DESIGN GUIDELINES: NORTH CAMBRIDGE NEIGHBORHOOD INTERGENERATIONAL URBAN VILLAGE CENTER

by
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SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
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Signature of the author

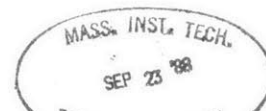Robert D. Fiedler,
Department of Architecture
June 14, 1988

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Students

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"... the city can be a deep and comprehensive education. Creating order is the essence of cognitive development. Sensibility is useful for maintaining the continuity of adult personal identity, and the stable meaning of culture. Perhaps it is far more useful to the growing child, who is less deeply immersed in abstract verbal notions and more open to the immediate sights and sounds around him. A rich, sensuous world, full of diverse meanings and characterized by an unfolding order, is a fine growing medium, if the child is free to explore it and can at times withdraw from it into some quiet and protected place. The survival of the species depends on rearing competent children. "
(Lynch,1981)

ABSTRACT

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Submitted to the Department of Architecture on
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This thesis has two fundamental intents: to establish a set of design guidelines for a new type of urban space which promotes increased day to day social and personal contact between elementary school aged children and their elders - the aging of our society; and, to accomplish this end by exploring what this idea means through an investigative process in which architectural design is used as a pre-programming tool.

Extant models of elementary schools and elderly housing were transformed into a new type of environmental program and social institution. Spaces and activities normally associated with elderly housing and elementary schools were combined to reestablish strong intergenerational relationships between the young and the old of our society. Traditional intergenerational relationships lost through the segregation of generations in American society are reestablished in a formal and contemporary way.

The result of this transformation was the architectural concept of an intergenerational urban neighborhood village. A place, which through its design as a highly structured urban environment, allows several layers of life, or territorial realms to exist simultaneously:
    o private dwellings;
    o semi-private and semi-public residential realms;
    o community education realm;
    o private educational realm;
    o private service realm; and
    o community realm.
The new relationships of activities afforded by this new juxtaposition of territories promotes intergenerational exchange.

Activities were physically interconnected through highly articulated territorial realms which form the loci of an intergenerational life. A life which is nurtured in a village like setting that forms the center of the intergenerational life of the neighborhood of North Cambridge. An urban neighborhood center in which an intergenerational sub-culture of elementary school students and elders can establish itself and flourish.

The architectural design process was conceived as a research program rooted in theoretical understanding of the sociology of aging, intergenerational exchange and elementary education. Urban design theory was used as a framework to make sense of the diversity and complexity of the intergenerational urban neighborhood village, by giving it specificity, coherence and vision. The architectonic intentions needed to realize this project were made more explicit through this process. Design explorations on a specific site tested the validity and plausibility of the theoretical understanding. The design research process was both inductive and deductive, theory and design explorations informing each other in a dialectical process.

The architectural concept was postulated through both written language and design drawing. This approach is rooted in the assumption that investigation of the social vision behind for the urban neighborhood village center, cannot be accomplished in abstraction, but must be rooted in both an understanding of architectural space as a cultural place, and of a particular urban location.

This work is based on four underlying assumptions:

    o that emotional, social and physical divisions exist between the generations in our society due to, in part, a trend throughout this century, towards age segregation;

    o that there is an reciprocal association between the physical definition of space and the social occasion or place which inhabit that space, and that this association can be exploited to define new types of social institutions;

    o specifically, transformation of extant models of elderly housing and elementary schools into new settings can guide through architectural intent, increased day to day contact between the aging and the young; and

    o intergeneration cohesion and exchange, are beneficial to society as a whole, the intergenerational sub-culture that would flourish in this place, and to the individual.

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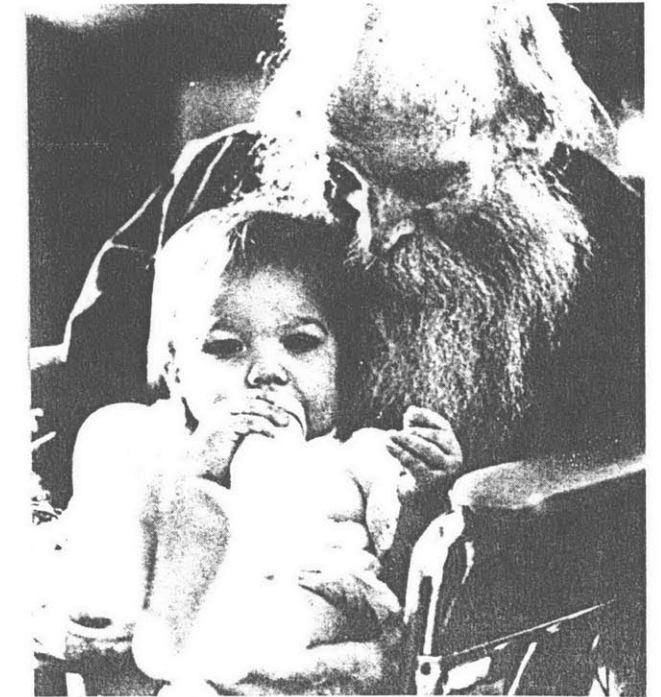
PART ONE: THE PRETEXT

A: THE CASE FOR INTERGENERATIONAL EXCHANGE

" ... the continuity of all cultures depends on the living presence of at least three generations. "

Mead, 1970 (Seefeldt, 1985)

"Young people have ambition, energy and enthusiasm. Older people have experience, knowledge and expertise. If you put those things together, you have dynamite - anything can happen."

Lydia Bragger, Gray Panther Leader
(Bartz, 1985)

"The phenomenon of segregation by age and its consequences for human behavior and development pose problems of the greatest magnitude for the Western world in general and for American society in particular."

(Bronfenbrenner , 1973)

American society is segregated by age to a greater extent than ever before. School is attended by children in age segregated classes. Those in the young and middle adult years work. The aged tend to associate with those of their own age and may be isolated from others. The extended family has given way to the nuclear family. As a result of these rifts in the traditional American social fabric, emotional and physical divisions exist between the generations.

Without intergenerational contact, cultural continuity is lessened, along with the educational vitality associated with this exchange. Both young and old aging persons are disadvantaged when isolated from each other and other groups in society.

The transition from the extended family toward the nuclear family in American society represents a transition from age integration to age segregation. Contact between the young and aging has diminished over the past several decades. Since 1970, this trend has reversed slightly, Americans aged 65 and over, are 40 percent more segregated than they were in the 1940's. (Tierney, 1987)

Since the 1960's, research indicates " that the decline in life satisfaction among older persons and the increase in negative stereotypes toward the aged and aging among younger persons both seem to be connected to this trend toward age separation between the generations." (Newman, 1985) In many other cultures, the young and the aging " live and work closely together. As a result, the children seem to understand and respect the old, and accept the reality of their own aging " to a greater degree than is the case in America. (Seefeldt, 1985)

The segregation of America's aging is population increasing while it continues to dramaticly age. The number of aged Americans will continue to grow for the next quarter of a century, both as a percentage of the total national population and in absolute number. The number of Americans 65 and over has increased from 9 percent of the total population at the turn of this century to 21 percent in 1980. The percentage of those 65 and over has continued to grow and it will continue to do so with dramatic increases over the next 20 years. By this century's end, there will be an expected 1150

percent increase in number of Americans 65 and over since it began. (The American Institute of Architect's Foundation, 1985) The combination of age segregation and the increased numbers of the aging is a situation requiring immediate design attention.

A growing number of intergenerational school programs are being implemented to counteract the trend towards age segregation. Research indicates that in 1985 several million children and 100,000 older persons and were involved in these programs, which covered a wide range of activities formats and settings. For example, the aging are involved in teaching arts and crafts, being guest lecturers, helping with homework, preparing school meals and providing assistance to school administration. Students have taught their elders to use computers, and visited them in their homes. A number of programs focus on developing friendships between aging and young persons. (Seefeldt, 1985)

Findings from individual programs designed to accommodate the needs of participants include the following benefits:

"... improved life satisfaction and maintenance of general good health and vigor." (Cohon, 1985)

"... mutual trust, learning and understanding" (Seefeldt, 1985)

"... a positive impact on the childrens' intellectual and social development." (Saltz, 1985)

reestablishing caring relationships "that are deemed necessary for the continuity of our society." (Seefeldt, 1985)

"The affection (the aging) receive from the young promotes feelings of self-esteem and worth." (Seefeldt, 1985)

While not all research indicates that these programs have such benefits, the majority of the findings are more favorable than negative. However some data indicate that in certain intergenerational school programs, children demonstrated a more negative attitude towards aging persons after participation than before. Research strongly recommends well designed programs and implementation strategies including training and ongoing support, to meet the needs of the older participants. (Struntz, 1985)

Participation in intergenerational programs have included young people providing service to the aging community, who in turn provide academic support, by both being employed and providing volunteer services within the educational community. Service to the aging include such programs as 'adopt a grand parent', 'meal on wheels' and a host of other sharing and support programs. Education, teaching, visitations and recreation, involve direct participation of elders with young students. Elders also perform various administrative support duties within the education system.
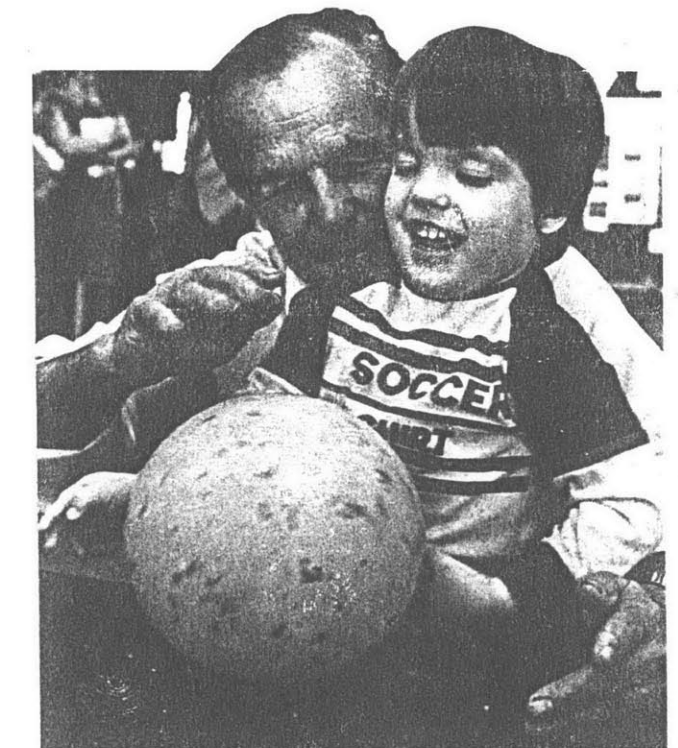
B. THE CASE FOR EDUCATIONAL REFORM

"American public education is beset by systematic structural problems that neither of its two most promising reform movements alone can solve. the current 'excellence movement' and the push for vouchers are both well-intentioned and far reaching, but neither effort will fully achieve its objectives unless we also undertake sweeping changes in the educational delivery system itself."

(Finn, 1987)

"American schools are in trouble. In fact, the problems of schooling are of such crippling proportions that many schools may not survive."

(Goodlad, 1984)

"... U.S. educational productivity has not kept even with that of the smoke stack industries such as steel, automobiles, and consumer electronics that are no longer worldclass competitors in quality and costs."

(Fraser, Walberg, Welch & Hattie, 1987)

The history of basic education and school buildings in America starts in the seventeenth century with the one room school, and ends in today's state of crisis. Declines in educational output, increasing costs and changing education goals now make obsolete traditional approaches to basic education and the buildings designed to accommodate those outdated concepts. New directions in education and, by extension educational environments, are urgently required, and have been for some time. Society spends tens of billions of dollars on school buildings, which are now and increasingly will be, obsolete.

American basic education now suffers from chronic cognitive, affective and socialization declines. Poor attitudes towards people and property as evident in increased crime and drug use are symptoms of decline of social cohesion and the educational system entrusted in maintaining it. Incremental improvements will not suffice. And thus nor will revision of the 'facility' model of school buildings: "Needed are some quantum gains in educational productivity. The chances of achieving these quantum gains through the cohort-processing that occurs in most classrooms is low".

While most popular education philosophies emphasize students' individual needs, this approach is seldom translated into practice, as reflected in the standardized, institutional nature of most classrooms. The American educational system standard practice of cohort processing students has resulted in school buildings which " convey the mass production, assembly-line ethic." (Hathaway, 1988) Individualized instruction has remained the elusive goal of education.

A new direction in school building design must be based on a new direction in education. This direction could be formulated around the following goals:

o Holistic and integrative approaches to both problem solving and dealing with people;

o Life long learning;

o Learning to learn;

o Increased individualized instruction to better develop each person's potential;

o Development of an inquisitive and innovative spirit in students; and

o Development of the empathic sensitivity which will prevent one from dismissing matters of human value. (Hathaway and Fiedler, 1986)

The educational system now serves three functions; education, socialization and custodial care. Children in school are taught within formal curricula, learn classroom discipline, socialize with their peers, and are cared for while their parents work.

Thinking of these processes as being integrated into other segments of community life leads to an understanding of the entire urban environment as the place in which education takes place, not just the 'school facility'. Individualization in education leads away from cohort processing of students in standardized group sizes in standardized classrooms, to learning environments which allow for differentiated group sizes and activities to occur simultaneously, and to allow the pattern of these activities to change over time.

The design of schools needs to become part of an approach which integrates education into community life. The community school movement of the last two decades is an example of such an integrated approach. The intergenerational urban village concept takes the direction behind the community school movement several steps further towards integration of school and community. In this model, the school an integral part of the urban environment, by designing the school to have an urban quality.

Integrating learning environments means allowing education to disperse into community life ,i.e., work, living and leisure activities. Individualized instruction means more differentiated and simultaneous activities and group sizes than is common today.

Application of the notion of community integration to the location in North Cambridge, which is owned by the Catholic church, may require a Catholic/Public joint venture for capital works and management .as a model for an intergenerational neighborhood village center project in North Cambridge.
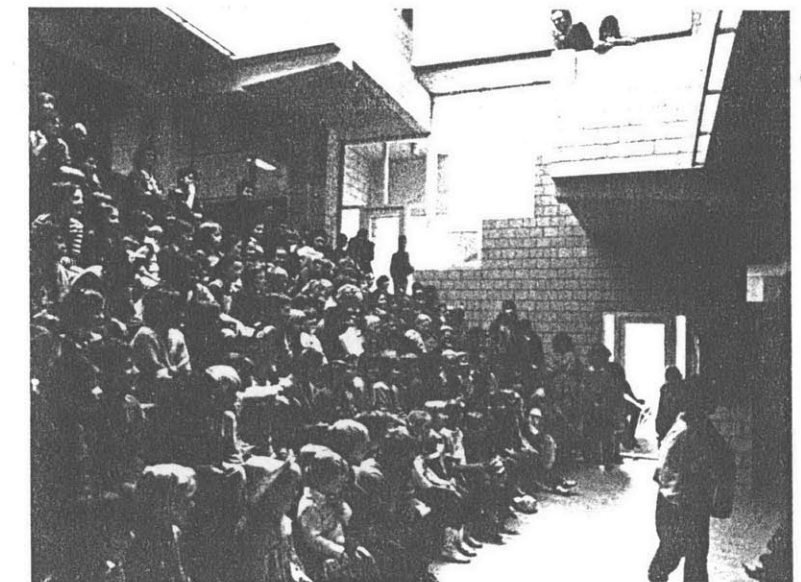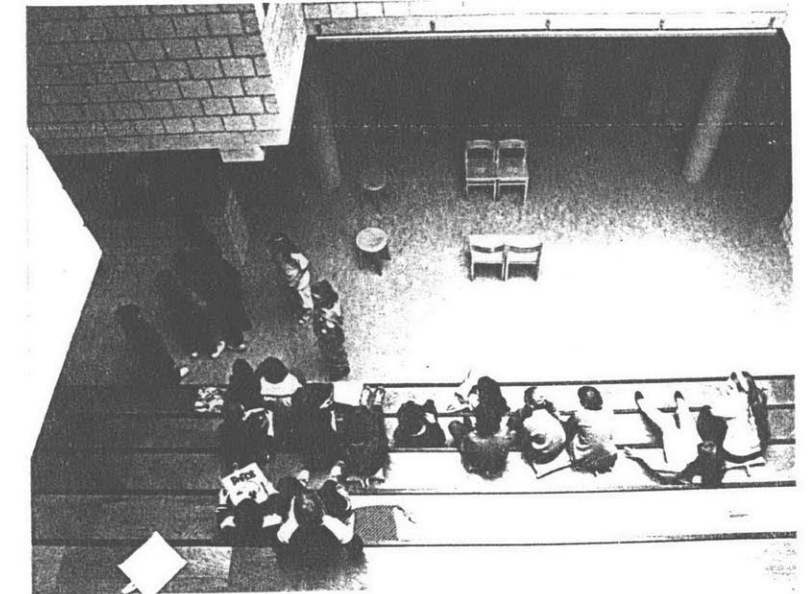
PART TWO
DESIGN GUIDELINES
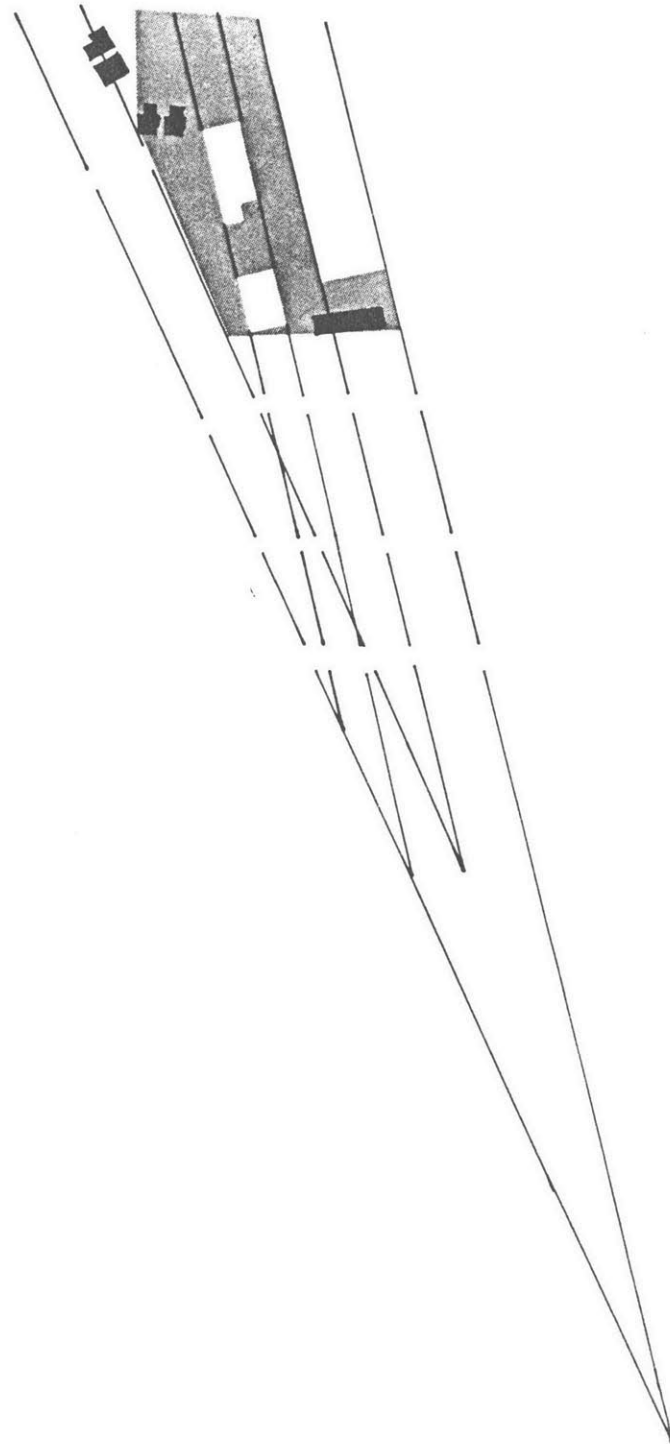
Architecture is not neutral, but contains generic intentions out of which individual and collective particular choices can be made. Design intentions in architecture must resonate with the intentions, interpretations, associations and images of its inhabitants, by supporting and strengthen them. Meaning in architecture results when it makes a demonstrable contribution towards improved living conditions and circumstances by supporting its inhabitants' intentions activities, associations and images.

The quality of an urban place can be defined as the relationship between its form and the value that form represents to the particular cultural circumstance of its inhabitants. A good urban environment can be defined as continuous, well-connected, diverse, accessible, decentralized, an adaptable and an open place which is tolerant to experience, and conducive to development. A good architectural space allows a social place where a complex culture is maintained and nurtured, while progressive change is permitted. The fundamental good of a settlement is to support continuous cultural development of the collective group and individual. This is a process of becoming more complex, of unfolding connections, competencies, and acquiring and realizing new powers - intellectual, emotional, social and physical. "A good place is one which, in some way appropriate to the person and her culture, makes her aware of her community, her past, the web of life, and the universe of time and space in which those are contained." (Lynch,1981)

Specifically, good city form fulfills the performance dimensions noted below:

Performance Dimensions:

Accessible: Diverse, equable and locally manageable;

Vital: safe, sustenant, and consonant;

Well Fitted: A close match between the form and actions;

Sensible: identifiable, structured, congruent, transparent, legible, unfolding and significant; and

Well Controlled: Congruent, certain, responsible and intermittently loose.

A. ACCESS

Access can be defined as the " ability to reach other persons activities, resources, services, information, or places, including the quality and diversity of the elements which can be reached. " (Lynch 1981) An accessible environment provides access the multiplicity and richness of life. Access to services is a most important factor for the elderly in choosing where to live, especially access to health care and local services.

DESIGN GUIDELINES

SITE SELECTION

The site was chosen for having a diverse urban environment accessible to it.. Located at the south-east corner of Sheridan Square, North Cambridge, Massachusetts, the site is particularly well serviced. Strip commercial extends along Massachusetts Avenue, which connects directly to Harvard Square, the commercial and cultural center of Cambridge. Davis Square, an urban retail and transportation node, is located four blocks from the site, providing access to subway and bus transportation, federal and local government services, and major shopping, eating, and entertainment services . There is bus service to the site along Rindge Avenue.

LOCAL SERVICES

Provision for eating, convenience store and pharmacy, a beauty parlor and barber shop are required to complete access to services.

