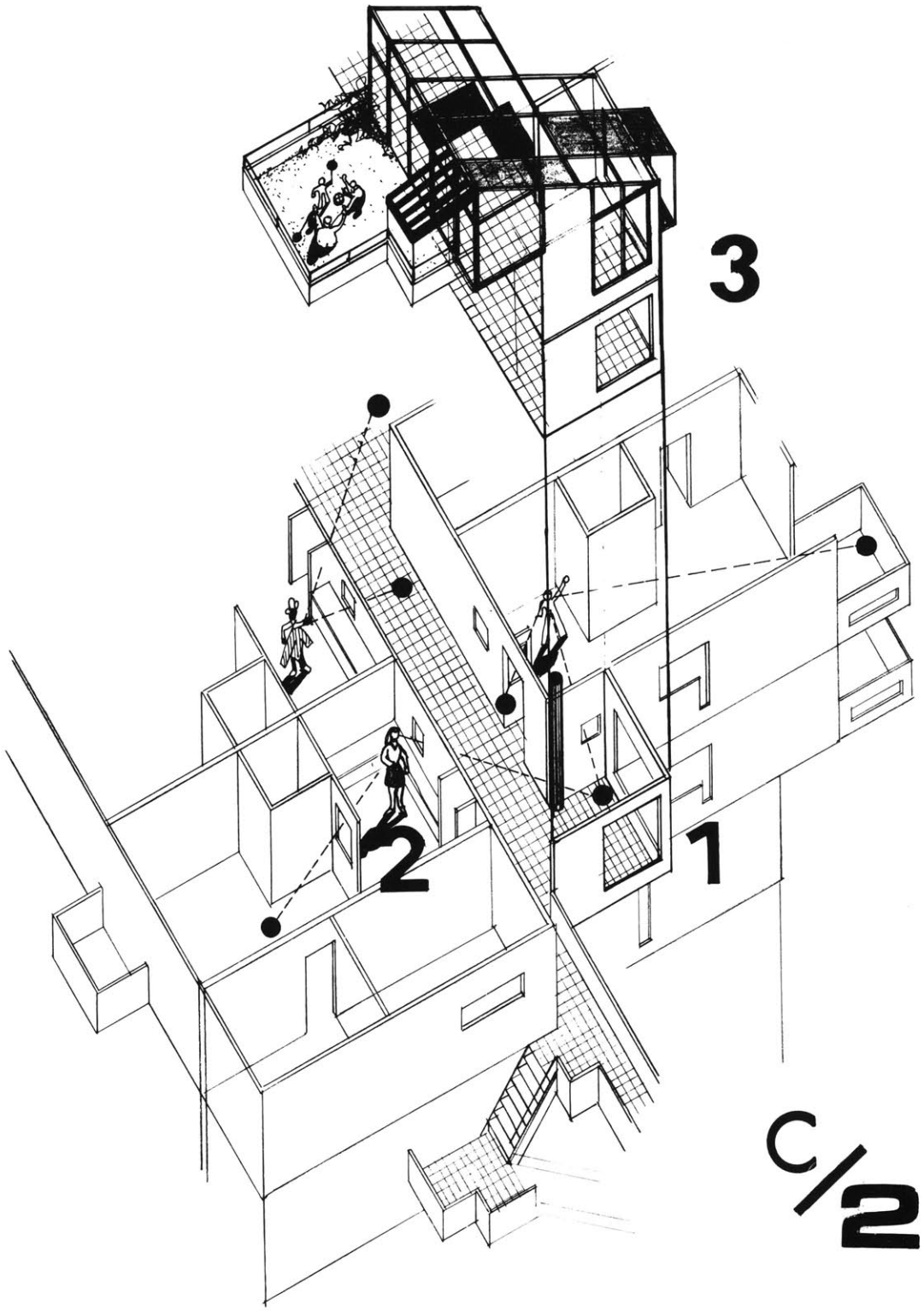
Drawing B/2. Proximity of Living/Eating Spaces to Children's Play

1. The drawing shows private garden adjacent to each unit. The gardent is partially covered for protection from the weather. The remainder is "soft" for children's play, garden spaces, or small pools. The proximity of the garden tucked under the building mass to the kitchen is an important feature. The dotted lines indicate the visual connection with other areas of the house.

2. In row house situations, it is important that the living spaces focus outward to the south or west. The living space is enhanced by various ceiling heights that connect to other areas of the house.

3. The small deck off the dining area allows:

   a) outdoor eating
   b) the choice of permanent or temporary enclosure as indicated
   c) small child's play
   d) rails are open to allow pets/children to see through



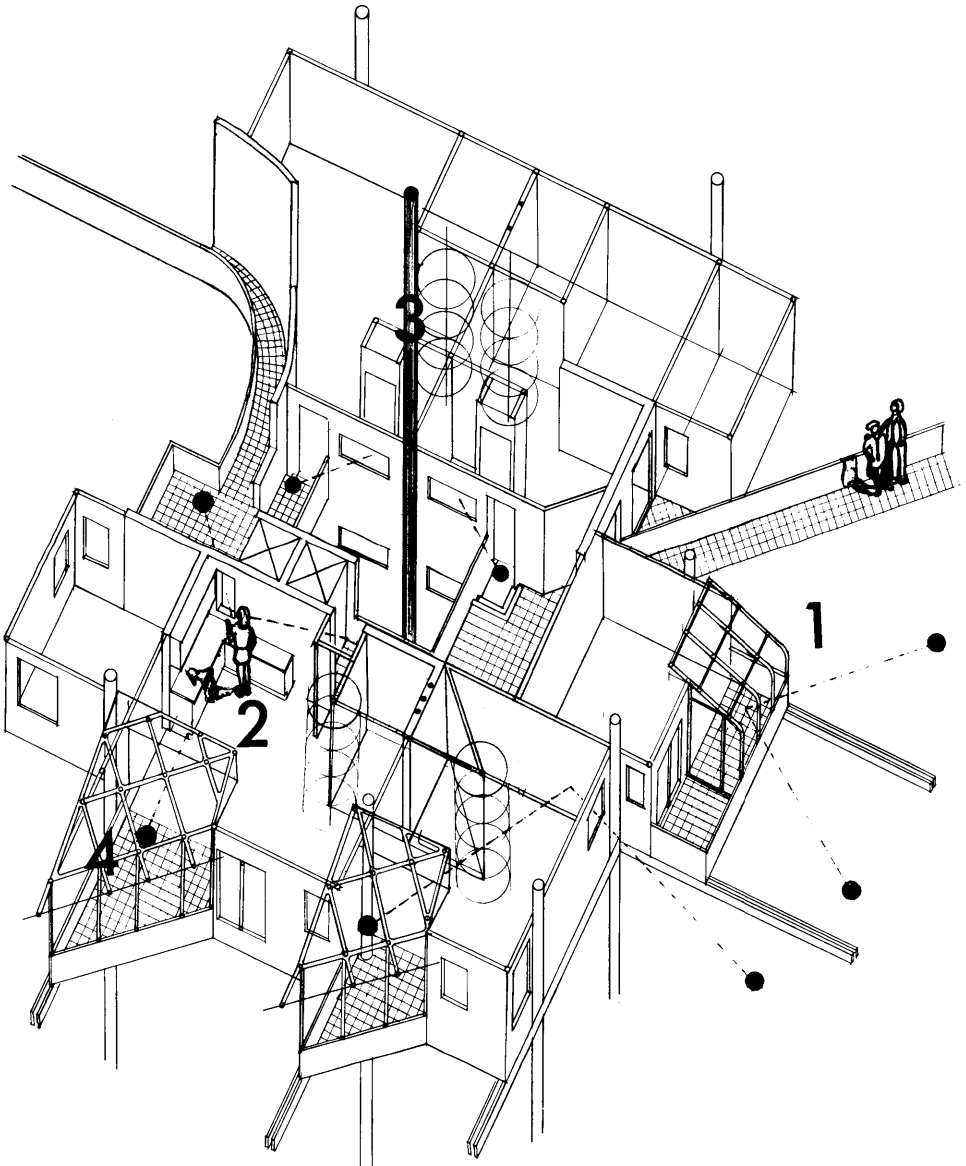
Connection Between Units and Corridor/Multipurpose Rooms

Drawing C/2. Connection Between Units and Corridor/Multipurpose Rooms

1. All units need to contain some glazed areas which permit small children to look outdoors. Preferably, this might occur in two directions for greater exposure.

2. Small windows systematically located along corridors allow mothers to police the corridors. This is most viable in housing situations where many similar developing families have small children. Mothers are reluctant to allow their children to play in corridors. Each unit would be able to close or open these windows.

3. The multi-purpose room at the corridor ends on each level varies in use. In one situation it might serve as a day care center, in another as a laundry room, and perhaps a play area for elderly to gather. The three dimensional, glass enclosed framework on the top level connects this mixed use room with roof terraces.



D/2

Proximity of Living/Eating Spaces to Outdoor Play Spaces

Drawing D/2. Proximity of Living/Eating Spaces to Outdoor Play Spaces

1 The clustering of units/apartments in Density D allows the woman/wife/mother to police the shared areas within her cluster. Visual connection with the hall/stairs/elevators gives her the same kind of security that the suburban woman had with the play deck adjacent to her kitchen. Existing decks/balconies provide the option to enclose seasonally with awnings or more permanently with a greenhouse/three dimensional enclosure. Again the design and management of housing at this scale must provide the choice particularly for those on, say, the thirteenth floor, far from the ground plane.

2 The design and layout of food preparation/eating/cleaning up/ etc. areas which we've labeled kitchen needs to be re-examined. This is particularly true in smaller units where the kitchen houses much more than these functions, but becomes a social place for adults and children.

Footnotes

[1]Alvin Toffler, Future Shock, Pan Books, Ltd. (Lond), 1970, p. 237.

[2]Ibid., p. 230.

[3]William H. Wheaton, Martin Meyerson, John Milgram, Urban Housing,

[4]Clifford Moller, Architectural Environment and Mental Health, Horizon Press, New York, 1968, p. 108.

CHAPTER IV: CHILD DEVELOPMENT/PLAY/AND NEIGHBORHOODS

4.1. Introduction

Society's attitude toward the development of children is in many ways evident by the institutionalization of their daily activities. Children sleep, work, study, play; all of which appear to be separate functions, but in fact, overlap considerably. It is both difficult and inappropriate to continue creating isolated places for play; planners and architects have followed that course too long. This chapter takes a look at how various age groups, both children and adults, play in their environments. The specific play activities to be considered range from the play needs of the small child in or near his home to the needs of the teenager in his neighborhood. Children, like the elderly, compose a part of society whose collective needs are often underestimated and disregarded. Not only is this true with respect to children's play, but valid for the quality of education, availability of health services, and the patterns of responsibility open to them. Since children do not constitute an economic or political base, their needs must be perceived and interpreted by the adult world.

A child's play occurs to varying degrees irrespective of his immediate surroundings; he fantasizes his bath an ocean, the hallway a race track, his backyard a world series stadium...the precious gifts to dream, to fantasize, to discover, to question, must be nurtured and reinforced by his locally built environment. The formative years 1-5 are centered

around the home and its immediate neighborhood. It becomes important to extract and magnify physical qualities of existing environments favorable to play and also to introduce new concepts of play for future housing.

> Children's play areas offer another challenge. Children seem to play almost everywhere else. The architect and the developer are likely to assure you that this is not just so; that the children's areas have worked out just as planned - and they see what they believe. Perhaps we visited at the wrong time, but in the majority of the developments studied; the designated play areas were under used and even the free form sculptures that so intrigue the adult eye didn't seem to draw many children.
>
> The children go to where the action is and the action most usually is on the streets, alleys, parking lots... where the deliveryman delivers the goods, where the fathers wash their cars, and where the children have the most room for wheeling about on their vehicles. This mixing of traffic is exactly what most planners have sought most to avoid, but is there not a lesson here? If children repeatedly seek out such areas, planners should ride with the punch and make use of this fact of life.[1]

It has been said that the young child's life is entirely play, free from the burdens of adult responsibility and comprehension. Psychological development in children from years 1-5 is the most critical in influencing the kind of adults they become.[2] Basic motor and linguistic abilities develop. If one at all believes that the local environment helps shape the development of a child at a young age, it follows that the design of dwelling places either singularly or collectively must enhance this development. What, then, are the issues worth considering? The few that are to be considered here seem

to come from an endless list of children's needs:

1. The intensity, frequency, and depth of contact with children of the same age. The drawings in chapter 3 indicated how one could provide such contact in each residential density.
2. The degree to which the child is exposed to nature/urban life and is able to capitalize on the exposure as a learning tool.
3. The age levels in each density where the child is capable of acting without supervision.
4. The interfaces or overlaps where a child's play becomes indistinguishable from other activities. For example, the corridor, sidewalk or shopping center mall becomes an interface.

The real test comes when we attempt to accommodate these needs in housing design. Let's look at some of the research which focuses on similar hi-density situations in Europe pertaining to needs of children.

