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A Living - Educational Center for Physically Handicapped Mentally Alert Children

Robert Lake Jameson
Clemson University

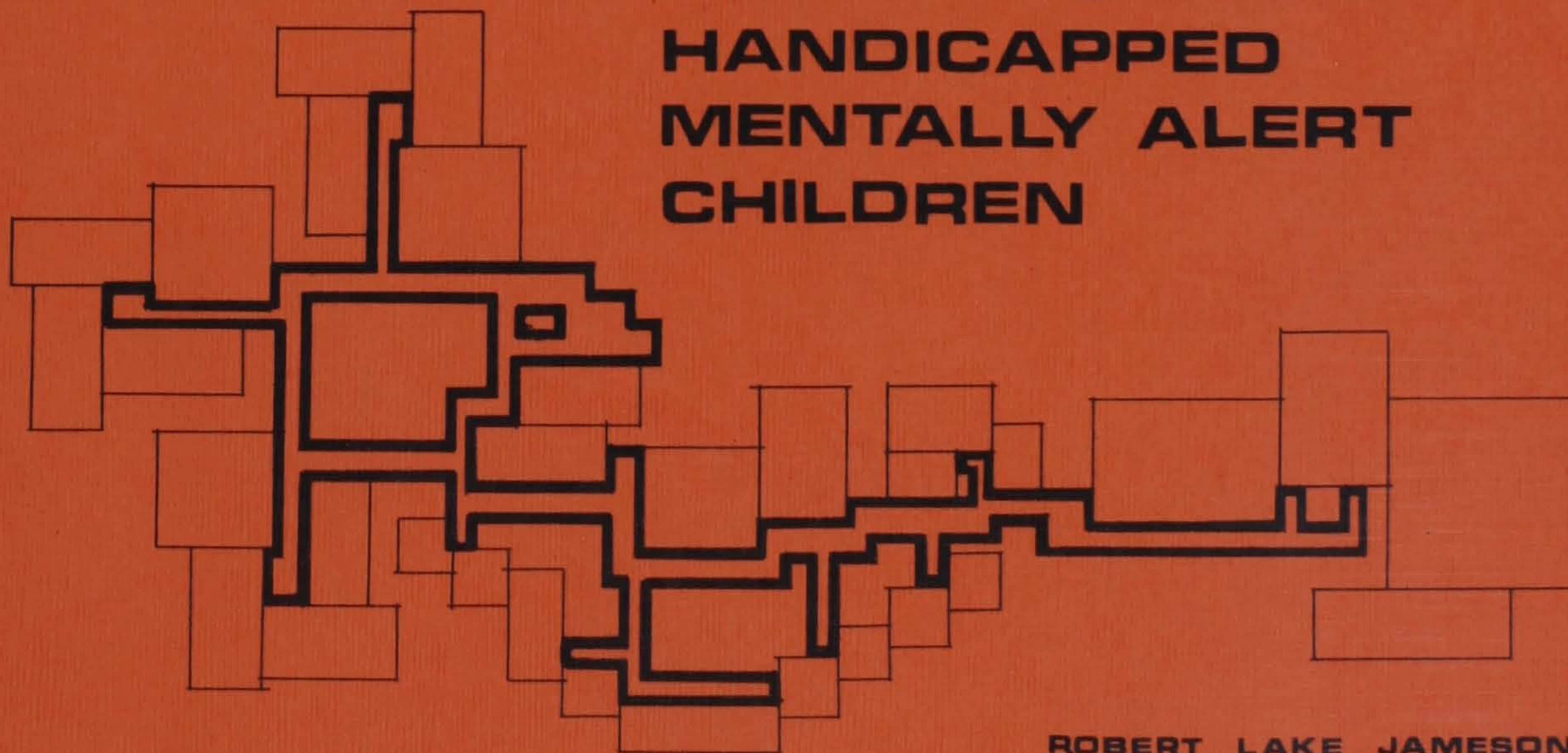
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**A LIVING-EDUCATIONAL CENTER
FOR PHYSICALLY
HANDICAPPED
MENTALLY ALERT
CHILDREN**



ROBERT LAKE JAMESON

A LIVING - EDUCATIONAL CENTER FOR PHYSICALLY HANDICAPPED MENTALLY

ALERT CHILDREN

Robert Lake Jackson

A terminal project submitted to the faculty of the
College of Architecture, Clemson University in
partial fulfillment of the requirements
for the degree of

Master of Architecture

While studying at the Center for Building Research and Urban Design in Genova, Italy, in the Spring of 1975 this writer was fortunate enough to visit several health care facilities in Italy, England, Belgium and the Netherlands.

On one such visit to a rehabilitation-educational center for physically handicapped children in Ghent, Belgium, my interest in the problems of designing for the handicapped child was aroused.

This interest to discover more about these children led to the investigation of a living/educational environment for physically handicapped mentally alert children in South Carolina.

ABSTRACT

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A LIVING - EDUCATIONAL CENTER FOR PHYSICALLY HANDICAPPED MENTALLY ALERT CHILDREN

ALERT CHILDREN

This study examines the needs of the physically handicapped, mentally alert child and presents possible architectural design solutions in which the child, parents, educators, and health care professionals assist in realizing the child's potentials, affording him the opportunity for contributing to society, and how this alternative might fit within a proposed system.

Robert Lake Jameson

A terminal project submitted to the faculty of the College of Architecture, Clemson University in partial fulfillment of the requirements for the degree of

Master of Architecture

1976

Architectural design proposal in Greenville, South Carolina, to serve the Piedmont Region

Throughout the scope of this paper the author has assumed the role of architect and planner, a combination of roles which is required because of the complexities of the project.

Approved:

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Committee Chairman

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Major Advisor

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Dean, College of Architecture

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The author wishes to express sincere appreciation for the assistance and encouragement by those who have contributed to the
For My Wife Liza and My Parents Hal and Christine

whose steadfast love and devotion have supported me through challenging times. the College of Architecture, Clemson University, who provided the impetus for this study, and for this educational opportunity.

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To my fellow classmates and friends, especially C.J., Mike, the studio, and to my wife Liza.

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TABLE OF CONTENTS

CHAPTER	Page
I. INTRODUCTION	
Introduction	1
Problem	2
Hypothesis	2
Statistical Perspective	3
Case Studies	3
Definitions	11
II. SUPPORTIVE DATA	
Age Grouping	14
Infancy	15
Preschoolers	17
III. CONCLUSION	
Summary	71
Evaluation	71

PREFACE:

The author feels it is essential to relate the approach that was taken throughout the entire scope of this study, so as to adequately explain the purpose of its various parts.

A problem was identified in concern with a particular area of today's health care delivery and extensive research was begun to aid the author in defining the problem and in developing a solution.

Through the synthesis of this gathered data, the author found direction towards developing those variables which were most influential to an appropriate solution. These variables were then carried through a programmatic process to formulate architectural factors and design criteria.

These factors or concepts were then applied to a particular situation in order to produce an architectural solution.

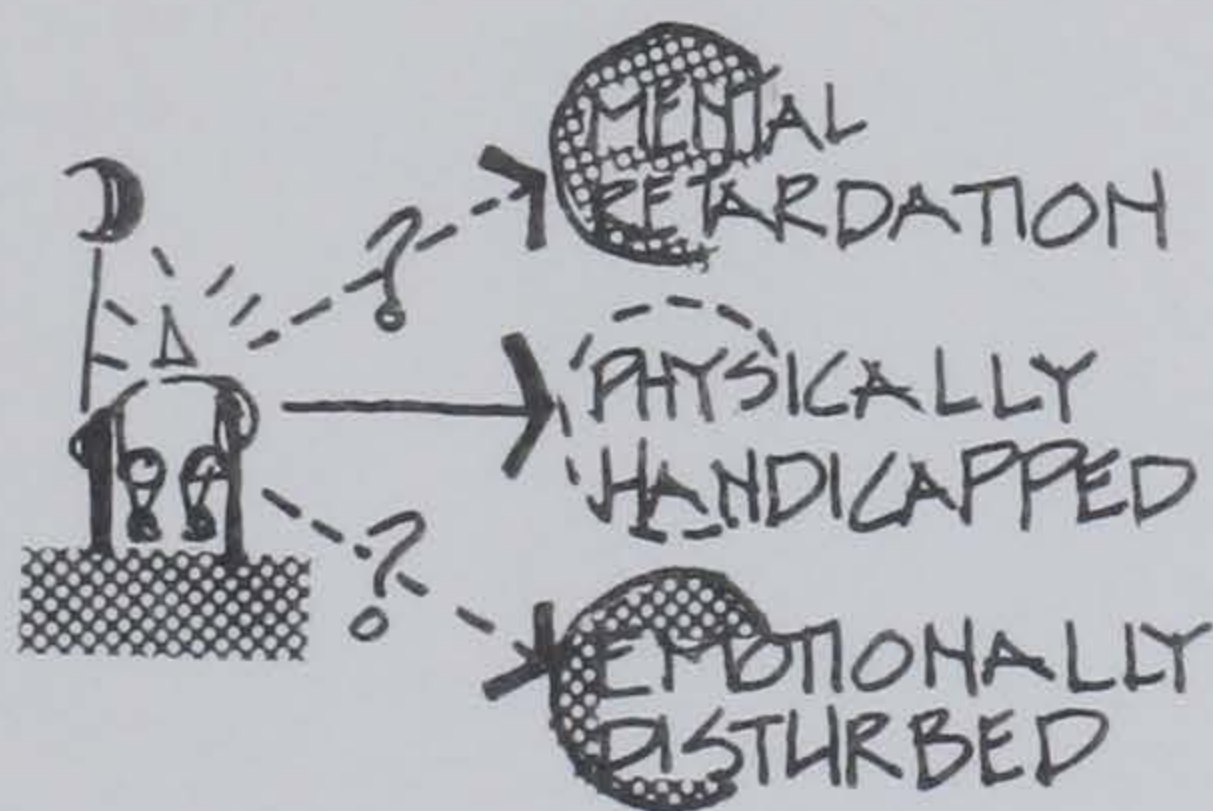
TABLE OF CONTENTS:

CHAPTER	Page
I. OVERVIEW	
Introduction	1
Premise	2
Hypothesis	2
Historical Perspective	3
Case Studies	5
Definitions	11
II. SUPPORTIVE DATA	
Age Grouping	14
Infancy	15
Preschoolers	17
Grade School Children	17
Adolescents	17
The Child	20
The Hospital Experience	22
III. PROGRAMMATIC AND TECHNICAL CONSIDERATIONS	
The Residential Environment	27
The Educational Environment	29
The Therapeutic Environment	32
The System	34
The Site	38
IV. ARCHITECTURAL CONSIDERATIONS	
Architectural Proposal	48
Drawings and Photographs	51
V. CONCLUSION	
Summary	71
Evaluation	71

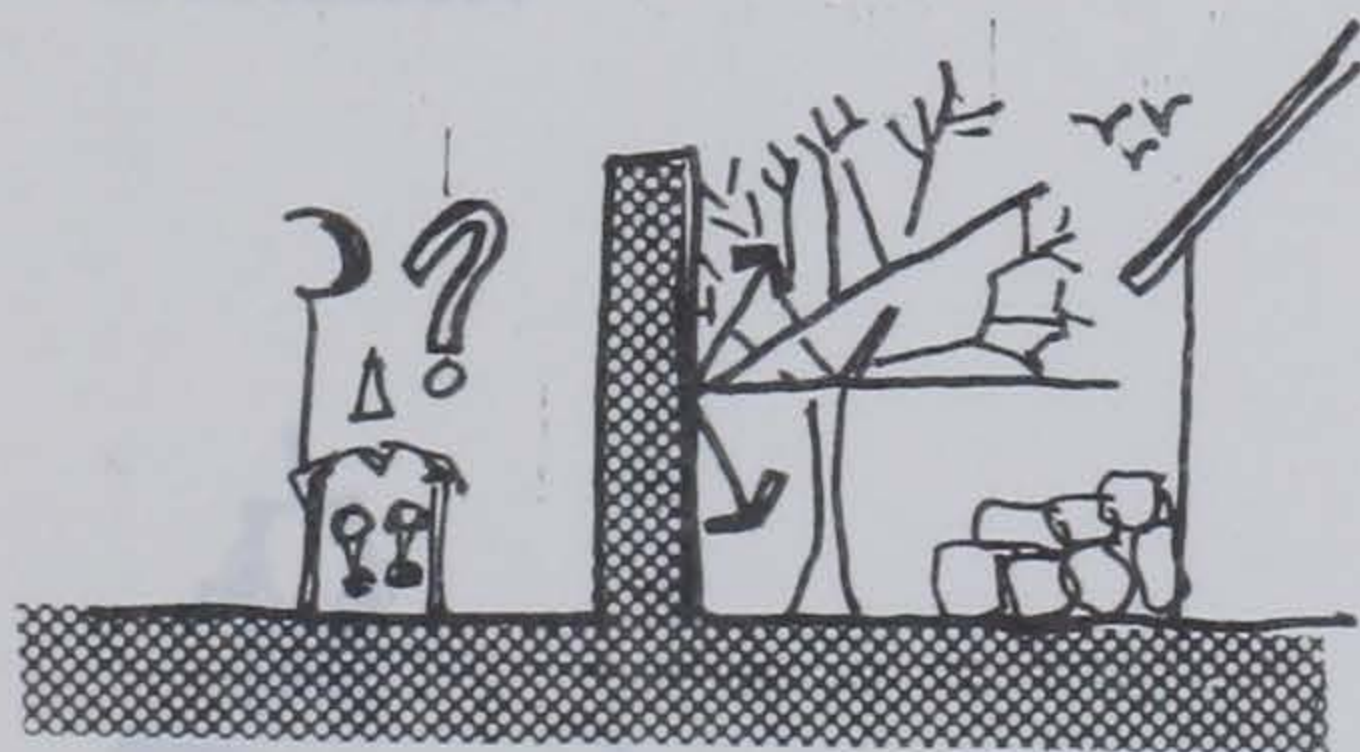


OVERVIEW

INTRODUCTION:



HYPOTHESIS:



COMMUNITY

The frequency of handicapped children and the lack of appropriate facilities to assist in the child's maximizing of potentials is a problem compounded by many factors, some of which interfere with the development of a normal personality and proper socialization of the physically handicapped child. Since most available facilities are primarily based on handicaps of mental retardation or emotional disturbance, a large gap in centers responsive to the needs of the physically handicapped child exists.

Due to medical and technologic advances the physically handicapped are able to make an increasing impact on their environment and take an expanded role in the community. Through non acceptance and public apathy the child's physical impairment has been compounded by a limiting of rehabilitative services and psychological damage to his personality.

Many of these possible contributors to society fail to receive proper guidance because of physical as well as social barriers which confront them. We learn about the world around us through our sensations of sight, hearing, touch, smell and taste² so that any barriers which confront the child interferes with his perception of the environment.

The physically handicapped child must be given every opportunity to grow and develop to his highest potential. Unfortunately the disabled are not totally accepted into the community and are usually looked upon as a curiosity.

Consequently, many families' life style is altered with the addition of a physically handicapped child as guilt feelings arise in the parents. Since, according to Doctors Charles H. Carter and Sarah R. Gustafson specialists on neuromuscular disorders in children, a child's personality and intellectual growth are usually determined by six years of age³, early recognition of handicapping conditions enhances the possibilities for rehabilitation and spares the desperate parents acute anxiety and worry.⁴

(3) Physical restoration to the fullest extent possible.

HISTORICAL PERSPECTIVE:

State institutions for the mentally retarded, blind and deaf as a rule have been established earlier than special facilities for the care, education, and therapeutic treatment of physically handicapped children. Those children who could adjust to public school life, or could receive special tutoring and help were able to obtain an education; but the others were deprived of this opportunity.

One of the earliest hospitals for crippled children which has been in continuous use since its establishment in 1848 is in Budapest. Twenty-four years later saw the founding of a school for handicapped boys in Copenhagen, which has been in constant operation by the Society and Home for Cripples in Denmark.

The end of the nineteenth and the beginning of the twentieth century witnessed the first state-supported institutions for the physically impaired child in this country. These early institutions were primarily asylums which provided custodial care for these unwanted children. Many parents, because of the guilt feelings accompanying the birth of a defective child, used these type facilities and others to hide their child, not attempting or knowing how to help him.

A number of private hospitals for the care of these children were established by the Shriners in this country and Canada on a regional basis. These hospitals were primarily concerned with orthopedic deformities in which educational provisions were short term and sporadic. World War I brought a revival in education of crippled children and assisted in the establishment of day schools for these children, which were usually brought about by a grant or bequests made by wealthy individuals.

It was not until the period between 1935 and 1945 that Hospital-Schools for crippled children were established, dedicated to the long-term care, treatment, and education of the severely handicapped child.

The first national agencies for handicapped youngsters were established in the early 1900's. The National Society for

Crippled Children and Adults and the Crippled Children's Program (started as a result of the Social Security legislation of 1935) assisted in the development of such facilities through their public education programs.

These facilities utilized a combination of proven therapies for the rehabilitation of war-injured individuals with intensive educational and residential care programs to meet the needs of the total child. Regional and state centers were established because of the complexities and expensiveness of these facilities.

Because of this increase in public and parent awareness displayed by the creation of hospital-schools improved special education legislation was adopted, as well as a new emphasis placed on integration instead of isolation of the child, and the providing of many educational and therapeutic opportunities for handicapped children in local communities resulted.

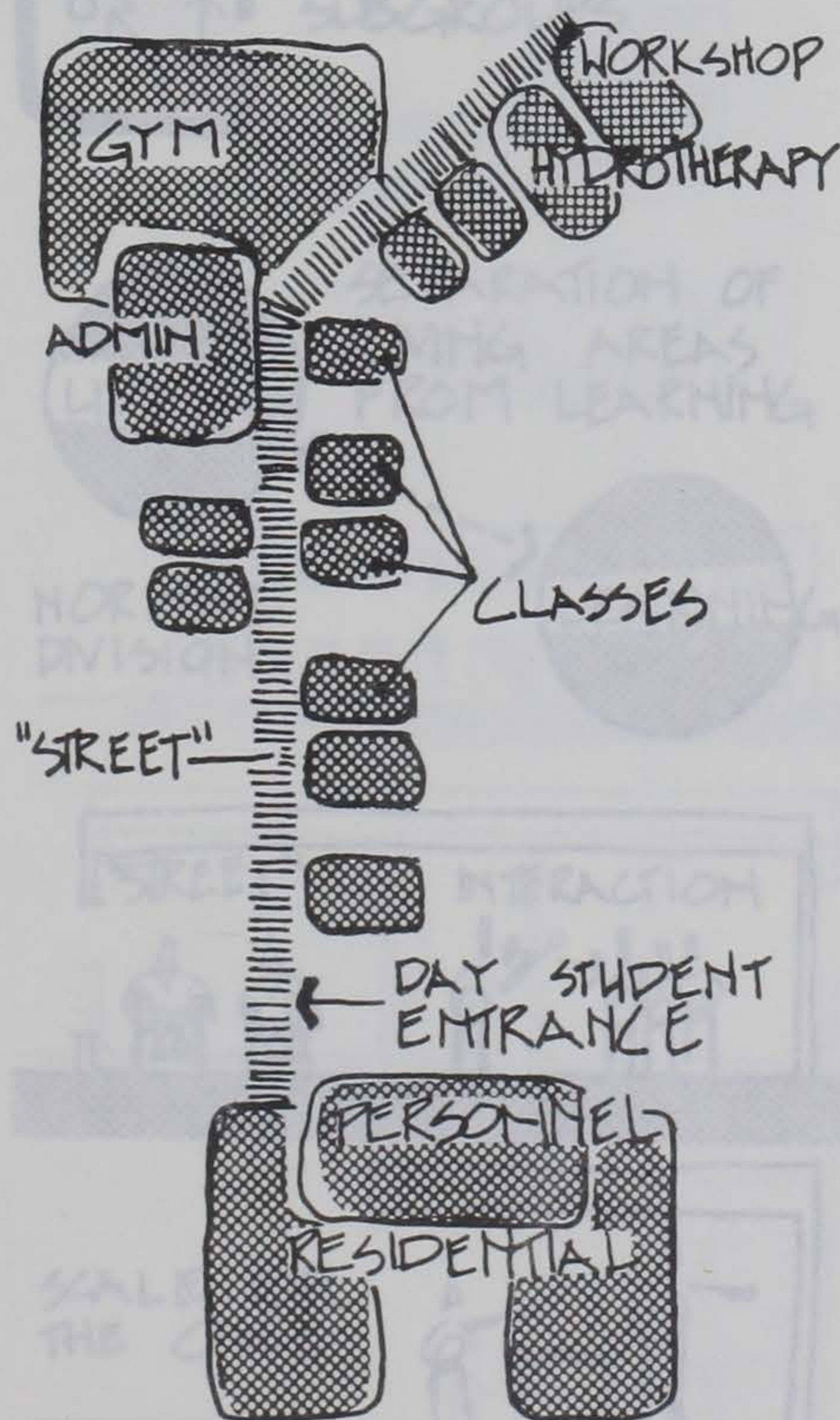
Special interest groups began setting up units for crippled children, frequently encompassing nursery schools, classrooms, and some therapeutic services.

It was not until Ohio and New Jersey enacted the first state laws requiring the state public school system to assume the responsibility for the education of crippled children that a government agency acted in behalf of this segment of society.⁶

Recently South Carolina has become a leader in concern for the handicapped.

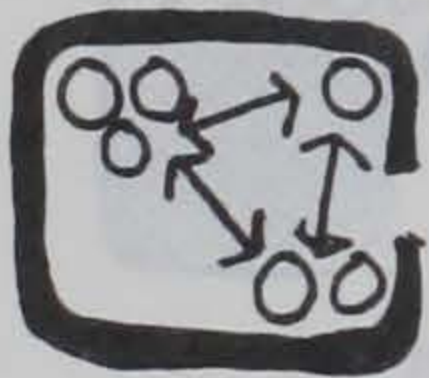
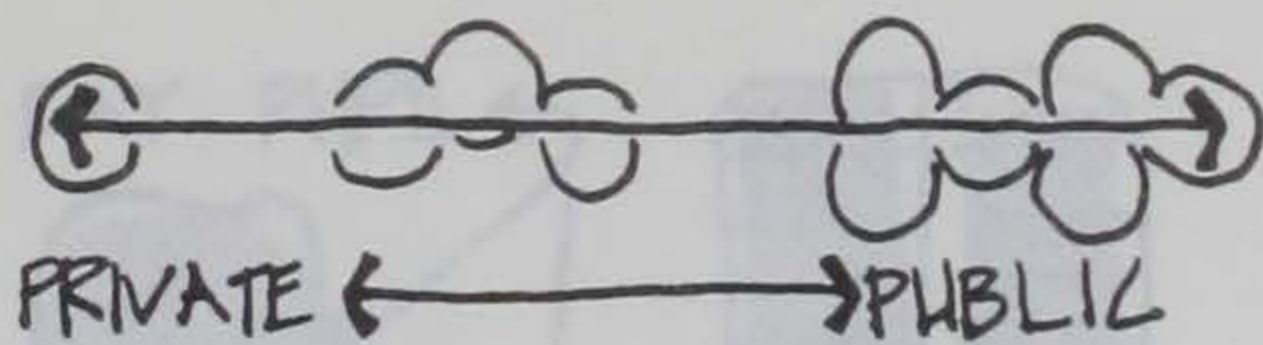
In 1963, the Easter Seal Society in South Carolina and the South Carolina Chapter of the American Institute of Architects sponsored the first legislation in the nation dealing with the need to design buildings which provide their barrier-free use by handicapped persons.⁷

This legislation as well as other more current legislation has



These three facilities were selected because of their similarities and range of treatment environments. They all use some type of age grouping, treat physically handicapped children, offer therapeutic and educational programs, and offer some sort of socialization through group living. Their treatment environments range from a living-educational center to a traditional hospital-school.