★ the site
☆ institutions
∗ retail
T subway
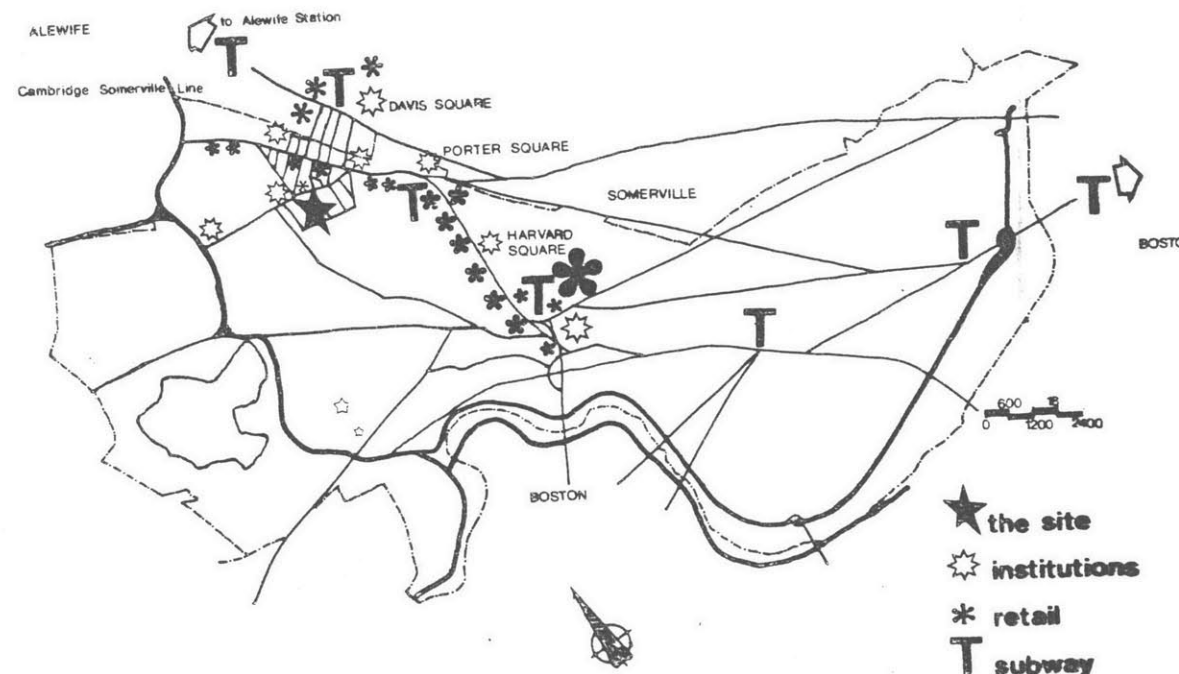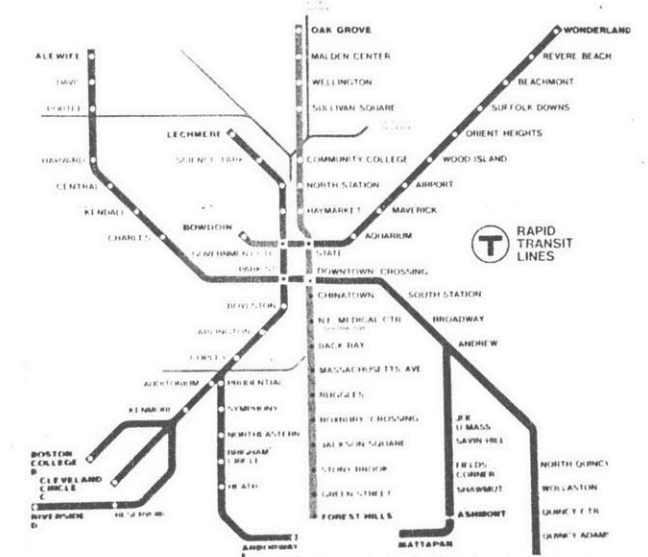
B. VITALITY

Vital urban form supports vital human functions, capabilities and biological requirements. There must be a fit between the physical environment and human requirements of body rhythm, sensory input and function. Architectural form must provide a sense of safety and security. In a larger social sense, good urban form supports the present and future stability and continuity of the culture. Both the old and the young need to be nurtured by their culture in order to continue to grow as human beings.

The diminished space in which life occurs, or life space, in the aging is the opposite of the expansion experienced growing up as a child, where life space starts at the body and extends beyond it, expanding potential with age. Ability develops to a maximum competence in adulthood, stabilizes, and then diminishes with time towards a life space limited back to the body in extreme cases. Both the old and the young require custodial care.

AGING AND THE PHYSICAL ENVIRONMENT

Aging is relational with the environment and with time. It is an ongoing process for which the participant is not prepared to anticipate all the inevitable changes to their needs and, as a consequence, needed environmental supports. It is not the static state of being aged. Needs change with time in ways often unexpected by the individual.

As persons age their need for support from the environmental becomes more complex. Their environment becomes more important to their sense of orientation, well-being and general ability. Abuse and insult from the environment is less easily tolerated.

AGING AND LOSS

One aspect of aging can be viewed as a progressive continuum of loss. Losses on this continuum include: separation of child, death of peers, loss of spouse, motor output deterioration, sensory acuity losses, age related health problems and reduced physical mobility. (Byerts, 1973)

AGING AND HEALTH NEEDS

The hypothetical average aging person " is likely to be in reasonably good health. She can move about her neighborhood in or near an urban area without great difficulty." (Powell, 1973) However, chronic illness is prevalent in the aging, commonly heart disease, arthritis, strokes and diabetes, with the first two being the most debilitating. Almost 40 percent of aged Americans have limited daily activities due to these diseases, and another "12 percent are virtually confined to their homes, or have difficulty getting around by themselves. " (Gelwicks, et. al. 1974)

Physiological Changes

The wear and tear of time exacts the following changes to physiological capabilities:

Mobility and reach:
   slower reaction time and reduced reach
Strength and stamina:
   reduced strength and maintained stamina
Vision:
   loss of visual field acuity;
   reduced color sensitivity;
   increased sensitivity to glare; and
   decline in ability to see fine detail, distinguish
        depth , or adapt to changes in brightness.
Hearing:
   increased difficulty to discern one voice or
   sound against a background of competing
   sounds.

Tactile and thermal sensitivity:
   loss of sensitivity;
   narrowing comfort zone. (American Institute of
   Architects Foundation, 1985)

The dysfunctioning in these capabilities leads to the sense of disorientation and vulnerability associated with aging.

Psychological Changes

Although intelligence does not deteriorate with age, the "speed with which we store, summon and express information" does. (American Institute of Architects Foundation, 1985) For example cognitive maps of unfamiliar settings become harder to generate. These perceptual, cognitive and expressive changes can be psychologically depressing and debilitating, and can lead to an increased sense of insecurity. The environment must be negotiated with less information, or activities curtailed.

DESIGN GUIDELINES

URBAN QUALITY

The physical environment must provide for an intensification of sensory messages, to become sensorially loaded, to ameliorate the increasing physiological and psychological thresholds associated with aging. Environment must become a meaningful language in all senses, not ambiguous space. Urban space needs to stimulate and provide clear spatial clues and landmarks so that the space serves as a point of reference for personal, social and public realms. (Byerts, et. al., 1973)

LOCAL SERVICES

Research indicates that the elderly need appropriate services properly and selectively delivered, have the possibility of enabling the elderly to live as independently as possible. To make the village center vital, required at Sheridan Square are a beauty parlor, barber shop, pharmacy and convenience store and neighborhood scaled health services.

Fundamental to aging is the unpredictability of changing needs over time. The implication of this fact for housing the aging is the need for dwellings to be adaptable. Adaptability includes the "ability of certain building elements, such as kitchen counters, sinks, and grab bars, to be added to, raised, lowered, or otherwise altered so as to accommodate the needs of either the disabled or non-disabled, or to accommodate the needs of persons with different types of degrees of disability." (ANSI (A117.1))

While these aspects are very important, to fully accommodate changes associated with aging, space must be convertible, extendable and retractable. Expandable /Contractible space allows for ordered growth or reduction of the amount of space in a given functional territory. Convertible space allows response to functional change with the same territory.

C. FIT

RECIPROCITY OF FORM AND ACTION

Fit is a match between the qualities and pattern of human action, and the temporal patterns and spatial attributes of the settlement form in which those actions are customarily engaged. Fit is related to the characteristics of the human body, physical reality, and the totality of behavior. In a well adapted environment, fit is not a rigid link between action and place, but is a reciprocity between architectural form and human involvement with it. Fit results when spatial characteristics support desired actions.

ENVIRONMENTAL COMPETENCE

Environmental competence is the personal correlate of fit. Environmental competence can be defined as the extent to which the inhabitant can carry out effective activities using the environment as a resource. (Perin, 1970) The built environment can either aid or hinder the purposes of those who inhabit it.

If the environment provides the resources for a particular activity to be fulfilled it provides the participant with a sense of competence. Inhumane environments are ones which disappoint expectations for human endeavor. Criticisms of the environment by its inhabitants are expressions of the level to which the environment hindered desired activities.

To be endowed with meaning, or be satisfactory, environments do not restrict desired activities. Unsatisfactory environments result in the need for defensive responses or the substitution of other activities for desired ones. Environmental competence can only be understood in terms of the activities which occur in it.

DESIGN GUIDELINES

COMMUNITY NEEDS

Provision of housing for the aging, daycare, and health facilities are goals of the North Cambridge Neighborhood Stabilization Committee. This group of local citizens is striving to maintain the number of families living in the neighborhood in the face of redevelopment. The economics of gentrification pressure the elderly to move in North Cambridge. Professional services are required to provide for the health needs of the neighborhood.

Redevelopment of existing housing stock and new condominium development are taking place. The goal is to keep the aging population in their own neighborhood by offering a housing alternative which is now no offered.

DEVELOPMENT SCALE AND TYPE

A neighborhood scale development at Sheridan Square, would be a contiguous extension of recent redevelopment of Harvard, Porter and Davis Squares and improvements to the subway (MBTA); part of a finely tuned gradient of services across North Cambridge. What is required in Sheridan Square is a neighborhood scale community service core or center, which complements but does not compete with the commercial nature of the northwestward redevelopment of Cambridge.
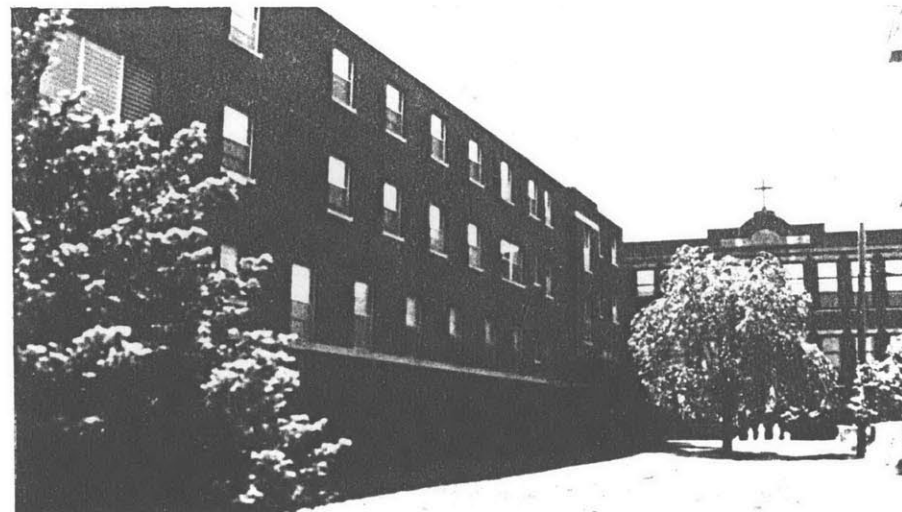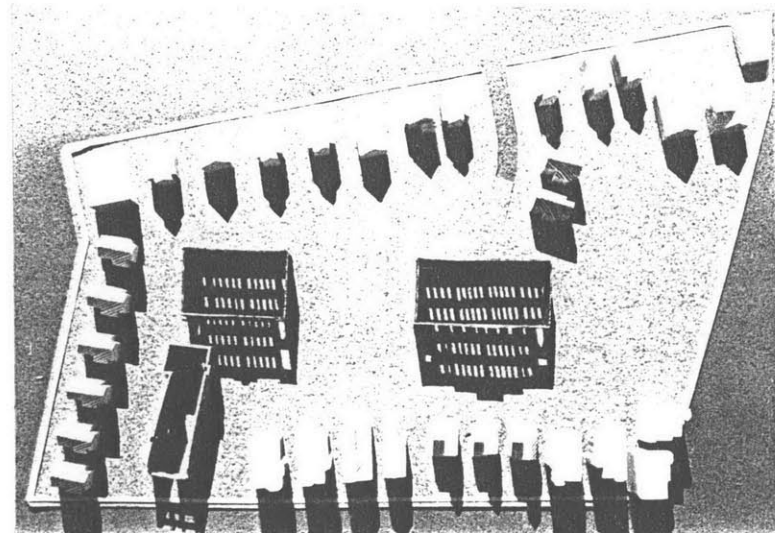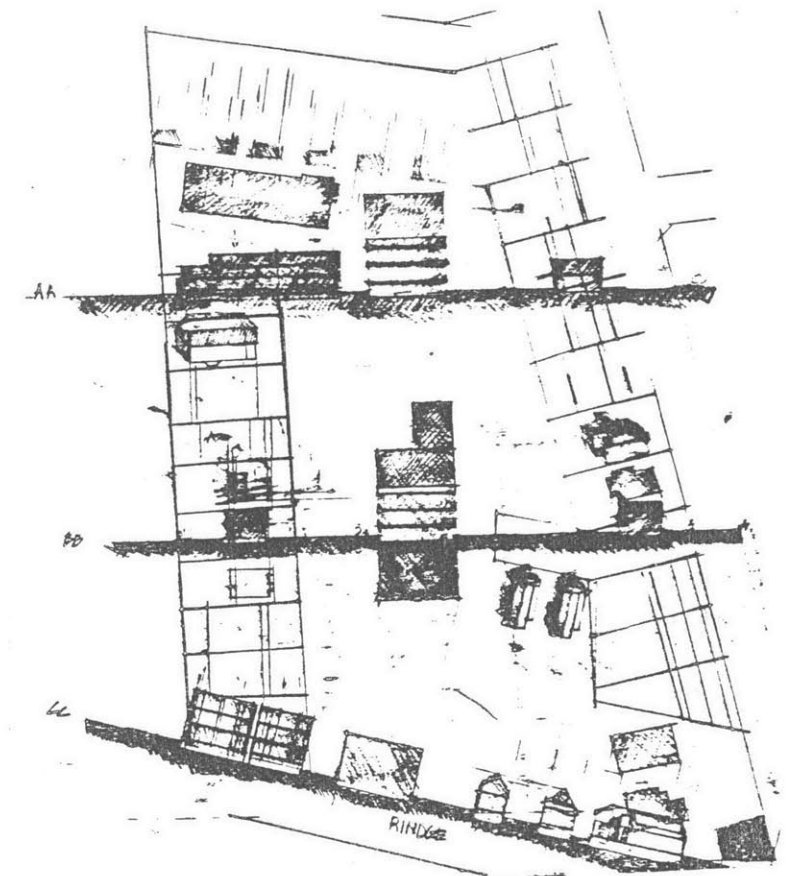
The elementary school and convent located on the site are vacant. The school has been gutted by fire, although it is still structurally sound. A high school on the site is now being used as St. John's Elementary School, with an enrollment of 270 students, and an annual growth rate of 14 percent. The school is now over capacity and has minimal facilities. Redevelopment of the site is appropriate.
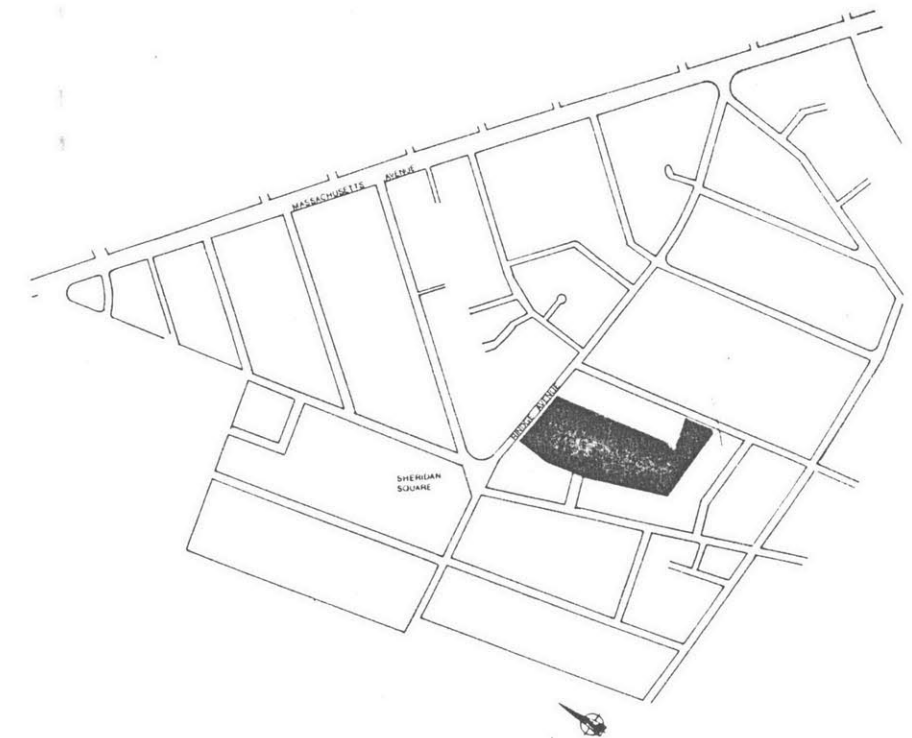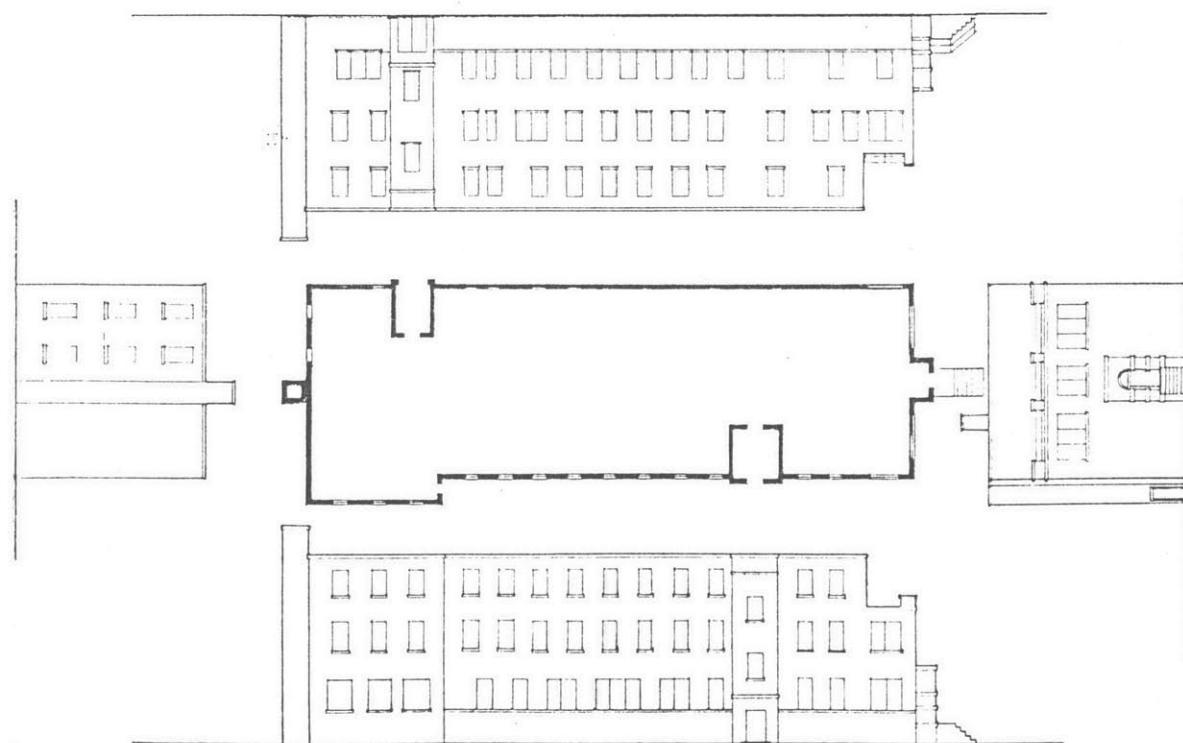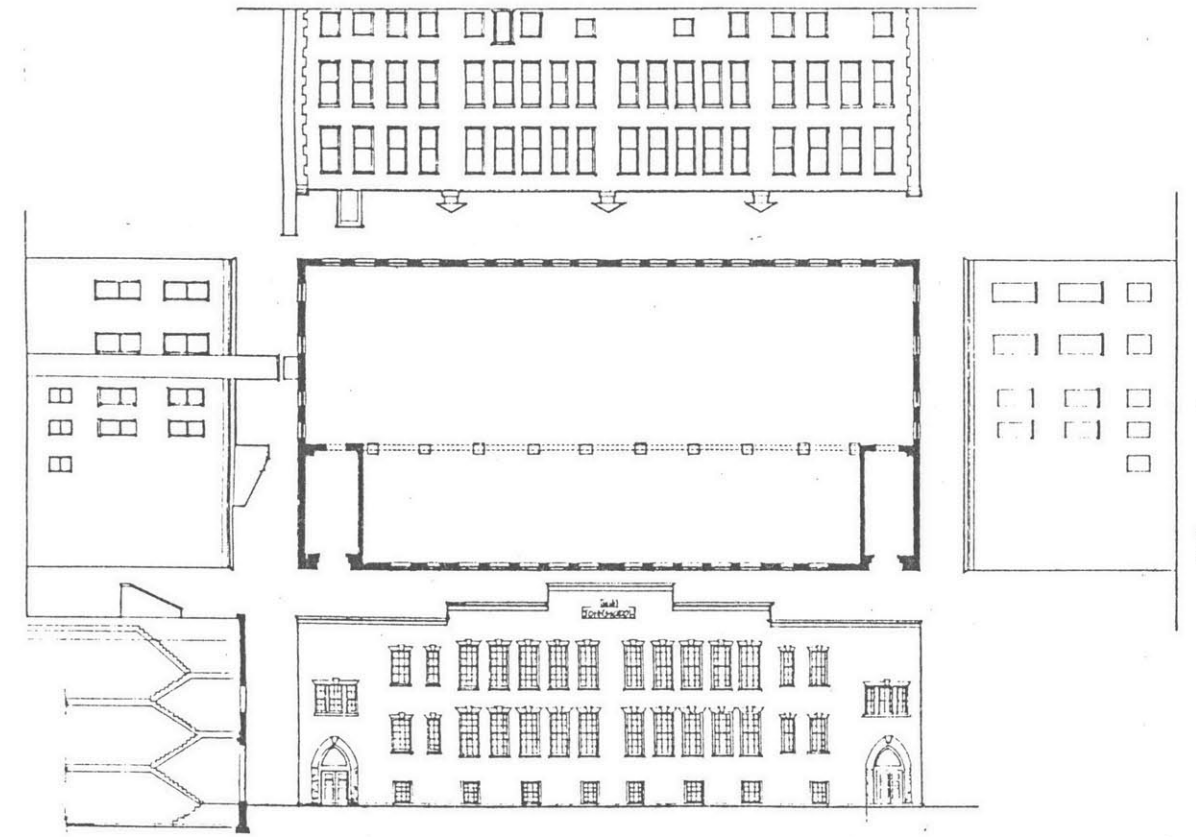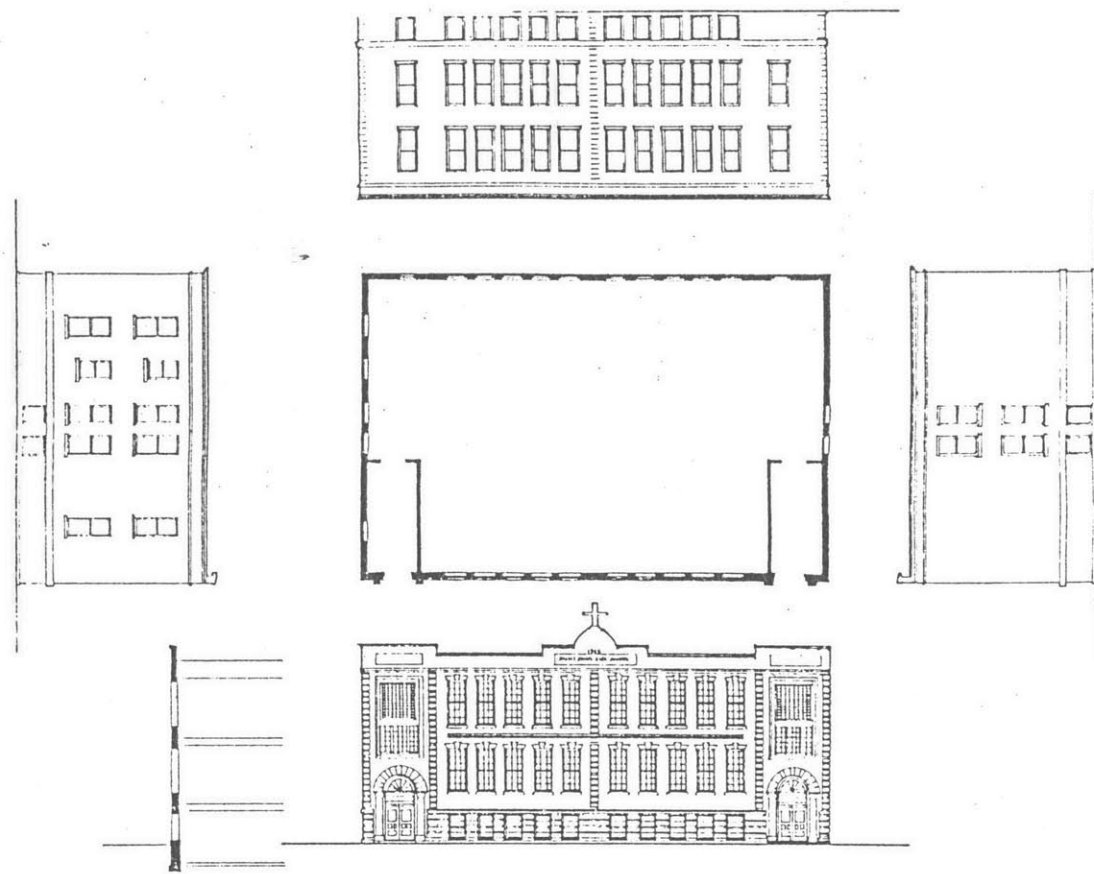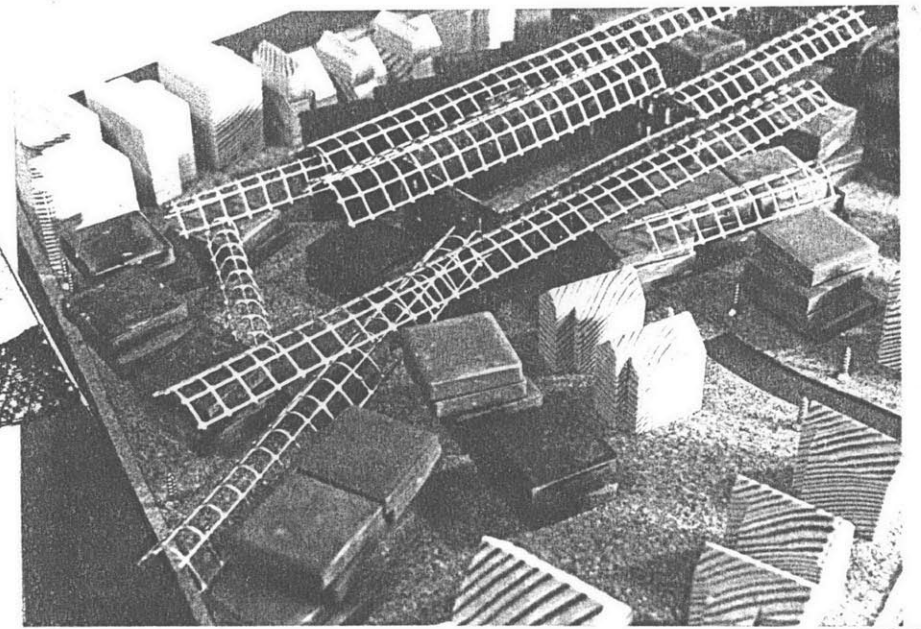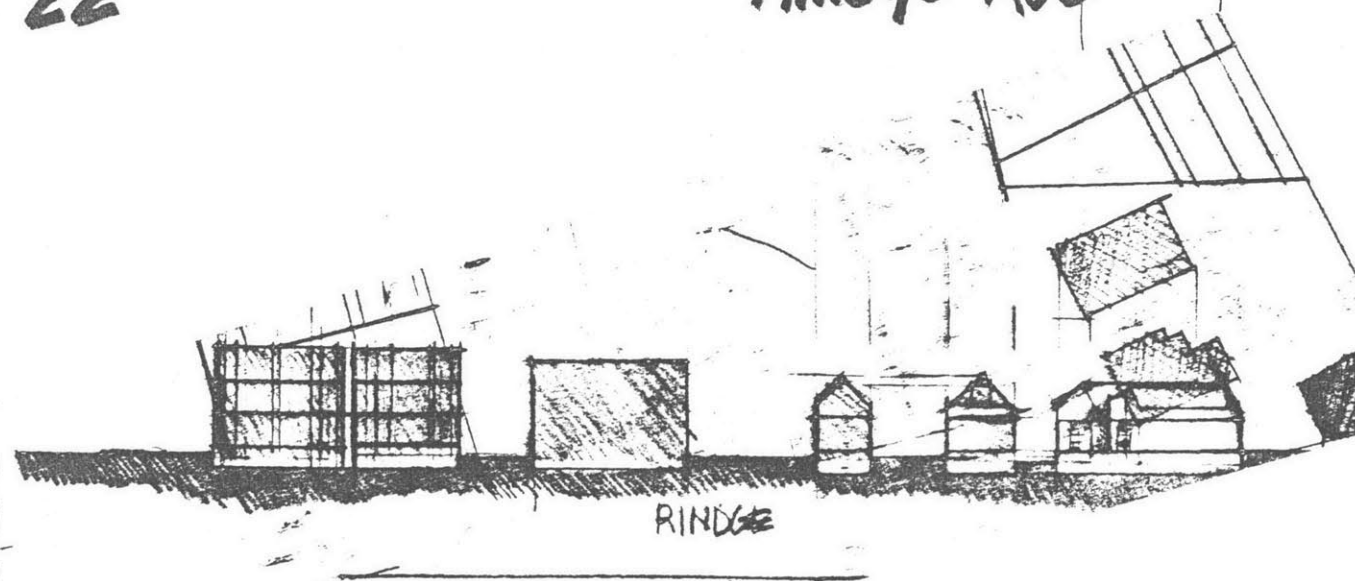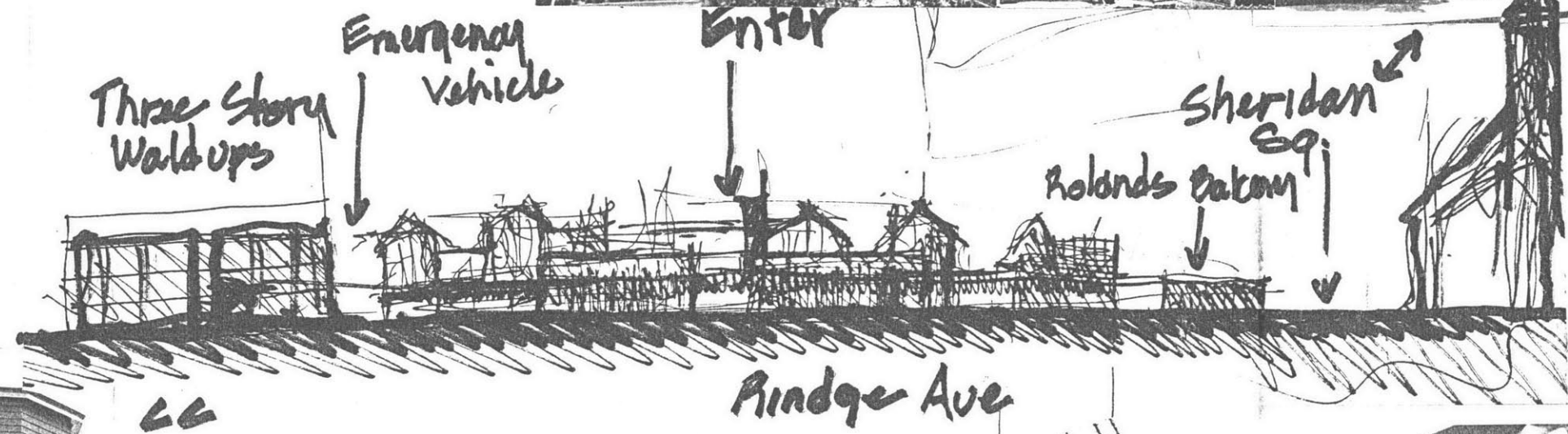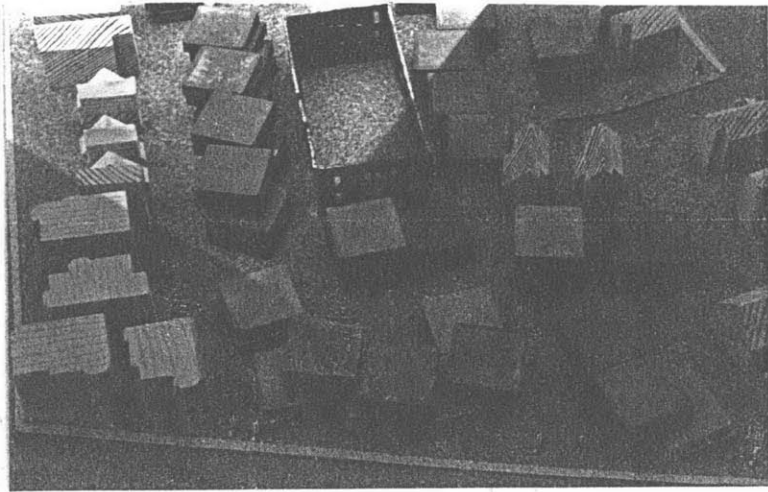
URBAN FABRIC