4.2. Urban Housing and Its Effect on the Play of Children

> Living in a tall block has grave consequences for the family and if this is to continue it will be necessary to accept certain limitations and arrange communal child care supervision in an appropriate manner because this can, to some degree, overcome the problem of contact between children. Lack of contact is serious, creating neurosis, and psychological development problems.[3]

Following World War II, European countries began producing large volumes of housing, particularly in the form of tower blocks to re-

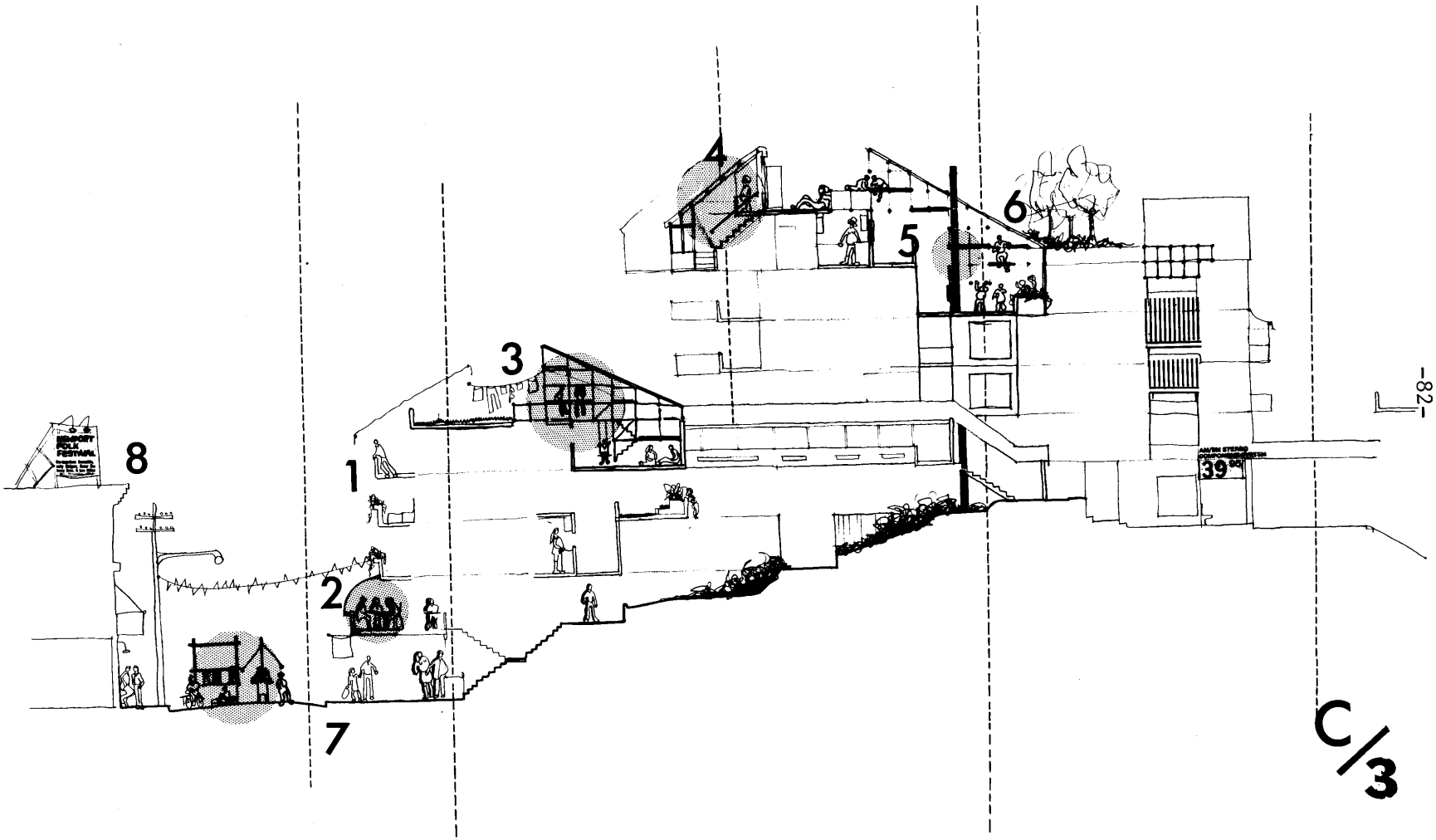
build their cities. Now nearly twenty years later this type of housing provides a base for social research on housing quality. In Stockholm, a comparative study was carried out on 3 and 4 story walkup buildings with 8-13 story elevator hi-rises.[4] Correlations were made between the amount of time spent in play each day for children ages 4-10 and both types of housing. The group from the low rise apartments spent an average of 1 hour or more outside in free play than the group from the adjacent hi-rise towers. The additional hour meant that much more group contact and relative independence from their parents. Unfortunately, results showing any psychological deprivation in the form of neurosis from the tower group were not available. "Children living in hi-rises, the ground level remains a foreign world for a long time. A recent London study showed that for children under 5 years 72% of them rarely played with kids their own age."[5]

In the process of analyzing the data from this study, a reseracher discovered a bazarre incident. A five year old child lived with his young parents on the twelfth floor of an estate block. During his short life, it was discovered he had only been outside a dozen or so times all of which involved accompaniment by his parents. Five years of isolation denied him any peer group contact, any sense of personal responsibility, and any contact with nature or the outside world. "It requires a great deal of courage for young children to risk the descent from a flat in a block to the ground level, not to mention his mother's courage. Too often the child is forced to remain indoors except when

his parents go out."[6] The photo below illustrates where urban children are often found at play.

Photograph 4. Corridors Provide Play Space in Urban Housing

Drawing C/3 on the next page shows how housing similar to the density depicted above could "liberate" its corridor spaces, roof tops, service facilities for children's play. One could easily imagine a three-dimensional frame located perhaps on alternating levels where kids climb,



Activity Profile Through the Pedestrian Mall and Housing Levels

Drawing C/3. Activity Profile Through the Pedestrian Mall and Housing Units

1 All units shall have some outdoor space capable/enclosing either permanently or seasonally. Balconies presently used in housing are often too minimal; ideally these need be at least 150 sq.ft. Also it seems that the balcony/apartment relationships could be extended in a way that two or more units might share a larger piece of outdoor space.

2 Lower portions of the housing along the street should house night life which could coexist the existing shops. Incentives need be directed toward tenants to perhaps initiate some smaller scale commercial venture themselves.

3 Roof terraces permit a wide range of tenant activity during the day and evening.

4 Units at the top can be double story, thus again taking advantage of the roof as useable space. In mixed age situations, the families with children should have preference for units on/near the ground while the elderly, young couples, singles, etc. occupy units elsewhere.

5 Corridor spaces on the top level of any horizontal organization both in this density and that of D, should take advantage of penetrating the roof to emit air/sunlight/and connection. In this case, a three-dimensional framework provides places/levels for kids to inhabit/built onto/or hang from. The frequency of these frameworks might be per number of units w/ children or per building. The levels provide the transition from the corridor to the roof.

6 Having a bit of nature on roof terraces is both an expensive and a structural consideration. Unfortunately, most planting associated with architecture/housing is regarded as a token gesture; ivy stuffed into large, inaccessible planter boxes. My feeling is that any duplication of a soft ground plane is worth it, however minimal.

7 The temporal/weekly appearance of street venders/ flowermen/carnivals etc.is a welcomed contribution to street life.

8.Media/advertisements/neon lights/an occasional flashing light,etc. both add and detract from the pedestrian street experience. The zeal to control them too strigently as we've done in the past is questionable. Controlled/architectural conceived graphics often appear sterile and dull in comparison.

swing and crawl in the open air. At this point, other questions arise. How does one accommodate a given number of people per house stuffed into a predetermined density without dismissing as secondary the real specific needs of any subgroup in that number? Providing for the child in suburbia is seldom looked upon as a problem. All the positive physical qualities are present - acres of open space for running, fresh air, virtually no traffic, etc. More often, however, there is little opportunity for diverse social contact which is maximized in the higher density urban areas. Children at an early age as well as teenagers must be chauffered about to meet their friends. It is my opinion that if the suburban environment continues,the disparity between places for human contact and play and people to play with will likewise increase.

Recognizing the fact that western Europe has passed the U.S. in industrialized housing systems development, having built many more housing estates and projects to date, more literature is available on how people use this type of housing. The Greater London Council has investigated those estates in and near the city and has provided numerous reports. Studies indicate that balconies, aerial walkways (streets in the air), exterior promenades, while they are fine for very small children's play, are not popular with older children and teenagers who prefer contact with the ground.[7] Some of the more sophisticated estates, which make a conscious provision for play inside and outside, find these play areas untouched. Children continue to migrate to parking lots, commercial strips, intersections, where the action is. Photos 4 and 5 on the next page illustrate how children make use of these areas. Statistics show that

50% of the parents do not allow their kids to play on the aerial sideways for fear of them falling despite protective rails. Also, the British climate doesn't really encourage one to use these walkways for more than transition most of the year. If the aerial streets (primarily advocated by Team 10 over the past two decades) are to work, then supplemental activity generators like shops, services, recreation area, etc. must also be present. Drawing C/3 illustrates in much the same way as C/2 how places that would be used by children as play surfaces could exist at any level within the structure. Somehow the design of hi-density housing needs to transplant some of the softness of the ground plane to the roof tops.

Photograph 5. The Sidewalk as Playground

Photograph 6. The Parking Lot

Following the current pattern of development in density A, I suspect that in the next decade existing as well as new cities will become dotted with more hi-rise housing for all income groups. The housing blocks of density D will remain a taken-for-granted phenomenon, and countless children will spend the formative years within these structures. Many authorities have suggested as a bandaid solution, a free telephone service from the playground, parking lot and building lobby, so the child may speak with his mother anytime. Furthermore, we need to provide public toilets, water fountains, protection from the sun and rain, better lighting for the child or anyone using adjacent areas. If the neighborhood is to be an extension of the home, we need to treat it as such.

4.3. Case Study: A Comparison of Child Development in Two British Cities, Southwark and Stevenage

An interesting case study between the old British new town of Stevenage and the much older industrial city of Southwark reflects great differences in attitudes about children's play.[8] Stevenage is a planned town where great emphasis was placed on the separation of auto and pedestrian. A child living in any of the villages can in theory walk to school or to the town center without crossing a highway. Stevenage projects a green, grassy, pastoral image with endless open space. Southwark has none of these amenities being largely industrial with no apparent planned concern for open space or pedestrian networks. Mothers from each town were asked some forty questions about such items as lo-

cal playgrounds, open space, where their children played at different times, and particular difficulties that arose from their children playing in the neighborhood. The same group of mothers were also questioned about such variables as social class, length of residency, ownership, children's age, etc.

As one might expect from the dissimilar environments, the mothers' attitudes toward play and child development differed greatly. The results are summarized below:

1. 85% of the Stevenage children had to be in bed by 9 o'clock.
   38% of the Southwark children " " " " " " " " .
2. 64% of the Stevenage children play in the garden adjacent to home.
   0% of the Southwark children " " " " " " " " .
3. 21% of the Stevenage children played in the street.
   64% of the Southwark children " " " " .
4. 0% of the Stevenage children do not play outside at all.
   9% of the Southwark children " " " " " ".

Areas devoted to programmed play at Stevenage were supervised; the larger open spaces were policed regularly. Most of the Southwark children played in vacant lots surrounded by decaying tenements and busy streets. Mothers believed in supervised play due to internal "fears of injury and older boys." A sampling of the Southwark mothers interviewed appeared apathetic or simply felt their child's ability to overcome immediate danger was paramount to becoming independent in later life.

The remaining results of the comparative study are listed below:

1. In the under ten age group, Southwark mothers only permitted one of three children to travel alone over distances greater than one mile. On the other hand, Stevenage mothers generally permitted the children to travel any distance. Most fears for their safety were absent in this case.
2. In spite of the number of planned play areas at Stevenage, 80% of those mothers responded by stating that there were simply not enough play facilities. A similar response was solicited from the Southwark group.
3. When asked what they considered to be the greatest danger to their children, over 60% of the Stevenage mothers and 75% of the Southwark mothers said traffic.
4. Mothers were asked if the noise created by children outside in play bothered them: 23% of the Stevenage group responded yes, while 71% of the Southwark mothers answered affirmatively.
5. 71% of the Stevenage mothers felt older brothers or sisters must take younger children to the playground, while less than 1% of the Southwark mothers thought so.
6. 48% of Stevenage mothers favored supervised play, while 19% of Southwark mothers felt this to be important.

This study was particularly interesting to me since I have visited both towns and am aware of how different the two environments really are. The photographs (6 and 7) on the next two pages illustrate the differences.

A similar study was done by David Stern comparing suburban (largely middle class) attitudes with inner-city attitudes (predominantly working class) on play.[9] Analysis of the households responding to the questionnaire was made for the Boston communities of Lexington, Concord, Belmont and Somerville, Medford and Charlestown. Stern developed these basic generalizations from his analysis:

1. The remains of any past extended family situation existed only in the inner-city neighborhoods.
2. For the most part, middle class mothers had weaker ties to the family.

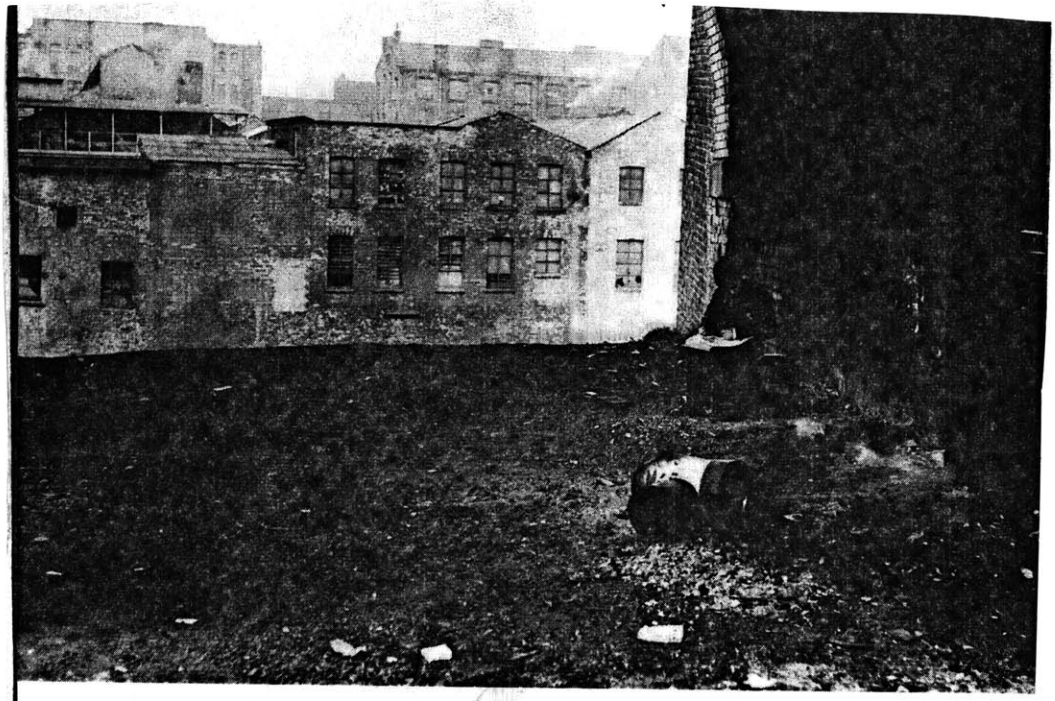
A space in which to play

Southwark

A play square

Stevenage

Photograph 7. Play Areas in Southwark and Stevenage



Southwark

Stevenage

Photograph 8. Individual Activity in Southwark and Stevenage

3. Suburban mothers often pursued their own careers and remained more independent from the children. They spent little time playing with the children.
4. Suburban mothers encouraged their children to invite friends to play at their homes/yard, while working class families preferred the child seeking places outside the home to gather with friends.