- Facility: Revalidatiestichting "Angele Verburght"
- Location: A few miles from the city of Ghent in northwest Belgium
- History: All treatment facilities in Belgium are of a specialized nature, therefore only physically handicapped children are treated at the center. The residential area was completed in 1958 while the new section for classes and therapy was completed in 1969. Approximately seventy-five children between the ages of three and eighteen attend school here, with the center being able to accommodate fifty children on a residential basis.
- Data: Social interaction is promoted in the group living areas by breaking down (to simulate a family group) the residents into six children rooms. The children are given their own personal cubicle which affords each child a private space that is his alone. Each room opens onto an indoor activity room which helps give the center a home-like environment.
- Location: The children's residential unit is connected to the school complex by a corridor link. The classrooms open off of a central pedestrian spine.
- History: The break down of the children into small groups of six and the range of public to private spaces help reinforce the home-like character of the complex.

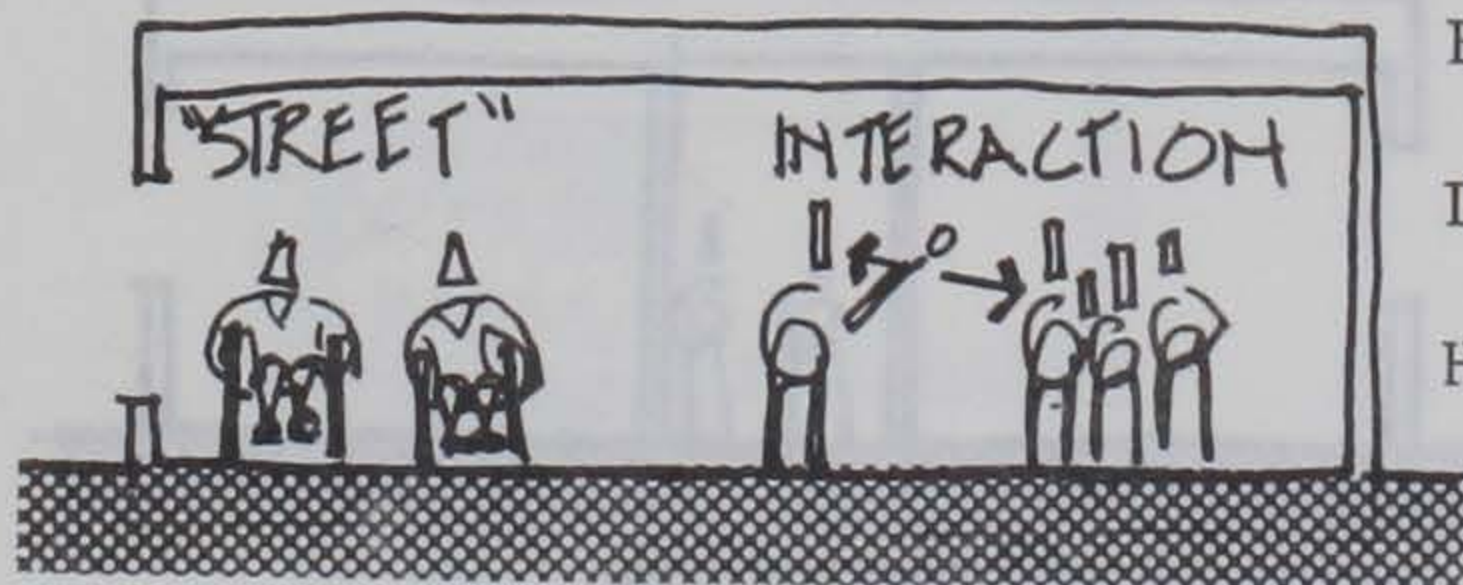


FORMATION OF
SUBGROUPS



SEPARATION OF
LIVING AREAS
FROM LEARNING

NORMAL
DIVISION



Facility:

Asheville Orthopedic Hospital

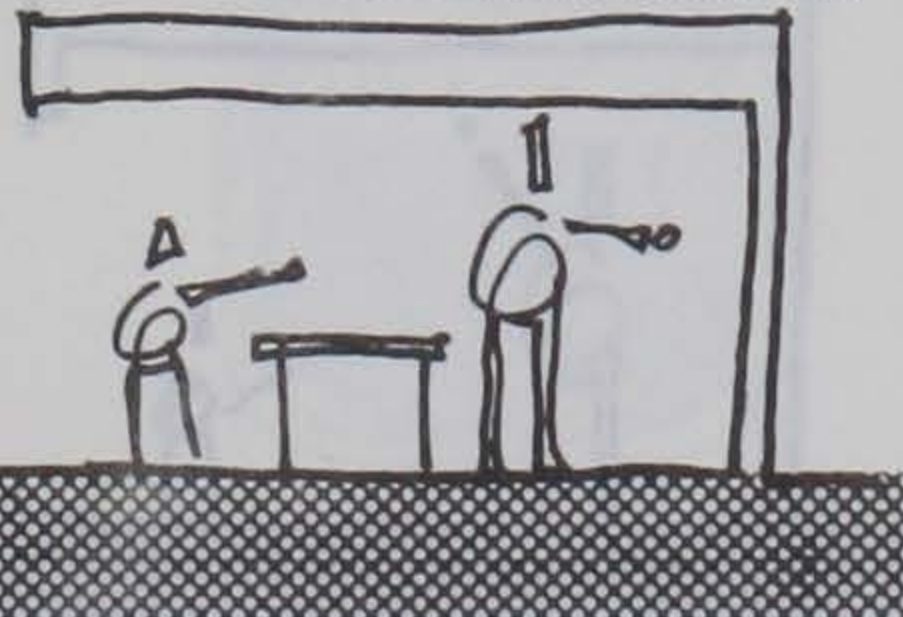
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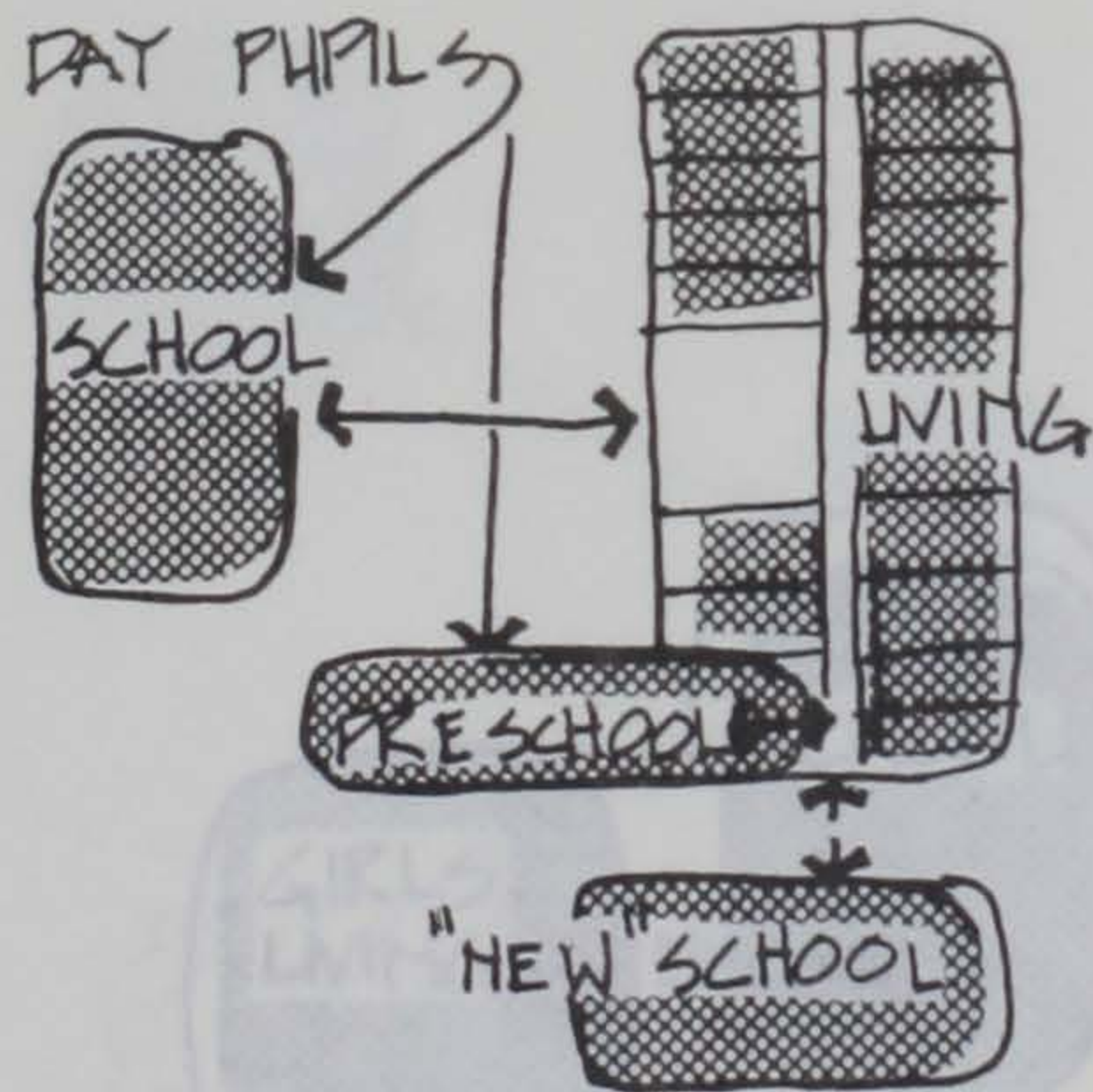
Asheville, North Carolina

History:

The hospital was established in 1938 as a non-profit organization for the treatment of crippled children, polio victims, and children suffering from chronic infectious and congenital problems. A full time children's school was started in the 1940's during the severe polio epidemics of the time. In 1959 the Speech and Hearing Center was added onto the hospital's physical plant. Currently there are fifty-four children using the educational and therapeutic services of the hospital on a day school

SCALE FOR
THE CHILD





Data:

Facility:

Location:

History:

basis. All physically handicapped children are accepted here regardless of any mental or emotional problems.

The residential children are placed into four bed wards. The children have their own clothes closet with no other personal space provided. Each ward opens onto a central hospital corridor which, combined with the large four bed wards, reinforces the hospital character of the children's living units.

The pre-school is located within the hospital while the grade school is directly across a service drive from the hospital. Construction has begun on a new school and pre-school complex which will be connected to the hospital by an enclosed corridor link.

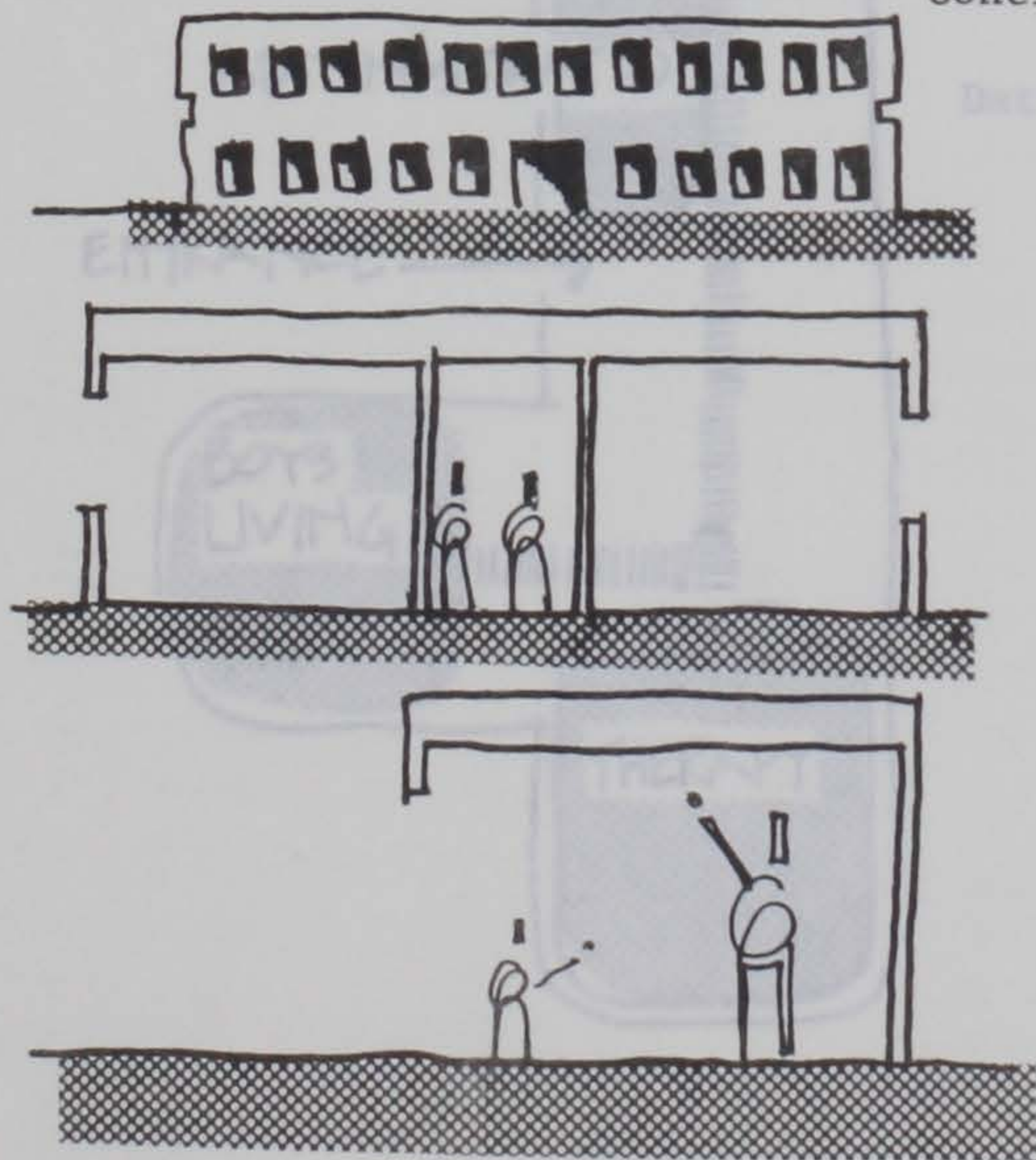
Conclusions:

The institutional character of the hospital environment coupled with the lack of private space creates an oppressive psychological response. Since all handicapped children, regardless of any mental or emotional disorders, share the same rooms all surfaces are visually antiseptic and void of color or interest so as not to excite the possible over stimulated child.

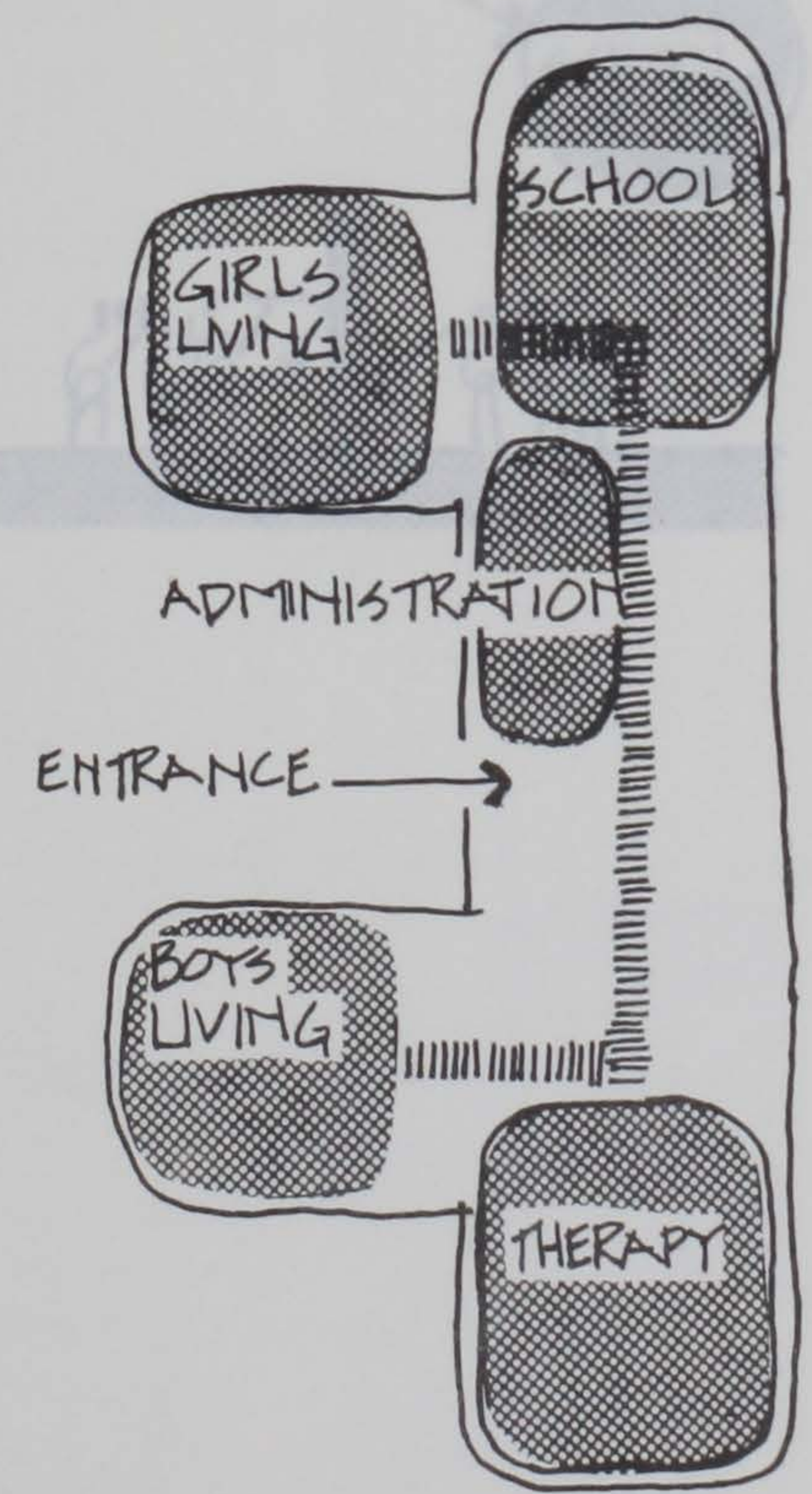
The child spends all his pre-surgical, convalescent, and post recovery time in the same room constantly being reminded of the hospital environment (a discussion on the negative psychological and social effects of the hospital environment on children follows in a later chapter).

Long and narrow hospital corridors prevent them from becoming a social interaction space.

Furniture and equipment is in scale with the child but the physical environment is more adult-centered.



LIVING



Facility:
 Location:
 History:

The entire complex, like most physical plants which have been added onto, lacks organizational logic. An example of this is the placing of the newly renovated library at the complete opposite end of the hospital from the new school which is currently under construction.

Shriners Crippled Children's Hospital
 Greenville, South Carolina

All Shriners Crippled Children's Hospitals are chartered to care for the economically disadvantaged, physically handicapped child up until the age of 16 years old. Shriners hospital in Greenville is a hospital-school. Built in the 1940's the original plant has been added to several times. The latest addition was a new sixty bed unit for the children.

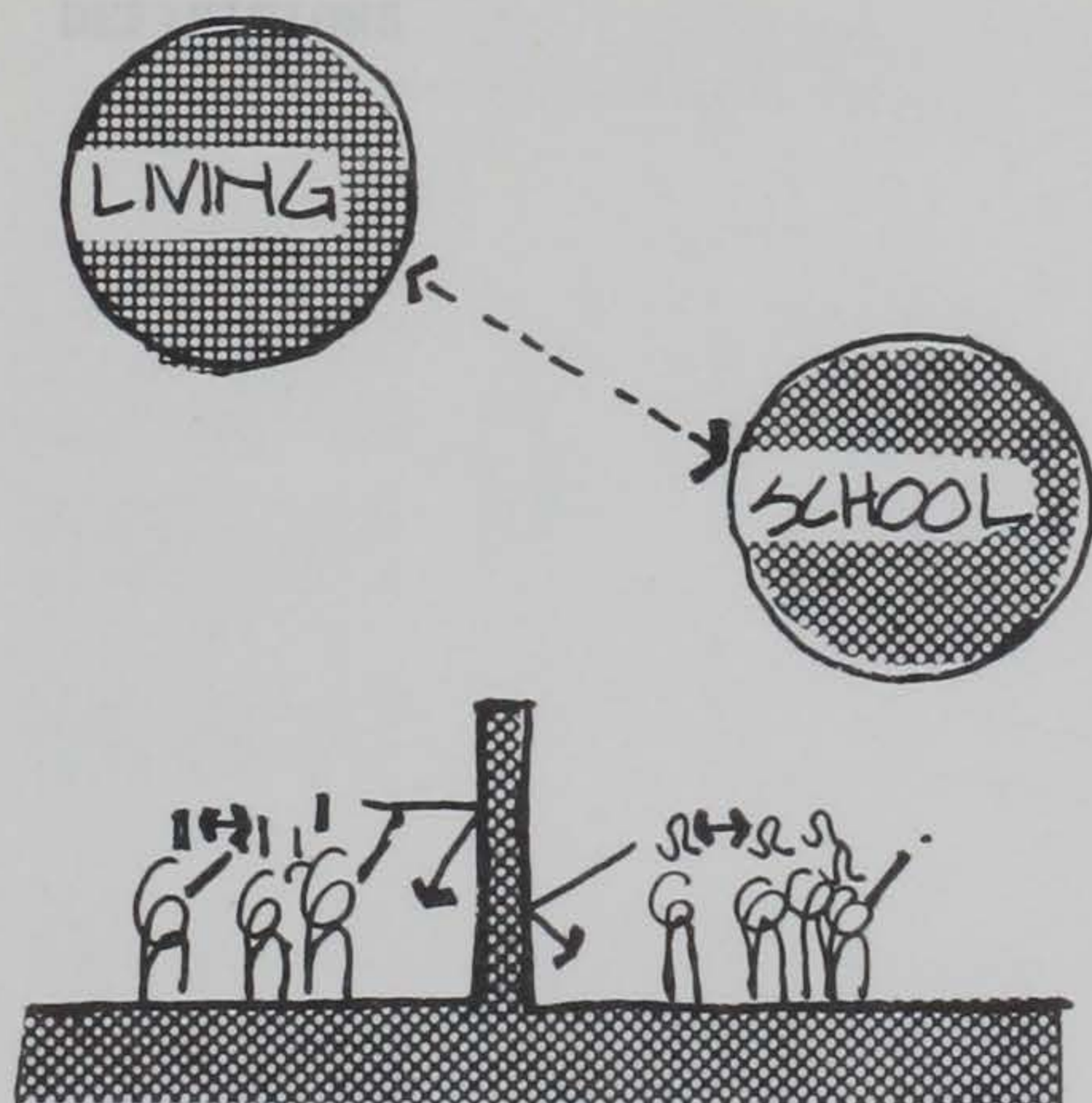
Data:

The living units are broken up into two large components of thirty children each according to sex. Each of these components is subdivided into two children rooms except for the large nursery unit which has several cribs contained in one large room. The rooms are arranged around the periphery of a central nurses station. A large recreation space is provided adjacent to the children's rooms.