The two and one half story brick exterior school buildings are in scale with several other educational and religious buildings in the area. The houses which border the site form a finer grained fabric, which is juxtaposed with the larger institutional brick buildings. The two scales are in contrast with each other. Weaving the housing and institutional scales of fabric together is a central design concern. The intent is to knit the site together with a third scale of physical intervention which mediates the scale of the other two.
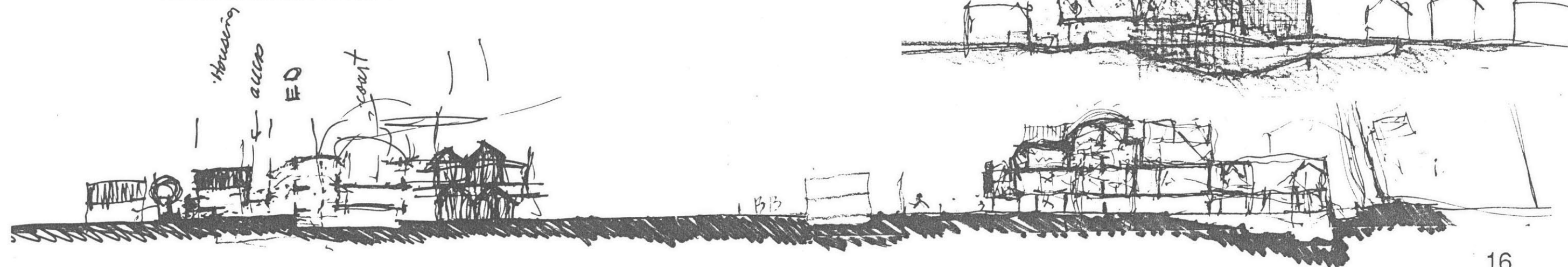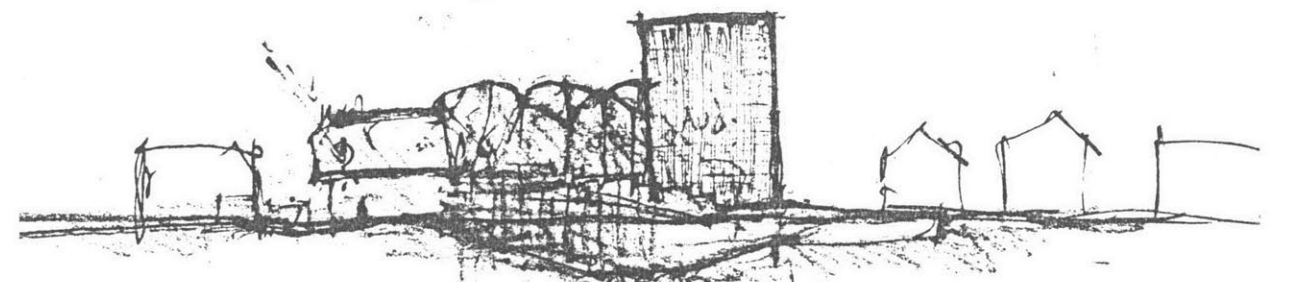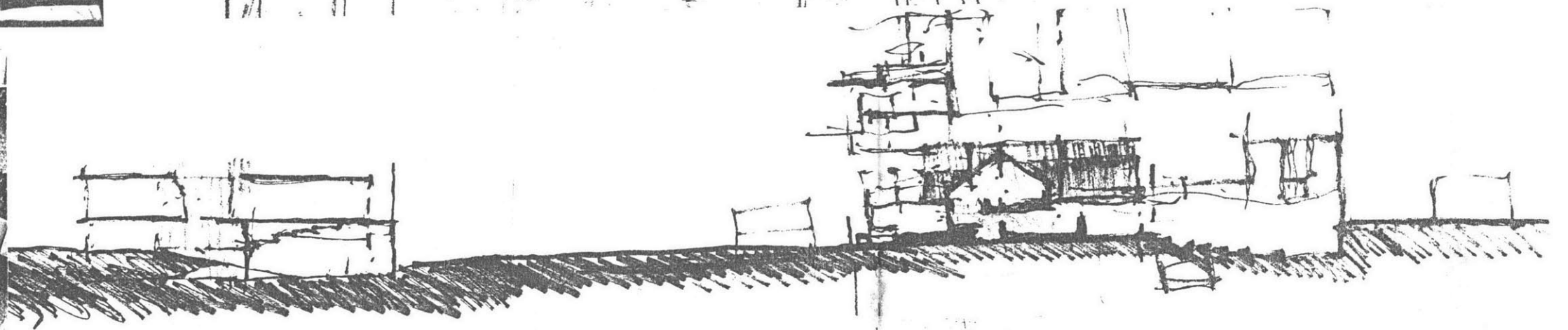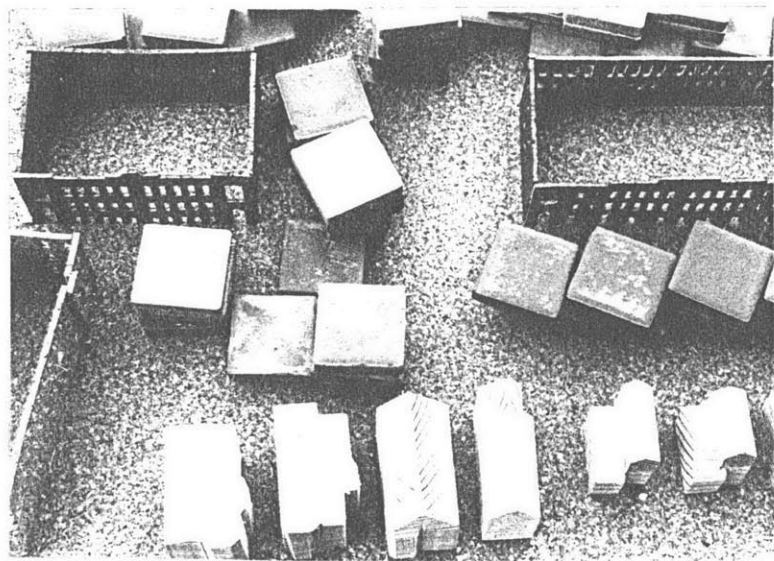
13

Three Story
Walk ups

Emergency
Vehicle

Enter

Sheridan
Sq.