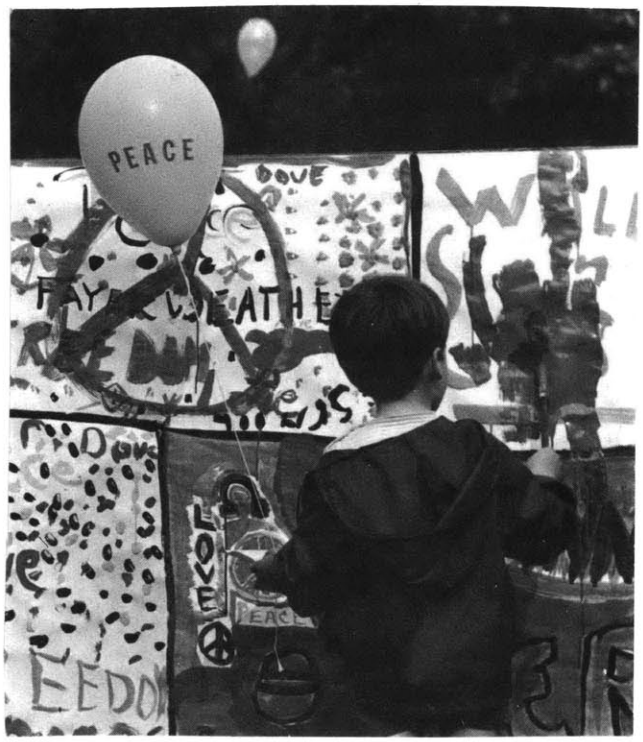
Stern referred to the dominance of individualism in the middle class family and familism expressed in the working class sample. Simply stated, the members of the suburban family tended to focus outside the family while the inner-city family withdrew into itself for its set of social contacts.

4.4. Child Development Theory Related to Housing

Much information exists on the design of play facilities for various groups of children, but little of this is specifically related to the psychological development of the child in various stages of growth. "Nearly one hundred and fifty years ago, the great educationalist, Froebel, stressed the immense importance of play as an educational tool and devised a system of education which centered learning through experience, or learning from the environment."[10] A number of theories related to the importance of child's play began to emerge.

The first is known as the surplus energy theory[11] which simply means that each of us has a surplus of energy beyond that needed to sustain life which must be released. In older children much of this is released in school and in adults it is released in sex, tension, drinking, smoking, etc. The second recreational theory[12] presupposes that man plays only when his mental and physical powers are fatigued. Both of

these theories support the fact that free play is essential toward normal development in childhood. Children need creative activity and facilities or play areas in order to develop into healthy adults. The photo below depicts a child making use of an outdoor graffiti board for free expression.



Photograph 9. A Child in Free Play

An abundance of literature reveals the cognitive development of children at various stages of growth. Some understanding about what a child is capable of doing and comprehending at various age levels is a prerequisite to the design of play facilities and areas. Much of this work is summarized by Jean Piaget and later by Werner in the developmental stages from babyhood through adolescence.[13] Paralleling one's physiological growth are the abilities to perceive space, understand cause and

effect relationships and notions of time. Piaget (1954) analyzed the understanding of space between age 6 months and two years as the result of a repeated activity, an action which takes place in that space.[14] Therefore, the child first understand space by the objects it contains rather than by the physical parameters of the space itself.

In the first two years space is totally ordered by the child's bodily movement. A direct link grows between any action and the objects involved. At about the second year, the child first begins to symbolize, to imitate, to understand the meaning of gestures by others (Piaget, 1951). Further, the child's perception of space is heightened in terms of concepts like under, on top of, behind, and into. Objects can be hidden and found easily due to similar displacements in the child's memory.[15] It seems feasible that there are relationships between what the two year old can do and the design of the unit as a "playful" environment where he spends most of his time. (Many of the specific form interpretations are outlined in the summary charts at the end of this chapter.) Also, at the two year level the concept of time begins to appear. One remembers the recent past and can foresee an immediate future. He knows morning is when everyone gets up, goes to work, eats breakfast, not dinner.

During the interval between ages 2 and 4, the already present concepts of space, time, causality, symbolism, etc. are reinforced.[16] The significance of a positive home environment has its greatest impact during this time. Unfortunately, this significance is underestimated. The child walks, runs, talks, conceptualizes, discovers. The dwelling and its immediate surroundings, the garden, the corridor, the alley and the

stairwell, are often the extent of a child's mobility. Yet, we continue to provide homes scaled entirely to the adult world. Section A of the summary chart at the end of the chapter suggests specific criteria for children ages 1-5. Werner and Kaplan cite the example of a three year old girl who was watching her mother turn on the hot water:[16]

> The water spurted out of the faucet in jets and the child exclaimed, "O mama, the water is choked; see how it coughs!" The human action model may also be the basis for the child's animistic thinking. For example, young children attribute life to all sorts of inanimate things, such as stones, if they perceive them in motion (Piaget, 1929).

The child questions natural phenomena, why it rains, how the flowers grow, where his sister came from etc. From this point of 2-4 years on in cognitive development, specific words assume specific meanings. One to one correlations develop. Objects with names and perceived functions appear to the four year old due to their propinquity to other objects in the room, park, street, mall, etc. Unlike the adult, who generally perceives space in some Euclidean manner, the child sees the number and placement of objects in space. Spatial concepts hinge upon his ability to move about and retain some familiarity to the place through repeated visits. The next photo(9) shows children of this age in a play-learning situation.

Appleyard, in a related article about experiments in open space, lists the dominant interests of various groups of children which should strongly be considered in recreational design.[17]

For children 4-8 years old:

1. Develop initiative, inventiveness, and self-discovery through environmental form manipulation.
2. Encourage muscular exercise, mental-physical coordination, and the expenditure of excess energy.
3. Expand sensory experience through a wide range of stimuli.
4. Develop cognitive skills.

Preschool and early school years nurture the development of intuitive, mental operations. Children begin to develop classifications and subclasses of objects. When similar objects appear in a group, such as a bunch of bananas, the child announces that there are many bananas instead of seeing them in a collective group. Werner suggests this is the way the child sees people in and near his home.[18] His knowledge of others stems from what his parents say about them, where they work, the kind of car they own, etc. Consequently, a child relates to the neighbor, Mrs. Jones, through her dog, her lawn, her property. Oddly,

Photograph 10. Picnic in the Park

even at age six, most children cannot adapt to differences in perspective as they move about within a room. Piaget experimented with children in 1941 and found them unable to reorganize or recreate their simple school plans when shifted 180°.[19] Similarly, most of these children were unable to describe the reverse trip to or from school. Intuitive geometric understanding based on the Cartesian grid or axis is absent.

In the years 8-12, a child's development includes these major operations which are noticeably absent in earlier years:

1. His thinking is no longer linear, but he adjusts to detours or change.
2. He begins to lose his egocentric view of the world and endeavors to understand the position and attitudes of others.
3. He readily extracts objects or pieces/bits of environment from more complex organizations.
4. His social awareness is heightened through role-playing, group contact, testing, etc.

In these years all the developmental concepts mentioned earlier are total. He has the skills to assimilate new information arising from daily experiences. Design criteria for the twelve year olds are presented in section B of the summary chart.

The teenage group is affected by an insatiable internal energy that somehow must be channeled to avoid negative malliciousness. "Much of the mystery and enchantment that leads children to discover their immediate surroundings is absent from present housing schemes."[20] The classic approach to providing recreational outlets for this group is to designate centers for activity. Thus, we have teen centers, youth programs, rec halls and the like. To a degree,

such containers of activity are fine, but static. Much of what is "supposed" to happen inside occurs on street corners, basements, pizza shops, parking lots. In this case, I suggest we avoid discussion on making places for activity, but attempt to coordinate the management policy with use.

Appleyard lists several valuable policy and design suggestions focusing on this group:

1. Allow for hanging out, loafing, rebelliousness, getting away from home; enhance function of peer groups, without threatening the general welfare of the society.
2. Encourage testing (daringness), active sports, tension release.
3. Provide process for the creation and destruction of activities like sibling care, plant and animal cultivation.
4. Recognize the need for career preparation through instructional workshops, car repairs, trade apprenticeships.
5. Allow for dreaming, solitude, role-testing, romance, fantasy.
6. Encourage self-identity through participation in the construction, ownership, supervision, execution and instruction of outdoor programs.
7. Encourage inter-class contacts through common programs and facilities, activities that emphasize age rather than class differences.

The summary charts and drawing C/3 illustrate how some of these needs of young adults and their respective ways of life can be accommodated in housing design.

4.5. Projections Based on Current Trends

If one sees the present youth movements or phenomenas as indicative of massive future trends, then of course, cons

servative notions like the physical "centers" for activity or play mentioned earlier will be obsolete. Current tendancies are specifically directed toward conformity to tribal groups, reversion to nature, alternative living and family patterns, etc. Charles Reich tells us that most teenagers are caught between conforming to a somewhat Puritan life style at home while constantly being bombarded by contradictory attitudes expressed by the media and peer group. Adopted values clash with parental expectations and ambitions. Again, of course, one would be confronted with these problems in producing more responsive housing. How future residential neighborhoods respond to these trends remains yet to be seen. One suggestion might be to "institutionalize" group living in the form of communes or co-ops. Communalism, however, runs counter to the ever present American dream of home ownership and family security and the philosophy of individualism. In the past, communal groups lived together for religious or survival reasons and were largely the exception to the normal family way of life. A more comprehensive list of teenage needs is presented in Section C of the summary chart.

This paper recognizes the importance of accommodating play needs of handicapped children as well as normal ones. Most of the facilities built for the disabled have occured in western Europe and Great Britain.[22] Children suffering from polio, spinal meningitas, muscular dystrophy, cerebral palsy, and other orthopedic problems can benefit from and enjoy play facilities like normal children. The playground and buildings should be designed in such a way as to challenge the children through the use of their whole bodies. Another overlooked

group are those subnormal children; those permanently retarded or impaired. Professor J. Tizard initiated the Brooklands experiment in which a number of mentally retarded children were studied as to their particular emotional and physical needs in play. It was found that less emphasis should be placed on climbing, running about and more on offering a wider variety of experiences and to spur the child's imagination.

The design of play facilities must also take into account maladjusted children. These children have been subjected to prolonged unfavorable emotional pressures which upset the normal development of control, resulting in unstable characters, and questionable moral judgements.[23] Past policy has been to remove these children from school to protect other pupils. Adventure playgrounds offer a tough, unstructured place where particularly aggressive kids must release tensions in a number of ways: building fires, destroying and building wooden shelters, discovering useful junk, etc. Adventure playgrounds merely provide the setting and materials; the action must be initiated by the child. In the case of the maladjusted youth, internal energies must be channeled. The drawings A/5, B/5, C/5, and D/5 in Chapter 6 show how spaces between building masses could become that "tough, unstructured place" where kids are on their own, free to explore.

4.6. SUMMARY CHART OF CHILD DEVELOPMENT AND PLAY ACTIVITY

Physical Needs	Psychological Needs	Architectural Qualities
Section A. Children Needs Ages 0-4		
Provide private outdoor space for children 1-3 easily supervisible from the unit. This is easily done in density A, but the greatest amount of needs occur in densities C and D.	To give the child a limited sense of independence even at a very young age.	Area should be minimal of 80 sq. ft./first child, 150 sq. ft./ second child and 25 sq. ft./ each additional child.
It is important for mother to watch child activity outside the unit. In case of density C or D this also includes the corridor, pathways, etc.	To assume an indirect role as the community 'watchdog'	Visual connection through operative glass to private play area. This area shall be enclosed by hedges, nonsolid fence, overhead sun protection, wet floor, dry floor, variety of textures: grass, mud, sand, carpet, artificial light. Must receive sunlight for 30% of the day.
Provide private storage for child's equipment, toys, etc. adjacent to play area, in case of hi-rise, storage must be provided at lobby level. One should encourage the child to have his own key, and personalize it in whatever way possible.	Alleviates a number of headaches for mothers, promotes some limited sense of responsibility.	Toughly constructed lockers able to withstand elements, and hold tricycles, sports equipment, hide in.
To provide a wide range of scaled places that invite participation, fascination without interference from older children.	Allows the child to inhabit, to fantasize, to set up house within, to conquor, to share. Such places should be thought of as the total architecture for children outdoors.	The scaled places need not be higher than 5' for this age. They are smooth/rough/shiny/ colorful/transparent/temporary.

Physical Needs	Psychological Needs	Architectural Qualities
Section B. Children Needs Ages 5-12		
Provision to play or wander in freedom from immediate supervision. Experiential encounters with facilities like bicycle paths, roller skating, ice hockey, etc.	Noise generated from play areas must be taken into consideration, i.e., the location of families without and with children.	Maximize acoustical privacy inside dwelling units as well as between dwellings.
Proximity of this age group to younger group of children; hopefully they might be able to supervise.	Nearness of plants and animals with opportunity to play in/ with mud and water.	
Provision for health facilities at the neighborhood level such that children, if injured, will readily go there. This need not be more than a part-time nurse.		
Provide day care centers to augment educational facilities and free mothers from continual supervision.	Daily contact with others his age allows the child to develop more fully.	In density A, children would need to be chauffered to the center by mothers; its use would rely heavily on distance and the facilities provided by local schools. A suburban d.c.c. might develop in a shopping center, church building, city hall, temporarily in one's home. (see drawing A/2). In density B, children might be able to walk or be picked up due to a possible higher demand for child care in higher densities. (see drawing B/2). In density C, I can see the mere density of at least 48 ppa to provide their own facility.