Children come to the hospital complex for orthopedic surgery and usually convalesce here. Since many children require various surgical procedures which may take several years, a small school is provided for their continuing education.

The two living components are separated by the rest of the hospital complex. Each component is connected to the main circulation corridor of the hospital with the school being contained within the

CLEVELAND UNIVERSITY LIBRARY



hospital itself.

Conclusions: Although the children live within the hospital there is a feeling of separation between the living areas and main hospital complex. The children rooms are visually stimulating because of the large expanses of glass which permit each child a view of his environment. Many of the younger children are apt to become bored with only one other roommate. For these children more than one roommate would relieve this condition.

Social interaction among children of the same sex is provided for but a lack of interaction between the male and female children is caused by the physical separation of the two living components.

There is a break down in the range of private to public spaces for the older children who would prefer more private areas of their own. Moveable partitions could be used for more visual privacy in the older children's rooms and a breaking up of the large central bath and toilet area would psychologically provide more privacy.

The hospital corridors are too small to act as a successful interaction area.

DEFINITIONS

The word "handicapped" is a broad term which applies to individuals who differ physically, socially, or psychologically to a significant degree from their fellow men.⁸ There have been many definitions of this term, but the most widely accepted definition was recommended by the White Conference on Children and Youth in 1960 which defined a handicapped child as one who:

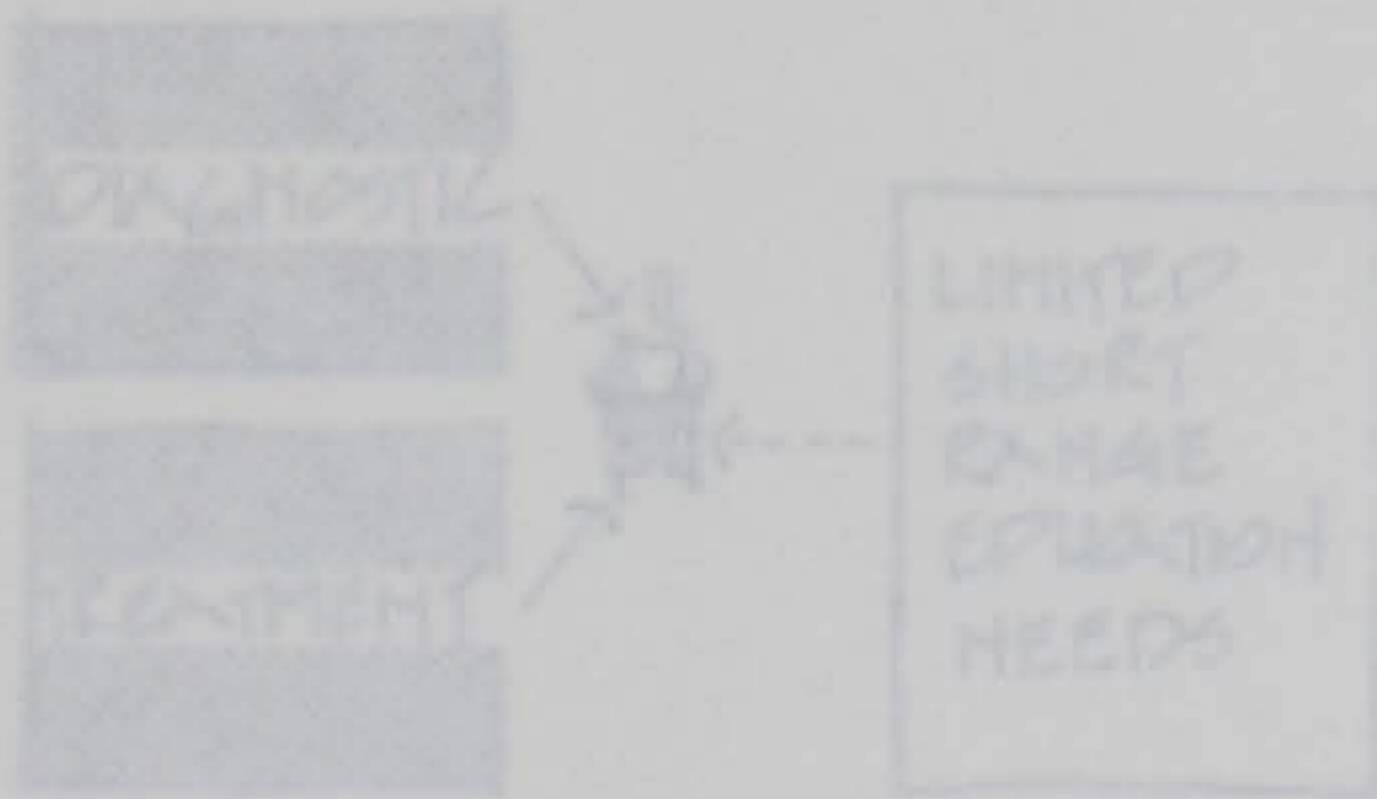
cannot play, learn, work or do the things other children his age can do; or is hindered in achieving his full physical, mental and social potentialities; whether by a disability which is initially mild but potentially handicapping, or by a serious disability involving several areas of functions with the probability of life-long impairment.⁹

The physically handicapped have been variously referred to in subgroups such as crippled, orthopedically handicapped, limited, physically disabled, or exceptional.¹⁰ According to the National Society for Crippled Children, a "crippled child" has been defined as "an individual who by birth, illness or injury, is deprived of normal functions of his neuromuscular and associated skeletal system".¹¹ The Department of Health, Education, and Welfare points out that historically the term "crippled children" meant any child who was orthopedically handicapped, but today applies to children "suffering from impairments in speech, hearing and vision, heart defects, defects in metabolism, mental and neurologic functions, and other defects".¹²

A term used more and more frequently today, particularly in special education, is "exceptional children". This is a term... which encompasses many medical and psychological groupings of children, including the physically handicapped and crippled".¹³

Though the words "crippled" and "physically handicapped" are used today interchangeably and appear to be synonymous, the term "physically handicapped" seems more appropriate than the others to describe those persons who have physical disability. Within this large category is a number of distinct groups of persons

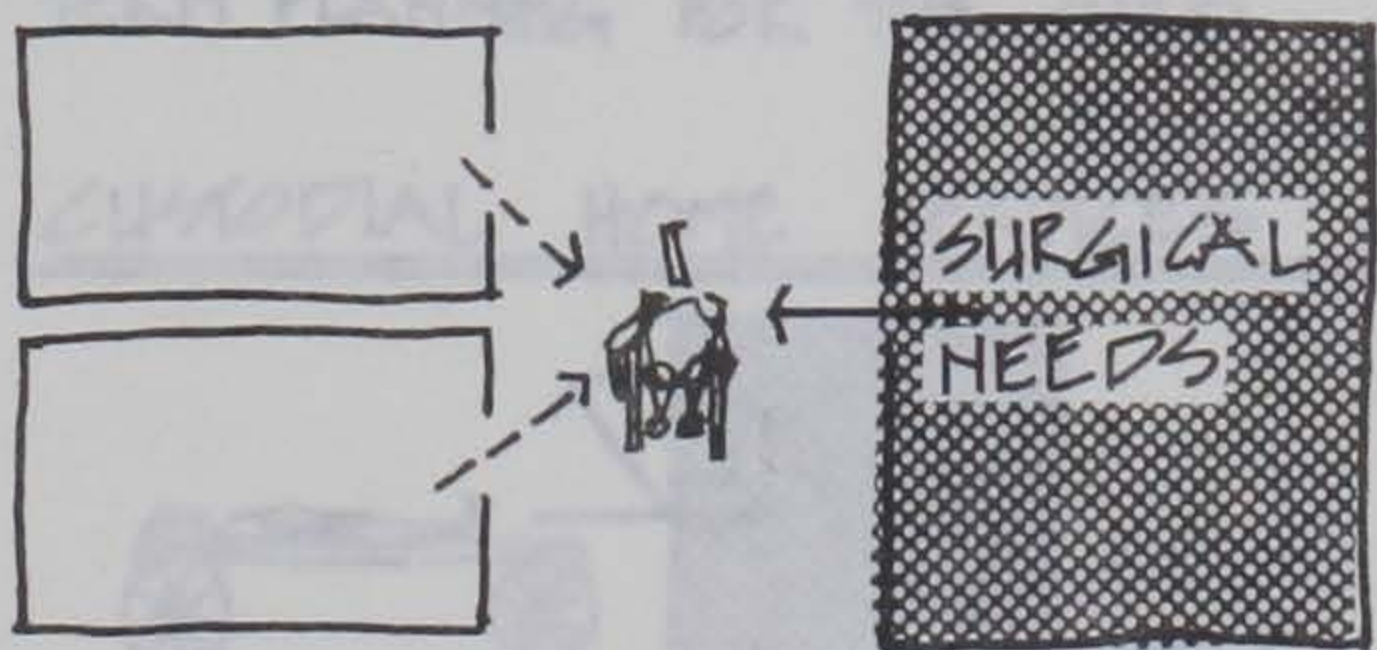
CONVALESCENT HOME SERVICES



DAY SCHOOL SERVICES



HOSPITAL-SCHOOL SERVICES



LIMITED PLANNING FOR THE TOTAL CHILD WITH THE MAIN GOAL BEING THE CORRECTION OF ORTHOPEDIC DEFORMITIES

"...with impaired hearing, speech handicaps, and orthopedic and neurological impairments".¹⁴

Physical impairments may be the result of a variety of diseases, accidents, or congenital defects. Crippling conditions may result from a variety of factors, such as:

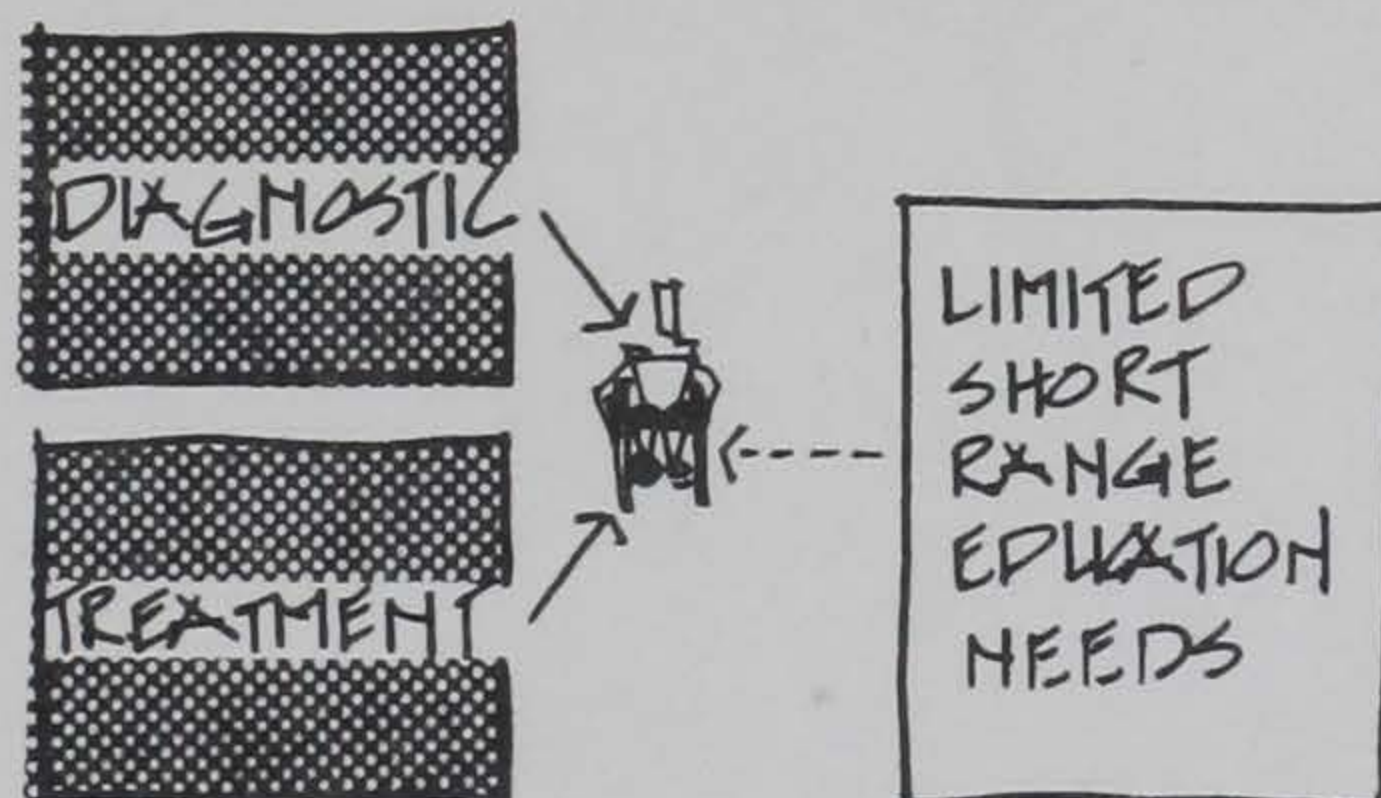
1. Congenital abnormalities: cerebral palsy, erbs palsy, spina bifida, bone imperfections, hemo- philia, and others.
2. Infection: poliomyelitis, tuberculosis, arthri- tis, myositis, epiphysitis.
3. Metabolic disturbances: muscular dystrophy, myesthesia gravis.
4. Traumatic conditions: fractures, accidents, burns, etc.
5. Unknown or miscellaneous causes: multiple scler- osis, tumors.¹⁵

As a result from these crippling conditions, there are cur- rently many facilities and programs which treat the physically handicapped child. These facilities and programs can be classi- fied into four primary categories: hospital-schools, conva- lent homes, day schools, and custodial homes.

The hospital-school's function is to provide care, education, and treatment of the severely handicapped (handicapping conditions vary from hospital to hospital depending upon the organization or administrators in control). These are dedicated primarily to the surgical correction of orthopedic deformities. These facilities provide equivalent medical supervision and nursing care in a hos- pital environment. Hospital-schools are designed for long-term education and treatment where the average length of stay is from between two to three years. Its main purpose being to train the

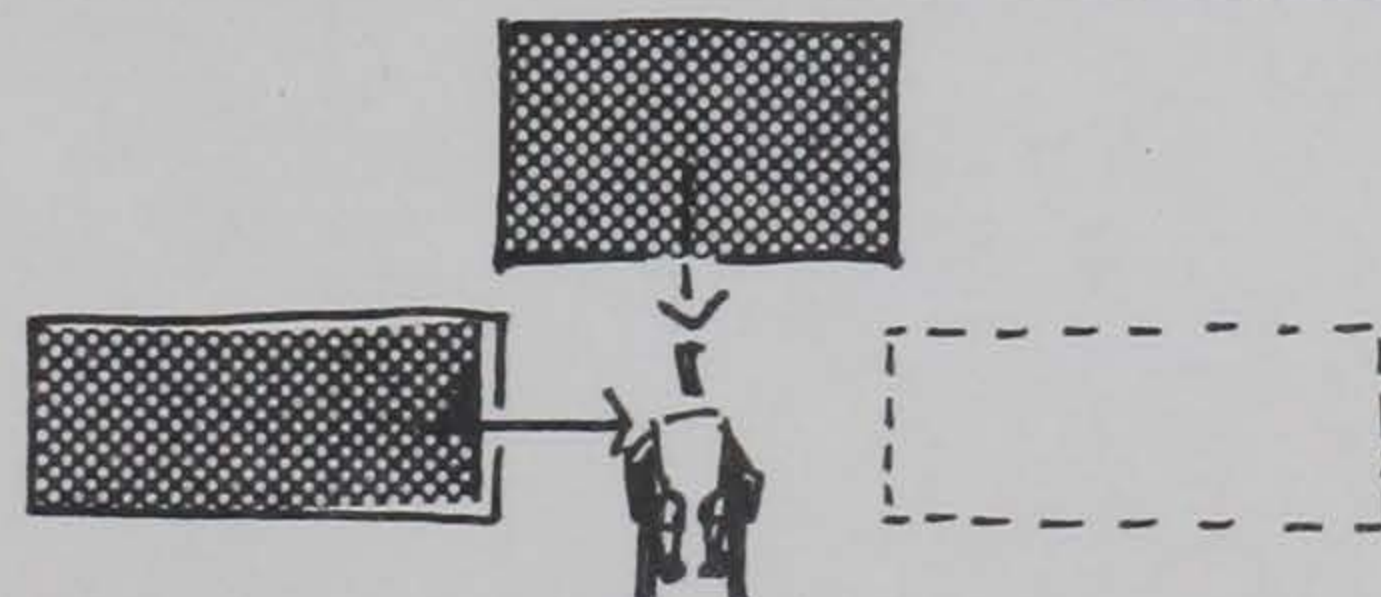
CONVALESCENT HOME SERVICES

severely handicapped for self-sufficiency and eventual self-support.



Convalescent Homes are established for patients who, because of surgery, accident, or illness, have to be immobilized for a period of time before returning to their homes. These facilities provide some diagnostic and treatment services for the child. The average length of stay usually varies from a few weeks to a few years. The patient population fluctuates considerably and turnover is rapid; and because of this, limited long range planning is done for the establishment of long range treatment goals.¹⁶

DAY SCHOOL SERVICES

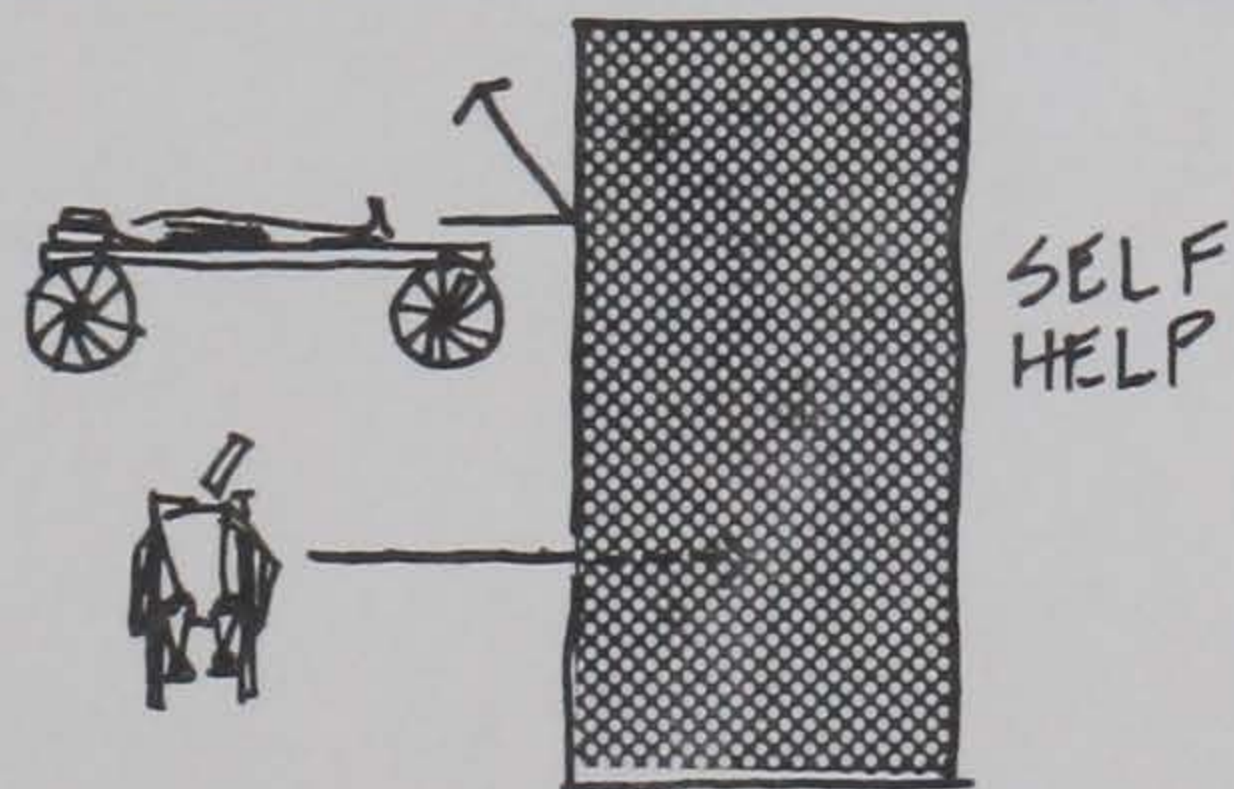


SERVICES FLUCTUATE, NO LONG TERM PLANNING FOR THE CHILD

Day schools are primarily dedicated to the education of the multihandicapped retarded child. They are usually operated by volunteer organizations whose services fluctuate depending on available monetary contributions. These schools are usually small with a pupil load which varies daily.