Rolands Bakery

Rindge Ave

RINDGE

Housing
and
ED
court

BB

16

AA

AA

AA
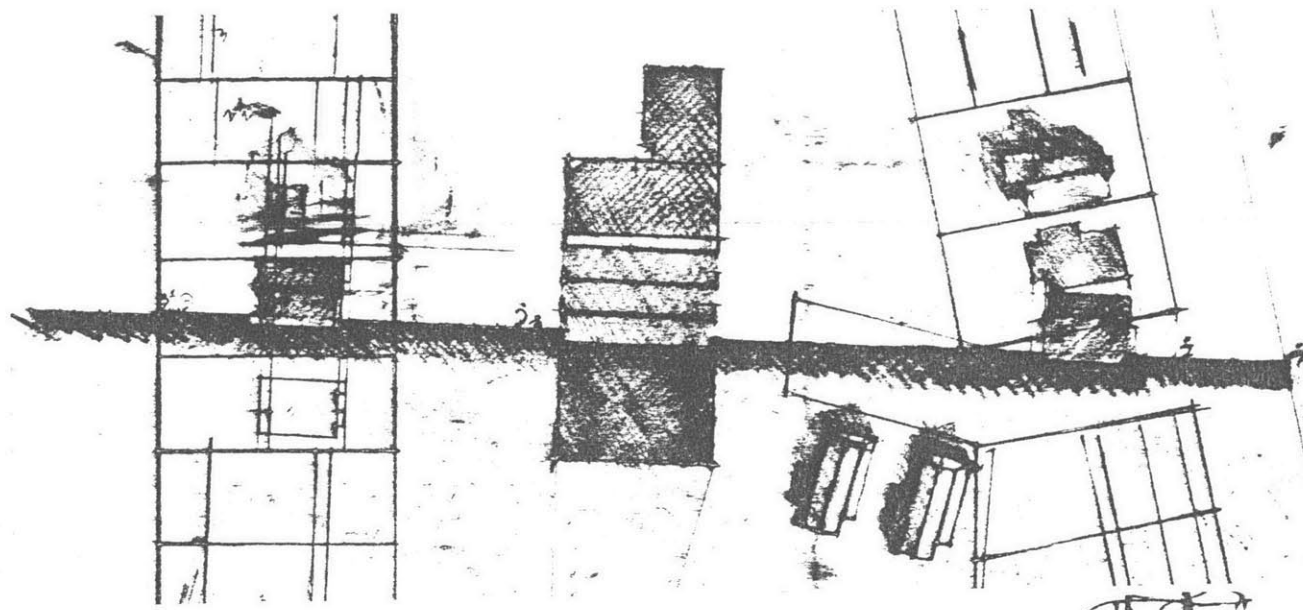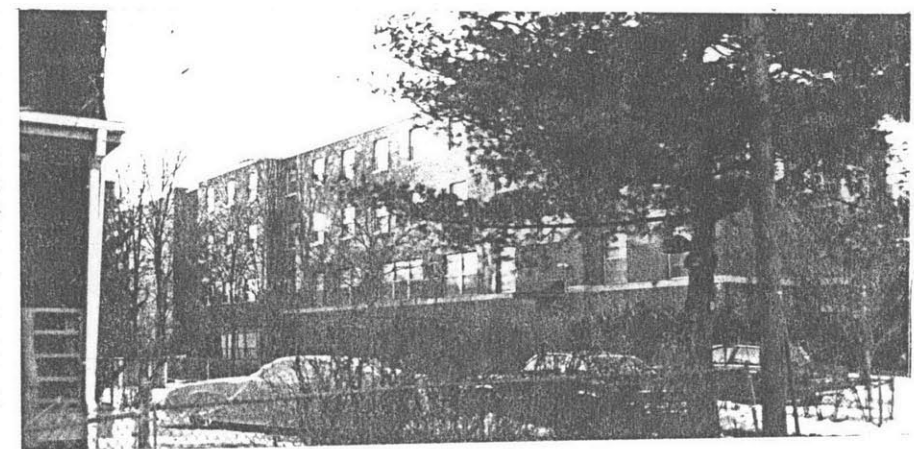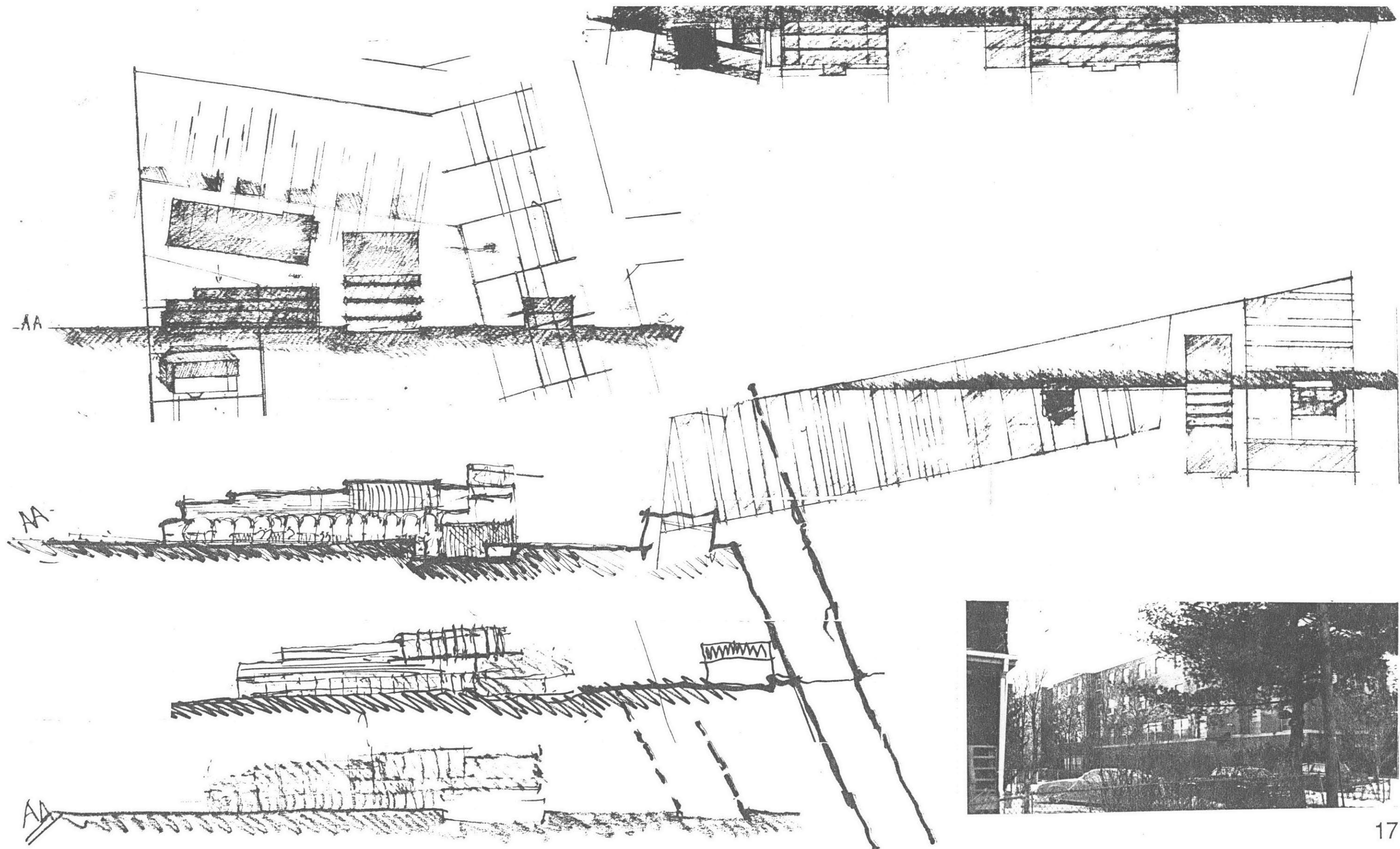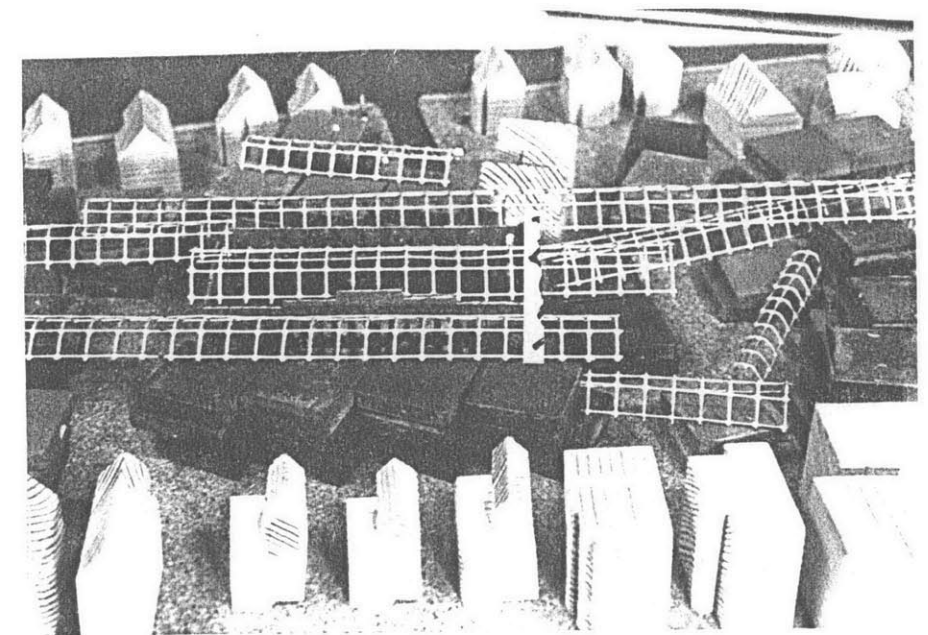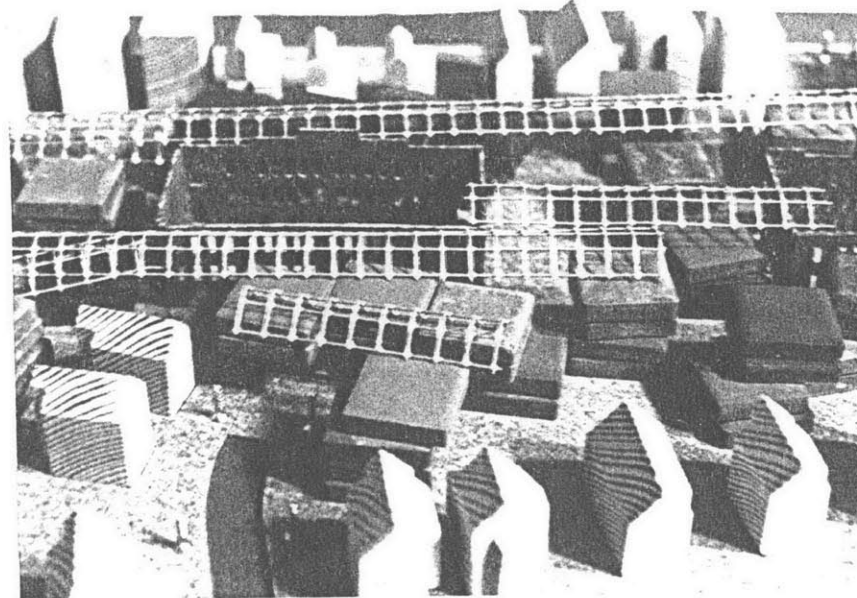
INTERGENERATIONAL ACTIVITIES

Informal Intergenerational Activities

Informal activities include the casual observation of the public lives of both generations together, which results when the generations spend parts of their day to day lives in view of each other - elder/child, child/child, and elder/elder.

Architectural Implication

The design of the public and some social spaces will allow for a transparency to life. The place will allow the aging to observe the young, and the young the aging, as one would sit on a window seat in a cafe, and watch the life of the street. Public life as street theater.

For this aspect to work, the public realm inside the building must be as public as an urban street. Otherwise, it will seam like a 'fish bowl', persons being o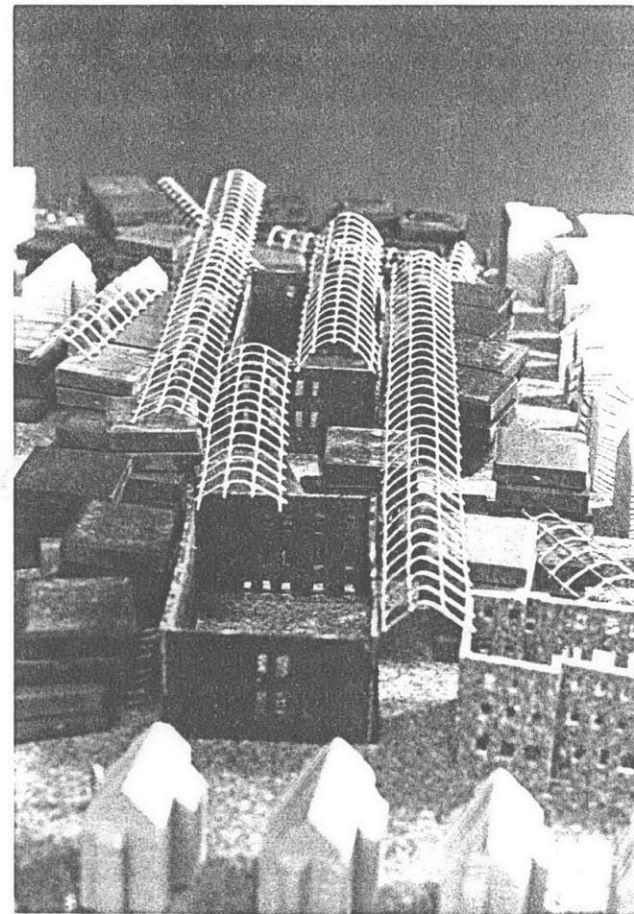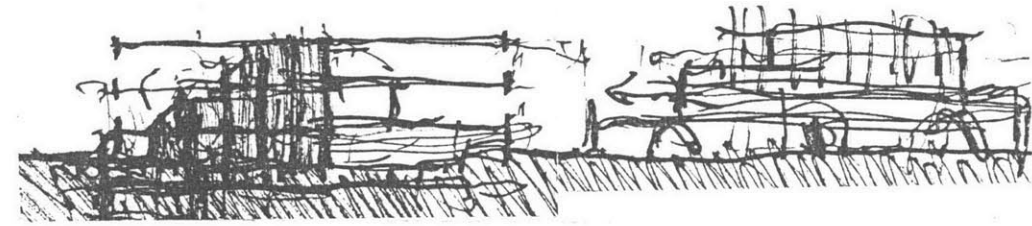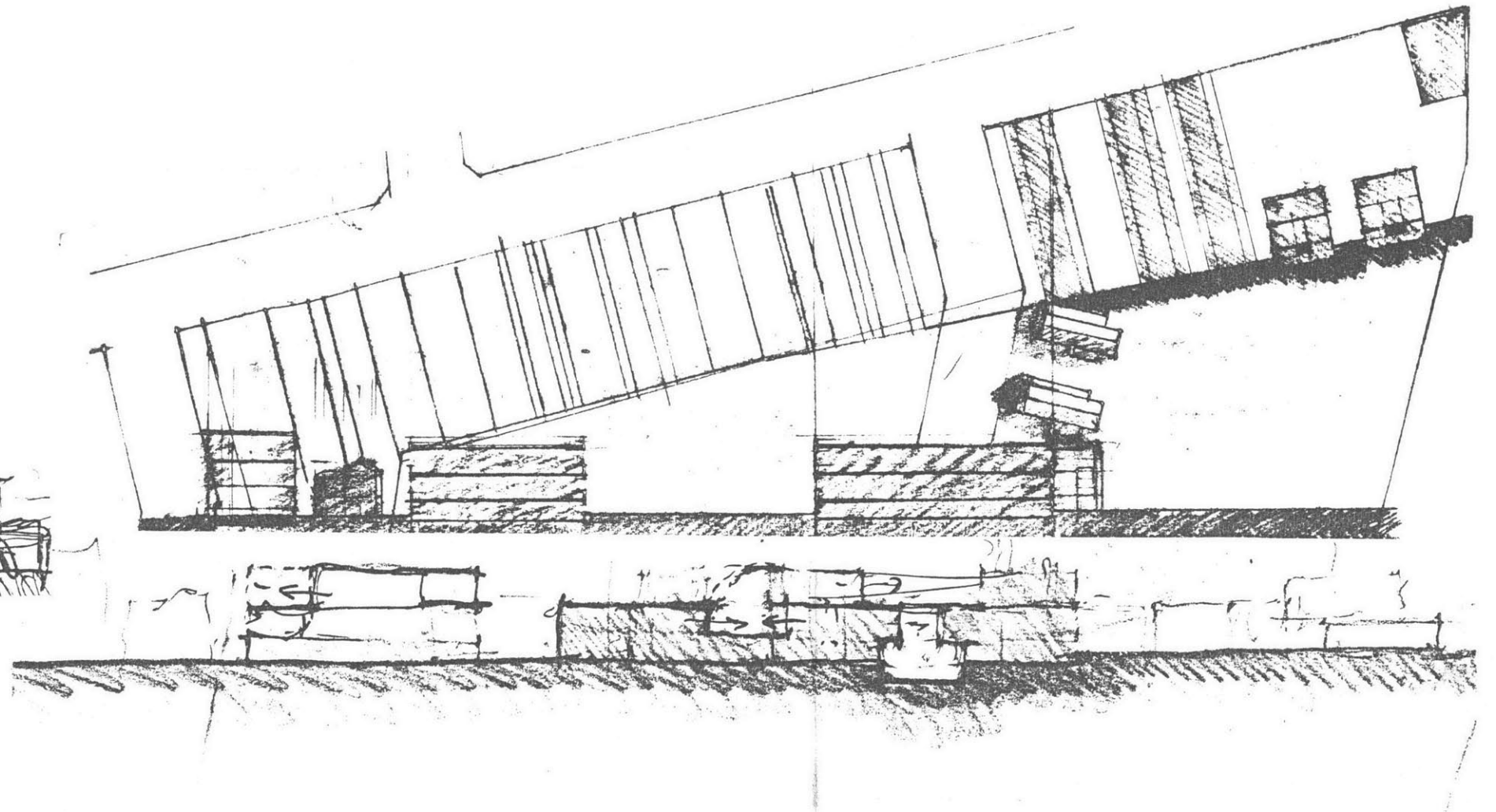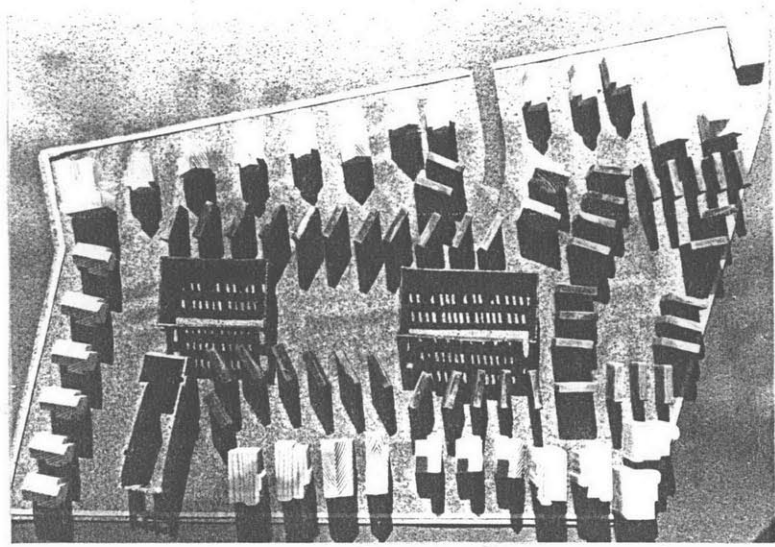bserved and feeling it an invasion of their privacy. Public and private are only definable in terms of each other. A place is more or less private relative to its separateness from the public realm. The private and public realm in this building, will therefore be mediated by a transitional territory, the same way the front yard, sidewalk and house entrance, no matter how narrow a zone, mediate the privateness of home, and the publicness of urban street. A main design consideration will be clearly defined private , semi-private, semi-public, and public domains to resolve conflicts for security and control by residents and publicness.

Intergenerational Celebrations

These activities will include celebrating together, birthdays, holidays, festivals and carnivals.

Architectural Implications

Celebrations vary in size, from the intimacy of two persons sharing a special moment in private, to the boisterous community wide festival or carnival. Although a good party can happen almost anywhere, the mood evoked by the space is an important architectural contribution to festive making. The space will intensify the event, intimate or boisterous.

The public realm will be designed to promote a sense of festivity, a celebration of the life of the place, a richly textured mosaic of material, form, light (natural and artificial), and color. The size of public and social realms will accommodate

each member of the intergenerational community and two invited guests, so that the extended community can party together. The celebratory quality will be emphasized by the compositional, and ceremonial aspects of the architectural form.

The social spaces will be designed for different group sizes, with a range of settings, e.g., small and secluded, and large and open to the public and light. More intimate gatherings will occur in the residences.

Intergenerational Caring and Sharing Exchanges

These activities involve one on one exchanges of sharing of experiences and feelings centered on affection and friendship, conflicts, generosity, sadness and grief, family and heritage. Activities can vary from touching and caressing, talking and walking, to just spending time together.

Architectural Implications

This activity reinforces the pattern of an elder and child couple being together and doing a variety of activities, and experiencing a full human array of emotion which in turn will require a variety of public, social and private settings, both active and passive.

Intergenerational Educational Activities

The aging could perform the following educational activities:

  o tutoring on subjects like daily living skills, speech skills, social and environmental awareness, and personal hygiene;

o joint library sessions of reading together to encourage reading;

o guest speakers and lectures in the classroom;

o story telling and oral history;

o teaching arts and crafts, e.g., sewing, cooling, kite making, clay work, painting, drawing and making paper collages;

o conducting and participating in exercise classes;

o teaching and jointly participating in music, theater and dance productions and puppet shows.

Architectural Implications

Involvement of the aging in the formal education process means that several 'teachers' could at times be involved with the same group of students. The ability to accommodate flexible grouping sizes in one location becomes important. The major concern is for acoustical privacy, if more than one group is active in the same place. The most acute situation would be in the library, with a number of older and younger couples, reading, talking and going to the stacks together; and aggregating for small group discussions.

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Intergenerational Sharing of Food

Eating and cooking together, the sharing of preparation and partaking of sustenance, is perhaps the most significant way people share. Food sharing will occur in three ways: the young could go to the elders housing for lunch; there could be a communal kitchen in which the elders prepare lunch for the young; and, meals could be prepared for both groups by a professional staff. And then there is shopping for food, and growing it on site.

Architectural Implications

Architecture must provide the physical support for the psychological and social meaning of sharing sustenance. This type of experience is the antithesis of that of eating in the typical school cafeteria. Opportunities need to exist for eating alone, with a friend or friends, or in larger collectives. And connected to celebration, is everyone eating together.

Intergenerational Day Care

Early childhood services is an activity in which the aging have considerable experience and expertise, if not formal training. Most elders have been parents. In an intergenerational context, caring for the emotional, intellectual, social and physical development of children aged 6 months to 4 years old would combine 'real world' experience with professional expertise, at this most critical stage of child development.

Architectural Implications

Day care will be disaggregated and taken out of the institutional environment. Babies and young children will be cared for in the home, in small indoor/outdoor social spaces associated with a group of homes, and as a collective activity in the public realm.

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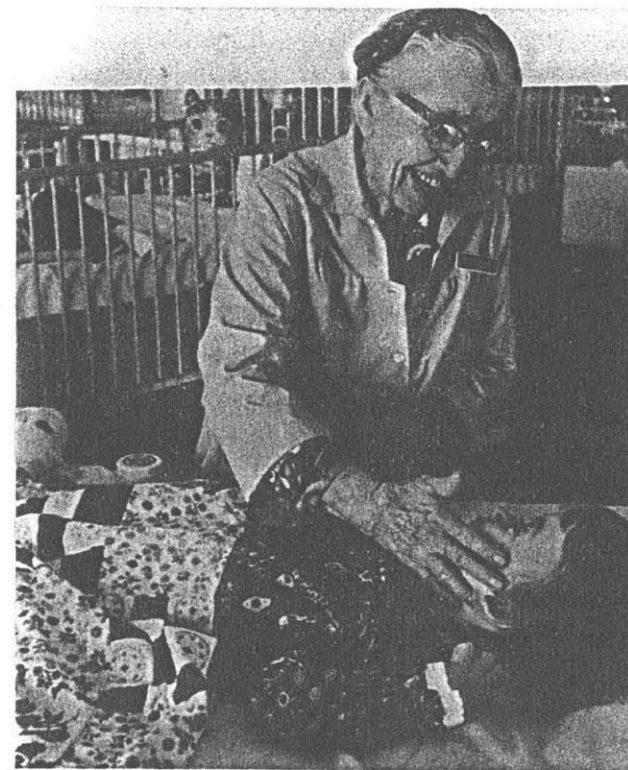
D. SENSE

Sensibility is the attribute of the physical environment to be clearly perceived, mentally differentiated and structured in time and space. Sense is also the degree of fit between the mental image of place, and the observer's values and concepts. Sense depends on spatial form and quality, cultural temperament, experience and purpose. Sense of place is characterized by identity, structure, congruence, transparency, legibility, unfolding and significance.

SELF IDENTITY AND PLACE

Identity connotes a sense of place. How one's place is identified, or differentiated from other places, or is recognized as a separate identity or territory. For the aging, identity is focused on the home: on its habitability as a personal place particularly important to the individual. Habitability connotes warmth of hearth, closeness of family, and containment of domestic activities. Habitability tends to denote protection and safety and sanitary conditions. (Howell, 1980)

The personal identity undergoes a process of consolidation in aging. The identity - the WHO AM I ? sense - is presented in their private surroundings, typically the home. The home becomes increasingly important as one ages, since it is here where the identity is expressed strongest.

ENVIRONMENTAL STRUCTURE

Structure represents orientation at the large scale, and at a small scale it is the sense of how parts fit together. Orientation, is knowing where and/or when one is. The temporal structure of a place, include natural processes, activity rhythms, celebration, and ritual. Spatial attributes include the visual sensations of color, shape, quality of light, smell, touch, kinesthesia, and sense of gravity.

Identifying and structuring the physical environment are vital to mobility or way finding. There is a an intrinsic need to recognize and pattern surroundings. Besides being practical, this ability has an emotional importance to the individual. Geographic uncertainty or being lost carries negative overtones. Organization and use of defined sensory cues from the physical environment are prerequisites of a free and moving life.

A vividly identified, highly structured environment, allows formation of strong mental images or maps; which in turn allow for a high competency level in relating to the physical environment. A new built environment may seem to have a strong structure or identity, if the features are striking or impose their own pattern.

LEGIBILITY

Legibility is the clarity of physical form to be recognized and mentally organized, or ordered into a coherent pattern. If it is legible, the parts of a settlement are easily identifiable, as are the physical and social relationships between those parts, and as are the rules which form those relationships. A clear image of place provides the following benefits:

o allows one to move about more easily than with an unclear image;

o an ordered environment provides a broad frame of reference in which activities, beliefs and knowledge are organized and associated; and

o emotional security results from a good, i.e.,clear environmental image. The sweet sense of home strengthens with not only familiarity, but also with the distinctiveness of its image.

A legible place allows its inhabitants to accurately communicate to each other, via the symbolic meanings invested in its physical features. For example, the privacy of a house is communicated by the symbolic overlay invested in its entrance way which is made up of physical features - gates, front walks, stairs and front door. In this way legibility, along with congruence and transparency make explicit connections between the form of the intergenerational village and the social territories of its inhabitants.

Legibility, congruence and transparency link physical connections in the urban environment to those of territory.

CONGRUENCE & TRANSPARENCY

Congruence and transparency form a perceptual basis for growth in significance and meaning of a space as a place. Congruence is the relationship between the form of an architectural space, and the form of the intentions, actions, associations and territorial order it houses. Congruence is the match between the spatial and the non-spatial, between physical and psychological space.