Section B. (cont.)

Physical Needs	Psychological Needs	Architectural Qualities
		As a physical part of the neighborhood, it would be accessible to all. Density D would also have its own center, perhaps one per bldg. The center could be large and mix with shops, professional offices, entertainment, and nature at the ground level. Smaller centers (maybe 5-10 kids) could function at different levels in the tower serving several floors. These centers might be supervised by: high school students, retired elderly who live nearby, alternating mothers, professional teachers (see drawing D/2).
Children 6-12 should have play area under their own control without interfering with private areas of other children.	Provide areas for group activities for the 6-12 kids in groups of 10-30.	
Provide an adventure playground.	To allow the self-discovery of building with materials; wood, masonry, pipes, old building materials, found junk. The visual quality of what is produced has a temporal quality, and must not be judged for any aesthetic reason by the adult world.	Provision of a screened area where kids simply do their thing with whatever they find/steal/borrow/buy. A source of water is needed, a way of draining water, snow; fires should be tolerated. Used tires, car parts, shopping carts, discarded furniture, are great building blocks.
Separation of girl and boy areas after age twelve.		

Section C. Teenage Needs

Physical Needs

Provide these facilities in/near the neighborhood:
- movie theater
- place to dance
- tennis courts
- skating rink
- drive-in theater
- places to hang out
- outdoor rock conerts
- beaches or swim area

Provide facilities of the following activities that are planned and performed with the opposite sex:
- window shopping
- idle strolling
- non-team athletics
- riding in cars
- errands, chores
- places to make love

Rooms/places to accommodate the above within 1 mile max. of neighborhood, also teen bulletin boards, kiosks in activity paths, presence of youth in local government/decision making process in the neighborhood.

Teen housed community activities like drop-in centers, crash pads (hostels), mental health services, tutoring services, hobby/craft studios.

Provide a private room/space for the teenager in the dwelling where these might occur: telephoning, house parties, watching t.v., raising pets, plants, playing records.

Psychological Needs

Places to be with the opposite sex formally or informally

A teenager is a young adult who has a voice and hand in policy-making. He needs to feel efficacious in his community.

Architectural Qualities

This room is used for a number of family activities during the day, and must be able to be folded off, isolated with reasonable acoustical quality. Generally, standards in poor housing leave out this room.

Footnotes

[1]William H. Whyte, Cluster Development, American Conservation Society, (Washington), 1966, p. 78.

[2]Lady Allen of Huxtable, Planning For Play, M.I.T. Press, Cambridge, Mass., 1968, p. 25.

[3]Ibid., p. 15.

[4]Anthea Holmes and Peter Massie, Children's Play: A Study of Needs and Opportunities, Michael Joseph Publishing, London, 1970, p. 41.

[5]Lady Allen of Huxtable, op.cit., p. 25.

[6]Ibid., p. 151.

[7]Ibid., p. 182.

[8]Ibid.,

[9]David Stern, M.I.T. MCP thesis, 1968, Study of the comparison of child play attitudes in several Boston neighborhoods and suburbs.

[10]From Theories of Development, Jean Piaget, 1930.

[11]Ibid.,

[12]Ibid.

[13]Jean Piaget, The Construction of Reality in the Child.

[14]Ibid.

[15]Ibid.

[16]Ibid.,

[17]Ibid.

[18]Donald Appleyard, Kevin Lynch, unpublished paper, the Openness of Open Space.

[19]Jean Piaget, The Construction of Reality in the Child.

[20]Ibid.

[21]Appleyard and Lynch, op.cit.

[22]Holmes and Massie, op.cit.

[23]Ibid.

CHAPTER V: THE ELDERLY AND RESIDENTIAL NEIGHBORHOODS

5.1. Introduction

Traditionally, our society has tended to segregate various age groups from one another in the way it structures social events and in the way living units are organized. The management and designers of many public and private residents purposely segregate the elderly from the noise of children's play, the intensity of traffic and the day to day contact with people of all ages. Some of this conscious segregation is for the safety needs, health needs that demand less strenuous living, but housing policies for the elderly also perpetuate the engrained myth that the aged prefer to live in peace and tranquility. It seems that in order to facilitate the aged in keeping their health, their emotional needs have been overlooked as far as housing design is concerned. However, our attitudes toward the elderly are visible by that which is built for them. If we look briefly at present housing for the elderly we become aware that segregation of the elderly is meeting the needs of some groups and yet we become suspicious that it may be primarily for the nuclear family.

Generations of families no longer share a dwelling unit by choice. Technology has liberated life from the collective burdens of domestic responsibility and survival. As we saw in Chapter 3, the extended household indigenous to the urban neighborhood is becoming extinct. Where responsibility for household duties and childrearing used to be shared by parents and grandparents alike, now the nuclear family will seek out neighboring families for immediate support. The dream of

the adolescent is to move away from home and be on his own; often enough he is modeling his parents who moved away from their parents. Today's teenager knows his grandparents by telephone and infrequent letters or birthday cards. For the average middle class family who must support an aging and/or ill relative, the financial burden is often only one aspect of the "unsuitable" living arrangement of keeping the aged in the family household. The problems of trying to integrate the needs of several family members are intensified when there are elderly about. And yet, housing and nursing home costs often leave a family with little choice but to care for the elderly at home. The financial dependency of the aged on their families is often humiliating as it runs counter to the American norm of independence. There is evidence that more and more families are seeking ways to care for their elder relatives that will free the family from the burden of physical, emotional and financial responsibility.

Even when savings and retirement benefits permit, the aged often have little option in housing as their resources and mobility are more limited than the average consumer. There are two choices which represent the economic range of housing for the elderly. The first is housing built and locally sponsored by the federal government. Public housing, rent subsidy, mortgage supplement programs, housing for the elderly, etc., fall under this category. This type of housing is often within the city limits, accommodating the poor elderly whose funds come solely from welfare payments, social security payments and pension checks. Fringe rooming houses, anonymous housing projects, 19th century tenement hous-

ing come immediately to mind. Since the beginnings of urban renewal in the 50's, many American cities have been able to boast of their "hi-rise for the elderly." My immediate impression of these towers is a vertical cemetary for the living dead stuffed into apartments rather like regimented coffins. This housing is mostly uninviting, generally minimal in every possible way, and is often far from shops, transit stops and other kinds of people.

The other extreme option in housing is available to the more affluent elderly person. The housing industry is building a number of retirement villages in Florida, the Southwest and on Long Island. These villages focus on leisure and recreation, allowing the aged to live their remaining years in natural splendor.[1] A person's interests may be pursued in many of the highly programmed social events for the "community." Usually included in the villages are day and night nurses and sometimes social workers and clergy.

While some attempt has been made to meet the needs of the elderly in housing, development has been slow and often falls short of fulfilling the demand for housing units that are both economically feasible and emotionally satisfying to those living in them. Also, the assumption that housing for the elderly necessarily means a segregated community is false. A concern of this chapter is not with the housing policies affecting the elderly, but with the quality of residential neighborhoods in which they live and the possibilities for an integration of life styles and development levels. Housing adjustments can be made to suit

the elderly who want to remain in an integrated community where their emotional and historical ties are too important to sever.*

The lack of proper housing for the aged is, in part, due to the market's focus on young adults and growing families who can afford higher rents and prices.[2] Bankers seek to maximize the number of units produced on any given land area while avoiding "risks." Therefore, the availability of needed mortgage or loans for the elderly is further limited. Nationally, public housing has few vacancies and, paradoxically, incredibly long waiting lists.[3] And lastly, suitable in-city housing within the budget of the poor elderly is often prematurely demolished under the guise of urban renewal or private development.

5.2. The Problem of Relocation for the Elderly

A tangential concern to housing for the elderly is the problem of relocation into a new neighborhood. Shortly following retirement, statistics indicate great numbers of older people face the question of where to move. Spatial needs decrease with divorce or the death of a spouse. Dwellings may become too large, taxes too high, insurance premiums skyrocket, etc. What once were the real locational problems for amenities like "good schools," nearness to place of employment, proximity to recreational areas, etc. give way to a new set of priorities like closeness of commercial facilities, shops, laundry, and nearness of family and friends. In short, an old person's mobility in terms of income and physical strength quickly decreases. Groceries, taverns, health clinics all need to be within easy walking distance in high concentrations of the elderly; this

*Detailed information on the optimal percentages of family types (like the elderly, singles, young couples, middle-aged, etc.) and how they best mix in housing is available from USED NEEDS STUDY, HGSD, June 1971.

is true in both new and existing neighborhoods.

The problem of relocation involves adjustment to new housing structures that are more suitable to the emotional and physical needs in the later years. It also means adjustment to a new community of people, to leaving friends behind and making new ones. It seems that taking the needs of both the nuclear family and the elderly into consideration, more opportunities ought to be available for the elderly to remain close to, but independent of, their family in housing that suits their needs. However, often housing for the elderly creates a sub-community where the older people are not integrated with the rest of the neighborhood.

The following citation illustrates some of the difficulties that occur with relocation. As pointed out, the elderly person who has lived in one residence over a period of years may have established a pattern that accommodated certain needs at the time that are hard to change with relocation. If a relocation agency could help facilitate the necessary changes to be made, perhaps relocation would not be as traumatic for the elderly. An individual might be able to look forward to the later years and to the changes that accompany it. Ideally, the elderly would feel a respectable and wanted part of residential community life and would be able to contribute more of their experiences to ongoing generations.

> Mr. and Mrs. B are an elderly couple. They had lived in a three room apartment for 27 years. Formerly an employee in a process factory, Mr. B's social security payments enabled the couple to manage frugally, but adequately. They were relocated in a public housing project.

> At first, the B's were delighted with the move. Their new first floor apartment had a lovely modern kitchen, a bathroom with non-skid tiles, a cheerful sunlite living room. Their first problem arose in connection with the rent payment. Mr. B's check came on the 13th of each month. His previous landlord had been willing to collect rent on the 15th. But the city required rent on the 1st, and the B's were unable to budget properly.
>
> They were used to a switchboard at their old residence. In fact, they had taken this telephone service so much for granted that they hadn't even thought of a private phone in formulating their moving plans, nor could they afford one on the tight budget. Without the telephone, they were cut off from their friends and worried over what might happen if one of them needed a doctor.
>
> Their first floor apartment was lighter and more convenient than their previous home, but it was also much noisier. Traffic sounds disturbed their light sleeping at night. Accustomed to taking short naps during the da-, the B's soon became frantic over the shouts of children playing or journeying to and from school.
>
> Although these discomforts may seem superficial, they can so confuse and worry the elderly person that adjustment to a new home is seriously impaired.[4]

5.3. The Psychological Needs of the Elderly

"It is clear that even amid today's affluence there is a fast growing group of people, the elderly, who are being given more life biologically while being refused an extension of life socially or psychologically."[5] It is important to look at some of the concerns of the elderly that often affect their resistance to relocate or to their reluctance to live alone. One of the most significant periods

of life in terms of major adjustments is the retirement period, and yet, it is often neglected by society leaving the individual to suffer the changes on his own. The housing industry, while concerned with the problems of the elderly to some degree, practically is out of the picture when it comes to the senior citizen (the non-home owner) who no longer is able to earn an income and yet is perfectly healthy and active socially. Again, often the choice is to relocate into a lower income neighborhood or housing project at the expense of leaving a more desirable community environment.

A recent census has shown 25 million Americans over 60 have difficulty finding ways to fill their free time.[6] The notion of retirement is quite important to the middle aged. "Society, at the moment, allows the average American to look forward to 20 years of retired living. As the retirement age slowly decreases in the next thirty years due to the well known evils of computerization and high efficiency, men will look forward to an even longer 'golden age.'"[7] Many, however, underestimate the emotional consequences of suddenly having the rest of their lives in their hands. People, even without an active past, generally find the retirement years an adjustment period. Their major social function (such as a job or parent role) may no longer exist. A couple who has centered their attention around children may find that being alone with each other takes some readjustment.

For the elderly, what were once simple daily activities now have become habitual rituals. The aged find themselves spending countless hours shopping, chatting with friends, even dressing or bathing. They

reminesce and dream surrounded by artifacts of the past, memoirs of younger perhaps more adventurous days. Old photographs, dated letters, worn furniture set the stage for 50 or 60 years in review. Robert Woods Kennedy has listed particular interests of the elderly that increase with age.[8] The raising of vegetables and flowers suddenly becomes more popular, informal teaching of the young, and fondness for informal conversation likewise increases; in effect, the elderly relish many of the daily activities which they might not have had time to enjoy. Likewise, the number of dislikes of the aged increases. They dislike abrupt changes in activities, being referred to by nicknames and have mellowed such that they even dislike a good argument.

Michelson mentions the three dominant fears of the elderly as: loneliness, bad health and poverty.[9] The first of these fears is dependent upon how active one's life has been and if, in fact, his transition from daily employment to retirement was smooth. The loss of activity contacts from daily employment accompanied, often, by a sense of obsolescence accelerates his mandatory withdrawal from society. The second fear, bad health, is apparent in all age groups. The elderly, however, often deny themselves proper medical attention because of high costs. Unfortunately, the poor are largely ignorant of free clinical or diagnostic services and often lack the self-initiative to seek help outside their neighborhood.

The third fear, poverty, is a real fear for those with no savings and those whose sole income is social security or welfare payments. Except for the wealthy, retirement reflects an adjustment to more limited

spending, and absence of a number of daily social contacts. A struggle begins as one's minimum financial security is countered by soaring costs of living coupled with a decrease in one's purchasing power. This situation, of course, is a real one for all groups within the culture. "About one quarter of all older persons live with their children, of those who do not, 40% still receive nominal financial support."[10] Presently, government rent subsidy is available through state welfare of FHA 231 programs. Since the social security program was designated, little expansion in income subsidy has been permitted; assistance must then be channeled through supplementary programs like medicare.