Custodial homes provide permanent care for those individuals whose prognosis of eventual self-help is not encouraging because of the severity and multiple nature of their handicaps. The patient population rarely fluctuates and therapies are aimed at maintaining the child rather than improving his condition.¹⁷

CUSTODIAL HOME SERVICES

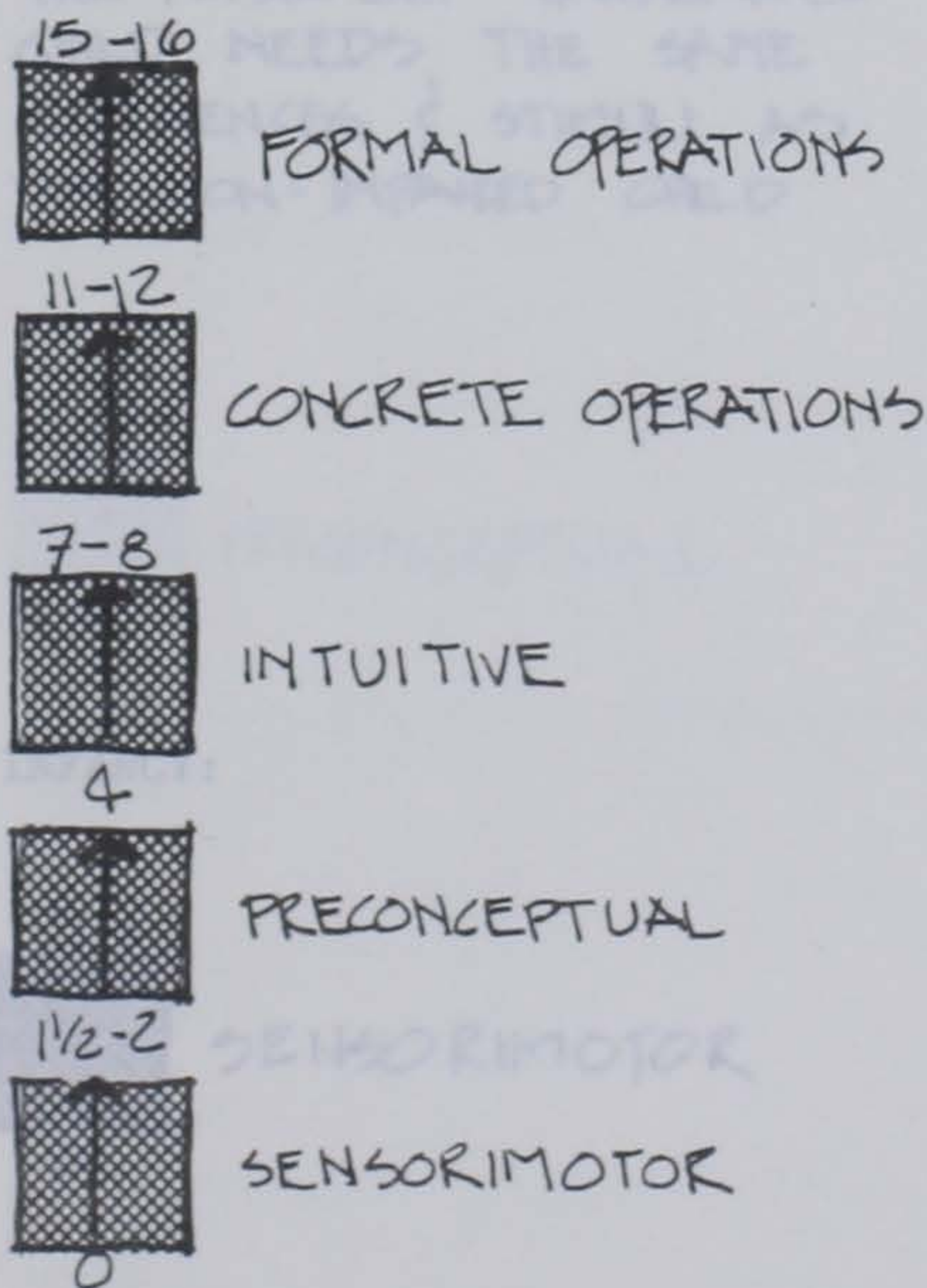


SUPPORTIVE DATA

GLENN COUNTY UNIVERSITY LIBRARY

SUPPORTIVE DATA

AGE GROUPING:



THE FIVE DEVELOPMENTAL PHASES OF PLAY

To lend support to the final concept and establish parameters or conclusions to form a basis for logical design decisions the following data is presented as directly applying to the design of any facility dealing with the physically handicapped mentally alert child. The purpose of this study is not an attempt to identify all the possible social, psychological or physical factors which may influence the design of such a children's facility (which would involve a lifetime of research and work), but rather an attempt to identify critical areas of concern for the designer.

The concept of age grouping is perhaps the most crucial factor in designing any facility for children. Richard Dattner, in Design For Play, found in his research on the therapeutic aspects of play that children fall into five development phases:

the sensorimotor phase (from birth to 18-24 months of age)

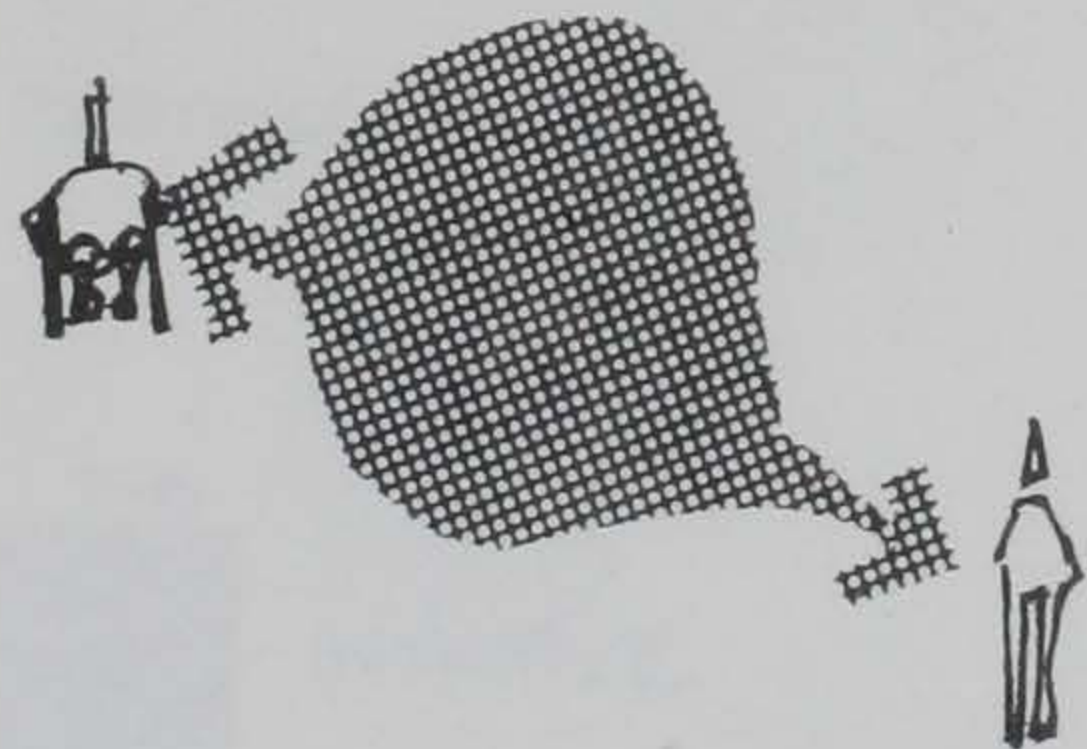
the preconceptual phase (from 18-24 months to 4 years)

the intuitive phase (from 4 years to 7-8 years)

the concrete operations phase (from 7-8 years to 11-12 years)

the formal operations phase (from 11-12 years to 15-16 years)

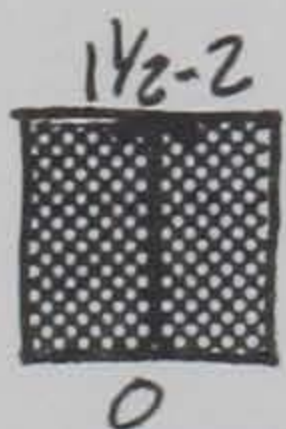
Since the basic premise of this study is that physically handicapped children need the same experiences and stimuli as normal children to maximize their potentials, an in-depth look into child development is necessary to determine what primary influences have an effect on their lives. The most important stimulus in a child's life is play, Dattner stated that the greatest discovery in his research of play was that "the play of exceptional children is in most ways identical to that of normal children... to the extent of their abilities, their play follows the same patterns as that of normal children; it serves the same function of expanding their experience and understanding of the world and it affords them the same potential for enjoyment and expression." 18



THE PHYSICALLY HANDICAPPED
CHILD NEEDS THE SAME
EXPERIENCES & STIMULI AS
THE NON-IMPAIRED CHILD

PRECONCEPTUAL

INFANCY:



SENSORIMOTOR

The psychological and social aspects of child development have taken on new meaning particularly in the last fifty years as studies have confirmed the ill effects of the seemingly callous treatment of the young in society. M.D. Vernon states in Human Motivation:

...that children reared in institutions apart from their mothers may remain permanently maladjusted, showing anti-social behavior and inability to develop normal social relations and affectionate feelings for others.¹⁹

Pratically all institutions for children have established a rigid age grouping structure for living and educational functions.

Facilities involving the physically handicapped, mentally alert child need one type of age grouping structure for both these functions to facilitate in the social growth of the individual based on the child's chronological age (unlike facilities for the mentally retarded which by necessity must be based on a combination of mental and physiological age factors). The four age groups considered here are taken from Madeline Petrilla's Emotional Care of Hospitalized Children: Infants, Preschoolers, School Age, and Adolescence.

Infancy begins of course at birth and continues until the age of about three and a half years. The first month of life is usually considered as the autistic (withdrawn) phase because the infant has no conscious feeling of his relationship to his mother or his surroundings. Sporadic actions occur, such as feeding, where the infant reacts to body stimulations of comfort and discomfort using the crying mechanism to demonstrate his level of discomfort. A constant need-satisfaction cycle is established and maintained by the mother.

During the next several months the child enters into a symbiotic phase in which mutual interdependence of the infant and mother occurs. At this point the infant is unaware that he is a

separate being.²⁰ Children removed after six months of age from their mother even for short periods of time develop anxiety and distress²¹ because he identifies his mother as the symbol for the gratification of needs.²² Up until this point separation from the mother may cause distress, but will have no permanent effect on the child's future development.²³

Towards the end of the first year is the separation-individuation phase where the child separates himself more and more from his mother and all others, thereby becoming an individual entity.²⁴ The child takes more of the initiative in signalling his needs and simple acts are repeated (practice play), especially those acts which have an effect on an object; and these actions are committed to memory. "The first year encompasses the time when confidence in having needs met and in feeling physically safe takes place".²⁵ When needs are met optimism results, when frustrated the child becomes pessimistic. During this first year the infant moves from total body dependency toward body independence.²⁶

By two years of age the child performs mental combinations by trial and error while learning that certain actions have an effect on the environment. Egocentric thinking begins as the child refers every event to himself.²⁷ The infant next enters the preconceptual phase which continues through the fourth year in which symbolic play and wish fulfillment preoccupies his time. It is during this time that youngsters start differentiating between a symbol and the actual object.²⁸ At three and a half fantasy play develops and the child enters into a crucial period in which failure at this stage results in reluctance to explore. Parallel and cooperative play begins and imaginary playmates occur. At between two and three years the child has established stable mental images or representations of his mother which reflect the child's relationship and experience with her as a dependable love object. These stable images allow the child to tolerate temporary separations from their mother without undue anxiety, thus the child has attained some degree of functioning independently.²⁹ Earliest friendships begin as play is used to assist in directing drive

PRESCHOOLERS:



INTUITIVE

GRADE SCHOOL CHILDREN:



CONCRETE OPERATIONS

ADOLESCENTS:



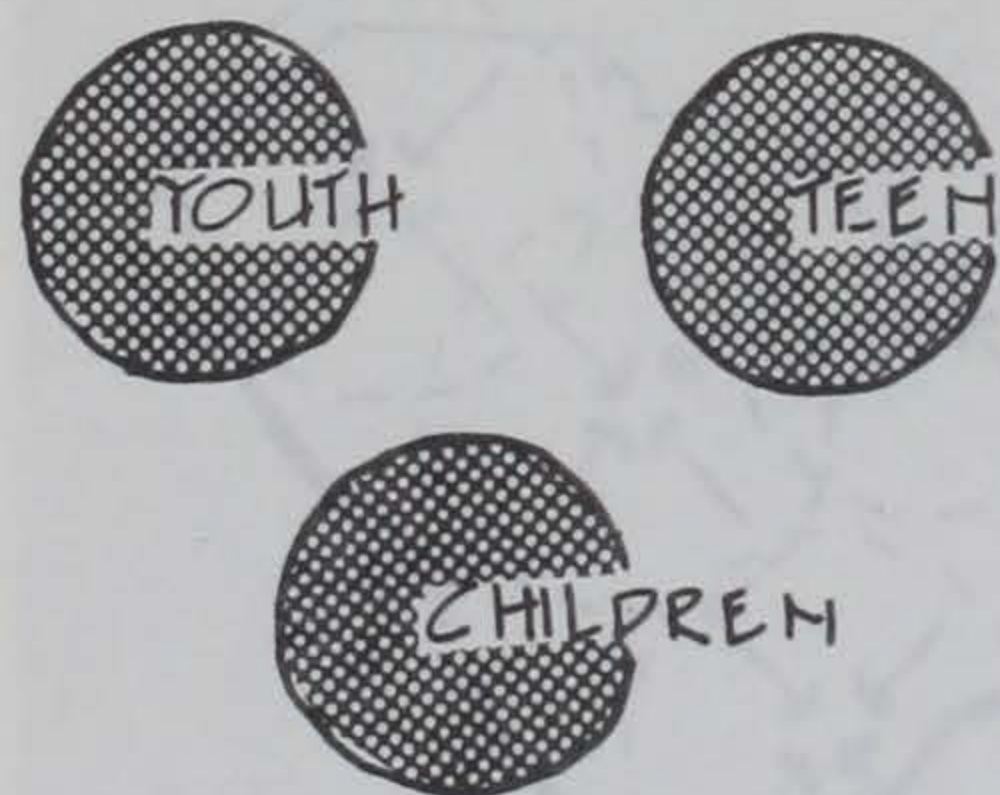
FORMAL OPERATIONS

energies to socially useful outlets.³⁰

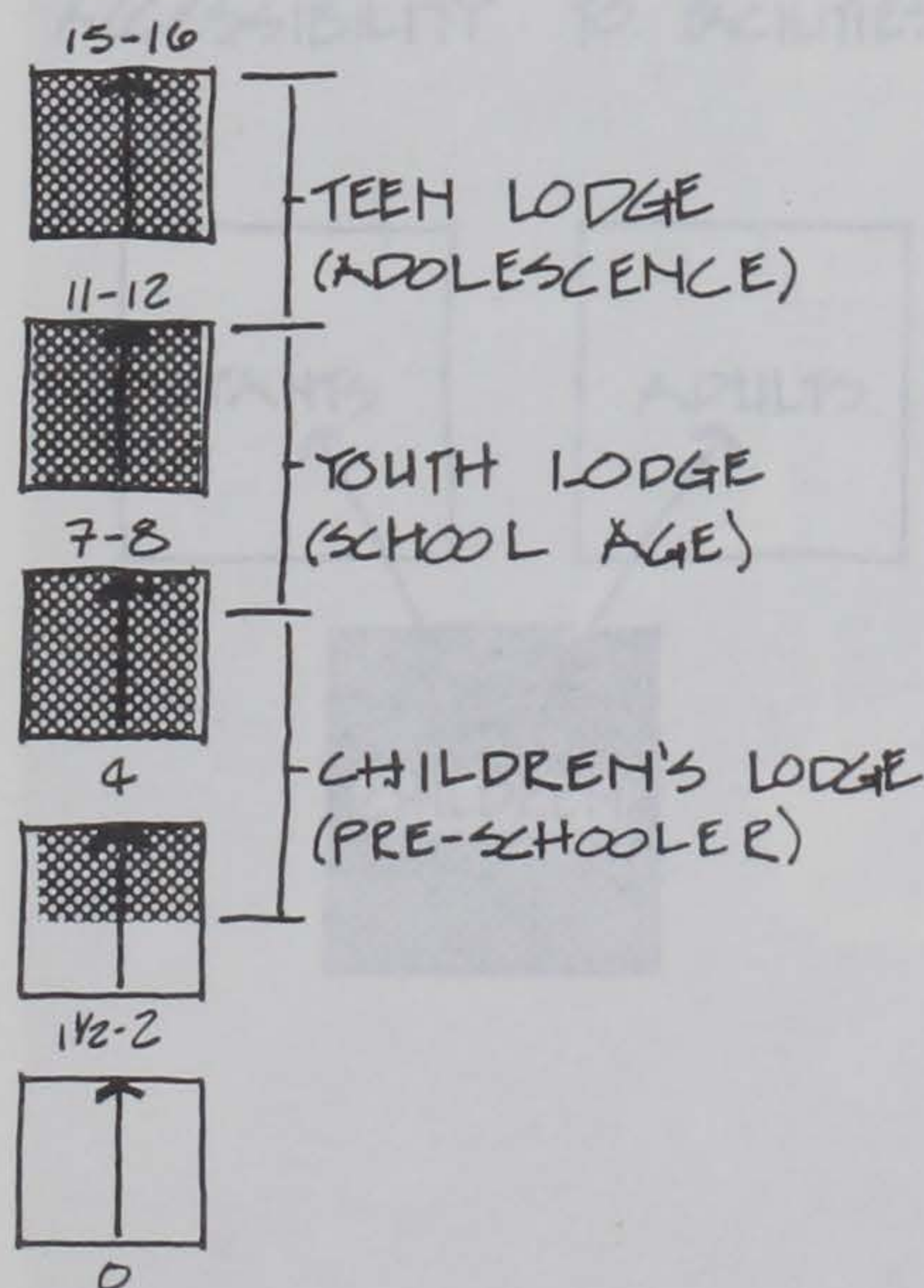
This age group is between three and a half and six and a half years old. Intuition begins as the child bases his conclusions on what he feels or would like to believe. Magical thinking decreases as the mastering of task completion becomes important. The preschooler turns to forms of play which require skill. At six the child demonstrates some problem-solving ability and he learns to recognize symbols and copies them as ritualistic play, competition, voluntary hygiene, and hobbies begin.³¹ He becomes more socially oriented and imitates others.³² "Psychoanalytic theory has long held that the foundations of personality are laid down by the age of five or six years,..."³³

From the ages six and a half to eleven the child learns the concepts of time and change and the more complex emotions (pity, grief, surprise). This marks the beginning of the concrete operations phase which is characterized by an increased interest in playing games with rules. Rational, well organized thought appears as the child wants to discover how things work and desires to experience things himself.³⁴ Physical qualities are seen as independent from size, weight and volume. Values expand to the neighborhood and school as the child's peer group and peer group pressures increase. The grade schooler realizes the consequences of success and failure with the emergence of an emphasis on skills and talents; and he is able to determine how to attain success. The child is invested in non-family relationships, companionable, and comfortably obeys rules. Body management is completely taken over by the child.

With the advent of the early teen years, eleven to sixteen year old group, the individual is capable of making abstract similarities marking the beginning of formal operational thought. The youngster deals effectively with his environment and with the world of possibility³⁵ enabling him to create logical systems.³⁶



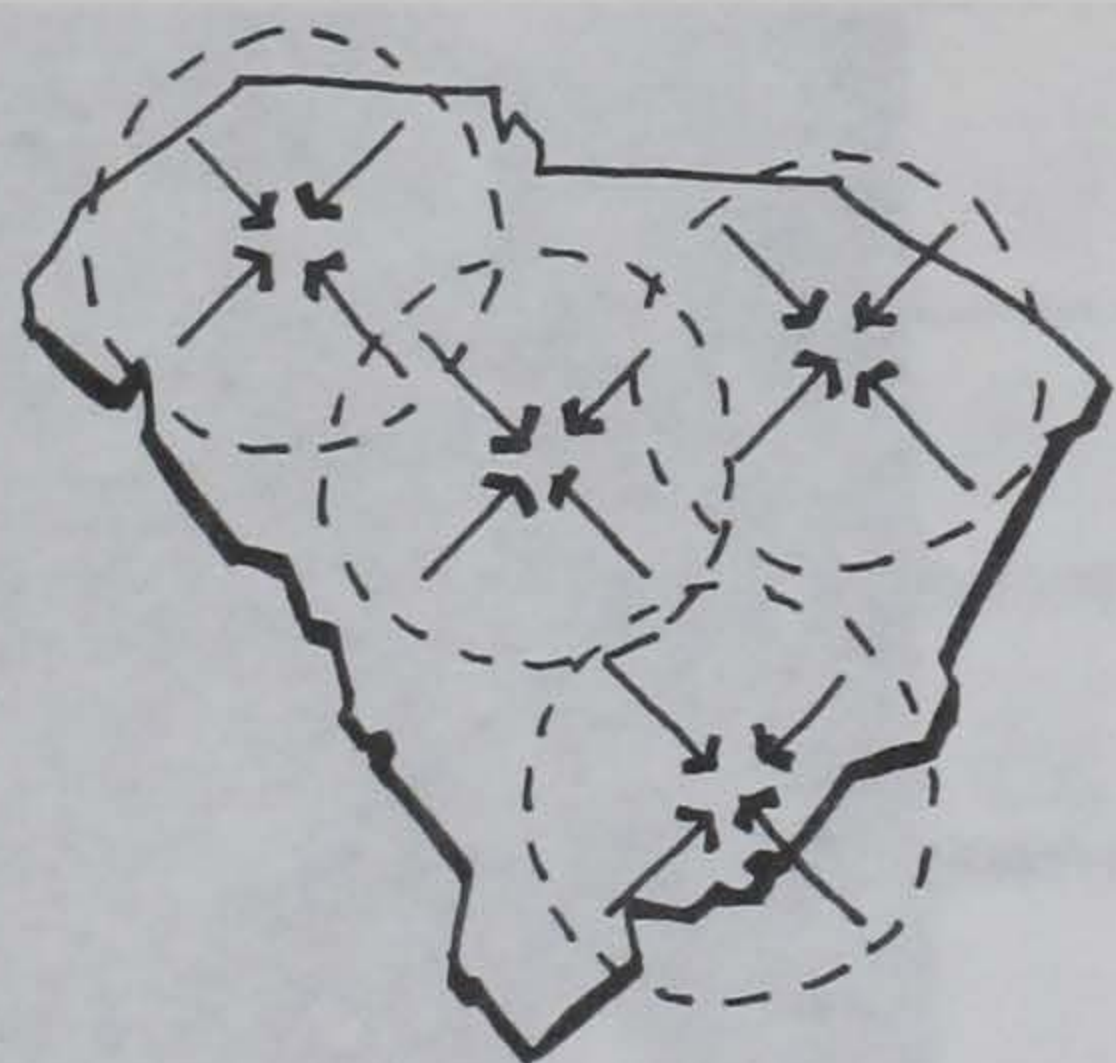
Conclusions:



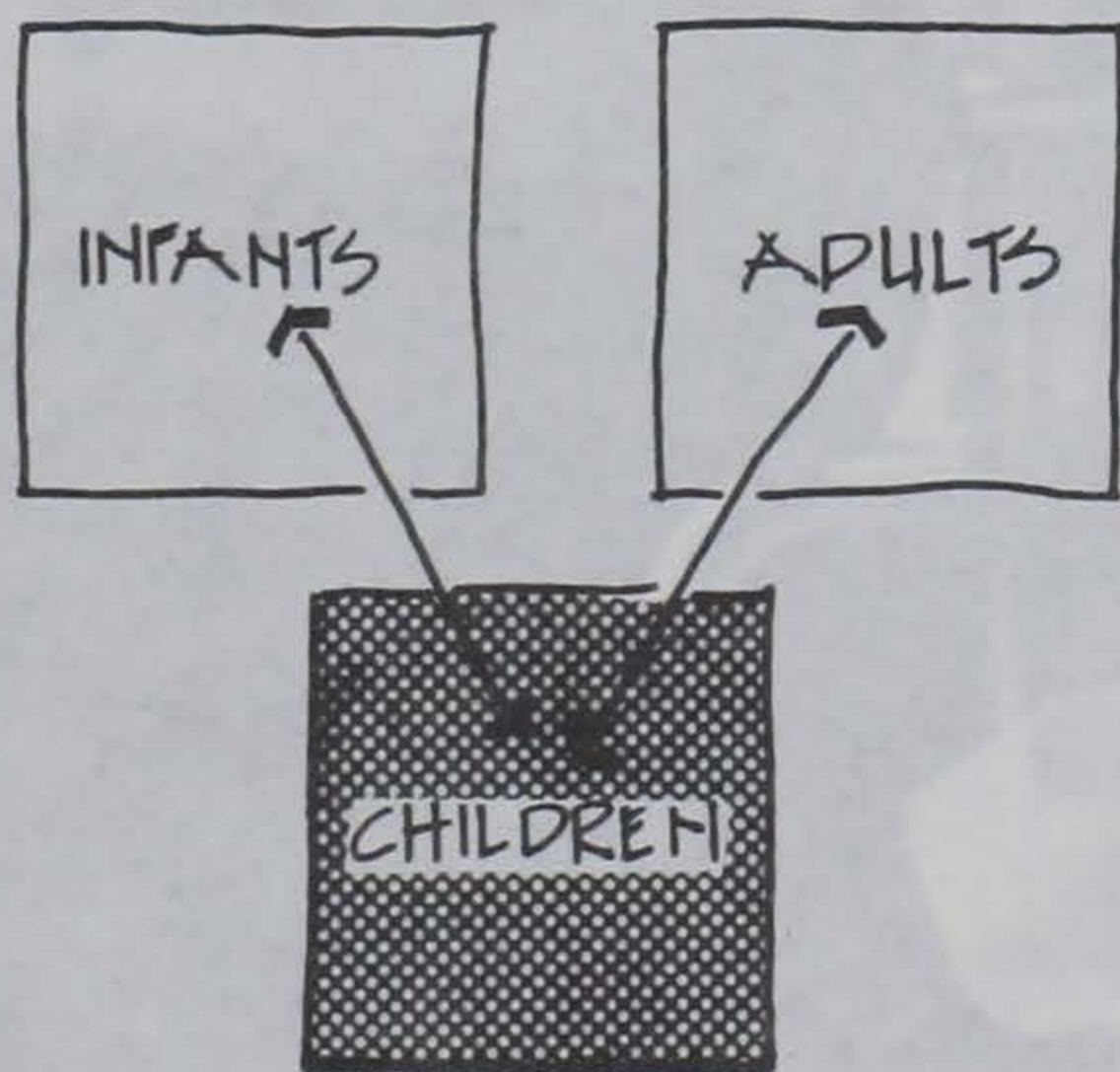
Deductive reasoning gives the child the capacity to deal with laws and principles. He seeks to understand himself. The adolescent takes on values of his peer group and becomes more easily influenced by group leaders. He loosens ties with the family as cliques develop with friends. This leads to an increase in responsibility and personal independence solidifies. "The ability to work is the culmination of the developmental line which began with play, task completion, and the use of inanimate objects".³⁷ The control of destructive impulses and frustration tolerance signals the emergence of the adult intelligence.

Through this analysis of age grouping determinates, the breakdown in the residential needs of the child from a sociological aspect can be established. Since the social development in physically handicapped, mentally alert children parallels the social development of normal children several points which influence the design solution can be made.

Initial diagnosis of the newborn should be made as quickly as possible so that any corrective surgery can be made before the infant becomes six months old. After this point and up until the age of three any type of separation from the child's mother may lead to a permanent maladjustment of the infants social behavior, interfering with the development of normal social relations and affectionate feelings toward others. "...studies have shown the occurrence of intense distress in children of 1-2 years during short-term hospitalization".³⁸ Therefore, for the purposes of this study, the youngest age group considered to reside in any type of overnight capacity is the preschooler (ages 3½-6 years old), since he is able to tolerate separations from his mother without undue anxiety and function to some degree independently. [A facility for infants (from six months to three and a half years old) which would offer some type of live-in situation for parents of these young handicapped children might be an additional element in the state system, but because of the logistical aspects and differing treatment techniques involved would be functionally different from a school situation and therefore will not be considered



ACCESSIBILITY TO FACILITIES



here.] Frequent visits by parents and weekend stays at home are very important to insure the proper foundations of the child's personality. This reinforces the idea of regional facilities within the state which can combine the new technologies with the increased accessibility to be more responsive to the child's medical and social needs. In addition, this will give the parents an opportunity to become involved with the staff and give valuable input into the child's total development program.

With the entrance of the child into the public school system at age six, it is logical to form the second age group comprising grade school children from ages six to eleven in one residential unit. This is a period in a child's life when he is invested in non-family relationships and the residential environment will enrich his social development.

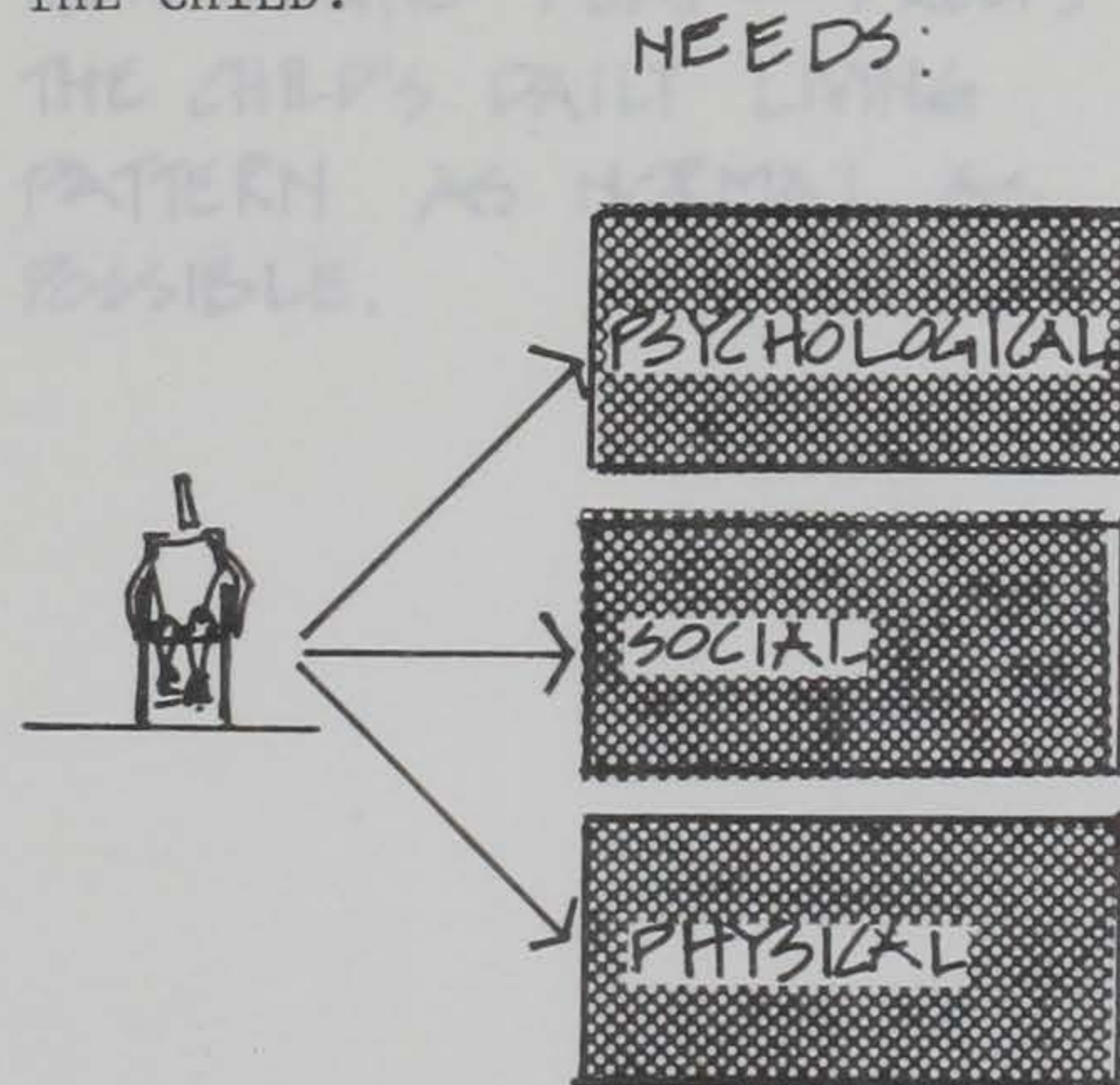
The emergence of middle-schools points to the social compatibility of grouping eleven to sixteen year olds together in a teen unit. Responsibility and the need for personal independence play a major role in the adolescents development into the adult world.

Primarily because of the increase in sexual awareness and exploitation, it is appropriate to make a break here with any childrens facility of this type. Because of this most living/school situations for the physically handicapped mentally alert child do not accept persons over sixteen years of age. Research points to the need for these individuals to be placed in their own special social setting separate from a childrens program. Many existing facilities, such as Roger Peace Institute in Greenville, are currently available to the adult. These facilities provide adult care for the physically handicapped. Any childrens program should be coordinated with proposed late teenage and existing adult programs in the state to insure continuity of care.



GLENNON UNIVERSITY LIBRARY

THE CHILD:



The physically handicapped child has the same if not greater need to develop psychologically and socially as the non-handicapped child. The social and psychological aspects of crippled children must be considered if successful rehabilitation and adjustment of the child are to be achieved.³⁹ The child's physical problems may lead to emotional as well as social frustration which serve only to compound his condition. Because of the child's social interaction needs many parents unwittingly slow their child's progress by keeping him sheltered in the home. Sometimes it is necessary to remove the child from the home because of the emotional maladjustment caused by an overprotective home environment. The child becomes more handicapped by not learning to accomplish tasks on his own, leading to the possible development of dictatorial and tyrannical behavior patterns.⁴⁰ In addition to making the child more dependent and clinging to, this overprotection prevents him from developing exploratory and independent actions.

DEVELOPMENT OF SOCIALLY ACCEPTABLE BEHAVIOR PATTERNS THROUGH:

1. A SENSE OF PERSONAL WORTH

2. STATUS

3. A FEELING OF BELONGING

A multihandicapped child has the same need to understand himself (as the normal child), but it is much more difficult for him to build a clear image of himself.⁴¹

To develop socially acceptable behavioral patterns each child must be given a sense of personal worth, status, and a feeling of belonging.⁴² Through a wide range of stimuli and experience the child has the opportunity to develop a positive attitude toward himself and others which enables him to cope with his physical situation.

Any discussion of child development is not complete without stressing the importance of play; a primary component "... of play can be childhood experience with development of the adult personality".⁴³ Play is used both to diagnose a child's difficulties and to help him with them,⁴⁴ providing insight into the child's body and intellectual development and his ability to adjust to new situations. Play leads to learning, through play the child acts out his fantasies, fears and conflicts in an effort to cope with them as he moves towards a more mature psychological behav-

THE RAPID PLAY → KEEPS
THE CHILD'S DAILY LIVING
PATTERN AS NORMAL AS
POSSIBLE.

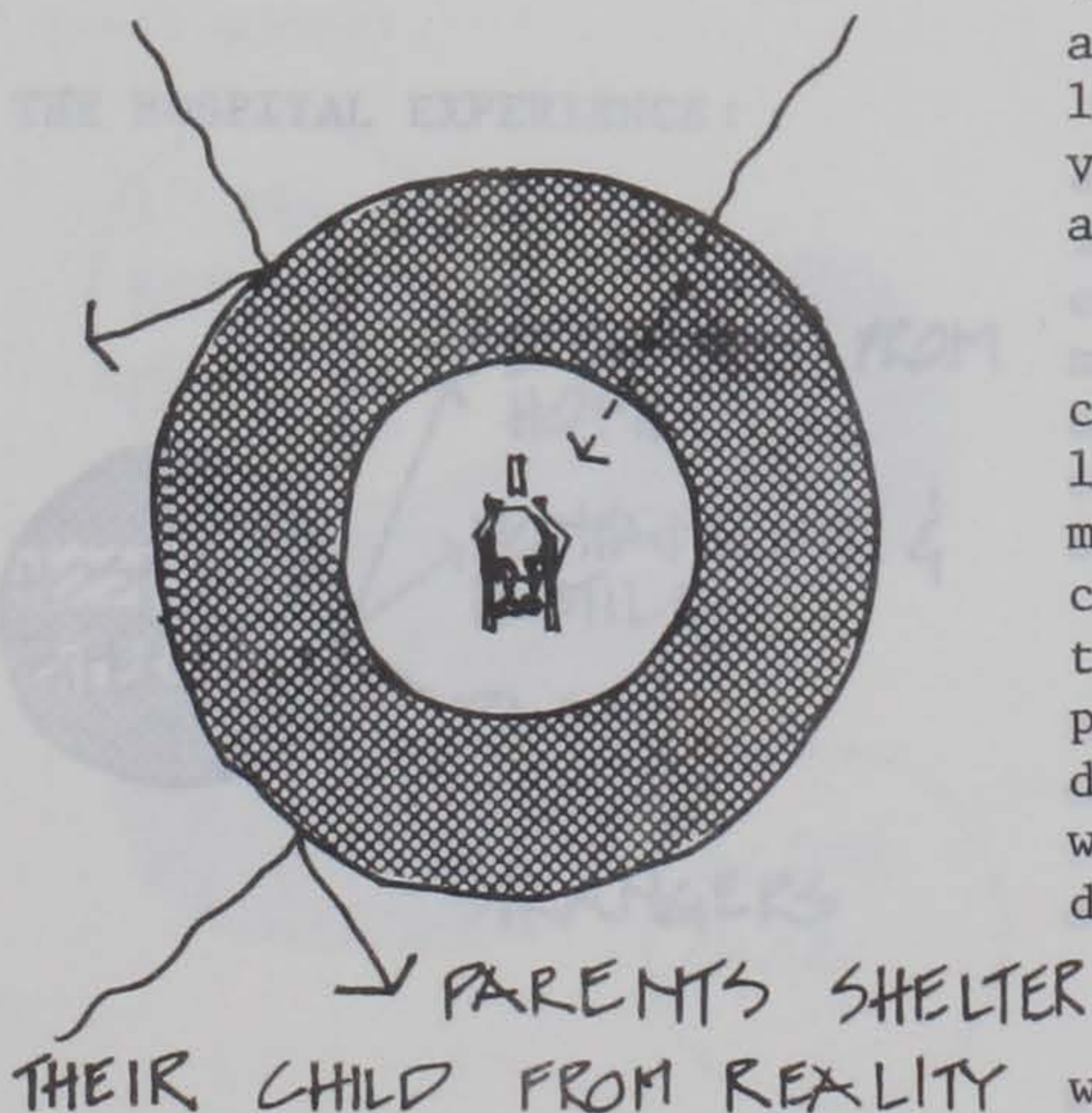
ior, providing him with the opportunity to reorganize his life.⁴⁵ Besides the use of play in the socialization of the child, "...skills may be acquired through play, for instance, in the use of babbling to develop speech and of manipulative play in producing fine control of the hands",⁴⁶ and in facilitating the development of reasoning as the child learns what makes mechanical toys "go" and how objects are made.⁴⁷ The basic aim of therapeutic play is to keep the child's daily living pattern as normal as possible. If play activities are not provided the child will find other ways of satisfying his needs, which may generate problems for the staff.⁴⁸

Thus it would appear that an important facet of maturation in the capacity for effective motivated behavior is played by the child's attempts to master the physical environment and to obtain competence in so doing by means of his own efforts.⁴⁹

Parents and Staff:

Another primary consideration in personality development of the child is parent-staff relations. Parents should be encouraged to work closely with their child and staff in determining long range educational and therapeutic goals. Parents can provide valuable information on the child's background experiences and feedback on the child's behavior at home.

Frequently parents have difficulty in understanding their child's handicap. They may have adjustmental problems in their life style just as the child must learn to adapt to his environment. Parents tend to protect and shelter the physically handicapped from life and reality.⁵⁰ Often the child becomes the center of attention within the family or is hidden away because of parental guilt feelings. Both of these extremes will lead to disruptive behavioral problems in the child. Through working with the staff many of these barriers to the child's continual development can be removed.



Parents, educators, therapists and medical personnel must work as a team to assure the development of the "whole" child.

This way the team is aware of and understands the overall goals which they formulate and; "there is a sharing and interdisciplinary interpretation of information".⁵¹

Conclusion:

The need for social interaction and psychological stimuli are crucial in the forming of the child's behavioral patterns. Research points to play being the primary link in the child's development of proper group socialization behavior and intellectual potentials. A playground setting should be an integral part of facilities for handicapped children. These children need a variety of play experiences to assist in their daily development of skills which will enable them to achieve some degree of independent living.

Parents and staff must create a close working relationship to be aware of any problems which exist and in establishing long range goals for the child. Accommodations for family lodging and education should be provided to afford the opportunity for parent-child interaction.

THE HOSPITAL EXPERIENCE:



In every physically handicapped child's life there will arise various hospital experiences which will interrupt his daily life style. Most of these experiences will involve some form of corrective orthopedic surgery. For many children this ordeal will mark their first separation from home. Being separated from home and family, placed in an unfamiliar and seemingly hostile environment⁵² which inflicts pain on the child by strangers⁵³ is always somewhat of a frightening and anxious experience.⁵⁴

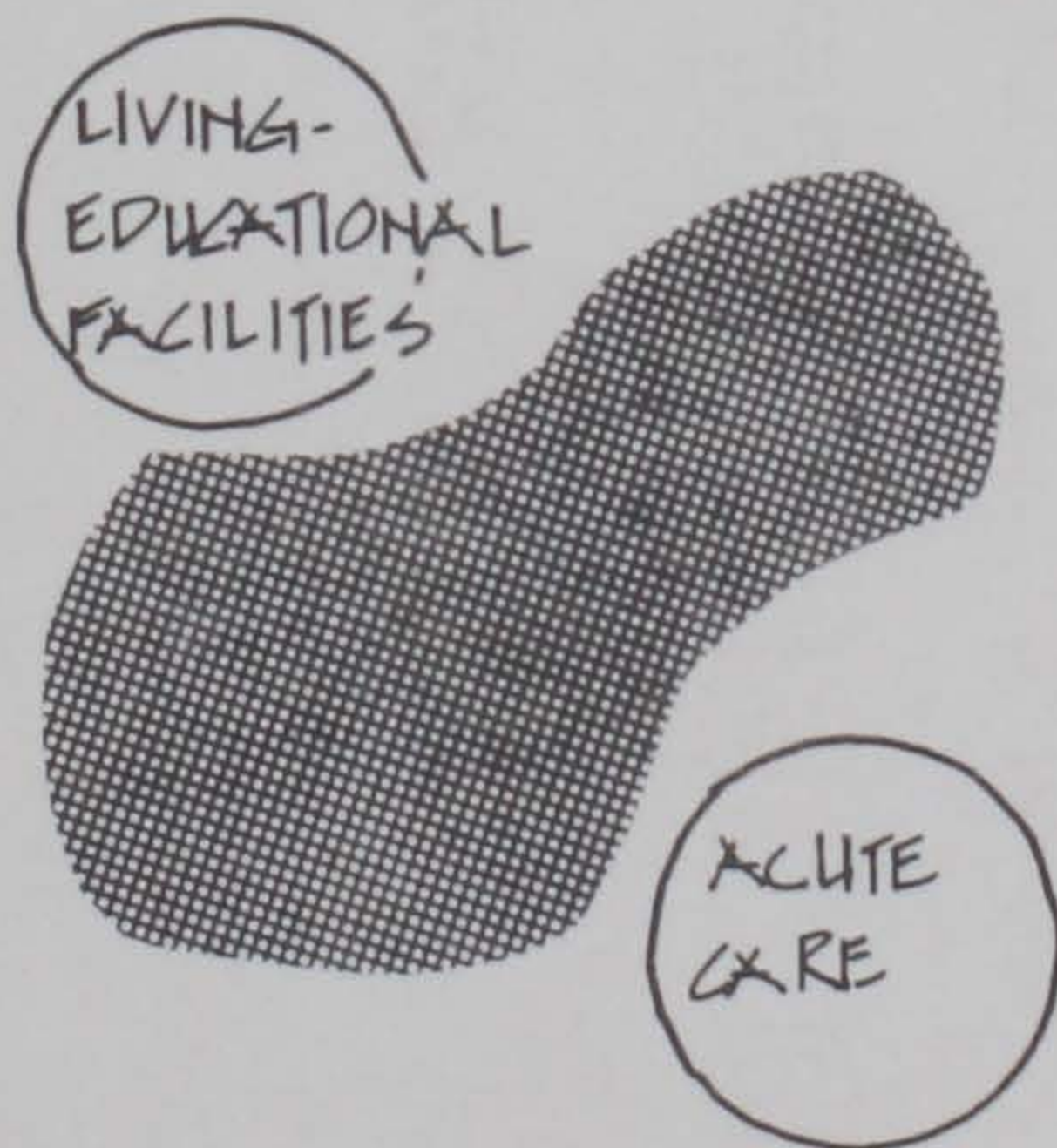
The hospital experience for children can be a traumatic and stressful situation where he feels deserted in an alien environment. Hospital personnel "are becoming increasingly concerned about the psychological impact of hospitalization on children and adolescents..."⁵⁵

Most children are placed in pediatric units in general hospitals which offer four disadvantages for the child:

- (1) General Hospitals are adult-centered because the pediatric population only runs between five and ten percent of the hospital's total patient load.
- (2) The philosophical approach to child care differs markedly from that of an adult.
- (3) Specialized equipment or personal skills are not available because they are not economically feasible.
- (4) Experimentation on new techniques is possible only in facilities which have a concentration of equipment and personnel.⁵⁶

The creation of the children's hospital has been a first step in attempting to minimize the trauma experienced by most hospitalized children. The concentration of pediatric and orthopedic specialists, and specialized equipment avoids duplication of services and promotes "child-centered" care.

Conclusions:



The psychological impact of hospitalization on the child and resulting physical discomfort creates a negative response to this environment. Confronted with the feelings of anxiety, desertion, and fear, which parents sometimes unconsciously transmit to their children; the child connects pain and suffering with the hospital.