Transparency is the attribute of a place which conveys a sense of the life that inhabits it. Transparency conveys a sense of immediacy. A transparent physical environment is one in which technical functions, activities, social and natural processes can be directly perceived. Transparency and congruence give meaning to architectural form.

UNFOLDING ORDER

Individual or collective ordering of a space needs to unfold with time. Life is fluid, and to some degree, so must be architecture. Change needs to be allowed, rather than have architectural space rigidly defined. In this sense the space needs to be unfolding. To have a simple and patent first order of structure, which allows through direct experience, a more extensive physical ordering and thereby construction of new meanings.

A multiplicity of life is accommodated in the attributes of the physical form. Unfolding accommodates diversity and change to future purpose. Unfolding allows inhabitants to make the physical environment their own, to inhabit it in a psychological as well as physical sense. The inhabitants should play an active role in perceiving the world and have a creative part in developing it.

ARCHITECTURE AS A SIGN OF LIFE

Architecture has potential to become a powerful sign for the way a society conceives itself and the nature of its universe. Significance and meaning of architecture is the degree it is a sign of basic values, life processes, social history, intergenerational life and social structure. Significance of architecture is its holistic meaning - a symbolic connection between place and the inhabitants beliefs and signs of home, neighborhood, nature, divinity and life.
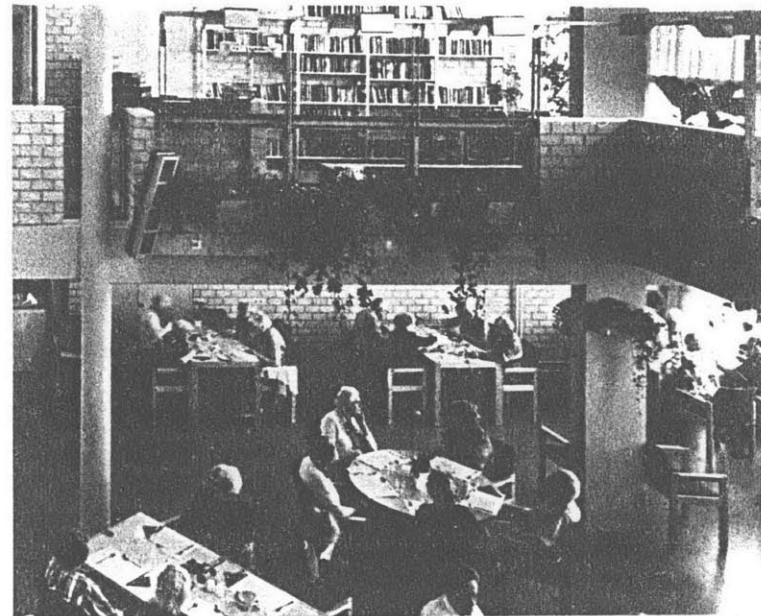
DESIGN GUIDELINES

HABITABILITY

In order for housing to seem habitable to the aging, it must exhibit a message of habitability, to be habitable by them in a responsive way. The architecture must support their lives but not control or rigidly define them. Their attitudes, behaviors, and physiological and psychological attributes need to be accommodated to aid in establishing their identity, to allow the occasion of their living, of their day-to-day lives to transform architectural space into their place.

The inclination in aging persons is to live in a complex spatial environment, not an orderly or open one. Visual stimulation, tactile involvement and memories of life are evoked from objects kept close at hand. (Howell, 1980)
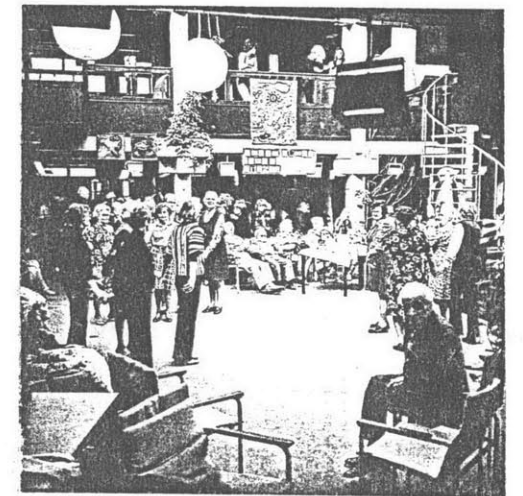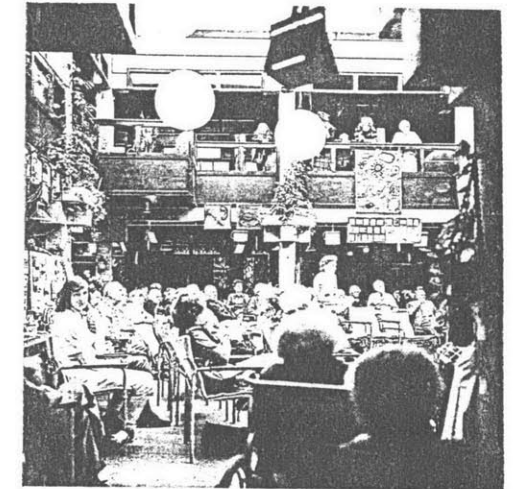
ENVIRONMENTAL STRUCTURE

The image of the intergenerational village center needs to have the following attributes to be readable:

o concrete and vivid shapes, colors, textures and details;

o a surplus of clues; and

o have a clear structure so that mental effort to understand its physical and social structure is economical;
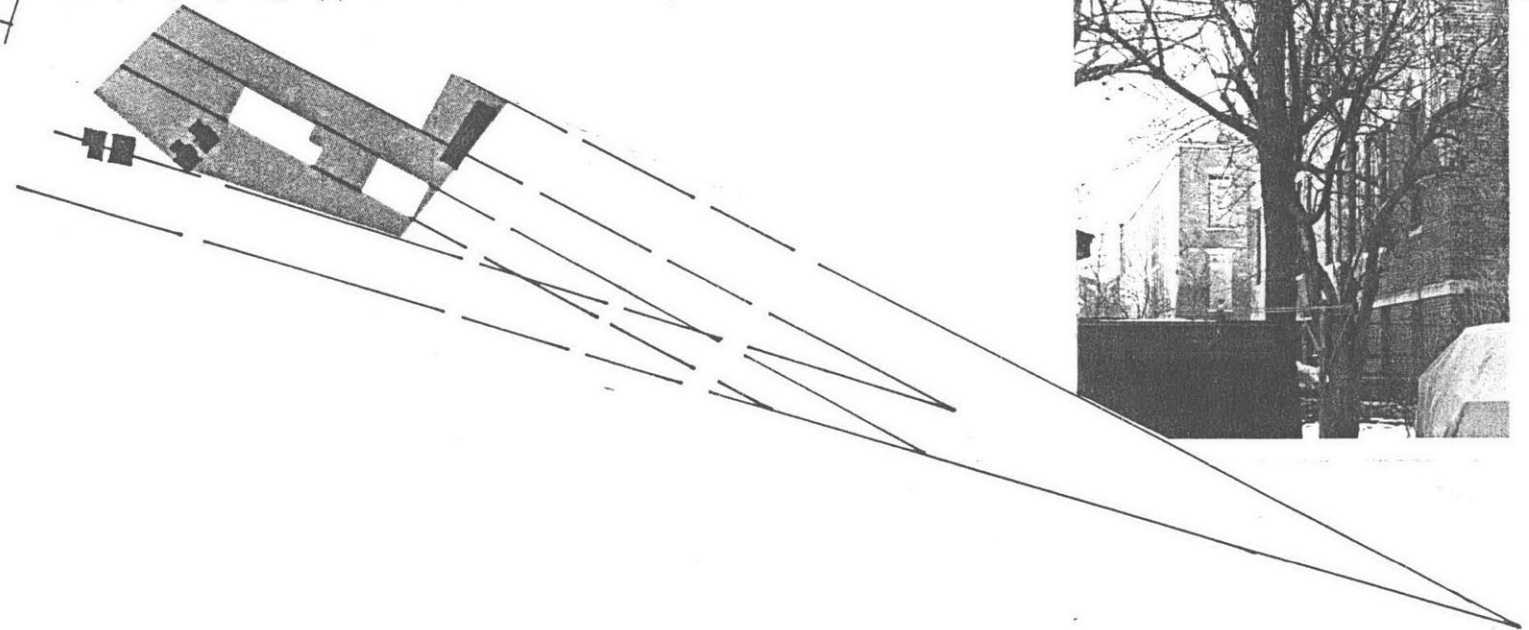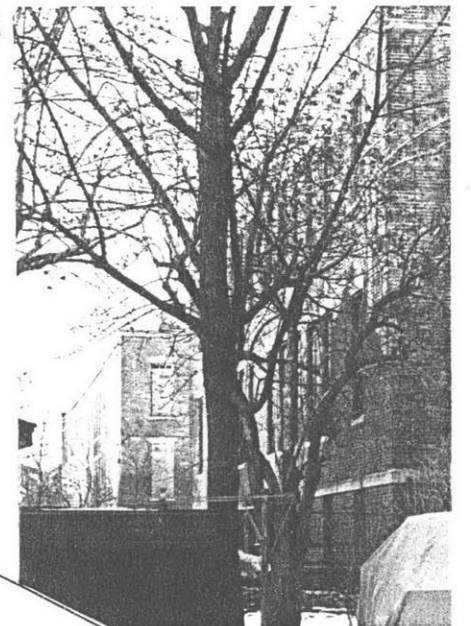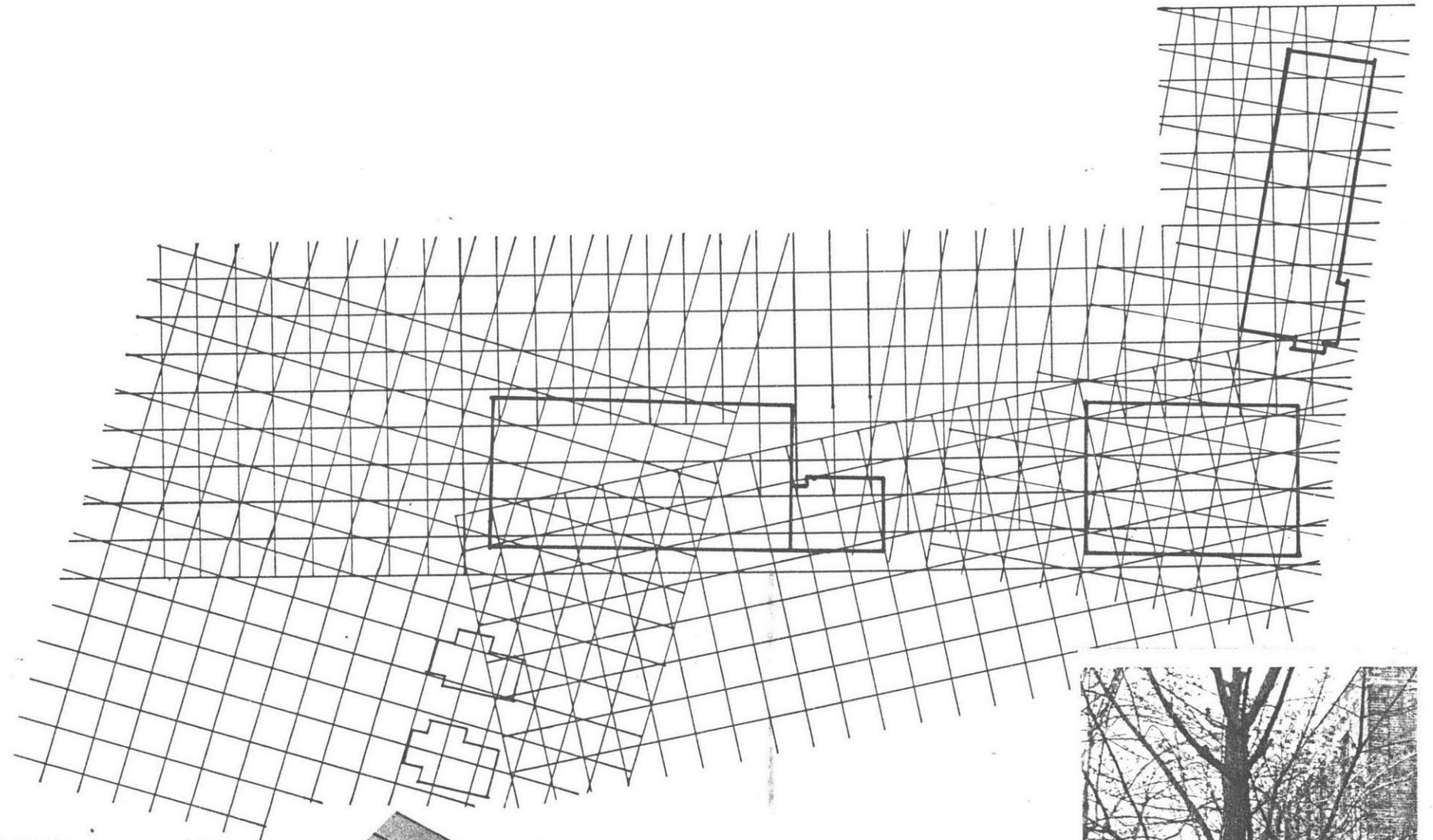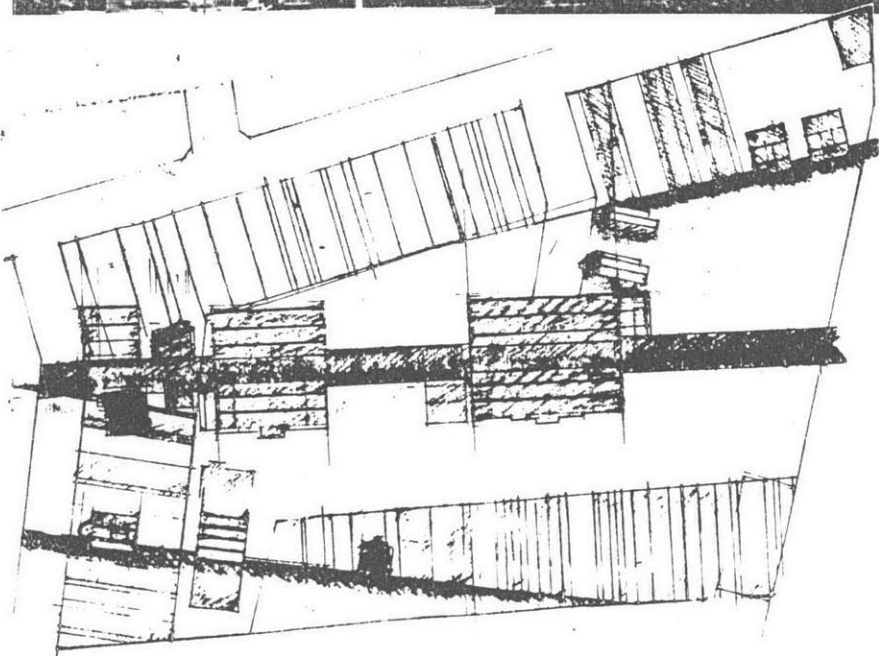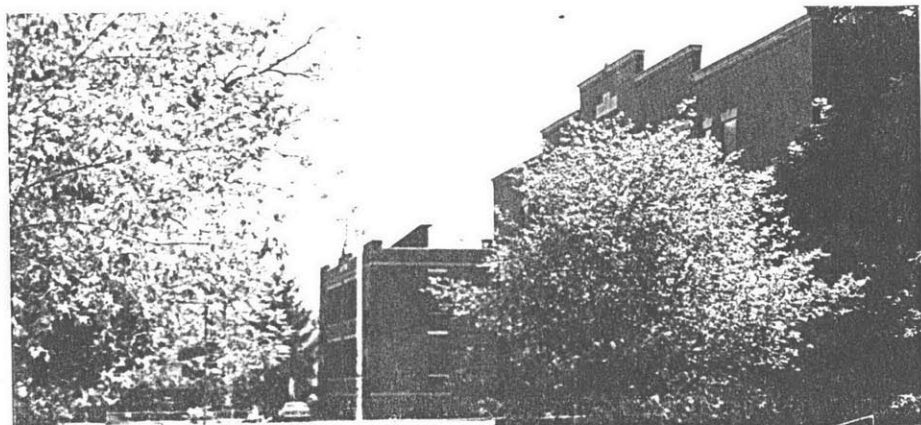
LEGIBILITY

The following elements will be coordinated to establish a legible image for the intergenerational urban village center.

   o access ways
   o edges
   o districts
   o nodes, and
   o landmarks.

Access Ways

Corridors and walkways will be organized in relation to the direction of the adjacent streets to allow clear and easy mental image of this place to be developed. Parts of the project will be organized along access ways to become visually prominent to those moving through it.