5.4. Physical Needs of the Elderly: Disabilities and Housing Design

The author includes a discussion of the handicapped and the blind in this chapter, recognizing that physical disabilities cover all age groups. The Department of Health, Education and Welfare indicates that a high percentage of the aged suffer from one or more of the following conditions:

1. confinement to wheelchair
2. walking assistance such as crutches, canes, braces, etc.
3. deafness
4. epilepsy or spastic nerve problems

When considering the special needs of the handicapped and the blind, it becomes apparent that more adequately designed housing could help enhance the living comfort of the disabled.

Generally, the design profession's understanding of the particular needs of the handicapped is limited to only the physical hardware of housing. There is on hand volumes of technical information about how

to construct rails, entrances, low barriers, emergency telephones, etc. for publicly used bits of the neighborhood as well as the dwelling unit itself. However, there is little information available to professionals on how the disabled function within their local living environments. The photograph below illustrates a wheelchair victim in his local environment.

Photograph 11. The Handicapped in His Local Environment

Information is needed from those disabled people as to what special needs they have and how changes in their environment could improve their mobility. Some of the needs of the blind will be discussed next.

It is estimated that 400,000 - 500,000 Americans are blind. Most of the blind get about easily with the aid of canes, seeing eye dogs or friends. When asked what they would like to see reinforced in public environments such as parks, streets, theaters, food shops, etc., they consistently describe the environmental cues that stimulate their other senses.[11] They vividly recall the smells of bread, fresh flowers, crying children, barking dogs, etc. as they move through the city streets. (I recommend Dr. R. Griffins, Listening in the Park, an incredibly vivid description of city life experienced by a man who became blind in his early adult years). Many of the blind said they wished branch institutions like brail libraries, banks, health clinics, etc. could be closer to their homes. The thought of traveling through the city on busy streets using public transportation was horrifying to them. Consistently mentioned was t.v. and how most of the programs required sight as well as the ability to hear. Few narrators described things in ways which could help the blind to conceptualize with stimuli other than visual ones . It is evident that enhancing public environments with other physical stimuli would allow a richer interaction with the environment for the blind as well as aid in increasing their social independence.[12]

With regard to activities of the blind in their neighborhoods, some attention should be given to pedestrian movement. What sorts of obstacles does a blind person encounter in his daily experiences? Obviously, the reinforcement of his other four senses is important for him to diagnose his location. He needs to know where he is by recognizing the smells, sounds, and tactile qualities of any spot along his path.

Although it may be difficult to plan an optimal environment for the blind, there are ways of maximizing sensory cues and eliminating hazards that may facilitate movement in a neighborhood. For example, musical shopways or entrances would facilitate identification of specific stores. Publicly used portions of neighborhoods should be free of hazards such as low objects, low rails, projections, etc. These simple additions to the environment should be no strain financially to private owners or the public and would contribute to the welfare of the handicapped residents. More specific criteria for improving the environment of the disabled are presented in the Summary Chart at the end of this chapter. In lieu of drawings for this chapter, the activity/setting relationship of the elderly in their environment is examined by the use of this Summary Chart.

To date little has been investigated by the state or local governments to facilitate the use of the public environment by the handicapped. An encouraging example, however, was the House Bill 1641 of the Massachusetts State Legislature which was introduced and passed last year.[13] The act calls for mandatory alteration of old facilities and new consideration for the disabled in the construction of any new facility supported by state funds such as highways, public housing, sidewalks, building entrances, parking garages, etc. My hope is that the act will be quickly implemented.

A second proposal for the physically disabled is the development of street signs and graphics. A small sign might indicate to a wheelchair victim accessibility into a building via ramps. Auditory sig-

nals might indicate caution or danger to the blind in hazardous areas. Unfortunately, these signals remain experimental and haven't been tested on the streets and pathways of neighborhoods. Chapter 6 illustrates how spaces between buildings can more easily accommodate the disabled.

The following section presents a series of defined needs in terms of housing design. The statements describe various active roles the aged might be asked to assume in future residential neighborhoods. The anticipated volume of housing to be built over the next thirty years must attempt to meet these needs. The fears of the elderly, like any other subgroup in society, might be ameliorated through a sensitive balance of social and physical organizations.

5.5. SUMMARY CHART OF THE ELDERLY/DISABLED IN THEIR ENVIRONMENT

Physical Needs	Psychological Needs	Architectural Qualities
A. Proximity of Amenities Supportive to Neighborhood Life: Based Upon Walking Times and Distances From dwelling to: public transit 300' - 1/16 mi. church 2500' - 1/2 mi. laundry 2500' - 1/2 mi. drugstore 600' - 1/8 mi. public park 600' - 1/8 mi. medical clinic 2500' - 1/2 mi. *grocery 600' - 1/8 mi.	To avoid psychological or physical isolation from existing social fabric. To provide daily consumer products or services to those without cars and unable to afford taxis.	Excessive changes of level involving many flights of stairs avoid-escalators are costly. Benches to rest on enroute to home. A changing visual field is necessary to make one's journey with packages seem a bit shorter.
B. Semi-Public Circulation Paths In/ Near the Neighborhood Safety considerations where pedestrian movement brushed with auto traffic. Sense of definition, enclosure by overhead, side structure, nature whenever possible in the forms of: arbors canopies bosques shrubbery awnings All walkways to be adequately lit as opposed to lighting every section of its length the same. Use pieces of old environments whenever, however, possible	Continuous expansion and constriction of the circulation path by built form, human activity, or natural growth. To some degree a linear sense of place is created. Accommodate the temporal quality of food venders, news stands, pigeons, spontaneous gatherings. To establish some visual link between the present and the past.	Ramps, stairs, where needed are 3' minimum. Places to sit. Wide range of types, sizes, and arrangements of plants, flowers and trees.

Physical Needs	Psychological Needs	Architectural Qualities
C. External Areas of the Dwelling		
Covered area for 3 or 4 to sit near entrance to unit. In hi-density a series of roof terraces, balconies, small garden to grow grass, flowers, herbs, as minimal as a planter, or as large as a communal garden like Back Bay Fens, Boston.	To remain mentally/physically active.	Min. outdoor area of 80 sq. ft.
	Allows one to pursue hobbies, meet friends, have dinner outside, enjoy a cool glass of tea.	Provisions for plantings on overhead screen to shelter from rain, sun, wind, snow.
Adjacent parking and washing for the auto.		Porch should have either a 'view' or an exposure to street activity, traffic, recreational areas, malls.
D. Design of Dwelling Unit		
To include needed safety devices like nonskid floors, bathroom hardware, etc.	To present a number of units some of which are isolated from local activity, others very much a part of the activity by mere proximity. The elderly like any group must be permitted that choice.	
Exposure in two directions, one of which is south.		
Display shelves, cases to exhibit artifacts from the past, photos, souveniers, trophies, gifts.		Minimal area for studio - 550 sq.' Minimal area for 1 bdr. - 650 sq.' Minimal area for 2 bdr. - 750 sq.'
Attached balcony or porch. All electric kitchen. Glass areas to take advantage of particular vistas, landmarks,		All units to be single floor No straight flight stairs
Maximum grouping of 8 units to some common interior shared space. In case of hi-rise density, this space should occur at every level, primarily along circulation paths or corridors.		

Physical Needs	Psychological Needs	Architectural Qualities
Policy or management must permit the tenants to make minimal cosmetic personalization of the unit: painting decorating door seasonal decorations religious artifacts	To boost the elderly's self-confidence as a productive/responsible individual able to influence his environment. To satisfy the need for self-esteem through participation at all levels in the neighborhood.	

E. Social, Psychological Considerations

Maximize the mix between the elderly, singles and couples.
In hi-densities, separate developing families from the elderly. Togetherness can occur at the ground level or elsewhere. In towers, this may happen at particular spaces provided at various levels.

Maximize opportunity for random meetings on circulation paths/corridors/walks/elevators to parks, shops, garages, schools.

Promotion of the elderly as informal/formal educators for neighborhood children. This might be in the form of neighborhood, community taught schools or in a spontaneous way. The elderly represent an untapped resource for youth. Women might act in childcare roles, while men may participate in athletics, hobby classes, local government, etc.

Footnotes

[1]Serge Chermayoff, Alexander Tzonis, Shape of Community: Revitalization of Human Potential, Penguin Press, England, 1971, p. 25.

[2]Lazar, M.I.T. MCP Thesis, 1970, Housing Factors of the Elderly, p. 71.

[3]William Michelson, Man and His Environment: A Sociological Approach, Addison-Wesley Publishing Co., Philippines, 1970, p. 106.

[4]University of Pennsylvania, Institute of Urban Studies, Essays of Problems Faced in the Relocation of the Elderly, Case Study, 1964.

[5]Alvin Toffler, Future Shock, Pan Books Ltd., London, p. 222.

[6]William Donahue, Housing the Aged, University of Michigan Press, Ann Arbor, 1964.

[7]Ibid., p. 32.

[8]Robert Woods Kennedy, The House.

[9]William Michelson, Man and His Environment: A Sociological Approach, Addison-Wesley Publishing Co., Philippines, 1970.

[10]Ibid.

[11]Personal discussion with a blind person.

[12]Ibid.

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CHAPTER VI: THE PUBLIC AND PRIVATE USES OF OPEN SPACE AND HOUSING INTERFACES WITH THE NEIGHBORHOOD

6.1. Introduction

Until now, the paper has focused on subgroups within our culture and how their activity needs are coupled with form/spatial determinants in housing. We have looked at small children, families, mothers, the elderly, the disabled, etc. As in Chapter 2 where an introduction was given to housing in a larger organization, the neighborhood, we now turn the focus once again to collective needs of individuals living in proximity of each other and who share similar environmental space and structures. Instead of examining the activity/setting relationships that demand design improvements in the housing unit or project, we will look at how alternative designs may improve the larger context of the housing unit - the surrounding spatial environment and the interfaces with the public. This chapter will deal with design specifics as to how these improvements can be made illustrated by several drawings related to the range of activities and ideas presented in the text.

This chapter looks at open space in much the same general way that the neighborhood was discussed in Chapter 2. We are no longer concerned with activity/setting relationships as "pieces" of housing organizations, but with open space as the larger organization itself. Open space or the "leftover spaces" between building masses is the largest organization capable of nurturing a wide range of activity/setting relationships outside the home. To improve this organization through alternative designs is to increase the activity choices for

individuals, for families and for groups of individuals. It also aids the ever-present alienation of individuals from each other who find that having a neighbor has no meaning. Designs for improving the social stability and well-being of neighborhoods is a monumental undertaking, yet it is possible to illustrate a few ways in which improvements can be made to help increase communication and social activity between people and to help diminish the physical and social isolation of housing units from the neighborhood environment. This chapter will look first at the design alternatives for use of open space and then at the uses of interfaces with the public.

6.2. Definition of Open Space

In this paper open space is considered the "left over" spaces between building masses. My concern is with open space as the defined, usable space at the ground plane where much activity occurs. Open space is shared territory most often where no one person assumes responsibility for its use, upkeep or general character. It becomes, in effect, what the functions of surrounding buildings allow to happen to it or what the attitude about it is by those who use it. In this paper it is defined by those who live in surrounding housing and who control its development and use. In the housing densities C and D much open space is used as required parking space, possibly as private areas, tot lots, and the remainder is uncommitted by compulsory zoning. As the drawings will indicate, alternative ways of handling open space fulfill the required uses as well as many other possible uses.

6.3. Functions of Open Space

The ground plane as the habitable part of open space should be an extension of housing and be designed as such. Much in the same manner that rooms allow us to perform various tasks, the manipulation of the ground plane outdoors makes pockets or places for activitiy. This conscious manicuring of the earth and constructed forms will lead to plurality in terms of functional use and participation by residents. The recognition of specific needs of the elderly, young children, singles, the handicapped, etc. at the onset of the design process can result in outdoor "rooms" where one can choose to be alone or mingle with a group in a variety of activities. Within a minimum of distance from the housing site, a wealth of materials, activities, softness and potential coexist. For instance, hard materials such as pavement, stairs, play equipment need to be complimented by a palette of softness - grass, sand, water, foliage, vines, etc. Too much of one without the other is insufficient for the plurality of needs involved. Habitable open space also must encourage venders of popcorn, ice cream, balloons, etc. to engage in the various activities of people outdoors, and designers should anticipate their participation and hopefully welcome it. The kinds of things we do, the way in which they take place, and who controls where and when they may happen are all important to consider in open space.

Planners traditionally regarded open space as functional space, highly programmed to satisfy specific landscape or recreational needs. To understand this we merely have to look at recreation parks around us. Most often, open space possesses formal qualities in which one

is more an observer than a participant. Places like freeways, right of ways, vacant lots, fair grounds, junk yards, abandoned railroad tracks, etc. are seldom thought of as habitable open space. They are merely the skeleton remains of obsolete activities.

Kevin Lynch expands the conservative implications of open space to include both very negative as well as positive places.[1] A distinction is made between those formal uses of open space which are exclusive to particular age and social groups and open space, often left over, between places where one is more likely to engage in spontaneous activities. Lynch sees the latter as the more exciting in these four ways:

1. The use of uncommitted land, largely left unplanned, where people discover parts of their territory they would seldom spend a moment to look at closely.

2. Like the natural environment of the woods and shore, the unplanned part of the world offers a number of physical challenges particularly to children. Old cars make wonderful shells to explore, used wood, bricks let the children construct their own mini-environments.

3. Open space presents opportunities for people to gather in ways as to make acquaintance with each other.

4. Land surrounding the home is an extension of the individual self to his local environment, to his community and ultimately to the world at large.

While many of the above places are rich and fun to fantasize about, they only exist in and around remains of older buildings. The difficulty is transporting these adventurous qualities to open spaces constructed around new housing for a wider range of people, without them appearing superficial or contrived. The photographs on the next page illustrate how open spaces around buildings generally appear or the kinds of activities they attract (and by implication, discourage).