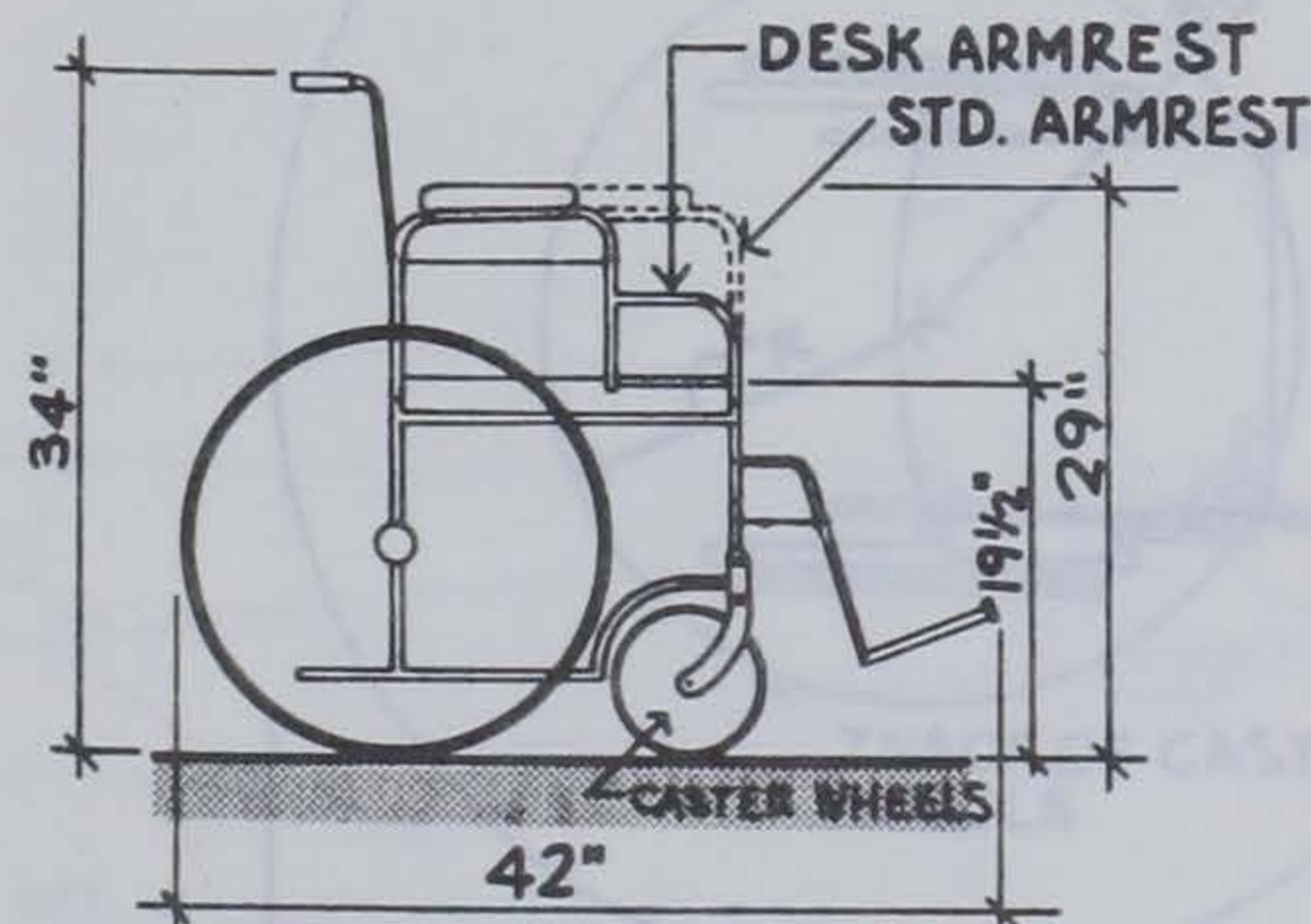
This logically points to the need for a separation between acute care situations and living/educational facilities for the handicapped child. The child needs to be placed back into the home or home like environment as soon as possible after convalescence has restored him with the strength to resume his daily living routine.

PROGRAMMATIC
AND TECHNICAL
CONSIDERATIONS

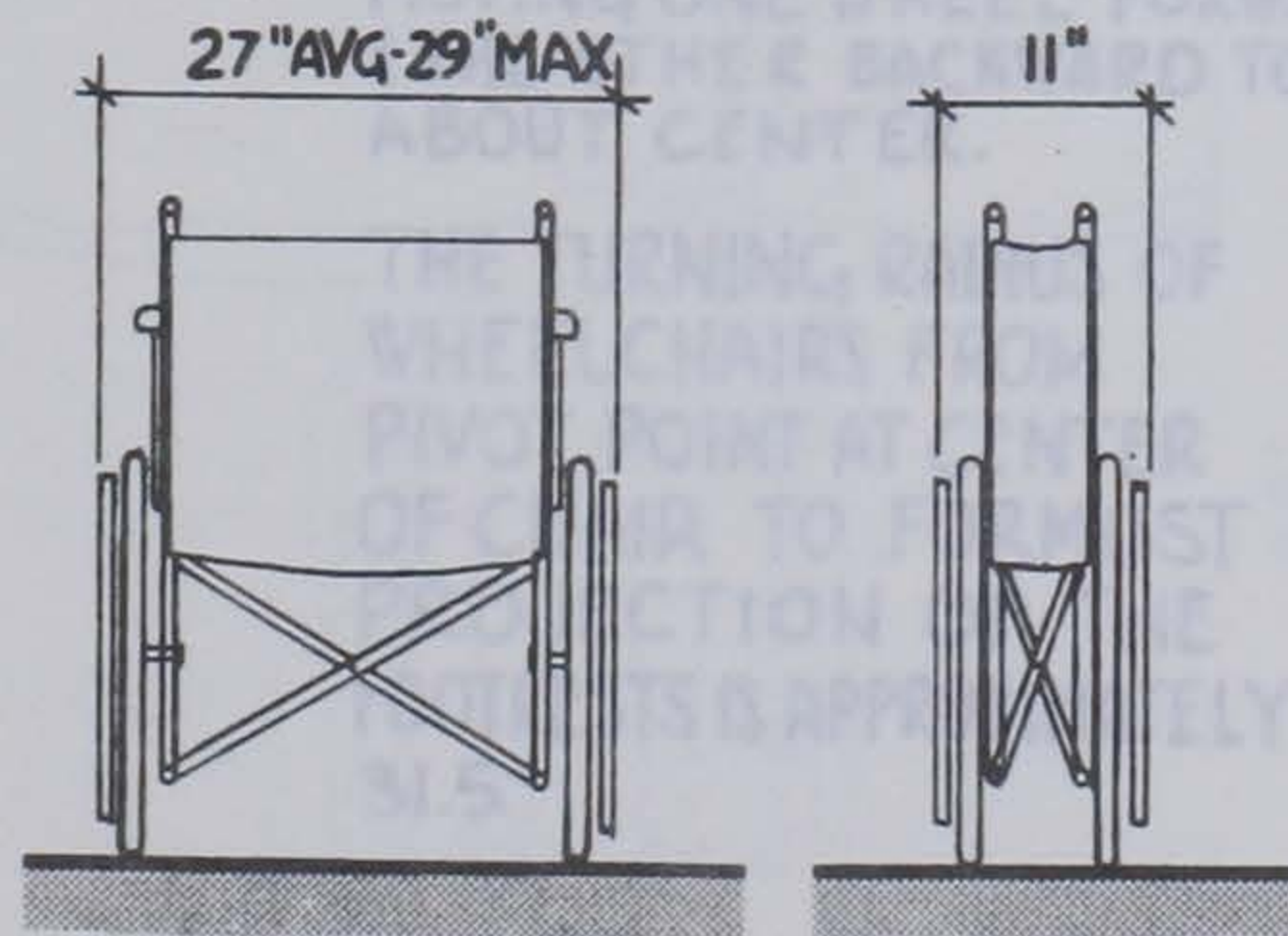
**PROGRAMMATIC
AND TECHNICAL
CONSIDERATIONS**

OLEGSON UNIVERSITY LIBRARY

PROGRAMMATIC AND
TECHNICAL CONSIDERATIONS:



THE MOST COMMON TYPE
OF WHEELCHAIR USED BY
NON-AMBULANT PERSONS
OUTDOORS IS THE
COLLAPSIBLE TUBULAR
METAL CHAIR WITH



The design concept is based on a variety of parameters identified in the previous discussion based on the physical, social and psychological needs of the physically handicapped child. The third component in designing any architectural setting is the physical criteria which, combined with these needs constitute the built environment. The analysis of specific activities, their spatial requirements, and technical data will be discussed first followed by additional general physical data.

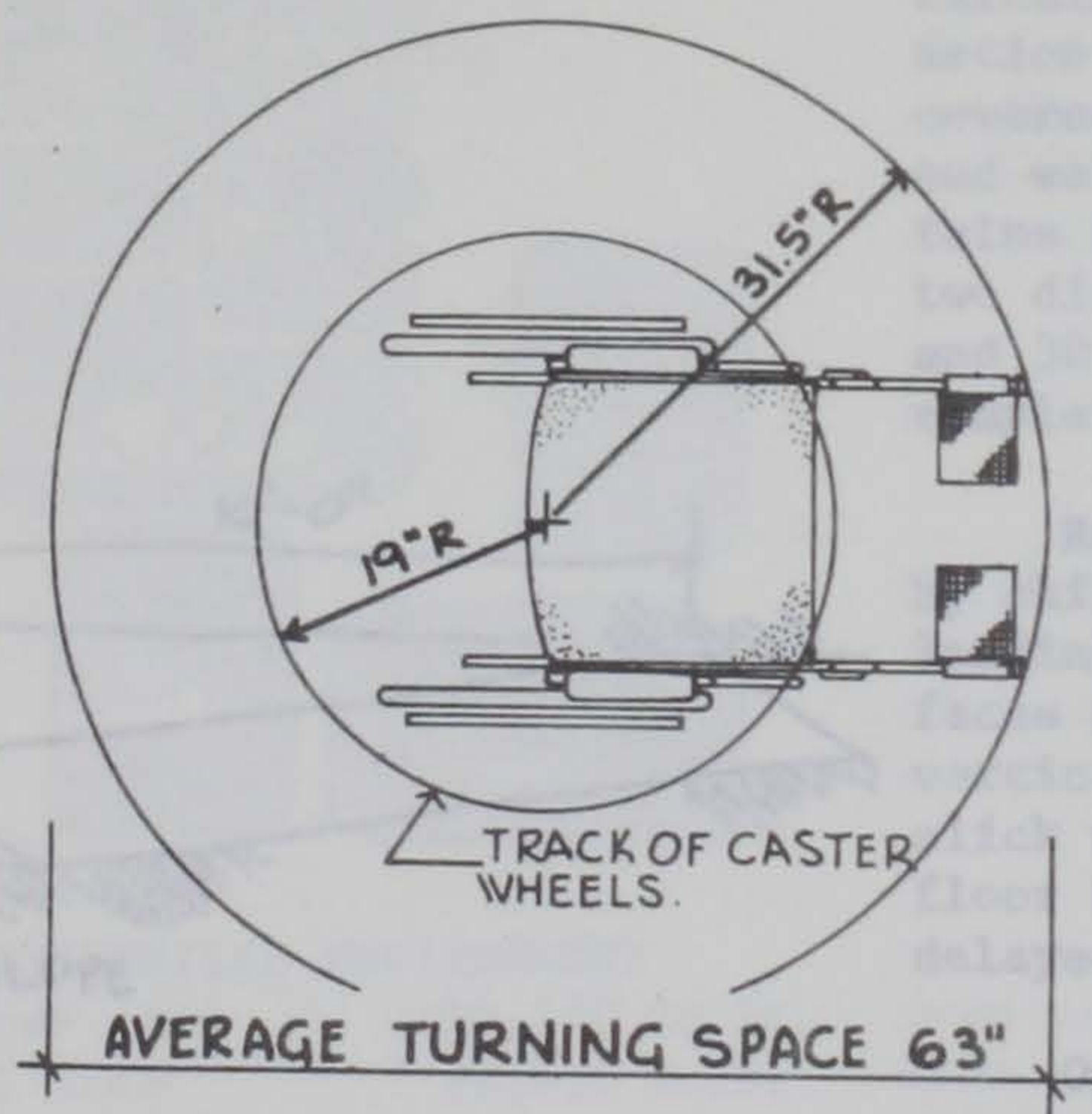
The children will be negotiating physical layout of the facility by a variety of means. Some children will be using leg braces, crutches, or both to travel from point to point while the majority will be using some type of wheeled vehicle, primarily a wheelchair. Wheelchair guidelines will offer the maximum flexibility for the varying types of child circulation.

Other general considerations concerning surface materials, openings, inclines, fenestrations, lighting, storage, and toilets follow.

Floors: Surface materials must include characteristics such as a non-slip surface (wet or dry), durability, softness (to prevent serious injury in case of a fall), fire resistant, easy maintenance, and sound absorption. Materials similar to asphalt tile, cement floors and terrazzo have proven to be unsatisfactory. Types of rubber tile have been found to be most satisfactory, with their only drawback being the expense of such materials. Problem areas such as bathrooms, hydrotherapy, pools, or any other high water or excessive humidity areas need floor drains to carry off standing water. Wall to wall carpeting works well in testing areas and classrooms and has excellent sound absorption qualities. Cork also works well in offices, speech, and testing areas where quiet sound absorbing qualities are desired; but cork is not a very durable material.⁵⁷

Corridors: Corridor links between activities should be at least eight feet wide to permit two wheelchairs to pass. Widths of twelve feet or more allow the free flow of traffic along a

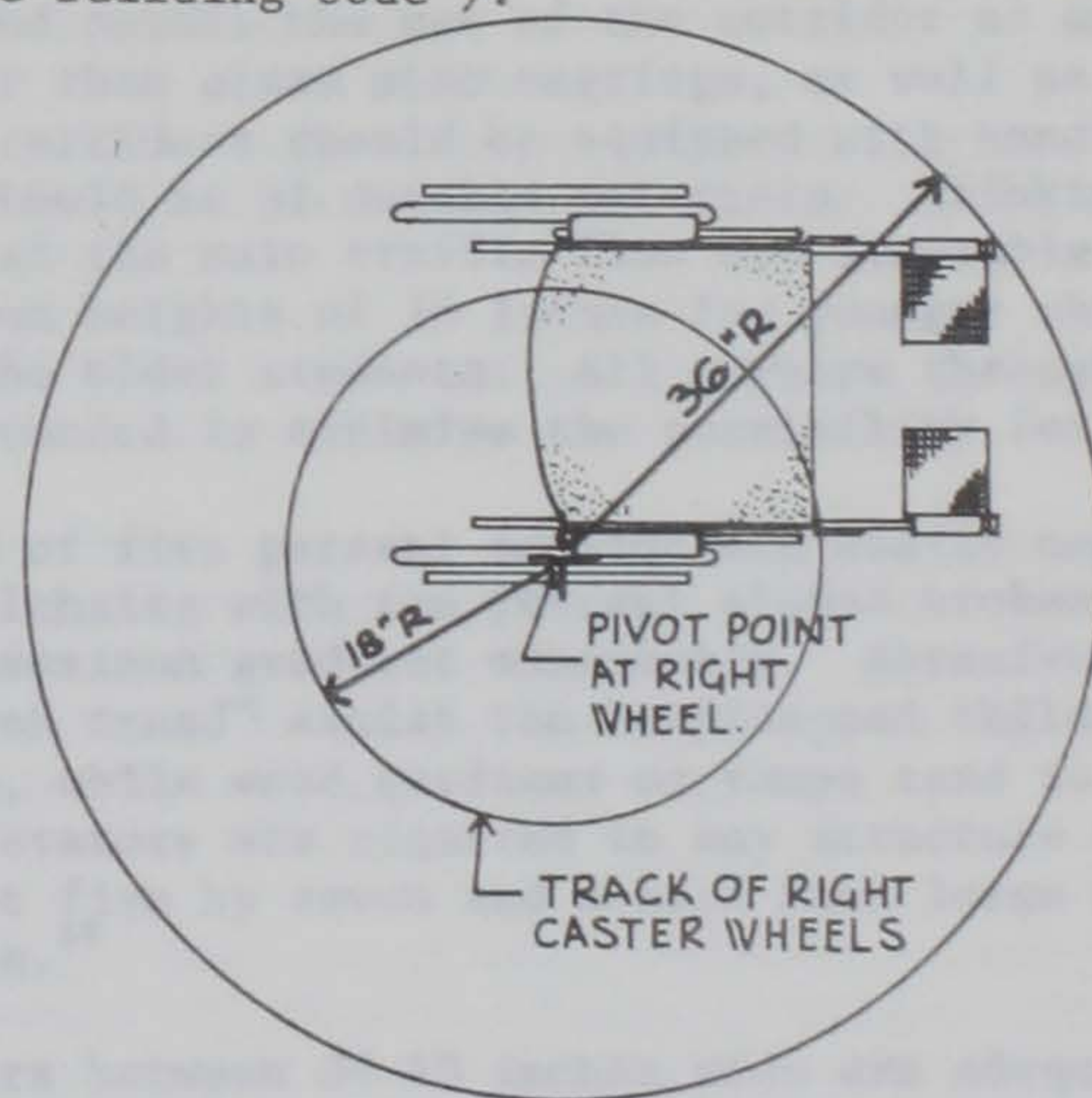
(Diagrams on pages 24, 25, and 26 were taken from "An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code").



PIVOT POINT AT CENTER

USUAL TURNING METHOD - MOVING ONE WHEEL FORWARD & THE OTHER BACKWARD TO PIVOT ABOUT CENTER.

THE TURNING RADIUS OF WHEELCHAIRS FROM PIVOT POINT AT CENTER OF CHAIR TO FORMOST PROJECTION OF THE FOOTRESTS IS APPROXIMATELY 31.5"

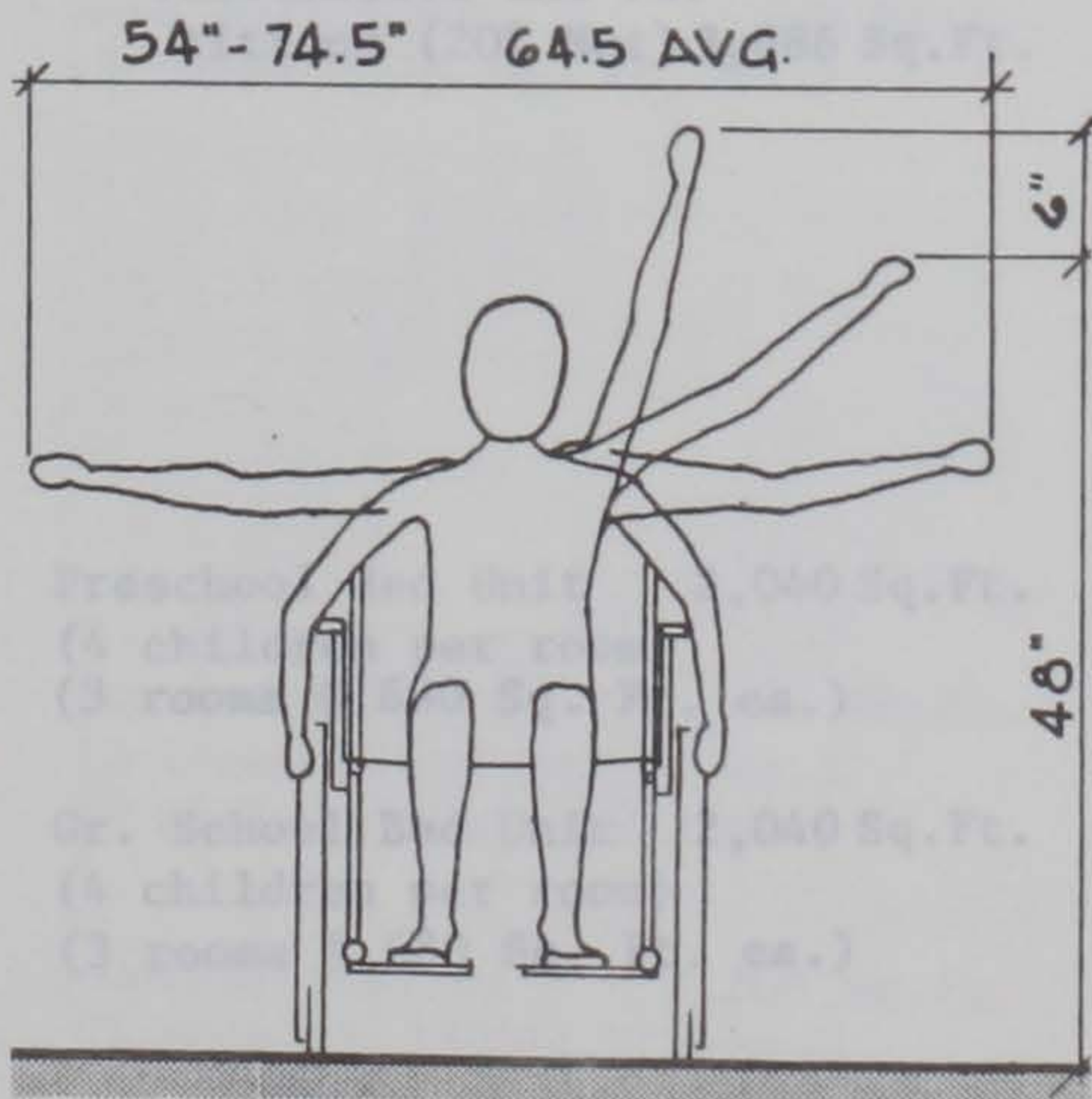
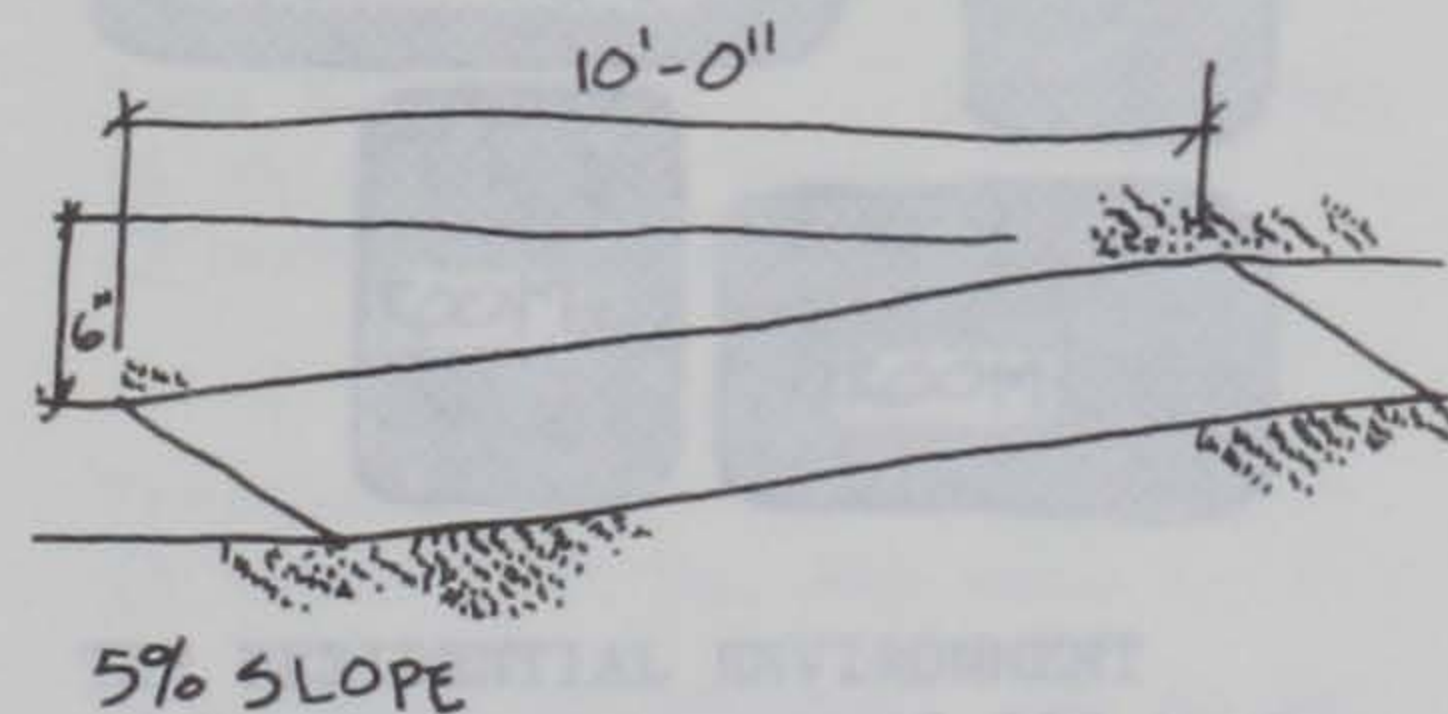


PIVOT POINT AT ONE WHEEL

ALTERNATE TURNING METHOD - LOCKING ONE WHEEL & TURNING THE OTHER.