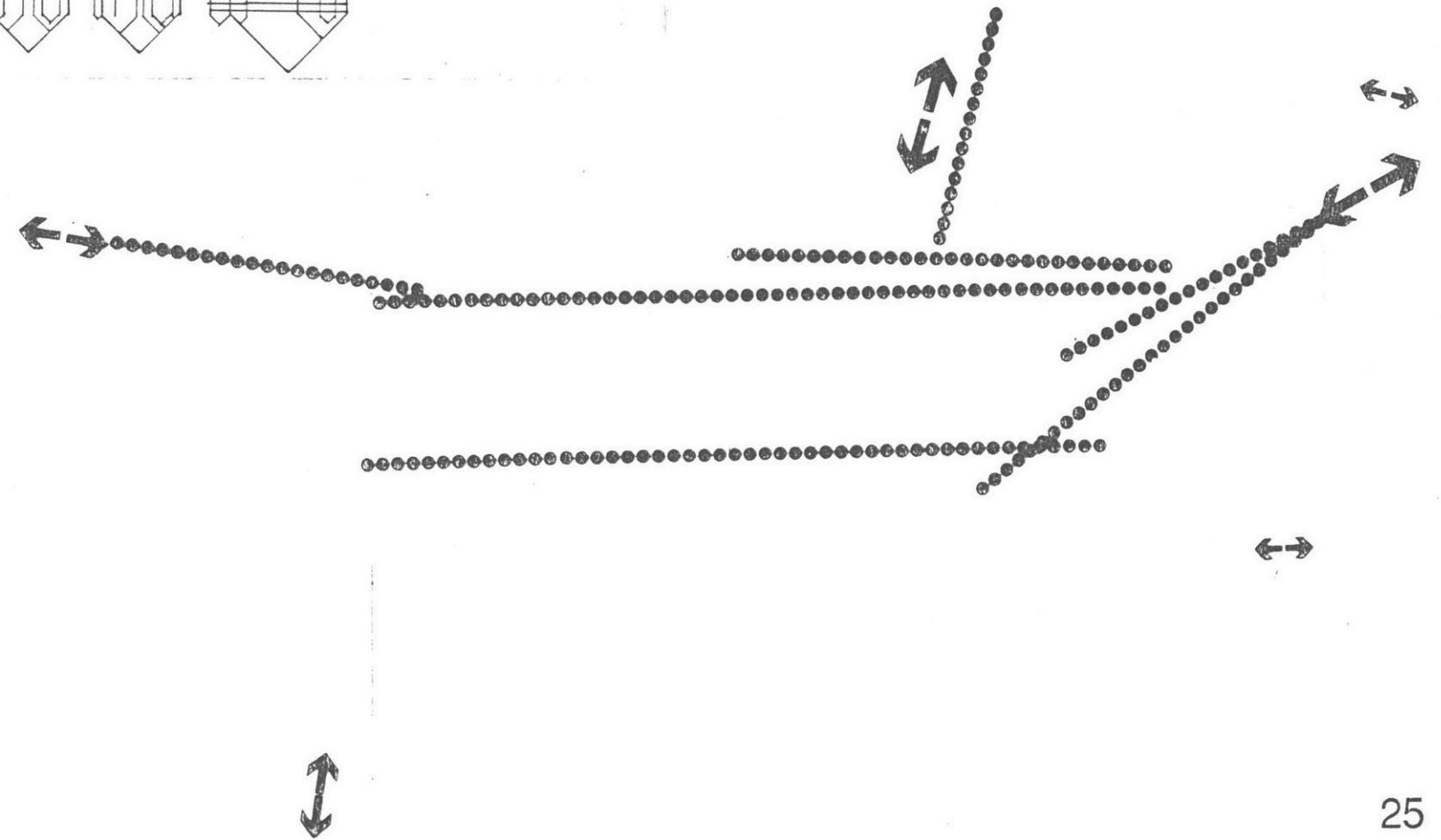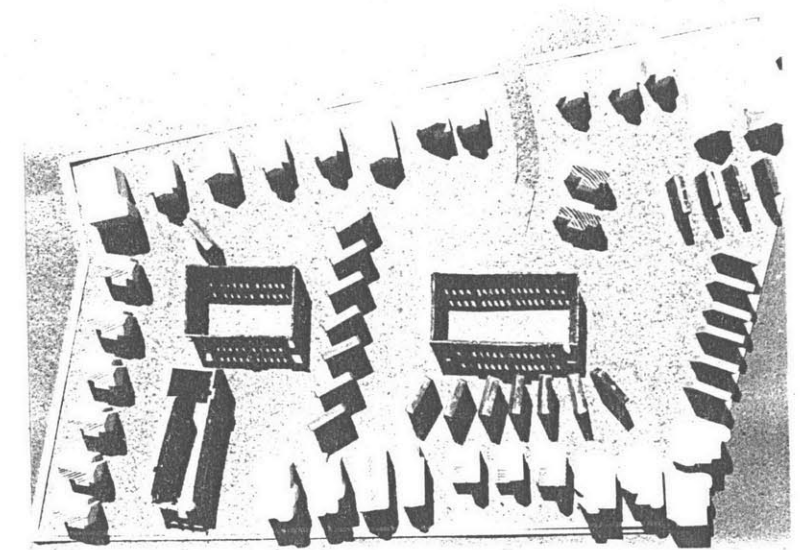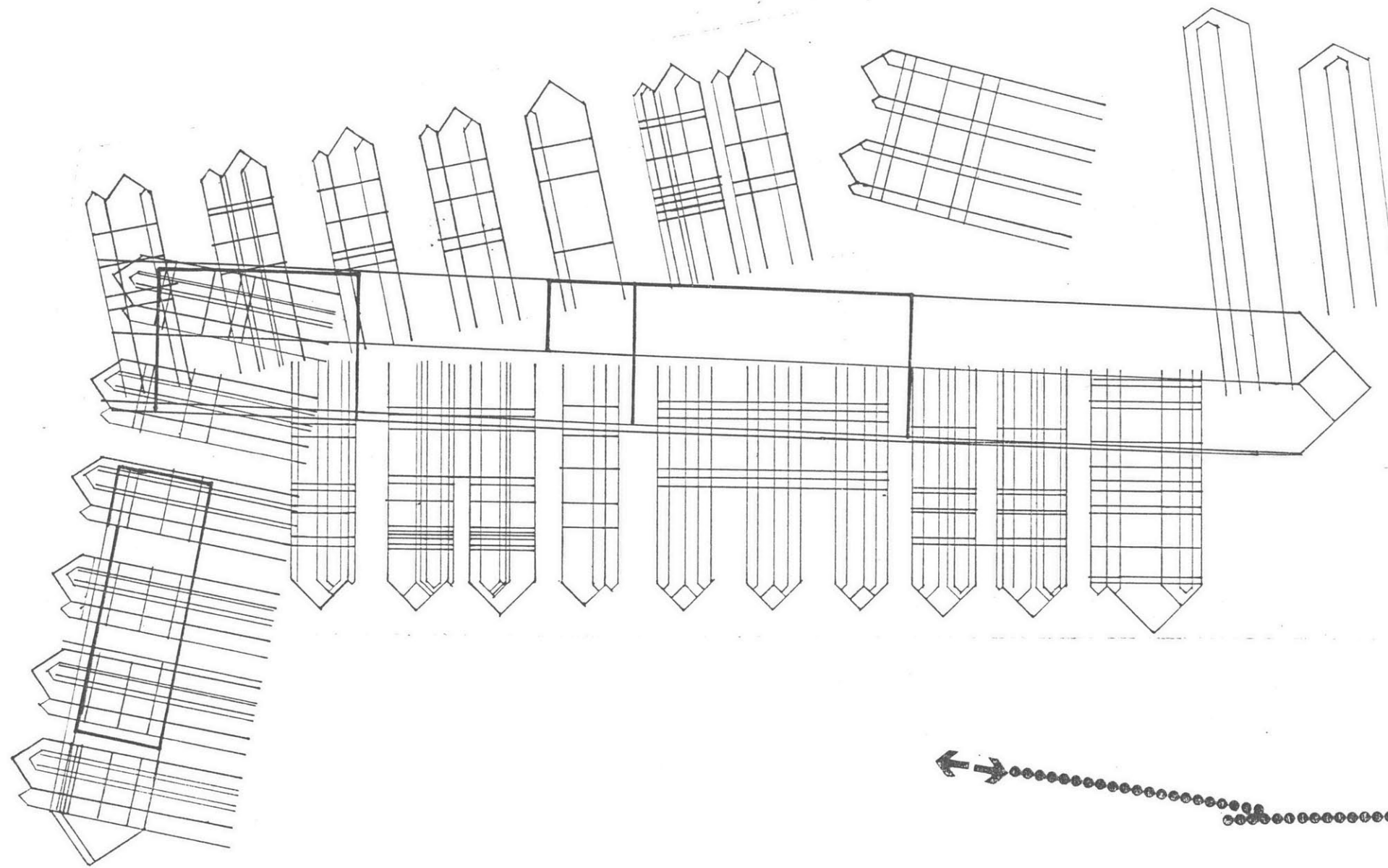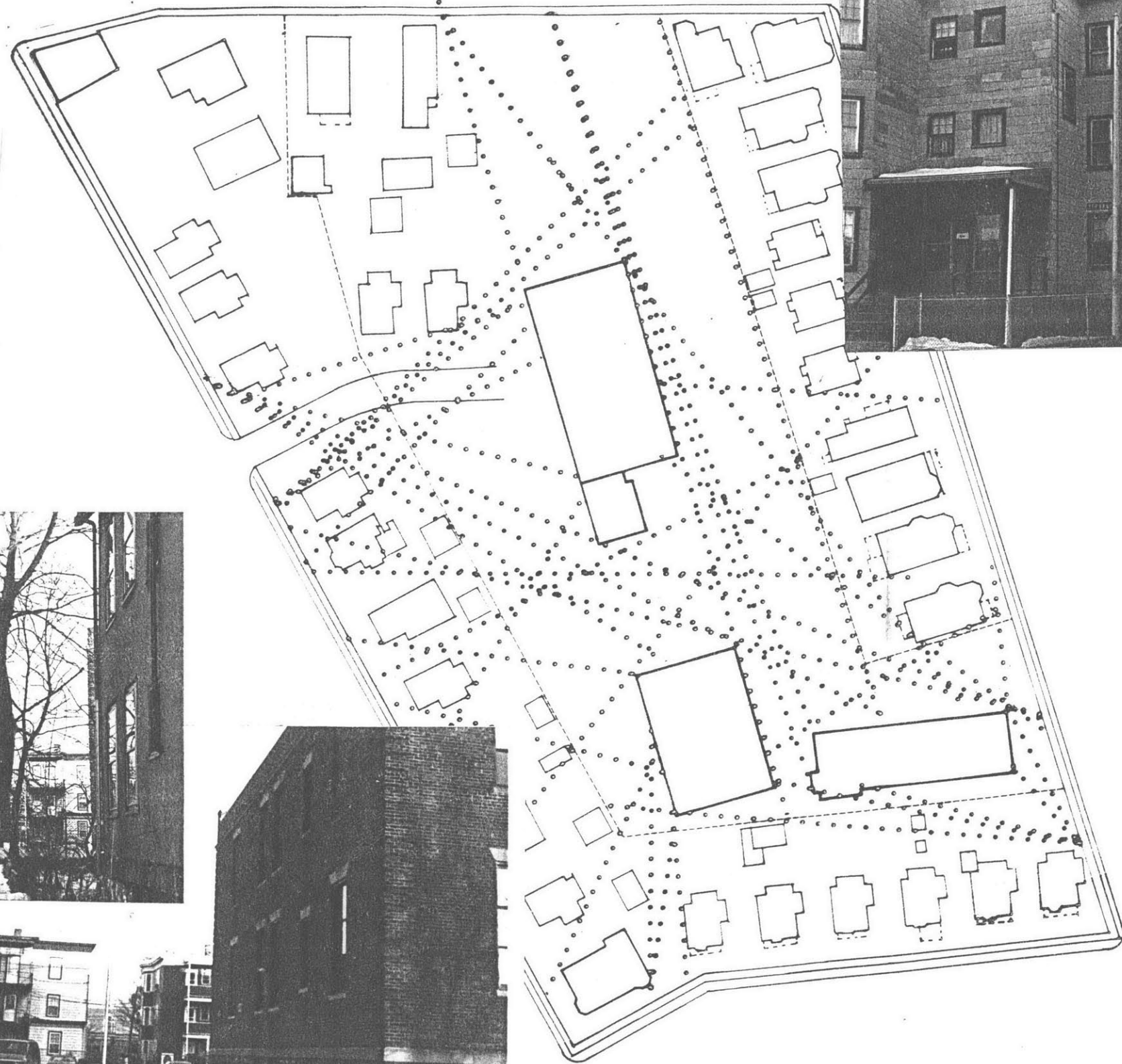Directionality allows access ways to be aligned within a larger order, both physical and territorially. Shifts in the direction of the visual field along the access way will be used to emphasize visual clarity by limiting view and directing it to places of visual distinction. Outward view will be shifted but not cut off from surroundings, so that view is associated with movement through the village center. Junctures in access ways are points of decision and will be reinforced with decision transition zones and landscape features.

The access direction and structure give clarity and afford establishing the particular sequence, rhythm, beat, and interval of each territorial realm. Scale will be used to differentiate the access in each territorial realm. The sequence of activities, landmarks and nodes along the access way will be used to provide a particular sense of scale, or grain pattern, to each territorial realm.

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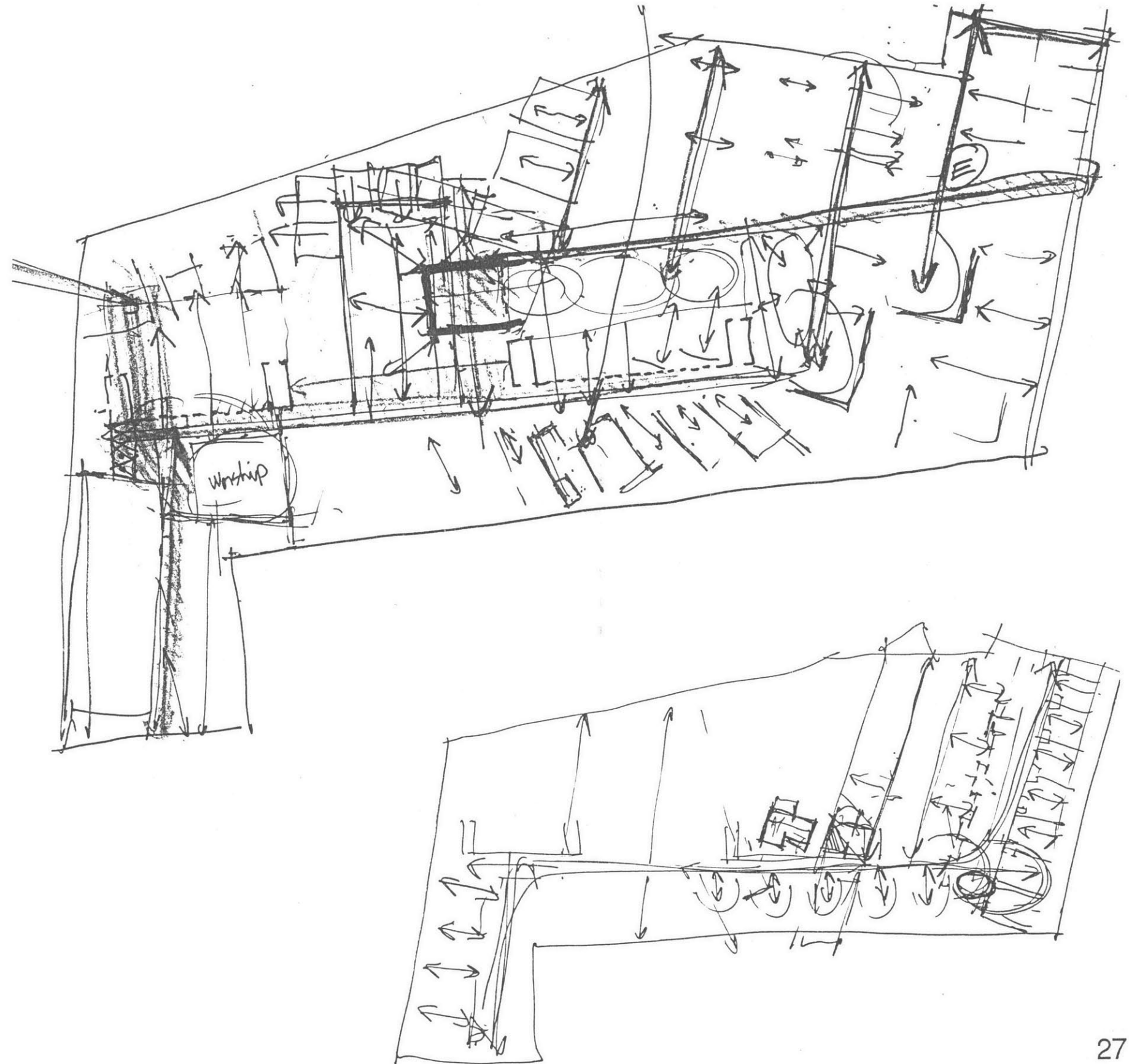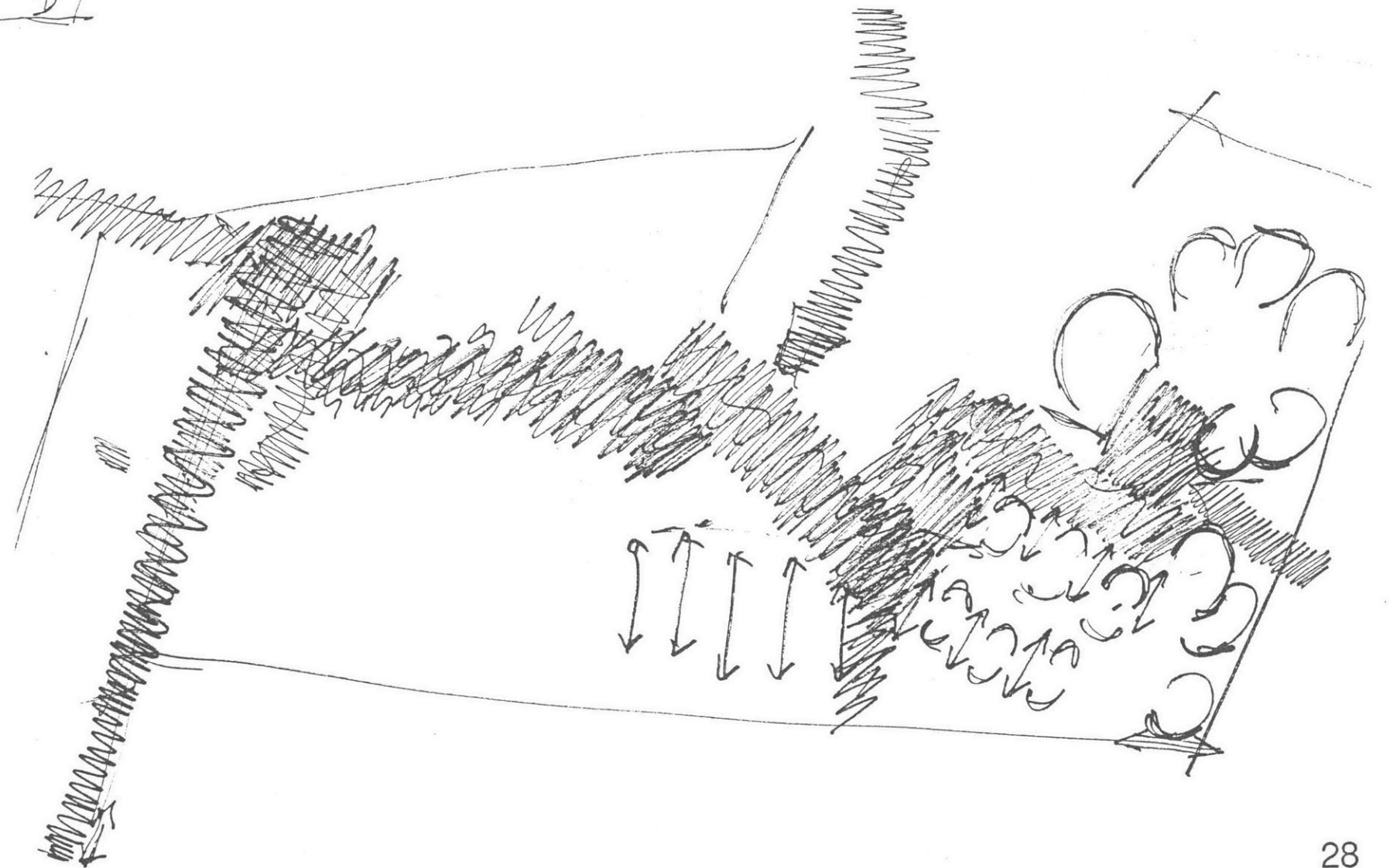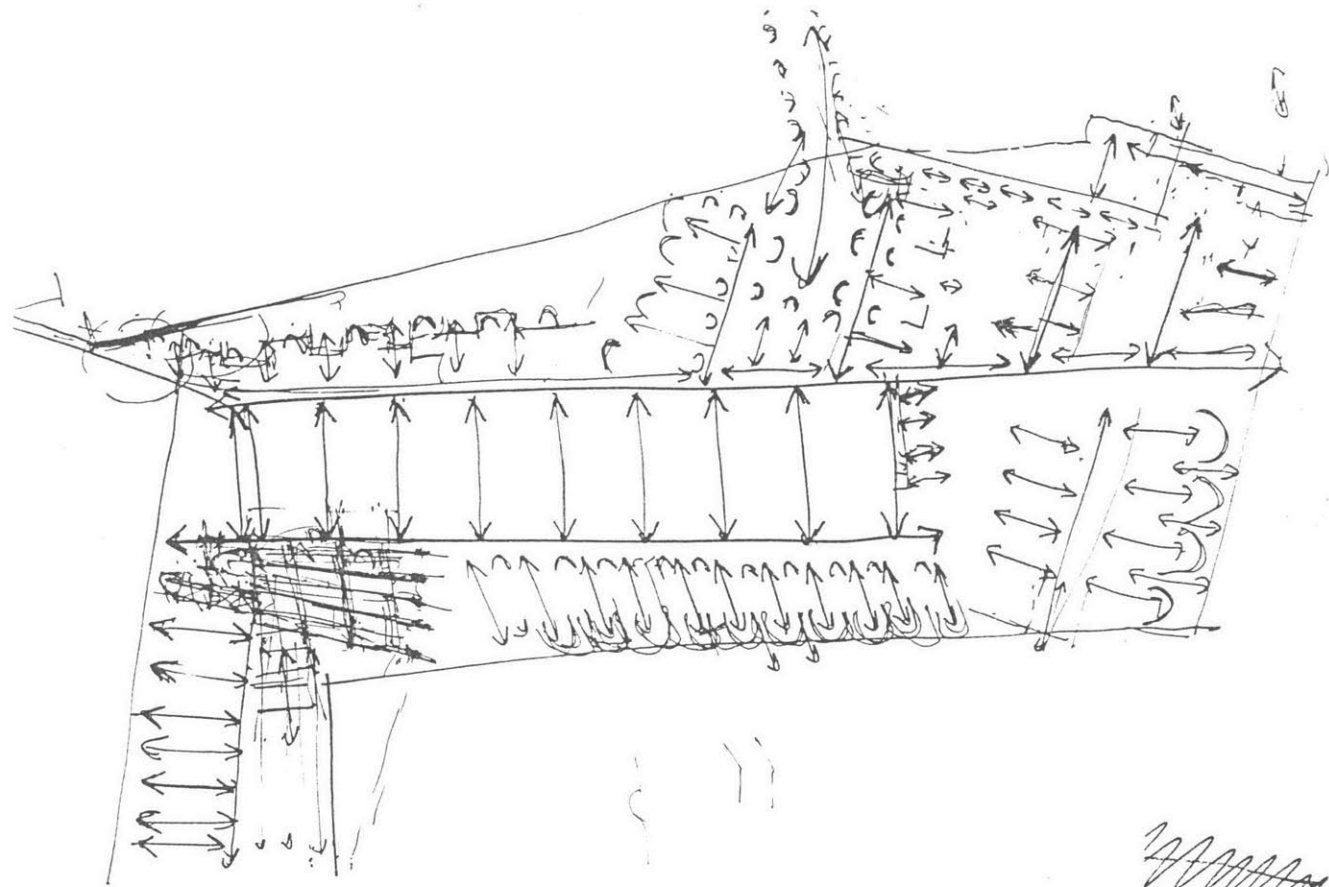
Edges

Physical edges hold together and join territorial realms. They will be used as the uniting seam lines of relations which form perceptible boundaries or transition zones between each realm. Edges provide for movement from one territorial realm or part of that realm to another, and for space to linger while deciding to do so. In this way, edges will be used to both compartmentalize e.g.,visually, aurally, and spatially, to allow behaviors to flourish without conflict with each other, and to provide transitions and overlaps to help persons to learn from each other.

Territorial Realms

To be perceived as distinctive, with specific edges and exterior realms, territorial realms require a number of perceptual clues. Different components, require a thematic continuity of physical and social form in each to make it present a strong image. The design theme of each realm will be reinforced by different activities, signs, physical space attributes, i.e., material, scale, building form, color, detail, texture, and finish detail.