Photograph 12. Hard Surfaces Encourage Little Activity Aside From Parking Cars

Photograph 13. Pleasant, But Seldom Used Spaces Between Housing Blocks

6.4. Notions of Neighborhood Participation

The drawings A/5, C/5 and D/5 indicate how one might manipulate the ground plane between/under/adjacent to housing. Each drawing is perhaps too complex in that it shows too many activities occuring simultaneously within a defined area. I recognize this and feel it is much more valuable to present the reader with an array of activities rather than discriminate which are more important or dispensible. My hope is that the drawings evoke an excitement which in reality would seduce residents to participate in, rather than observe the open spaces in their housing environment. In short, the drawings don't paint a landscape, but introduce the possibilities for real choice by people of all ages. Clearly, problems of noise, supervision, child conflicts, use priorities exist and will be discussed later.

As the numbers on each of the drawings show, a number of places are available which tenants may directly affect themselves. Vegetable gardens, flower beds, herbs, arts and craft/hobby spaces, etc. are some possible uses of open space which can be claimed personally. Laying claim to "turf" and being "allowed" to operate on it is necessary in hi-density situations. Habitable open space and one's ability to perform comfortably within it introduces the temporal uses of open space; numerous people have access to the same area and will want to engage in different activities. On a sunny afternoon one may find teenagers congregating on the lawn listening to rock music, an old man tending a small garden near his home, a mother pushing her twin daughters along a brook. Many activities such as these occur each day, however unpre-

dictable as to the exact time and location. While designers don't need to construct ways for people to engage in informal activities, they need to keep in mind the attributes of the open space environment that encourage people to do so.

People have a need to "feel at home" outside the space of their house. I agree with Larry Halprin's opinion that the major reason why most housing projects are not successful (for most income groups) is due to poor site planning. Habitable open space between buildings optimizes social interactions between neighbors, or at least provides more opportunity for social contact. "Urban dwellers, in fact, have a deep seated need for a close propinquity and intimate relation to the place in which they live. Where they live is an echo of themselves. They want to feel where they are is a specific place with character just as they want to feel unique as individuals. They resent anonymity; they wish a personalized character."[2]

6.5. The Ground Plane - or Getting Back to Mother Earth

As stated earlier, this paper discusses the quality of the ground plane as a maniputable form that houses outdoor activities - form which is physically defined by adjacent housing and manipulated natural and man-made pockets for outdoor activity. Psychological studies (Paul Baum, Ph.D., clinical psychologist) indicate that people tend to identify with the context in which they live.[3] Numerous studies verify the importance of people/tenants being able to add part of themselves to their environment as many people feel the need to extend their social activity beyond the walls of their home. With regards to open space this might be partly accomplished in the following ways:

1. Flexible rental spaces along a heavily used pathway - like a storefront. Places where groups can lease display space on a limited basis. A rental space which teenagers may call their own. Other uses include emergency clinics, arts and crafts studios, legal aid, used clothing and furniture exchanges, half-way houses. In older cities, land values and rents often make it difficult for non-profit groups to have access to space for their functions.

2. Allottment gardens (not unlike those in Boston's Fenway) where occupants in apartments can grow fruits, vegetables and flowers, particularly in those dwelling units that house mostly retired or elderly people.

3. Provisions for organized games for all age groups. These might be floor surfaces for basketball, shuffleboard, or tennis as well as hilly ground surfaces for winter sledding and pathways for bicycling. Water fountains should be plentiful and lit by night to encourage more nighttime activity. Areas for skating in winter should be provided and made safe if in natural waters. In general, sport facilities which are often scattered throughout older cities should be made more available in high density areas where there are ample people to support the facilities.

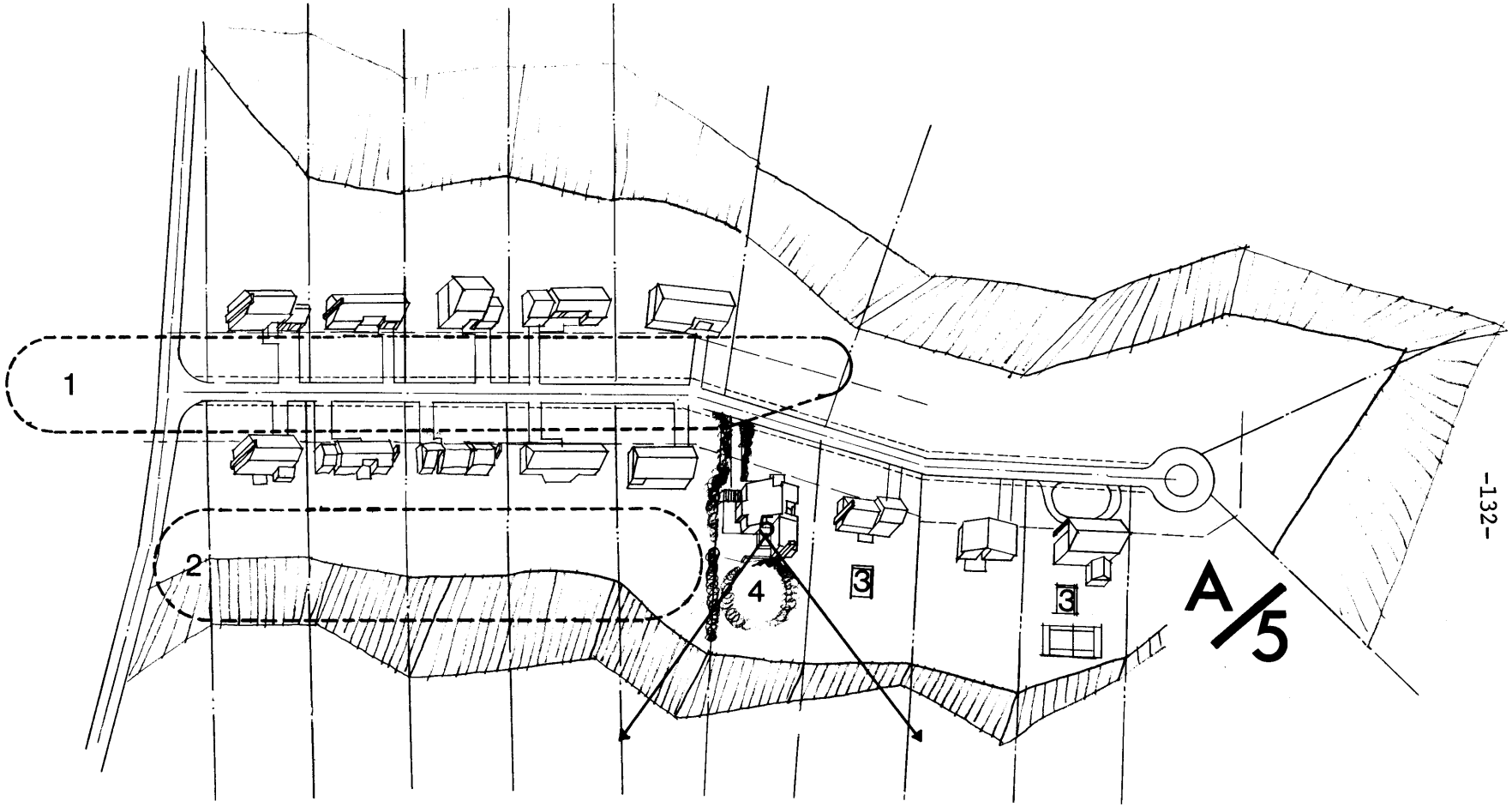
4. Provisions for parking that provide overhead shelter and preferably underground protection. Adjacent to parking stalls should be ample storage spaces for tools, spare tires, seasonal sporting equipment, etc. Research (notably that of John Zeisal and Brent Brolin) shows that the car is a status symbol for the lower income groups indicating that places to wash, tune up and display automobiles are needed.

5. Historical landmarks in new housing developments. Open space offers areas for generating significant landmarks or distinctions in a neighborhood. In ethnic neighborhoods landmarks might take the form of an ongoing project initiated and maintained by the residents. Ideally, generations of one family would participate in the preservation of landmarks and add to tradition by creating new ones. It is conceivable that parts of older, obsolete structures could be redesigned for new constructs and integrated with new buildings. This might require a tremendous coordination of effort between the architect, tenants group, owners and the contractors; however, with responsive communication, the human need to feel historical continuity can be preserved at the local level.

6. The acceptance of spontaneity of action in open space needs to be encouraged more. As mentioned earlier, if the ground planes begin to represent an extension of the home unit, then one understands the importance of feeling uninhibited outside the home. Spontaneous acts, of course, can be constructive or destructive, and clearly not all are to be condoned in public areas. But in the arena of public open space, humans often display great moments of emotion, creativity, and communion with the larger world which ought to be sanctioned, not repressed.

The diversity of human activity needs to be accommodated by the design of adequate open space that provides safety day and night. I feel that when an environment features such diversity of human activity the neighborhood spirit is enhanced. The multitude of informal and programmed activities compliment each other day to day which is necessary for maintaining a sense of urbanity in the hi-density pedestrian areas. "Whenever the pattern of interest of multiple use along the street is violated, exciting qualities are constantly left out."[4] Also, it is important that people begin to have a better sense of influencing their environment and an ability to manage some of the resources around them. This "ownership" of the environment will add to a community's spirit of cooperativeness and sociability. Designers of housing must begin to adhere to some of these activity needs and the psychological implications behind them.

The following pages include a series of drawings relating to the alternative designs of open space in densities A, C, and D. Following these drawings will be a discussion of the uses of interfaces with public areas.



Uses of Open Space in the Suburban Neighborhood

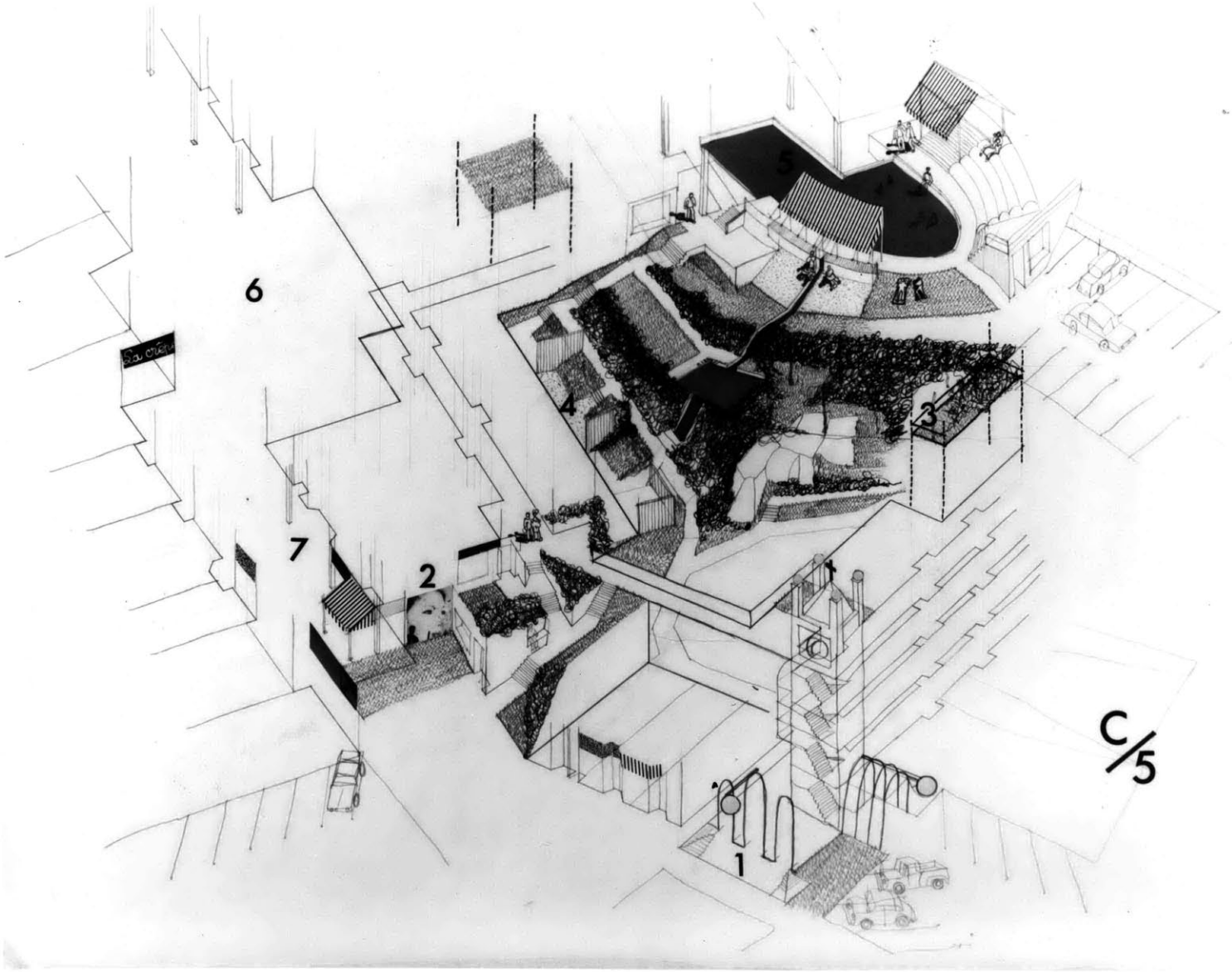
Drawing A/5. Uses of Open Space in the Suburban Neighborhood

1 The linear open space whose width is determined by zoning setbacks and repetitive objects like driveways, mailboxes,walks,token land scaping, etc.. It becomes a nonspace, a showcase of picture windows, highly manicured lawns, and questionable facades.

2 The linear open space behind these houses, like the front, is an obvious result of similar building masses. Most often, little effort is made to define private space by planting, barriers like fences,arbors, topo changes, etc. The rear is that place however, where kids can play football, where family barbecues occur, but not the place where a woman struts about in her nightgown. There are degrees of privacy and acceptability.

3. Repetitive elements like swimming pools, tennis courts, vegetable gardens begin to appear over time. Like many things, they are status items and possess all the connotations that accompany them. My preference would be to consolidate these elements and maybe build a larger swimming pool for all the neighborhood to use together.