FIXED TURNING RADIUS OF WHEELCHAIRS

THE FIXED TURNING RADIUS OF WHEELCHAIRS, WHEEL TO WHEEL, WHEN PIVOTING ON A SPOT IS 18". I.E. DISTANCE FROM PIVOT SPOT TO TRACK OF CASTER WHEEL.



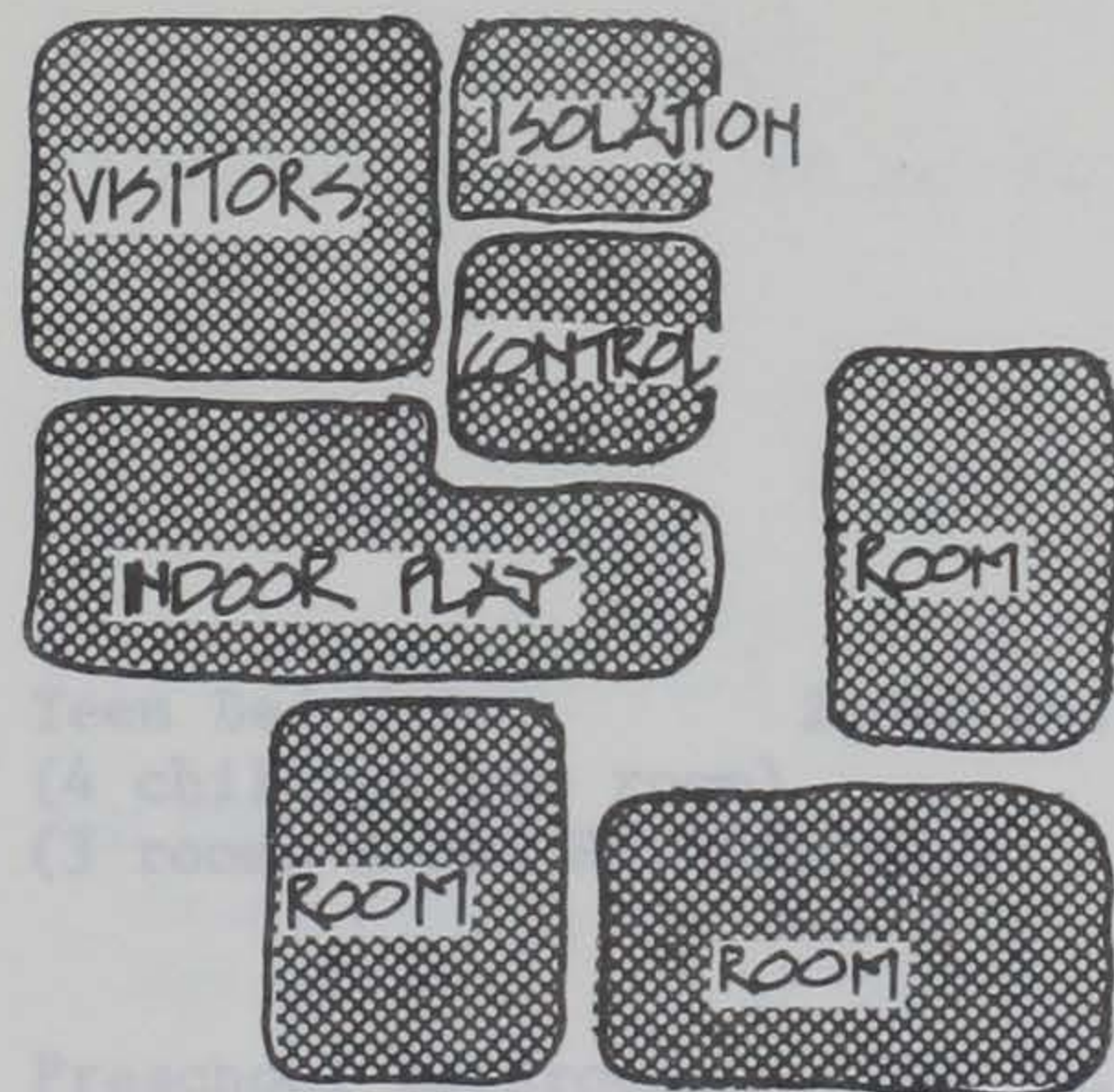
circulation spine and permit the use of the corridor as an interaction space, larger than class size meetings, as well as area for covered play. All corridors should be equipped with handrails and wall surfaces should be of durable materials. Drinking fountains recessed out of the main traffic flow are desirable with two differing maximum heights of 26 inches for younger children and 30 inches for the older students. All corners throughout the complex should be rounded to minimize the possibility for injury.⁵⁸

Ramps: Slopes of five percent incline are easily negotiated by children in wheelchairs with ten percent slopes broken by landings being the maximum gradient manageable. Abrasive surfaces such as "Scotch tread" assist the handicapped child in this vertical transition, while wood surfaces on ramps tend to become slick with use. Elevators are required in any structure over one floor high, at least five by seven and a half feet large with delayed action doors.⁵⁹

Openings: Doors between 38-40 inches wide are adequate except where beds may need to be moved through these openings, in such case they should be 46 inches wide. Swinging doors are hazardous and sliding doors should be avoided because only children with good hand control are able to manage the opening of and closing of these doors. Automatic doors offer the maximum flexibility in door design.⁶⁰

Windows are an important visual element which bring the outside to the child, giving him the opportunity to visually experience nature. Large amounts of fenestration in playrooms, dining rooms, living units, and other recreational areas are desirable. Window openings should be no higher than 24 inches from the floor to allow most children the opportunity to view out.⁶¹

Lighting: Visual perception is relied on more than other perceptual systems to obtain information on the environment. Quantity and quality of light has a significant effect on human behavior, emotions, and communication.⁶² Indirect lighting is suggested in classrooms and treatment areas to eliminate eyestrain.



THE RESIDENTIAL ENVIRONMENT

Gross Area 22,120 Sq.Ft.
 Net Area 18,432 Sq.Ft.
 Circulation and Par-
 tititions (20% Net) 3,686 Sq.Ft.

Preschool Bed Unit 2,040 Sq.Ft.
 (4 children per room)
 (3 rooms @ 680 Sq. Ft. ea.)

Gr. School Bed Unit 2,040 Sq.Ft.
 (4 children per room)
 (3 rooms @ 680 Sq. Ft. ea.)

The illumination level in classrooms should be between twenty and thirty foot candles. Occupational Therapy requires thirty foot candles for general activities and fifty foot candles for detailed work. Outlets should be raised off of the floor between thirty and forty inches.⁶³

Toilets: There should be one water closet for every five children with variable heights for smaller children.⁶⁴

General Storage: Most schools for handicapped children never have adequate storage space. Storage space for specialized equipment, wheelchairs, walkers, and carts take up a great deal of room. An equipment area is needed for storage of day students apparatus, unused wheelchairs, and other supplies.

Residential Units: The center will serve 36 resident children ages 3½ to 16 years old from the Piedmont Region catchment area who are unable to attend as day pupils because of transportation or home environmental problems. The residential area should be broken down into three components of twelve children each by the concept of age grouping. The pre-school unit will house children between the ages of 3½ to 6½ years old; the youth unit will house children between the ages of 6½ to 11 years old; and the teen unit will house youngsters between the ages of 11 to 16 years old. Approximately 64 day pupils from Greenville, Pickens, Spartanburg, and parts of Anderson and Oconee Counties will be served by the center.

The residential units for the pre-schoolers and grade school children should consist of four bed rooms which should offer a home-like rather than an institutional (ward) character. Research points out that children in this age group prefer the company of several roommates. Children seem to get bored quickly with only one roommate; three youths to a room increases the chance of conflict offering the potential of two children ganging up on the other child; four youngsters to a room offers the variety of three roommates while reducing the chance of inter-group

(Offices 360 Sq. Ft.)
(Storage 480 Sq. Ft.)
(3 visitor units @ 700 Sq. Ft. ea.)

Indoor
Recreation Areas 3,888 Sq. Ft.
(Preschool 1,296 Sq. Ft.)
(Gr. School 1,296 Sq. Ft.)
(Teen 896 Sq. Ft.)

Teen Bed Unit 2,040 Sq. Ft.
(4 children per room)
(3 rooms @ 680 Sq. Ft. ea.)

Preschool Bathrooms 234 Sq. Ft.
(3 baths @ 78 Sq. Ft. ea.)

Gr. School Bathrooms 234 Sq. Ft.
(3 baths @ 78 Sq. Ft. ea.)

Teen Bathrooms 234 Sq. Ft.
(3 baths @ 78 Sq. Ft. ea.)

Isolation Rooms 516 Sq. Ft.
(3 rooms @ 130 Sq. Ft. ea.)
(3 baths @ 42 Sq. Ft. ea.)

Control Station 7,206 Sq. Ft.
(3 rooms @ 130 Sq. Ft. ea.)

conflict; while more than four children to a room runs the risk of subgroups forming, splintering group action.⁶⁵

Within each room every child should have a space he can call his own. This cubical is made up of his bed, a built-in wardrobe for clothing, storage space, study table and tack space avoiding any sharp protruding edges which may cause injury to the child.

The teen unit should be broken up into four bedroom room components because of the demanding social need for more privacy. Each resident in the teen unit should also have a built-in wardrobe for clothing, storage space, study table and tack space.

Bathrooms should have plenty of space around fixtures for wheelchairs and attendants. According to W.B. Schoenbohm in Planning and Operating Facilities for Crippled Children, every twelve older children need one low tub and two showers while every twelve younger children need two raised tubs and one low tub. Raised tubs save attendants from having to stoop over low tubs and permit easier handling of children who require bathing assistants. In addition, drying tables are needed in the younger children's baths. Raised tubs are less desirable for older children because of the exertion involved in lifting the child into the fixture; older children may also be able to manage bathing by themselves with the assistance of grab bars. Low tubs should be accessible from two or three sides to facilitate the getting in and out of the tub by older children who are able to manage by themselves, and some children may need two attendants to help them into and out of the tub.

Each living unit should have an isolation room and bath which can be used by children with infections, colds, other minor illnesses, for behavior reasons, or for observation and training of new staff.

A staff room with sleeping accommodations and bath for "house Mothers" and office for consultation, files, and general

(Offices 360 Sq. Ft.)
 (Storage 468 Sq.Ft.)
 (3 visitor units @ 700 Sq. Ft. ea.)

Indoor

Recreation Areas 3,888 Sq.Ft.
 (Preschool 1,296 Sq. Ft.)
 (Gr. School 1,296 Sq. Ft.)
 (Teen 1,296 Sq. Ft.)

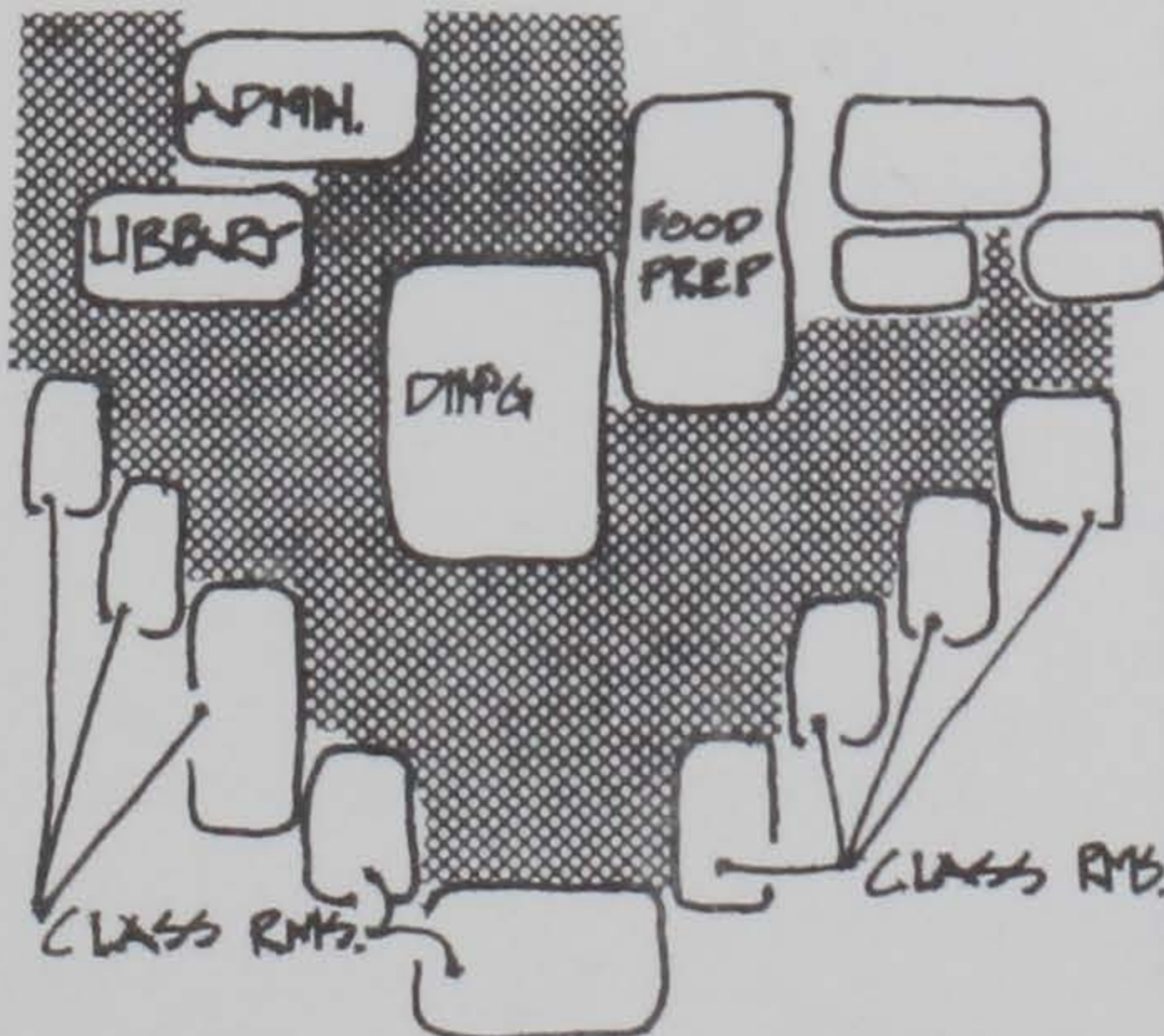
THE EDUCATIONAL ENVIRONMENT

Gross Area 14,856 Sq.Ft.
 Net Area 12,380 Sq.Ft.

Classrooms 4,000 Sq.Ft.
 (8 students per class)
 (10 classrooms @ 400 Sq.Ft. ea.)

PreSchool

Kindergarten 540 Sq.Ft.



storage is needed as the control point for the residential units. Residential units for visiting parents equipped with kitchenette and bedrooms for parents and child would provide the possibility for weekend home experiences.

Areas for limited indoor recreation and television watching adjacent to a small food preparation area for snacks or parties are very important to round out the child's living needs. This completes the program of spaces for the residential units.

Educational: The school will serve a total of 100 residential and day school pupils from kindergarten to the tenth grade level.

Classrooms should preferably hold eight students to provide for individual instruction for each pupil, but should be designed to accommodate an additional four students to provide for additional expansion of the educational program without the need for expansion of the school's physical plant. Twelve students should be the maximum number of children permitted in any classroom because of the break down in individualized instruction⁶⁶ and proper control of the group. Adequate storage space in each classroom for reference books, supplies, wheelchairs, and crutches, is needed. Besides accommodating wheelchairs and crutches, each room must be large enough to contain special tables, desks, and chairs.

Brightly colored rooms are psychologically desirable in creating extra stimulus for the mentally alert child. This is not the case in facilities for children with mental and emotional problems which are easily distracted by bright colors and become over stimulated and difficult to control.⁶⁷ Small children are attracted by bright saturated primary colors with blue being preferred by most school aged children.⁶⁸

Adjustable chalk boards and grab bars next to boards encourage student participation in class and low book shelves inspire

independent use of reference and reading materials.

Display space is needed to show off student work; this assists in giving each child a sense of personal worth and achievement.

Lavatory and counter space are desirable in each classroom offering the students a work station for projects and in class experiments.

Arts and
Crafts Dept.

1,100 Sq.Ft.

An arts and crafts department is a vital link in the overall educational experience of the physically handicapped child.

The basic purpose of an arts and crafts program should be to develop interests and innate talents of children and, as these are cultivated, to develop skills and hobbies which may eventually lead to worthwhile occupations.⁶⁹

Beside the recreational and diversionary aspects, arts and crafts will increase the development of spheres of interest and facilitate future vocational planning.

One of the biggest difficulties encountered in the vocational training of handicapped young people is that so many of them do not know what they want to do or become in life since so frequently they have been entertained in their spare time with movies, television, and other passive activities rather than having been encouraged to develop creative interests and capabilities.⁷⁰

Activities such as photography, painting, ceramics, jewelry making, print making and weaving give the child an opportunity to diversify his interests. A crafts program is never an end in itself but "...a program of determining what the potential skills, interests, and abilities of crippled children are so that a program of vocational or professional training can be outlined for

them which will eventually result in their taking their place as contributing, economically independent members of society".⁷¹

Industrial Arts
Department 820 Sq.Ft.

An industrial arts department acts as a compliment to the arts and crafts department by training students for possible future employment or hobbies in wood working, mechanical drawing, electronics, and metal working. A brace shop included in this department containing the necessary equipment to repair, alter, adjust and construct braces and shoes would provide an extremely useful service for the children themselves.

Cafeteria 3,790 Sq.Ft.
(Dining 1,920 Sq.Ft.)
(Food Preparation
and Storage 1,870 Sq. Ft.)

A food eating area is required to serve the 100 students and staff during the school week. The breaking down of this large area into smaller sections is desirable in creating a more intimate and easily controllable situation. A smaller feeding room for food training is recommended to give special attention to children whose handicaps interfere with the food intake process.⁷²

Toilets 460 Sq.Ft.
(2 @ 230 Sq. Ft. ea.)

THE THERAPEUTIC ENVIRONMENT
Gross Area 15,360 Sq.Ft.
Net Area 12,800 Sq.Ft.
Circulation and Partitions (20% Net) 2,560 Sq.Ft.

Food preparation will occur at Greenville Memorial Hospital and be trucked over to the children's facility's kitchen to be served. This is the current practice for food distribution at Marshall Pickens and the Re-Education Center. According to Mr. Steve Burke of the Greenville Hospital System Planning Department the soon to be expanded Memorial Hospital complex would have no problem in supplying an additional three hundred meals a day for any adjacent facility which needed food preparation services.

Library 570 Sq.Ft.

A diversified library is needed to foster independent learning techniques and as a resource for the children's academic classes. Since the fundamental purpose of any educational facility is to broaden the child's interests and experiences, and since many physically handicapped children will have to depend on their minds for self employment, good books with a wide range of interest are a necessity. Many of these children will be limited in the amount of travelling they will experience, therefore geographic and historic literature takes on a greater significance. Some type of school store run in conjunction with the library, is needed to enable pupils to purchase paper, pencils, and other

Recreation Room 6,300 Sq.Ft.
Observation 182 Sq.Ft.

Storage 435 Sq. Ft.

Locker and Shower Room 1,100 Sq.Ft.
(2 @ 550 Sq.Ft. ea.)

Pool 1,400 Sq. Ft.

Administration 1,100 Sq.Ft.

Toilets 460 Sq.Ft.
(2 @ 230 Sq. Ft. ea.)

THE THERAPEUTIC ENVIRONMENT
Gross Area 15,360 Sq.Ft.
Net Area 12,800 Sq.Ft.
Circulation and Partitions (20% Net) 2,560 Sq.Ft.

Speech and Hearing Therapy 360 Sq.Ft.
(3 rooms @ 90 Sq.Ft. ea.)
(Observation 90 Sq. Ft.)

Recreation Room 6,300 Sq.Ft.
Observation 182 Sq.Ft.

Storage 455 Sq. Ft.

school supplies for their own personal use.

An assembly hall is desirable for school programs and productions offering one space in which the whole student body may meet. The assembly hall is capable of lending itself to multi-purpose uses and for this reason should be combined with the gymnasium and physical therapy department to form one recreational department. Its further uses will be discussed later.

Administrative offices for the school principal, his assistant, school secretaries and school social worker are needed to direct and coordinate the educational and therapeutic programs. A waiting area for children, parents, and teachers, a conference room and central file room completes the physical requirements for the administrative department.