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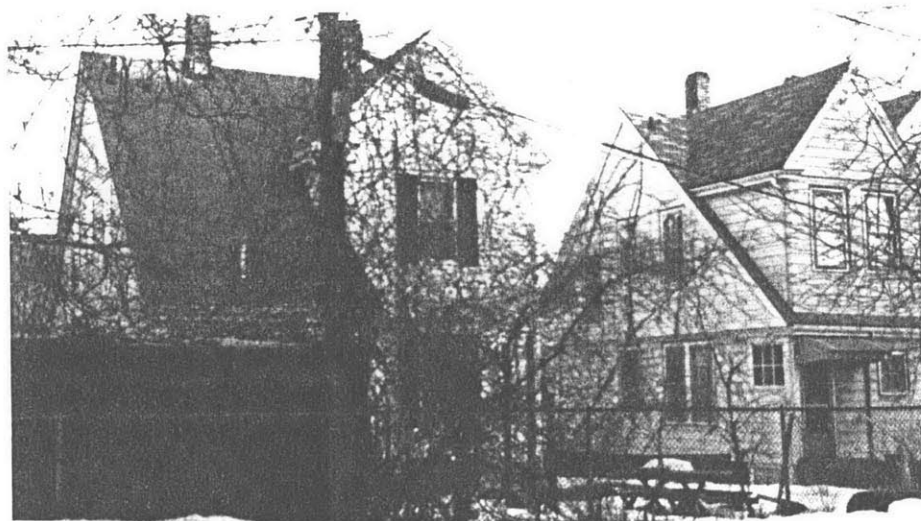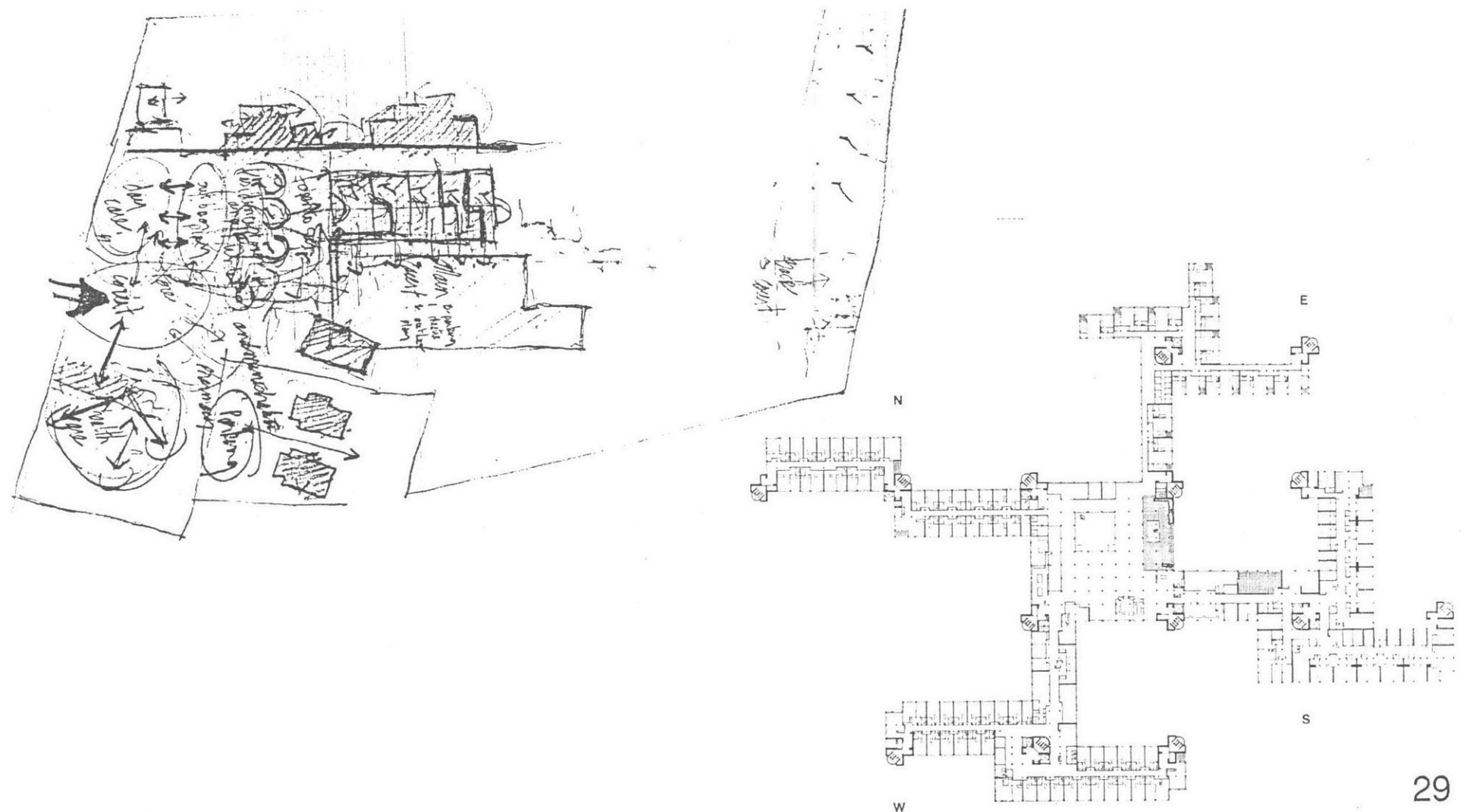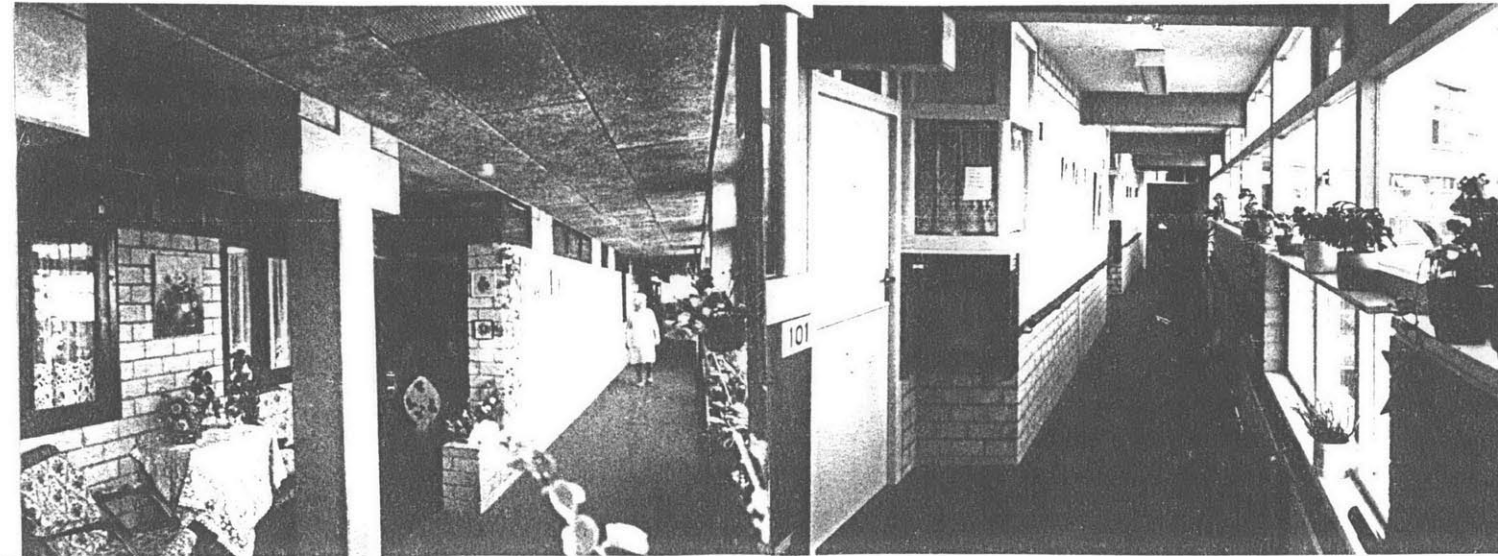
Nodes

Nodes of activity and associated physical character will be sequentially placed in the access way at important breaks in direction, at crossings or convergence points, e.g., shifts in access direction, and between interconnected activities. Nodes will form the centers of each territorial realm. Strong physical forms will be used to make the nodes recognizable.

Landmarks

Landmarks like elevator towers will be used as reference points. They will be place to seen from many points of view. Landmarks will have prominent spatial locations.

SHERIDAN
SQUARE
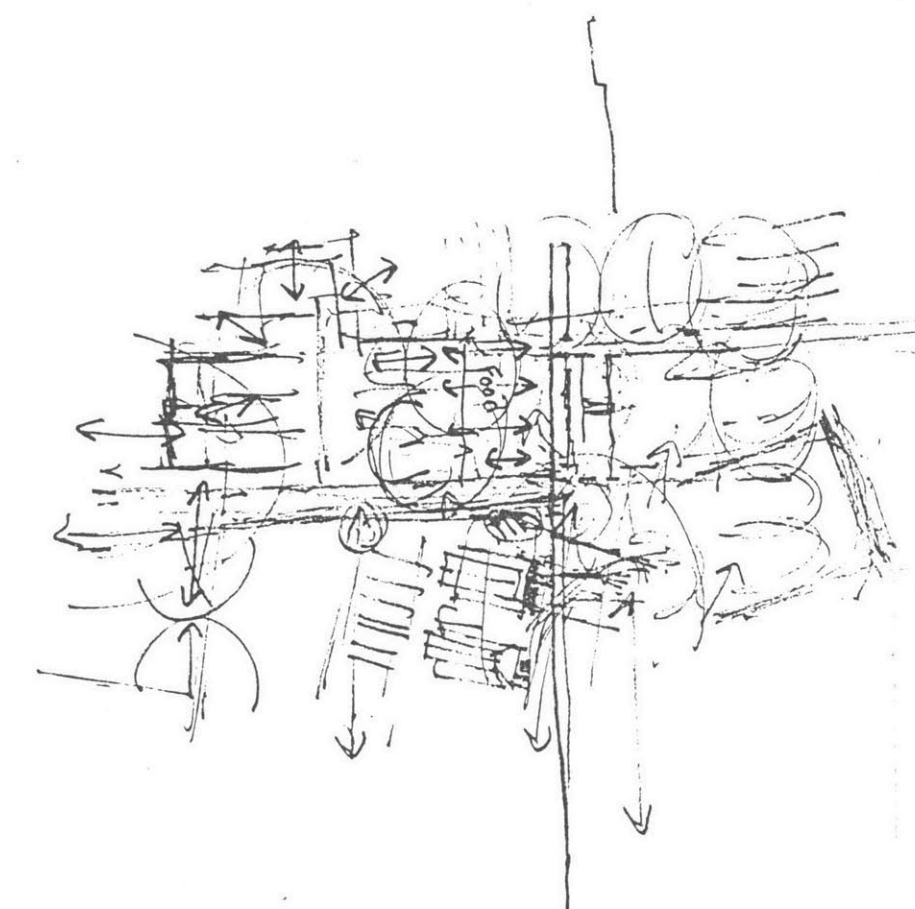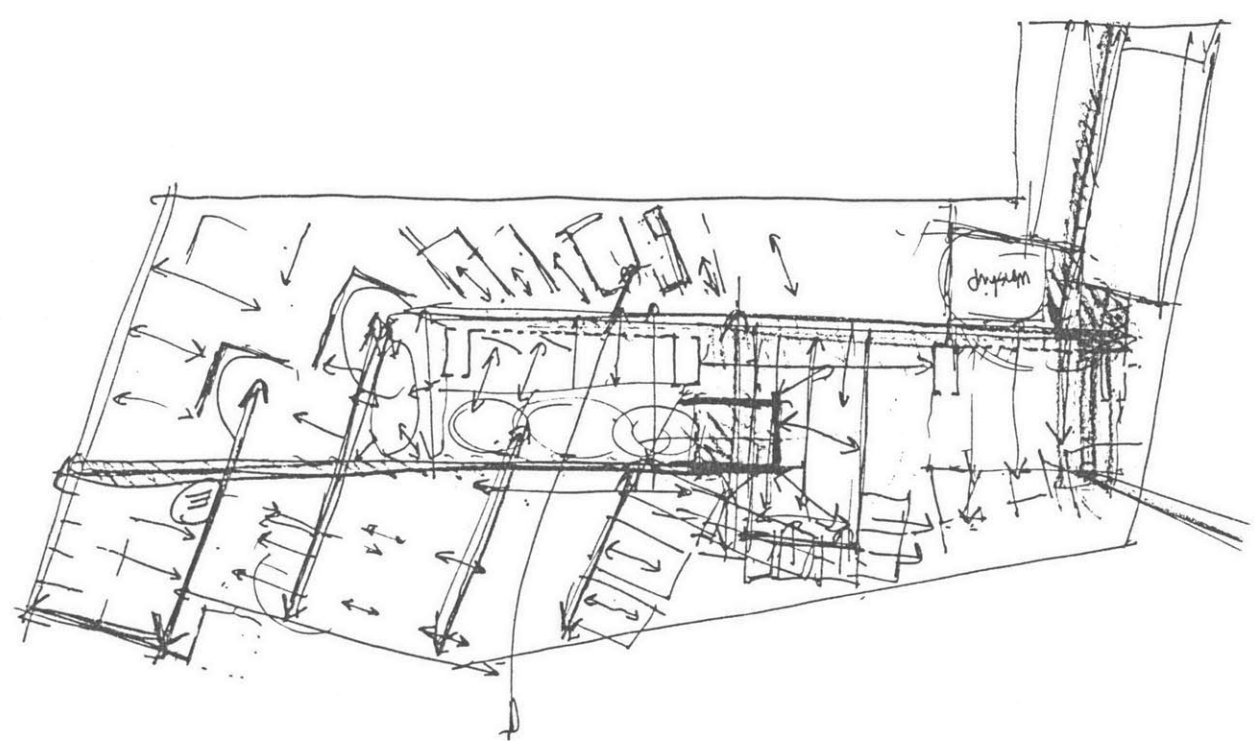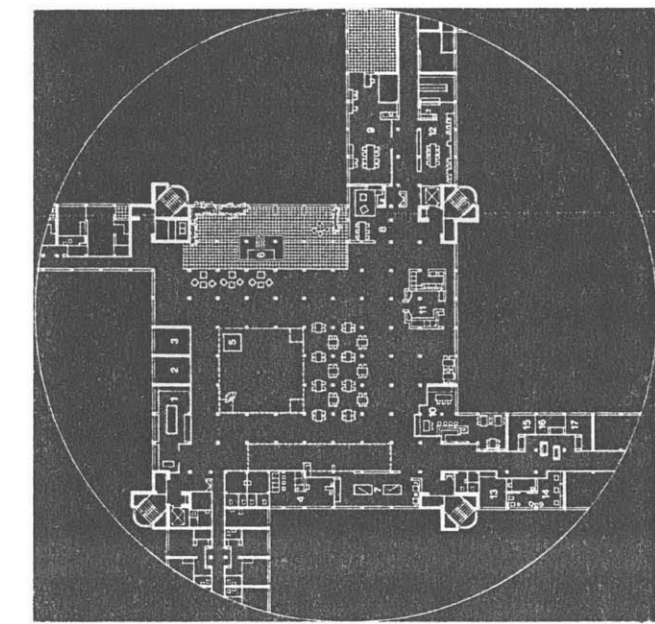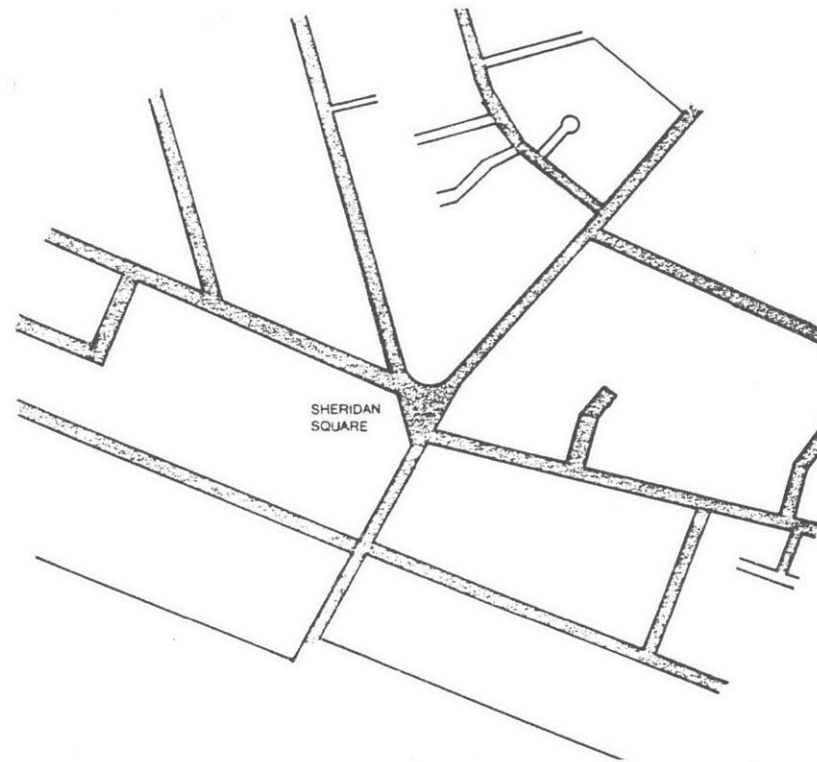
Urban Quality

Landmarks, nodes, districts, edges and paths will be patterned together to establish a physical form in which access ways and territorial realms are legible, clear and distinct. Groupings of similar elements will be used to reinforce one another, enhancing each others power in forming a collective territory. Critical places in the access will be reinforced by a strong node-junction form. Landmarks will be employed to strengthen nodes. The total complex of these formal interrelations will be perceived as the urban village center.

DESIGN FOR UNFOLDING

Manipulation, adaption or change of physical form by human interaction is the reciprocal attribute to permanence of built form. Possible human intentions based on change, or permanence can reinforce each other, and are not necessarily in opposition. Adaption and permanence are essential in humane environments.

Design for Education

The adaptable/permanence requirements for education facilities include the following dimensions:

- o Expandable/Contractible Space: allows for ordered growth and decline;
- o Convertible space: allows for adaptation to programme or functional change including wet services;
- o Adaptation to Information Technologies: to provide for use of computer and communication technologies;

- o Versatile Space: allows for multi-functional use of the same space;
- o Facility Type Mix: allows for scheduling to meet varying programme needs for a variety and diversity of spaces;
- o Furniture Functional Flexibility: adaptation of furniture to functional changes in space use over time:

Convertible Space

Adaptation to degrees of elder helper involvement, ongoing changes in educational curricula, and introduction of information technologies. Response is required to long term changes in demographics and community needs as North Cambridge evolves. The design needs flexible inner partition panel system to accommodate varying group sizes. HVAC electrical service, lighting , and plumbing systems are organized to serve varying spatial configurations, and functional requirements. Flexible group sizes, i.e., 1 teacher 20 students, or 5 elder helpers with 1 to 5 students each. clustered around a common space.

Converting space for changed functions of group sizing may be required over three different time spans: day-to-day, term-to-term, year-to-year.

Adaptation to Information Technology

Information technology applied to education can be used for enrichment, supplementary teaching, direct teaching, and continuing education. To ensure adaptation to these technologies requires the following measures:

- o glare free natural and artificial lighting;
- o flexible group sizing;

- o provision for optical fiber, coaxial cable and telephone distribution system;and
- o provision of adequate storage.

Versatile Ancillary Space

The following measures increase versatility of multi-functional ancillary space:

- o adequate storage for the different types of educational resource material;
- o provision of a double sink, hot and cold running water, and counter space; and
- o provision of an accessible janitor closet.

Design Strategies for Adaptation

The following design strategies increase the potential for adaptation:

- o building supports and infill;
- o improve access and obtain information and bring in resources;
- o reduce interference between parts;
- o organize activities around fixed focal points, and allow slack in the margins for change and growth; and
- o build with independent building units.

ARCHITECTURE AS A SIGN OF
INTERGENERATIONAL LIFE

House/home, street, neighborhood, city and metropolitan region are sets of images deeply interwoven in structure of place, self identity, and vested meaning. For the project to be successful, its intergenerational life must be based on the

community life of the neighborhood of North Cambridge. The urban village center must covey an image of this open and connected social order.
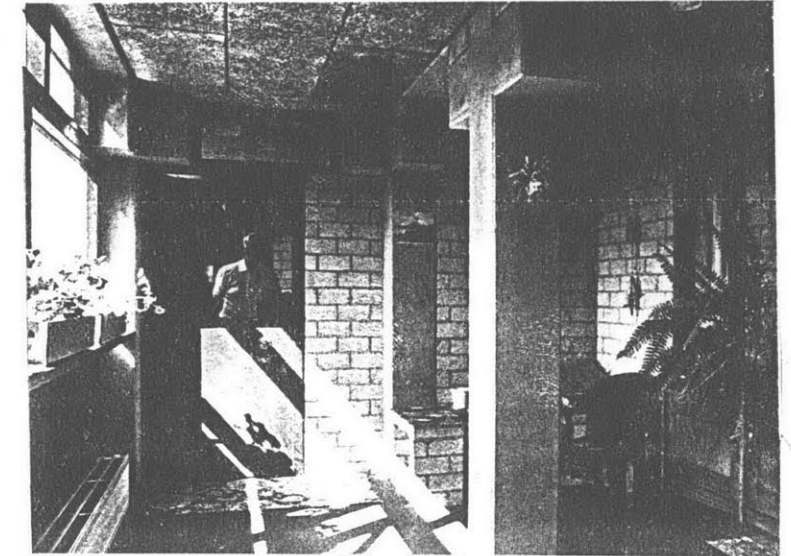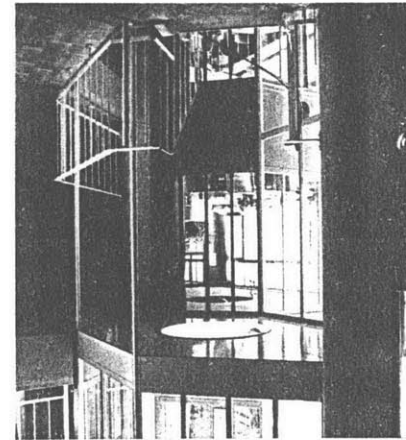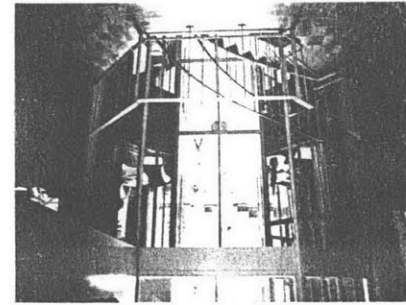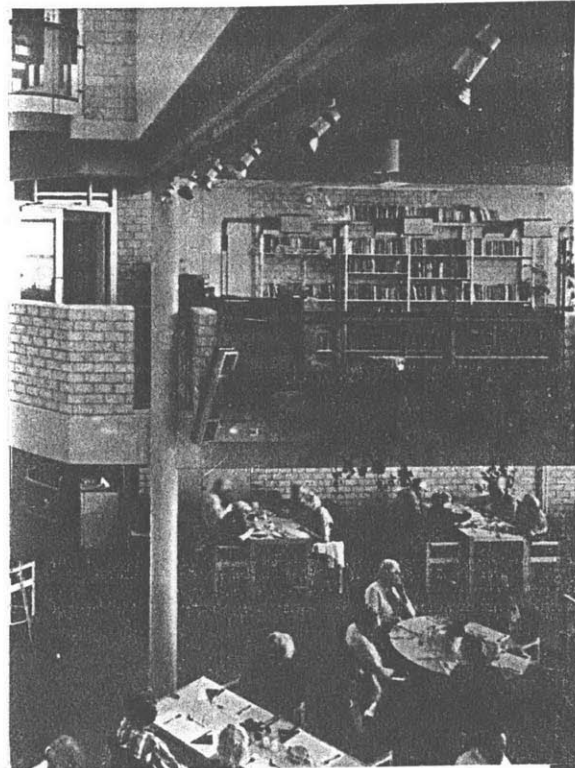
E CONTROL

Man is a territorial animal. Space is used to manage relations with others, and to deny access to, provide privacy to, information about thoughts or actions. Control is achieved through manipulation of access, symbolic barriers, and through size, elevation and spatial distance. In good urban form control is certain, responsible, and congruent, to present, potential, and future inhabitants, and to the structure of this particular place.

AGING AND CONTROL OF TERRITORIAL

Common in the elderly is the desire to maintain independent living arrangements for as long as possible, and to control the physical and temporal aspects of social contact. A private kitchen and eating area, living space and bedroom and bathroom appear to be very important to the aging.

Aging reduces individuals' ability to claim their own space and defend it as their territory. Aging is experiencing a decrease in willingness to master large or complex spaces, or relationships with large numbers of people.

Yet the will to maintain contact with other persons is strong in the elderly. A balance is required between connectedness and openness and the need for privacy.

AGING AND PRIVACY

Concepts of Privacy

The notion of privacy, the right to be left alone and deny access to information about thoughts and and actions, has three dimensions; privacy of event, privacy of life-style and privacy of thought. Actions like bathing, dressing, sex, sleeping, and excreting are considered private by American social norms. Rhythms, patterns and routines not wanted to be shared, or shared with a limited group require isolation from others. Planning and goal setting, contemplation and reflection are affected by noise, activity and interruptions.

Individual control of privacy, the ability to define, reinforce and protect the physical and social edges of personal territories.

Privacy and Individual Identity

Privacy is fundamental to development and maintenance of individual identity. Privacy affords modifying and decorating one's house to intensify its personal territorial sense of being home; and the carrying out of personal habits, activities and preferences. In this way, shelter is infused with emotional qualities.

Privacy and the Institution

Institutions subsume and manipulate privacy, individuality and self-expression to a strong institutionalized group identity. And thus undermine the continuation and growth of strong individual natures. A lifetime of growth of individual preference and habit is the cost if relocation of the aging into institutionalized housing means the loss of privacy to institutionalized patterns of space and staff routines.

Privacy and Shrinking Territorial Claim

Aging often results in a smaller space in which to live, due to a narrowing in psychological, physiological and economic dimensions of life. This change often compromises personal territorial perceptions. Narrowing physical competence compromises between a need for assistance, and a need for dignity and privacy.