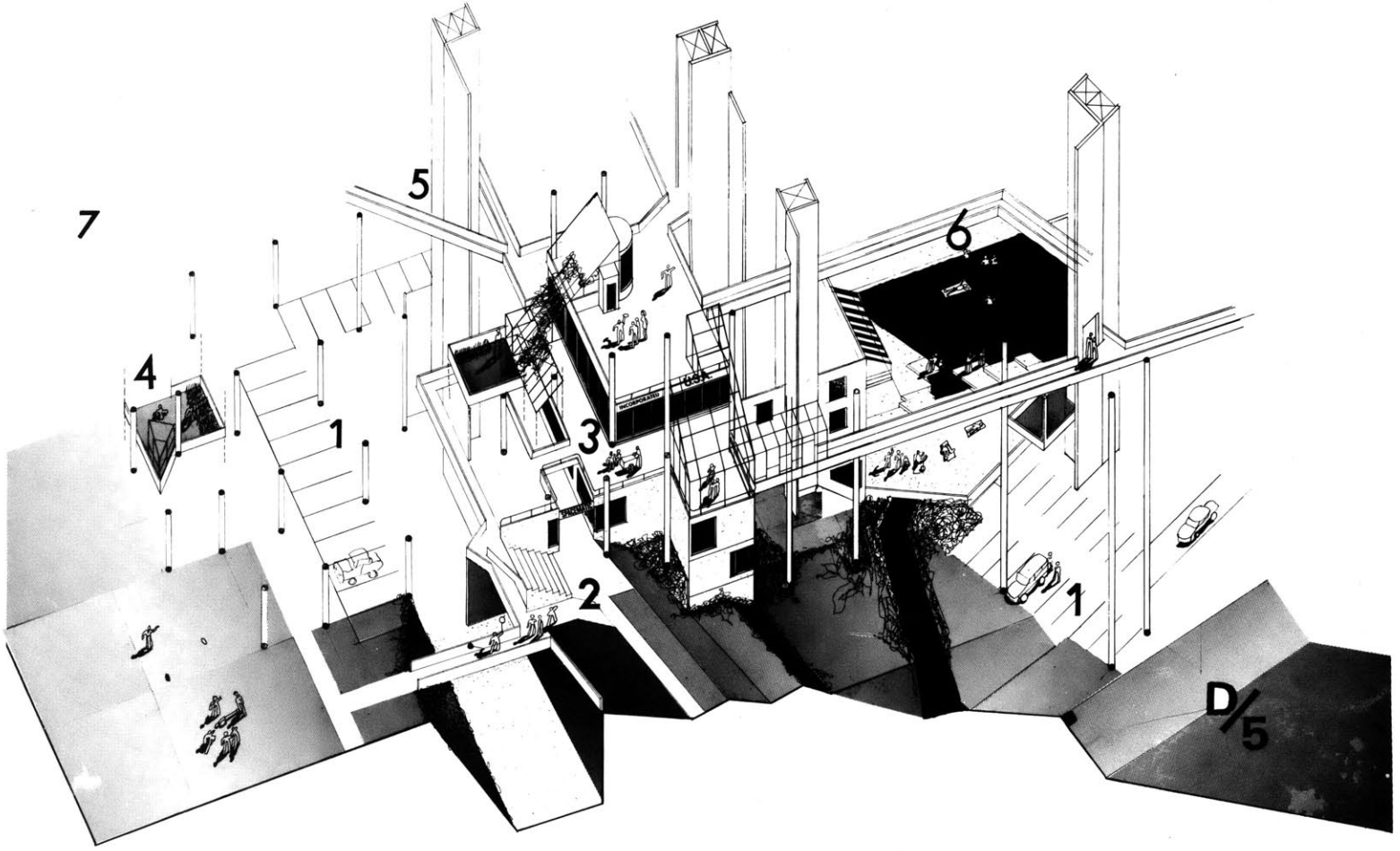
4 The site plan of house A/1 depicting how one'takes' advantage of the potential views as well creating more private, permissible places by soft barriers like dense plantings.



How One Might Treat the Open Space Environment Between Building Masses

Drawing C/5. How One Might Treat the Open Space Environment Between Building Masses

1. The conversion of an older structure adjacent to new housing into some supportive place. In this case, a church becomes a movie theatre, a teen/rock/drop-in center/ a branch library/etc. It becomes what the people want it to be; it is controlled and operated by them for them. In addition, I suspect the recycling of something which is a landmark within an existing neighborhood, could lead to a smoother acceptance of new housing on older social patterns.
2 Displays/medias/ billboards/announcements onappointed walls of the housing which is seen by people along their daily movement paths. Hopefully, such a place could be used by those within the neighborhood, and not leased to national advertisements as billboards presently are.
3 Use of roof tops as terraces/gardens/soft spots, accessible and safe for all age groups. Hopefully, any tenant might feel so at ease here that he'd invite his friends/relative to visit/ mingle with others. Present housing for the most part, does not even provide this possibility.
4 Some units/apartments on the gound plane have private gardens. Places where one can grow flowers/vegetables/herbs and feel that to be an acceptable, comfortable act.
5 The presence of water for people to swim,sun themselves, skate on, etc. is vital when sufficient numbers of units at this or any density are present.
6 Possible considerations for activities along existing streets which
7 about the site are necessary. The drawing illustrates how a commercial street might become a mall with planned constrictions and expansions along its length. Housing and night life are mixed with the shops if thought compatable.



How One Might Treat the Supportive Services and Open Space

Drawing D/5. How One Might Treat the Supportive Services and Open Space

1 Parking stalls should again be covered and as close to the unit as possible. Facilities for washing, self-servicing are provided at each cluster of stalls.
2 Physical layering to seat people for events like political speeches, theatre, films, etc. Temporary props, lighting, stage sets, etc. can easily be attached to the existing structure. Both programmed and spontaneous activities occur.
3 Promenades lined with shops/cafes/services/rental spaces which can move outward through a sliding glass partition to exhibit along the promenade. Administrative policies of public zones like this must accept this flexibility to expand.
4 Roof terraces/expanded balconies for people of all ages to use. The possibility for three dimensional enclosure by some lightweight glass structure will enable the terrace to be used year round.
5 Connectors at various levels allow movement among the clusters rather than forcing one to descend via elevators and then move along the ground plane. The ability to protect these connectors from the wind/weather also exists.
6 Water in some supervised fashion exists in the form of cascading fountains, swimming pools, mini sail boats, ice skating, sun bathing, etc. One is encouraged to splash, not watch.
7 At the extremes of any housing of this density and complexity, one needs to concious of any tensions created with how it meets existing neighborhood fabrics. This kind of interface requires massing and scale in the building type which is similar.

6.6. Public-Private Interfaces Within Housing and Neighborhoods

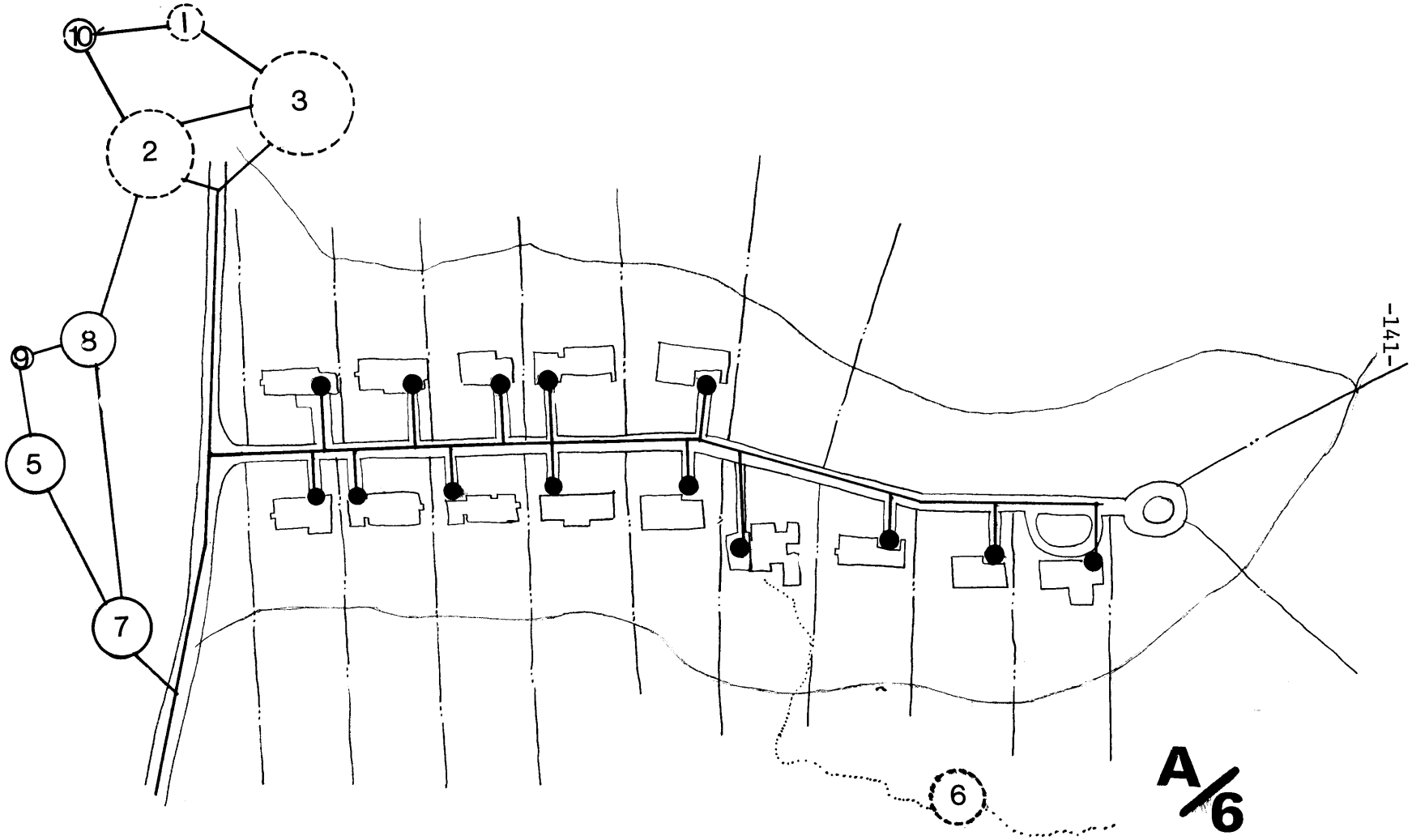
The point of transition in housing where one leaves the semi-public quality of corridors, sidewalks, stairways, elevators, etc. and enters his unit is called the interface. The interface is the spatial zone which might be as minimal as the door stoops illustrated in photograph 13 or as large as the private courts depicted in photograph 14. It is the physical threshold between the inside and outside. Older houses often emphasize the spatial experience from the street to the entry as a place to decorate. Plants, wood embellishments, stain glass, decorate tile, etc. make those places where umbrellas, wet boots, milk bottles, and hatracks were placed a bit more exciting to pass through.

The drawings A/6, B/6, C/6 and D/6 indicate how the various entry/threshold/interface conditions relate to the larger circulation organizations. In the case of the suburban density, one senses much of the public, shared activity occurs outside the physical neighborhood. The numbers on drawing A/5 show how both informal and formal institutions (mechanisms for meeting others) occur outside the neighborhood and are usually driven to by cars. In density situation B (drawing B/6), the mere presence of small shops and neighborhood branch institutions increase one's opporunity to spontaneously meet others. Here parking stalls and entry courts become the transition space. Drawing C/6 illustrates the relationship of the entry condition to the total circulation system. The darkened areas outside each entry along the shared corridor are to be claimed and affected by the tenant. He might re-

Photograph 14. Minimal Entries Offer no Transitional Space.

Photograph 15. Private Gardens Soften the Interface Between Public and Private Areas.

paint, recarpet, place graphics, etc. in and around these spaces as he chooses. The ability to positively make his mark helps destroy the anonymity of most prototype apartment floor layouts. A similar method of personalizing one's unit exists at the highest density situation illustrated in drawing D/6. My concern here is not to outline further ways of personalizing entries at these hi-rise densities, but to show the tenant/owner the physical and psychological importance of these spaces.

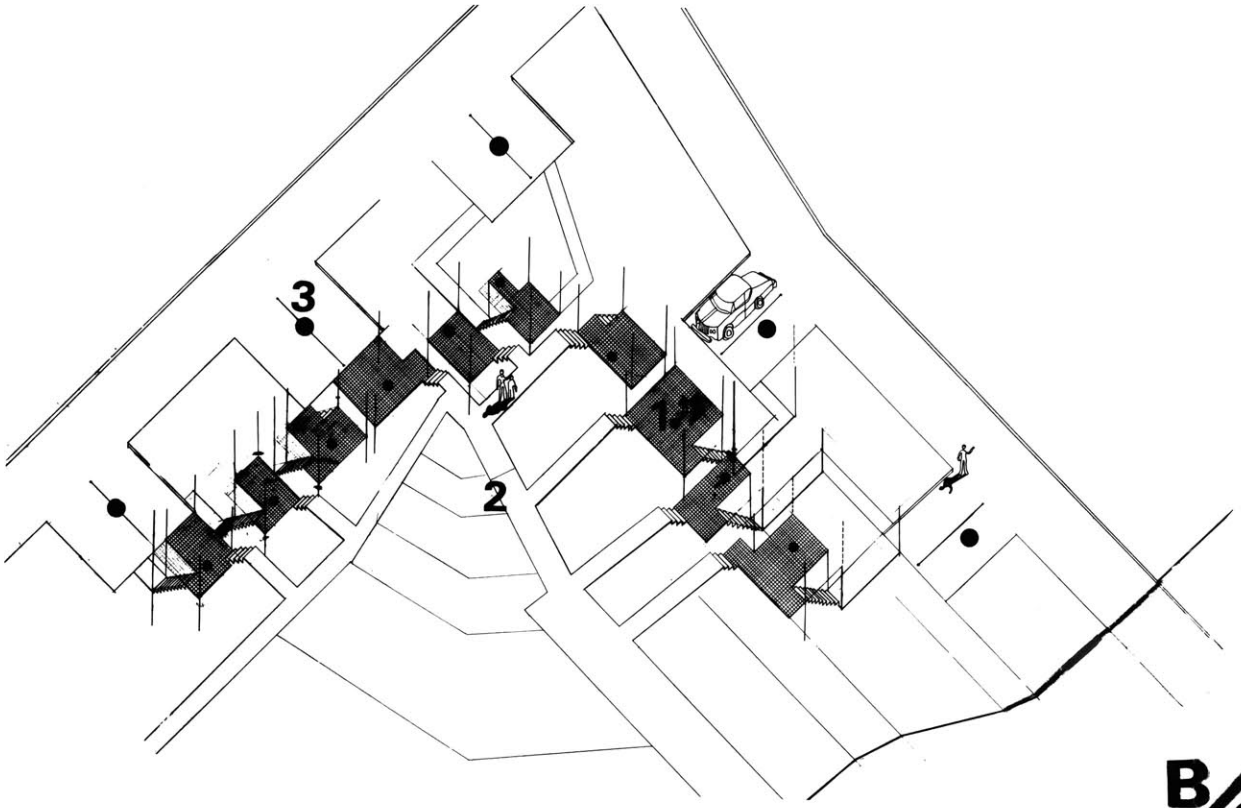


Relationship of Suburban Houses to Outside Activities and Services

Drawing A/6. Relationship of Suburban Houses to Outside Activities and Services

In the suburban pattern of density A, one's connection to activities, shopping, branch institutions, schools, and employment is generally made by car. The small number of people within housing at this density of 4 units/acre cannot support neighborhood facilities.

The numbers 1 through 10 graphically illustrate how supportive facilities either on a daily basis (like jobs, schools, shopping) or on a weekly basis (like churches, entertainment, parks, sports events) lie outside the immediate neighborhood. People, of course, who opt to live here are aware of this. Life here becomes a kind of reclusion with the media, t.v., telephones, and the highway as its tenacles to the world outside. Unfortunately for the elderly, the physically handicapped, small children, etc. who cannot drive, life is even more isolated. Women spend countless hours chauffering their family and groceries about.



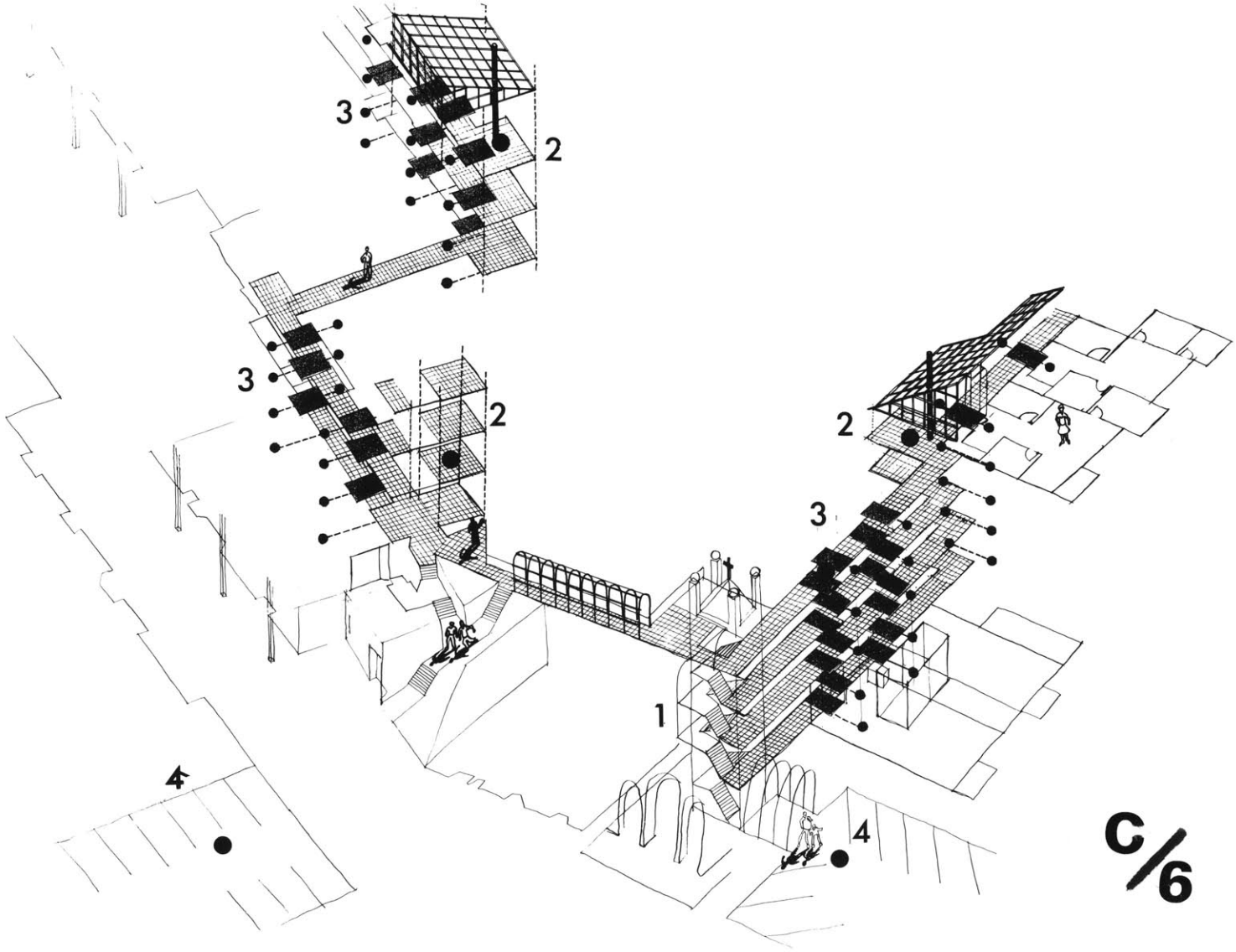
Relationship of Circulation Spaces to Unit Entries

Drawing B/6. Relationship of Circulation Spaces to Unit Entries

1. The private garden adjacent to each unit is described on pages 70-71. It is significant in that it creates a transitional space between public streets and pathways and the private housing unit. The garden, like the verrandas and porches of older homes, is a place to watch others from and be seen. It serves as one "piece" of the local living environment in which people can comfortably operate.

2. The sidewalks and paths on the ground plane at this density perform the same function as elevator/corridors, circulation performs in higher densities. They serve as latent mechanisms for social contact. With respect to their use in housing at low density situations, this is determined in part by their quality and initial layout as to where people need to go. The sidewalks are mainly used by those who don't own cars and by the young.

3. The closeness of the car to the home is important for a number of reasons. The car space should be enclosed if possible under the building masses.



Relationship of Units to the Larger Circulation Organization

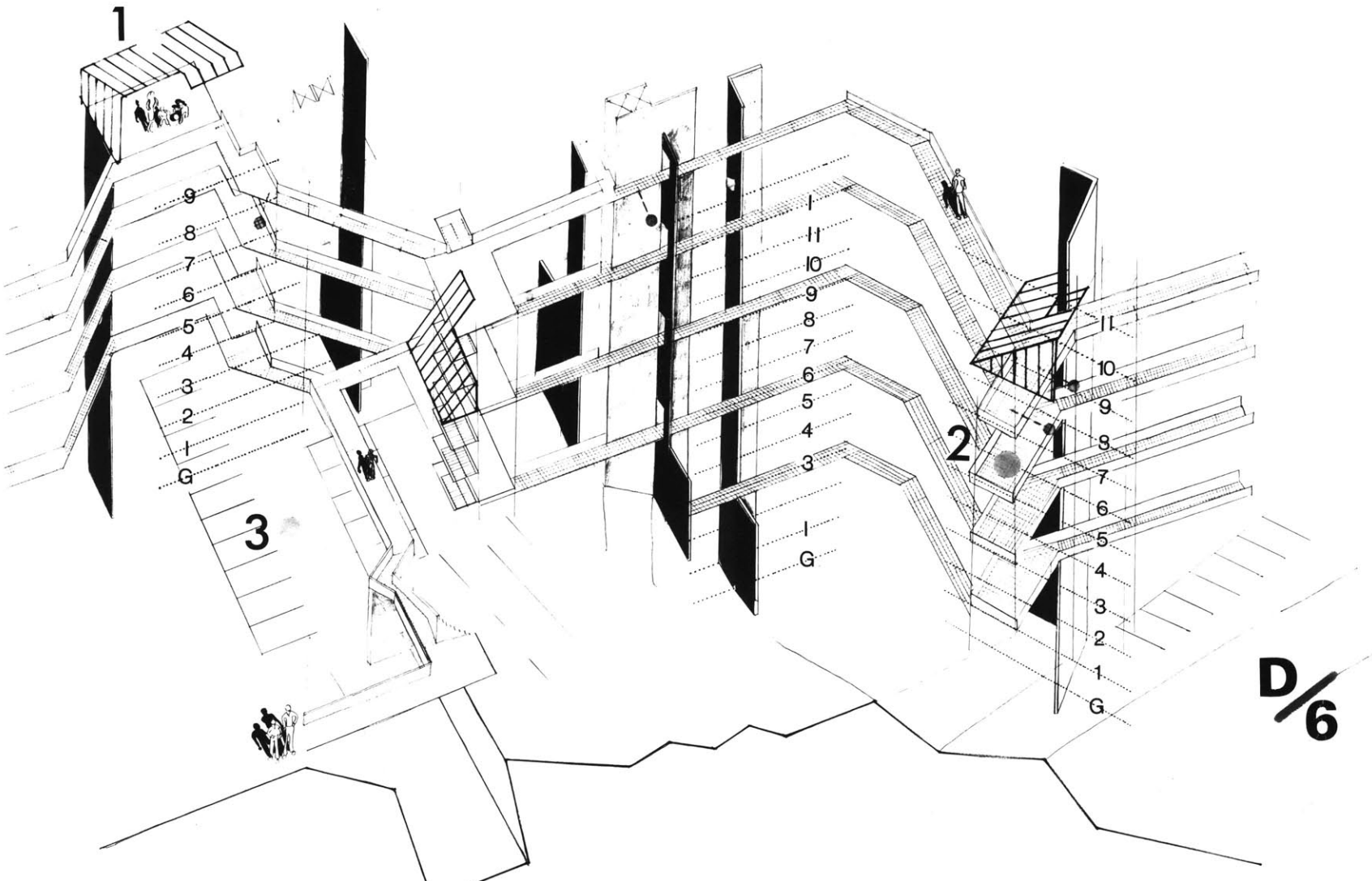
Drawing C/6. Relationship of Units to the Larger Circulation Organization

1 The conversion of the existing church bell tower into a stairwell for the housing. The notion of manipulating the new to accommodate the potential reuse of something older, and probably respected within and existing neighborhood. The drawing wants to avoid the 'missed opportunities' due to hasty, insensitive decisions we witness daily.

2 The solar rooms whose use is determined by those living within the housing. In the case of the elderly, it might be a quiet place where one knits, plays cards,watches TV, or falls into that eternal sleep. For families with smaller children, it might become a day care center, a laundry, a local service run by an elderly, etc. The question is not use, but the option of choice and the ability to change over time.

3 The darkened area outside each entry along the corridor is thought to be some part of the shared corridor which might be claimed by a tenant. One might decorate/paint/recarpet/connect with another unit at this point; most important to some age groups is his ability to positively imprint this part. The option to destroy any anonymity needs to exist.

4 Parking in/under/around the unit. The proximity of house to car is often underestimated; the car to manyis a cherished, to be protected object. Tenants need the ability and place to fix/wash/display their cars.



Relationship of Units to the Larger Circulation Organization

Drawing D/6. Relationship of Units to the Larger Circulation Organization

1 Each building or series of clusters shall contain a solar room, a multi-purpose place whose use and control could be upto the tenants. The roof is a three-dimensional greenhouse like place where it's acceptable to grow plants and grass indoors. Children whose ability to play outdoors is certainly minimalized much of the year, can be placed there by mothers for supervised play during the day. At night either spontaneously or in a programmed way, other age groups can schedule functions. Its rather like a piece of the Garden of Eden up on the roof.

2 The expanded corridor at each level occurs when the movement jogs providing a large alcove with large glazed openings. The use/function of such an alcove might the following; to support tenant activities beyond the capabilities of the solar room, to provide additional classroom space, to offer office/professional space, to allow expansion of adjacent units,etc.

3 Parking stalls should be accommodated underneath the housing as much as possible. This obviously facilitates carrying groceries/goods, the arrival of guests,the movement of the handicapped, etc., but allows one to repair/wash his car under cover.

Footnotes

[1]Kevin Lynch, "The Openness of Open Space," from Principles and Practices of Urban Planning,

[2]Lawrence Halprin, New York, New York

[3]Clifford Moller, Architectural Environment and Our Mental Health, Horizon Press, New York, 1968,

CONCLUSIONS

This paper discussed six activity/setting relationships and showed how they consistently reappear in various residential density situations with implications for alternative housing designs. As stated earlier, the choice of these six was due largely to personal interest. Their presence was to provide an initial framework or method for coupling what people do and where/how they do it in their home environments. The needs of children, mothers, the elderly, the blind and handicapped, etc. are often unrecognized or ignored, both in housing design and planning of neighborhoods. Therefore, my intent was to loosely assemble sociological and psychological evidence to substantiate the design alternatives that I have presented in the text and in the drawings of this paper. This was done out of a belief that much of what is currently being built in housing leaves out these needs of people, and that much can be done to improve the living environment of people in all density situations.

In the paper many of my thoughts are only presented briefly and not discussed at length. In the beginning of the paper I anticipated that many readers might have difficulty in two ways: first, moving through the paper in a linear fashion with smooth transitions between the information presented in the chapters. Secondly, assimilating the variety and abundance of information without drawing simplistic conclusions when, in fact, the problems are more complex than would appear at a first glance.

The associative quality of human activity to physical settings is the most fundamental aspect of daily living. It is those daily events which are either facilitated or inhibited by our local environment. Much of the housing built for others lacks an underlying sensitivity for these fundamental relationships. As one who has and expects to build reasonable places for others to live, I constantly find myself searching for information about various activity/setting relationships to aid in housing design. The framework presented in this paper is an initial pass at a method of collecting useful and important information about how people live and need to live.

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