Privacy, Aloneness and Loneliness

Aloneness is the opposite sense of publicness. Both are part of appropriate rhythms of socialization and withdrawal. However, loneliness is the absence of wanted social contact and occurs for the elderly, when socialization is interrupted by a narrowing capacity for life, as evident in houseboundness and infirmary. Culturally valued roles and images overcome loneliness

AGING AND SECURITY

Concern for personal security increases with age, affecting behavior and involvement with others. Places not subject to public view are vulnerable to a high incidence of crime. The aging are often prime targets for all types fraudulent practices, physical attack and robbery. Vulnerability is associated with narrowing life capabilities.

DESIGN GUIDELINES

TERRITORIAL DEFINITION

The design intent is to reinforce the territorial distinctions and thereby their meaning to the inhabitants through differentiating material, quality of light, dimensions, and direction changes. In this way the built form intensifies the territorial sense of the place. Private realms and public realms are distinct from each other, due to differences in physical definition.

This design feature will reinforce a gradient of territorial realms from individual private to community public. The need of the aging for increased security reinforces the need for strong separation of territorial realms, and emergency call system outlets with a twenty-four hour contact point.

For example, the urban street character of North Cambridge is brought into the building's interior to intensify community realms, and this quality is contrasted to the more private realms. The publicness of the street is used as a means to bring people together inside the intergenerational neighborhood center.

Streets, squares, independent building units are used to create a small self contained city atmosphere inside the intergenerational neighborhood center. The building becomes urban tissue. This conception allows a train of associative connections between buildings and cities. Corridors become streets. Interior lighting becomes street lighting. The design intent is to evoke a strong sense of territory through its urban character.

In this way the physical form of the building reinforces the social cohesion represented by this intergenerational institution through demarking spaces which can be occupied by a wide range of activities, intentions and associations. Conflict between public and private are resolved.

Church
Tower

Pick up all 3 directions in public realm
2 in social realm
1 in private/secure?

This new social institution is based on transforming existing models of elementary schools and housing the aging. These models were disaggregated in their constituent components, and reaggregated based on the concept of intergenerational exchange, and from the perspective of territorial realms: private, semi-private, semi-public, community, public educational and private service.

The territorial program patterns the intergenerational urban village center after its social order. This particular arrangement of spaces and potential activities. give this institution a new social meaning. The territorial program reconciles specific territorial considerations for the elderly, school children, workers, and community members.

The territorial program identifies who will occupy each realm, the parts each contains, and the activities expected to occur in each realm. The complete territorial program is detailed below:
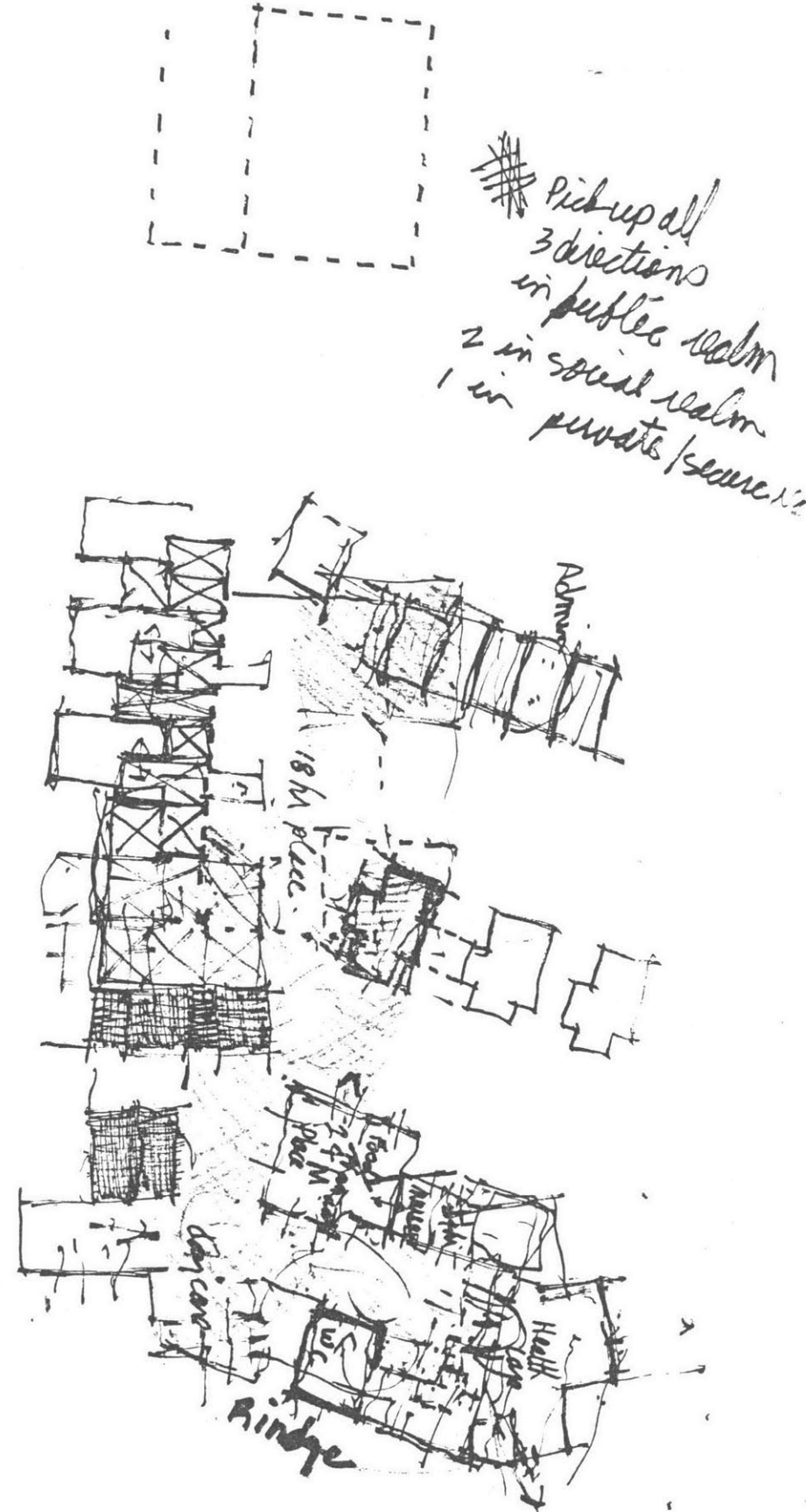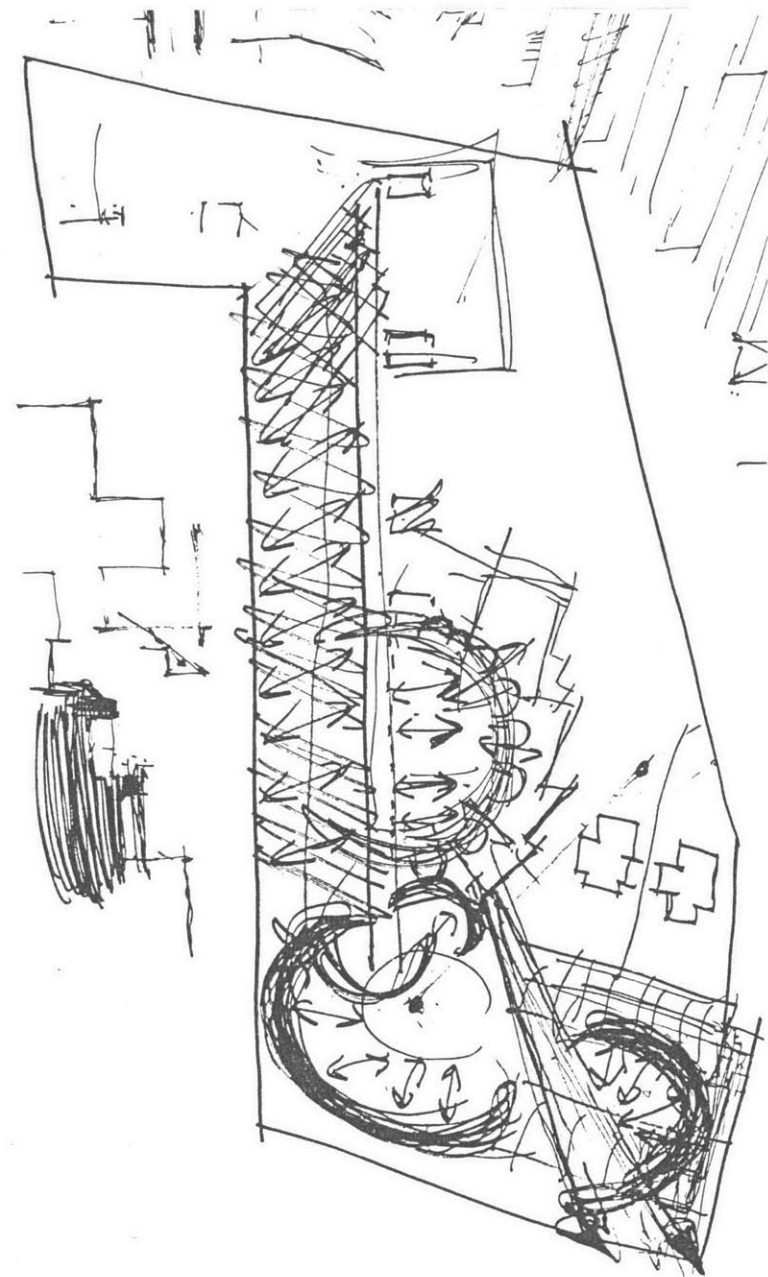
INHABITANTS BY REALM

COMMUNITY REALM

Day to Day

80 elder residents
child & elder pairs
child & elder groups
100 ECS
300 elementary students
20 teachers
60 elder teacher helpers
3 doctors
1 nurse(three shifts)
3 elder volunteers
1 lab. tech.
3 kit. workers
3 administrators
2 elder helper
2 custodians (three shifts)

Invited Guests

outreach and in reach groups
North Cambridge neighborhood residents
parents, siblings and friends of other participants

SEMI-PUBLIC RESIDENTIAL REALM

elder residents
child-elder pairs and groups
other invited guests
administrators
custodians

SEMI-PRIVATE RESIDENTIAL REALM

elder resident collective group
child-elder pairs and groups
invited guests
custodians

PRIVATE DWELLINGS
(Garden Apartment Supports)

Infill/Options & Potential Mix

10 single elders in studio(usually male)
30 singles elders in 1 bedroom
20 elder couples in large 1 bedroom
10 pairs two elder friends, relatives, couples in 2 bedroom
3 shared house groups of 5 to 7 elders in own rooms

invited guests,
custodians

COMMUNITY EDUCATION REALM

child-elder pairs and groups
100 ECS
300 students
20 teachers
60 elder teacher helpers
community outreach groups(100P/day)
3 administrators
1 office staff
2 librarians
custodians

PRIVATE SERVICE REALM

administrators
office staff
librarian
teachers
teacher helpers
cooks
retail workers
custodians

37
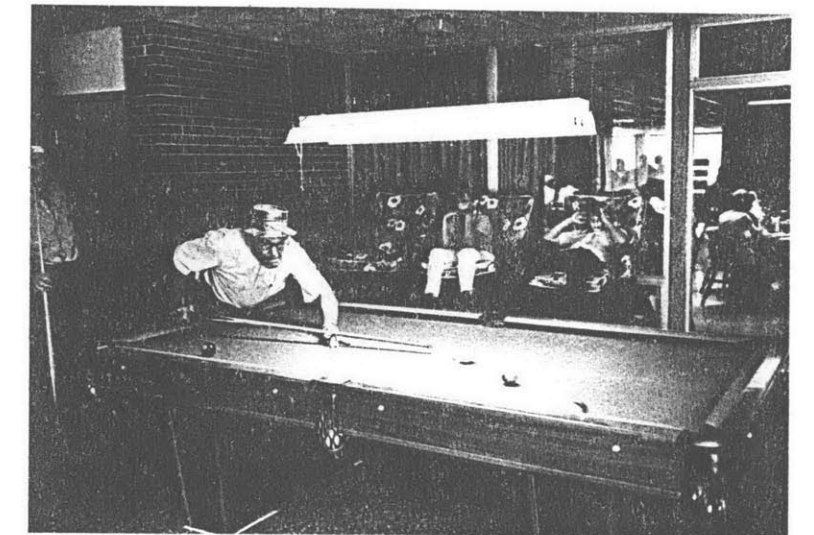
PARTS BY REALM

COMMUNITY REALM

SITE ACCESS

pedestrian gates to street
emergency vehicle access
school bus passenger drop off and pick up
fire truck
automobile passenger drop off and pick-up
service vehicle deliveries
pedestrians
bicycles
visitor parking
drop off and pick-up
public gardens
seating
building entries
playground

PLAY GROUND

physical play area
social and dramatic play area
creative cognitive play area
quiet retreat play area
sitting area
access

PUBLIC GARDEN

open sitting areas
barbecue pit
exercise area
shuffleboard
sheltered sitting area
dancing area
water fountain
water surface
treed area
access

MAIN ACCESS AND ENTRANCE

reception and information counter
separate vehicular, bicycle and pedestrian access
streets,outdoor/indoor plazas/greenhouse mail & package pickup
signage & directory
public toilets
public telephone
waiting area
transition zone to semi-public

COMMUNITY EVENT SPACE IN PUBLIC ACCESS

display areas
public lavatory
viewing space for 400
performance area
acoustical panels
theater lights gallery
electrical control panels
projectionists/control booth
green room
storage

NON-DENOMINATIONAL CHAPEL

vigil
quiet retreat
entrance
entrance vestibule
lavatory
storage

HEALTH CLINIC

1 reception area
visitor washrooms
3 small intimate waiting areas
emergency room
conference room
3 suites of doctor's office with 2 wet examination rooms
secure drug closet
nurses station
health education areas
small test lab
staff washrooms
staff entrance
emergency entrance

RETAIL

beauty parlor/barber
pharmacy
convenience store
meal service

GYMNASIUM

multi-court floor
bleacher area
offices
sports equipment storage
portable chair storage
washrooms
shower/change rooms

ELDERS RESIDENT'S SEMI-PUBLIC REALM

ACCESS

gate to community realm
lavatory
elevators
ramps
stairs
corridors
resident parking
gate to semi-private realm

COMMUNAL SPACES

elders communal room and kitchen
T.V. lounge
games room
sun rooms
pool room
sitting room and parlor
mail boxes

ELDER RESIDENT'S SEMI-PRIVATE REALM

ACCESS

gate to semi-public realm
access to living units
elevator lobbies
private realm transition zone

COMMUNAL SPACES

sun room\greenhouse
lounges
laundry rooms
garbage disposal

PRIVATE DWELLINGS
(Garden Apartment Support)

Infill Options

studio apartment for one person(usually male)
one bedroom for one person
one bedroom for two persons
two bedroom for couple
two bedroom for two friends
group living home for four or five

Parts

entrance transition zone
gate to semi-private living room
patio/balcony
kitchen
storage
utilities
bathrooms
bedrooms
private resident gardens or garden balconies

Furniture

love seat
sofa/couch
easy chair
foot stool
arm chair
side chair
dining table
coffee table
end table
china cabinet
shelving
desk
vanity
low bureau
high bureau
single bed
double bed
TV
TV tray
TV tray stand
floor lamp
room divider
step stool
plant stand

EDUCATION REALM

ACCESS

gates to community
realm
entry lobby
display
signage
information
entrance vestibules
stairs
ramps
elevators
corridors
washrooms

STUDENT AND ELDER COMMONS

indoor and outdoor
focal points in the
community school
access
many places to eat
cheese

EARLY CHILDHOOD SERVICES/DAY CARE

many private personal
scaled activity places
for simultaneous play
wash up area
nap areas
eating areas
plant growing area
dry group work stations
wet group work stations
terraria
aquaria
greenhouse
outdoor play access

LEARNING RESOURCES CENTER

book security entrance
information desk
check out counter
technical services area
wet study stations
A.V.
 slide projector
 microfilm reader
 computer
 television
current periodical
stands
stacks
atlas & dictionary stands
paper back racks
reference collections
work spaces
reserve area
conference and test
center
dry work stations
wet work stations

project work stations
media utilization center
individual study carrels
computer work stations
learning resources
storage
reading area
communications control
center

Tools

computers
video players
television sets
film projectors
slide projectors
models
maps
text books
reference books
magazines
construction and writing
paper

Furniture

individual work stations
tables of different sizes
book and magazine
display
chart stand
easels for painting and
drawing
teacher station

room,change/shower
room, office and closets
garbage storage rooms
and pickup

WET ANCILLARY SUPPORTS

Infill Options

music/choir
art ancillary
science
special education
general learning

PRIVATE SERVICE REALMS

ADMINISTRATION

entrance waiting area
secretarial desk & work
space
teacher mailboxes
communications control
panel
Master Clock and
manual override
building controls
communication
switchboard
storage of
administration supplies
school records
office machinery

office supplies storage
principal vice principal
offices
conference area
infirmary/ lavatory
staff lavatory

TEACHER SUPPORT SPACE

small kitchen
dining area
quiet rest area
staff lounge
staff work rooms
staff lavatory

GUIDANCE & COUNSELLING OFFICES

private waiting room
with display
informal staff offices

RETAIL SUPPORT

unloading dock
kitchens
storage
service access
staff lounge & lavatory

BUILDING SUPPORT

general storage rooms
mechanical room
electrical room
service entry
custodial work

ACTIVITIES BY REALM

COMMUNITY REALM

SITE ACCESS

entering site
driving automobile
driving school bus
driving delivery vehicles
meeting rides
getting in and out of automobiles
getting in and out of the school bus
riding a bicycle
parking the bicycle
locking the bicycle
walking on grounds
riding in wheelchairs
parking the automobile
parking the school bus
entering the building
waiting for rides

PLAY GROUND

Physical Play

running
throwing
jumping
climbing
pedalling
pushing & pulling
hitting & punching
supporting own weight
kicking
creeping & crawling
rhythmic exercises
somersaulting
rolling & tumbling
balancing

Social and Dramatic Play

Creative cognitive play with sand and water

Quiet retreat play in protected area

PUBLIC GARDEN

watch street and
sit in the sun
sit under a roof in the shade
sit in a large group
play outdoor games such as shuffleboard
have barbecue parties
see greenery and hear water
walk conveniently without encountering stairs
celebrating birthdays, and holidays

MAIN & SECONDARY BUILDING ENTRANCES

casual observation of intergenerational life
sleeping in public
observation of public life
greeting friends and family
waiting for rides
telephoning
going to the lavatory

COMMUNITY EVENT SPACE IN PUBLIC ACCESS

celebrating together
going to see a show
arranging tickets
leaving coats
waiting
going to the washroom
becoming seated
projecting films
giving slide/talk presentations
watching films
watching plays
putting on plays
listening to music
playing music
holding rehearsals
setting up stage
scenery & props

NON-DENOMINATIONAL CHAPEL

worshiping
morning
being quiet with one self

HEALTH CLINIC

going to the doctors
dropping off the baby at day care
checking in with the nurse
checking in patients
waiting for the doctor
talking to the doctor
being examined by the doctor
examining patients
responding to emergencies
writing and reading charts
doing office work
giving blood and urine samples
lab testing samples
checking out with the nurse
pick up baby at day care

RETAIL

cutting hair
washing hair
getting a perm
filling prescriptions
shopping for convenience items
purchasing prepared food
eating indoor/outdoor

GYMNASIUM

playing major sports
playing minor sports
general physical conditioning
coordination exercising
reaction & interaction
learning activities
changing cloths
taking showers
storing equipment

ELDER RESIDENT'S SEMI-PUBLIC REALM

celebrating birthdays, holidays
elder-child sharing of experiences
talking
meetings
dining
games
private birthday parties
family gatherings
play pool
work on puzzles
intellectual activities
sports & exercise
do arts & crafts
reading
snacking
arriving and leaving residential realm
picking up mail
greeting company
going home

ELDER RESIDENT'S SEMI-PRIVATE REALM

talking
accessing private dwellings
doing laundry
taking out the garbage
greeting visitors
growing plants

PRIVATE DWELLING

arriving and leaving
eating
sleeping
dressing
visiting
watching T.V.
reading
sewing
knitting
stamp collecting
drawing
crafts
plant tending
watching life
telephoning
letter writing

Private Garden or Garden Balcony

sitting unobserved in a secluded quiet spot
raising flower
raising vegetables

COMMUNITY EDUCATION REALM

ACCESS

arriving at and leaving school
removing outer wear
going to the washroom
riding the elevator
going to class

ELDER AND STUDENT COMMONS

celebrating together
story telling
being together
relaxing
conversing
meeting
studying
snacking
eating meals

DAY CARE/EARLY CHILDHOOD SERVICES

napping
eating
playing with paint sand
water
raising plants
raising fish
raising animals
plant and animal study
reading
fitting & building
making and listening to
music
dancing
watching and putting on
plays

LEARNING RESOURCE CENTER

elder child joint reading
individual reading

note taking
individual video
watching
group video watching
individual listening to
music & taped learning
resources
looking up call numbers
using reference
materials
using computerized
reference retrieval
terminals
making printouts
story telling
relaxing
informal learning
ordering
receiving
processing books
cataloguing books
checking books out
shelving books
finding and obtaining
books from stacks

GENERAL EDUCATION SPACE

independent study
small group dialogue
and physical interaction
large group dialogue
and physical interaction
giving and listening to
lectures

reading
note taking
writing
doing and watching
demonstrations
group and individual
watching video
data entry
text entry/edit
information retrieval
listening to teacher
lectures
listening to other
students
listening to recorded
material
speaking to teacher
speaking to other
students
note taking
editing printouts
flow-charting
writing on over head
projector
taking tests and exams
monitoring
teacher/student activity
through viewing video
or computer screen

ART ANCILLARY

painting
drawing
constructing
modeling

carving
print making
weaving
photo developing

MUSIC ANCILLARY

individual and group
(small ensembles, large
choir, bands)
performance
group interaction
action and reaction
learning experiences

SCIENCE ANCILLARY

engaging in group lab
work
employing problem
solving approaches
heuristic investigations
student/teacher planned
experiments
some laboratory manual
experience
viewing traditional
science demonstrations
(decreasing in use)
using closed/open
circuit T.V. & video
using computer
instructional aids
(increasing in use)
giving and listening to

lectures
group and individual
project work
group discussions

PRIVATE SERVICE REALM

ADMINISTRATION

receiving guests
holding meetings
controlling building,
program &
communications
doing office work
evaluating student work
interviewing parents
and students
socializing

TEACHER SUPPORT

preparation of teaching
learning materials
holding conferences
relaxing
eating

KITCHENS

cooking together
serving food
returning dirty dishes
dish washing

storing dishes
cooking
cutting food
mixing food
washing food
storing and retrieving
food
receiving food &
supplies deliveries
planning meals

RETAIL SERVICE

unloading trucks
loading garbage
distributing supplies
storing supplies

BUILDING SERVICE

heating
ventilating cooling
air conditioning
storing
cleaning
receiving food &
supplies

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