Toilets should be easily accessible from the classrooms. W.B. Schoenbohm suggests using a figure of one water closet for every five children.⁷³

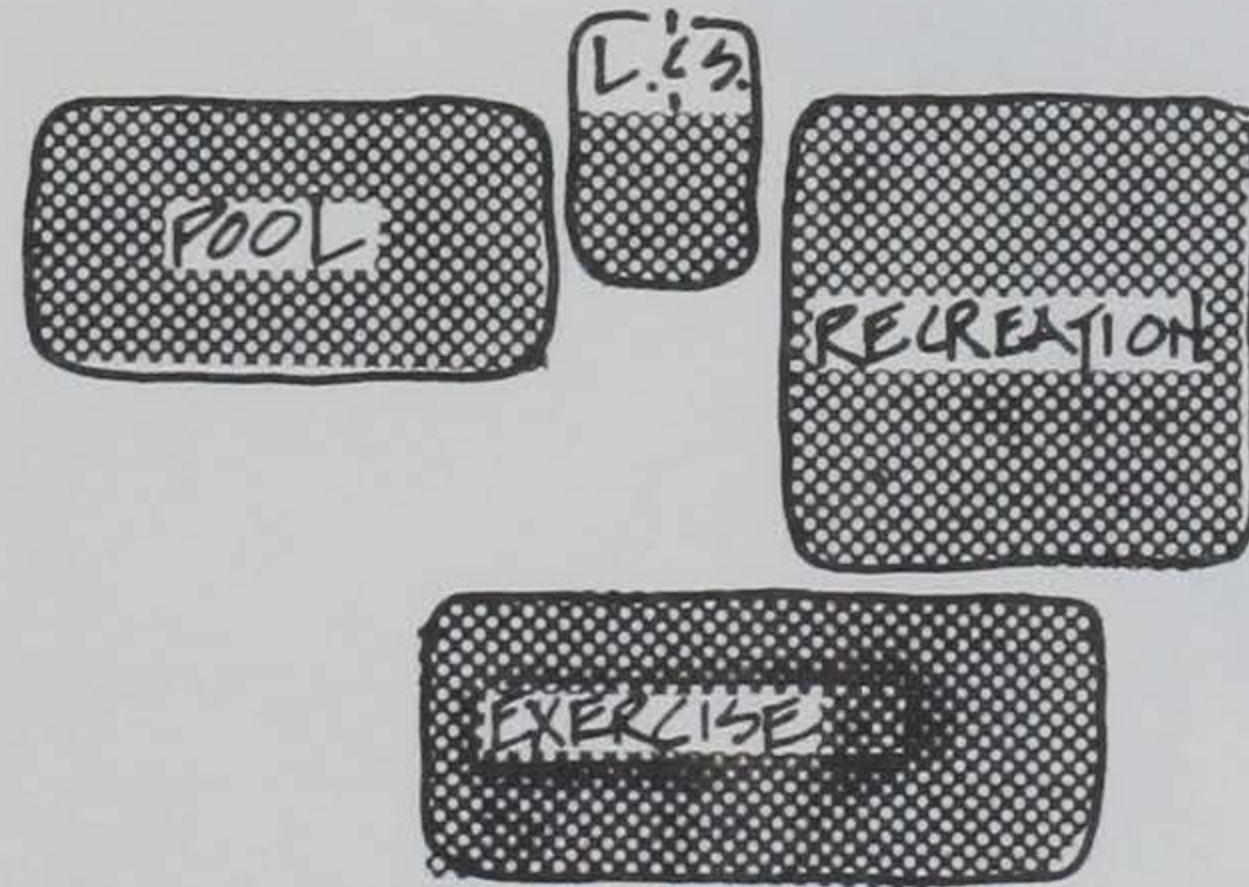
Therapy: The therapy component is composed of primarily three parts: physical therapy, occupational therapy, and speech and hearing therapy.

The physical therapy department assists children in reaching their maximum performance so they can lead useful, productive lives, within the limits of their capabilities. Physical therapy aids the child in the motor skills with activities such as ambulation exercises, stair-climbing, walking, crawling, standing and other balance exercises. The physical therapy department for a children's school should be made up of a small gymnasium, massage and exercise room, hydrotherapy, locker and shower rooms, and storage area.⁷⁴ As mentioned earlier, several activities in the physical therapy department are compatible with an assembly room and one multi-purpose use space could contain a gym, a massage and exercise room, and act as an assembly room when needed. A storage area for equipment (crutches, braces, football helmets,

THE SYSTEM

Locker and Shower Rooms 1,140 Sq.Ft.
(2 @ 570 Sq.Ft. ea.)

Pool 3,480 Sq.Ft.



Occupational Therapy 884 Sq.Ft.

Speech and Hearing Therapy 360 Sq.Ft.
(3 rooms @ 90 Sq.Ft. ea.)
(Observation 90 Sq. Ft.)

linen, towels, etc.) and locker and shower rooms could be adjacent to the recreation room.

Hydrotherapy, besides its therapeutic uses, can also add to a more comprehensive recreational program by the inclusion of an indoor pool in the facility rather than installing hydrotherapy tanks. By enlarging hydrotherapy, through the addition of a pool, a second and extremely valuable recreational opportunity exists for the children. Many physically handicapped children are able to walk and use parts of their bodies, which normally do not function well, in water because of its bouyancy property. Swimming is especially beneficial to the handicapped child enabling him to perform activities (such as standing) which he otherwise is not able to manage, and in addition gives relaxation and self confidence to the child which in turn provides for self improvement.⁷⁵

Occupational therapy contributes to the physical and emotional independence of the child through selected activity. Functional activities such as feeding training techniques, dressing skills and self help activities are stressed. Other aspects covered are homemaking skills, prevocational exploration, developmental skills use of prosthetic devices and adaptive equipment. Plenty of counter work surfaces are needed as well as a fully equipped kitchen for the handicapped.⁷⁶

Speech and Hearing therapy is an important tool in evaluating and treating speech defects and sub-normal hearing which may slow down the child's development. Small sound-proofed rooms are needed to eliminate outside noise. Observation cubicles are required for the therapist to conduct tests and evaluate the child's progress.⁷⁷ The therapist is then able to consult with the parents, child, and medical personnel in the selection of hearing aids and instruction in their use and care for children suffering from hearing loss. Special classes for children with speech defects help the child overcome his communication problems.

THE SYSTEM:

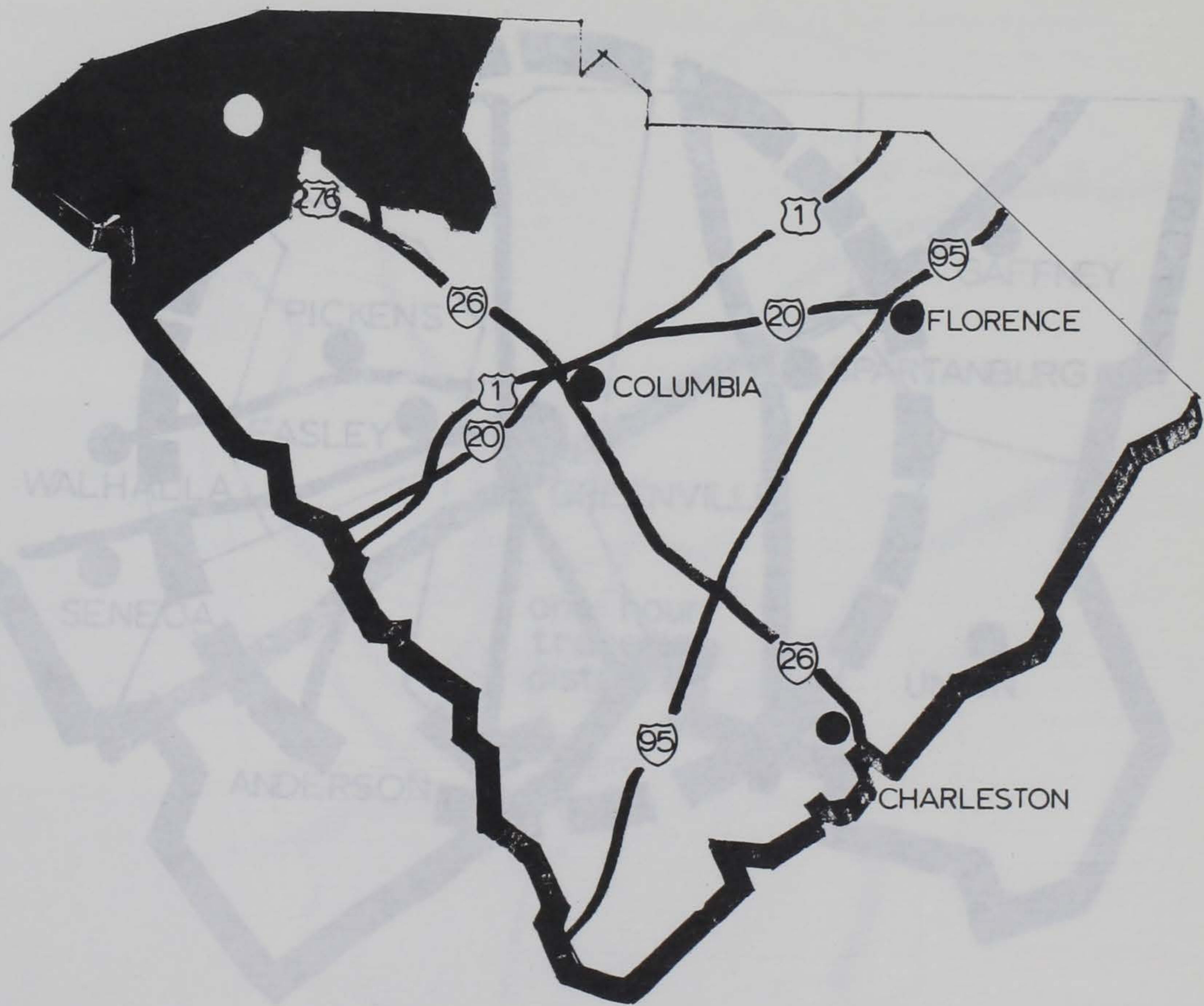
For the purpose of this investigation a broad look at a possible state-wide system of facilities is presented. This discussion's intent is to provide a possible framework or context for which facilities involving the physically handicapped could be established. The actual physical planning of such a network would involve an in-depth look into the existing living, educational, and therapeutic situations for the physically handicapped from a physical, social, and psychological standpoint of their needs, which exceeds the scope of this study.

An excellent guideline for the establishment of such a system would be the state-wide plan developed, in conjunction with the Department of Mental Health and the Health Care Facilities Planning and Design Studio here at Clemson University, for mental health. The mental health system is divided into four catchment areas or medical service regions: the Piedmont, the Midlands, the Pee Dee, and the Coastal. Within each catchment area is a subsystem of facilities, programs and personnel which offers continuity of care, flexibility, and an opportunity for therapy promoting mental health.

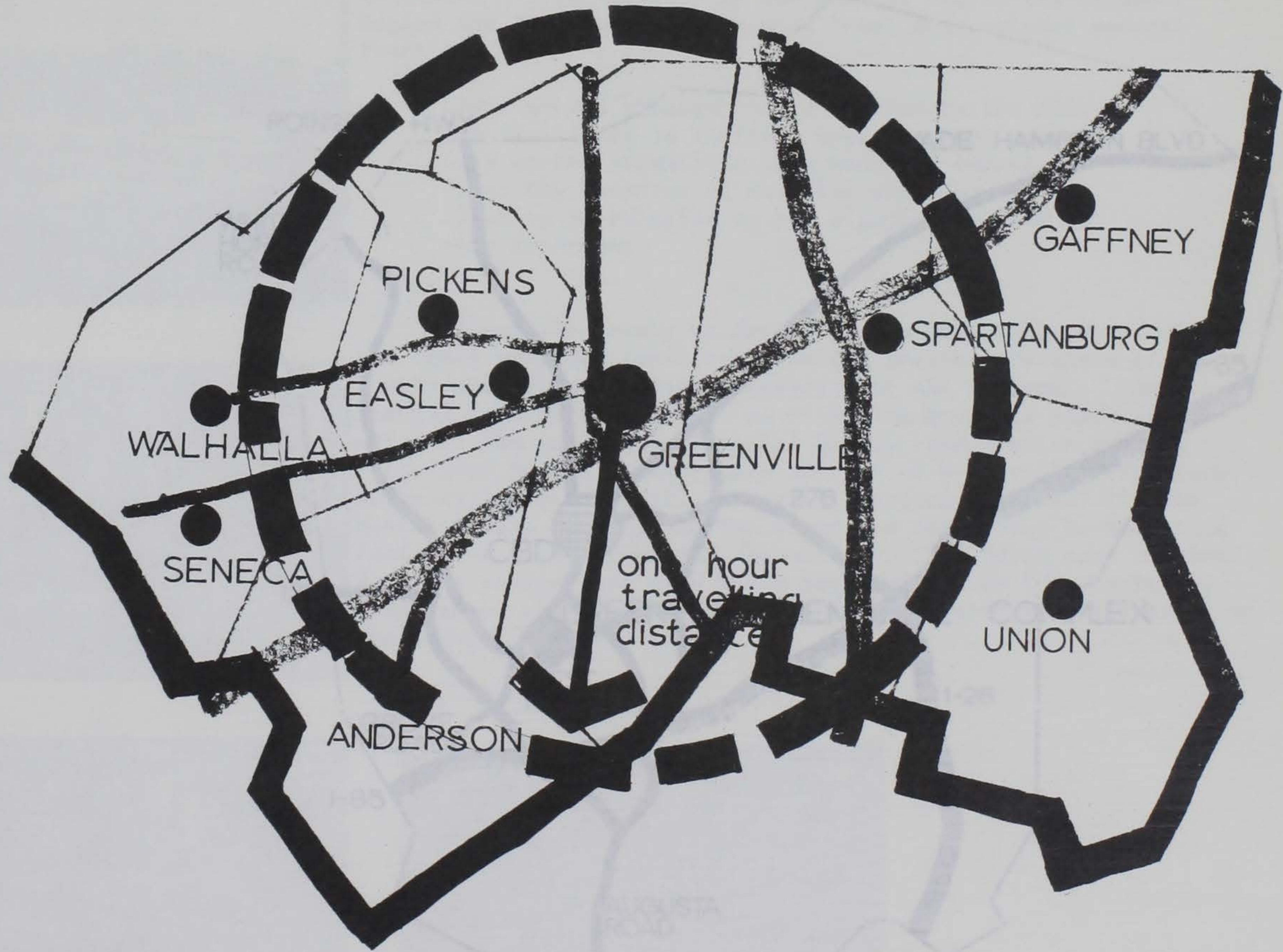
Programs and facilities for the physically handicapped could be coordinated and developed in a similar manner. According to Dr. Frank Stelling, chief orthopedic surgeon at Shriner's Crippled Childrens Hospital in Greenville, S.C., state-wide regional centers for physically handicapped children could easily be established in the urban areas of Greenville, Columbia, and Charleston. Coordination of existing programs and new facilities could give the state of South Carolina comprehensive care capabilities from infancy through adulthood.

Because of this author's personal relationship with the Piedmont Region, consisting of Oconee, Pickens, Anderson, Greenville, Spartanburg, Cherokee and Union counties, this area was selected as the service catchment area for the facility. A brief investigation of the Piedmont Region in relation to specialized medical personnel, facilities, population, and transportation networks indicated that the city of Greenville, in Greenville County, was the medical, population, and transportation center of the



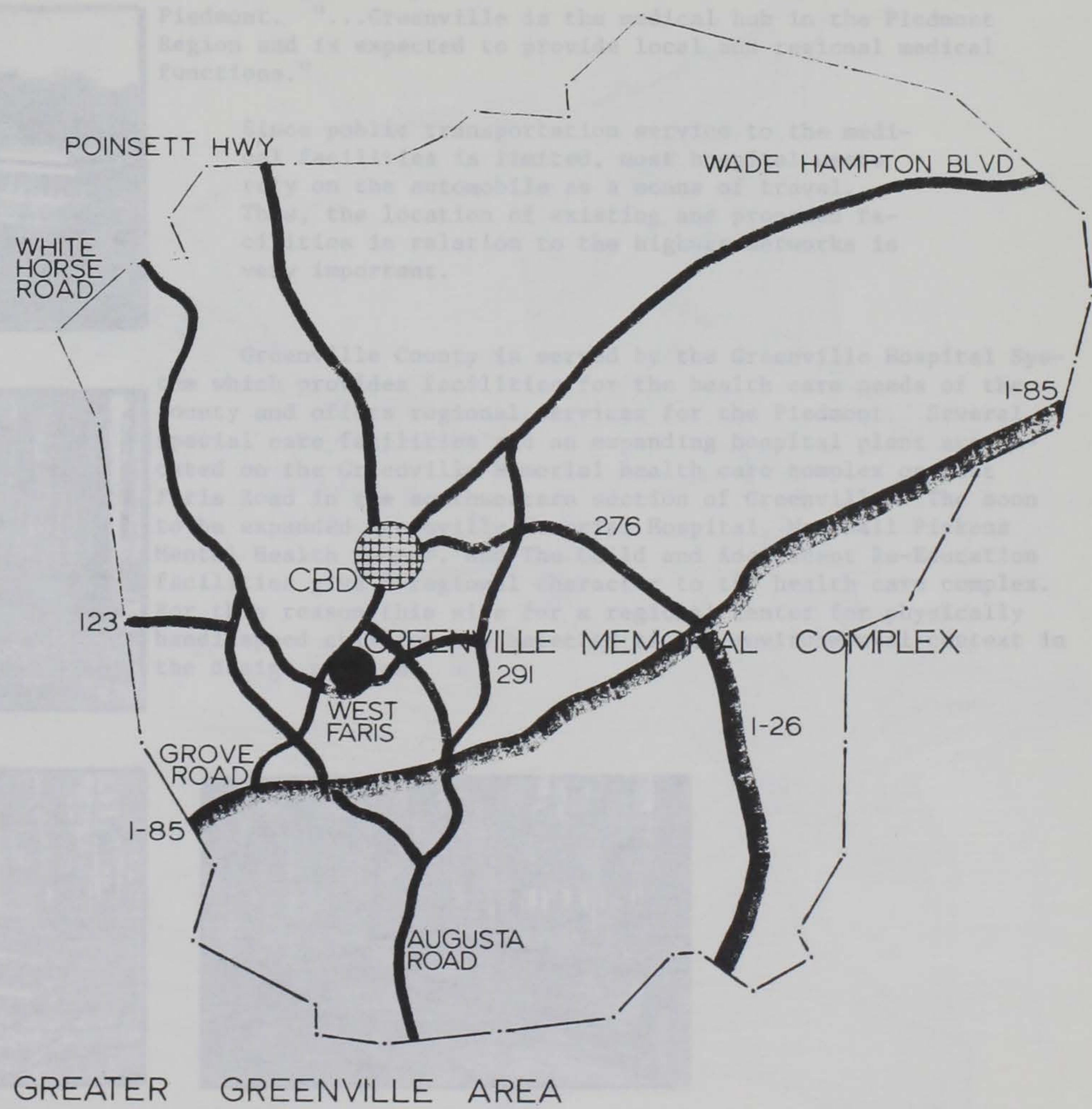


PROPOSED STATEWIDE SYSTEM OF CENTERS FOR THE PHYSICALLY HANDICAPPED, MENTALLY ALERT CHILD



PIEDMONT REGION

CLINTON UNIVERSITY LIBRARY



THE SITE:

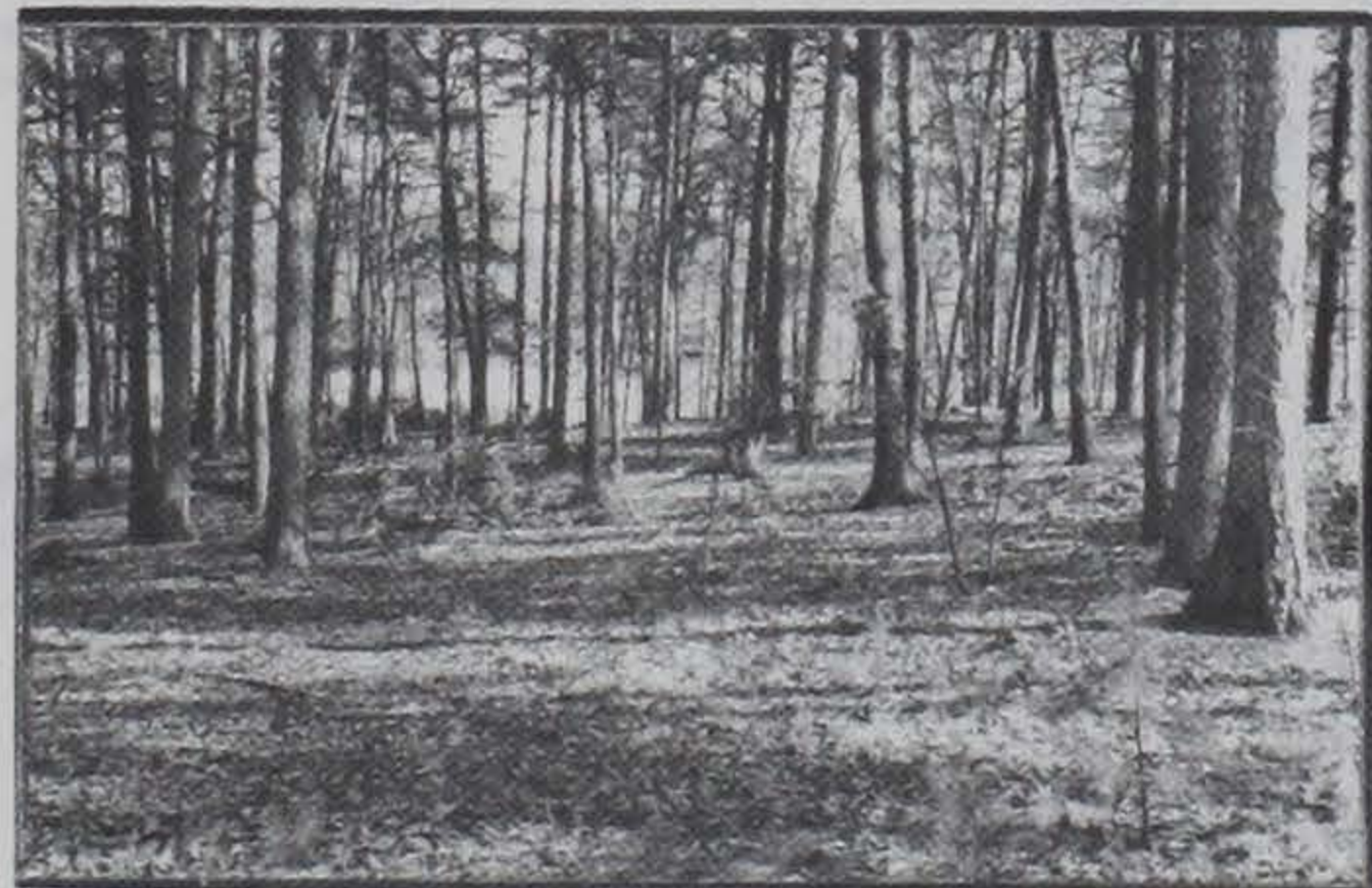
CLEMSON UNIVERSITY LIBRARY



Piedmont. "...Greenville is the medical hub in the Piedmont Region and is expected to provide local and regional medical functions."

Since public transportation service to the medical facilities is limited, most hospital users rely on the automobile as a means of travel. Thus, the location of existing and proposed facilities in relation to the highway networks is very important.

THE SITE:



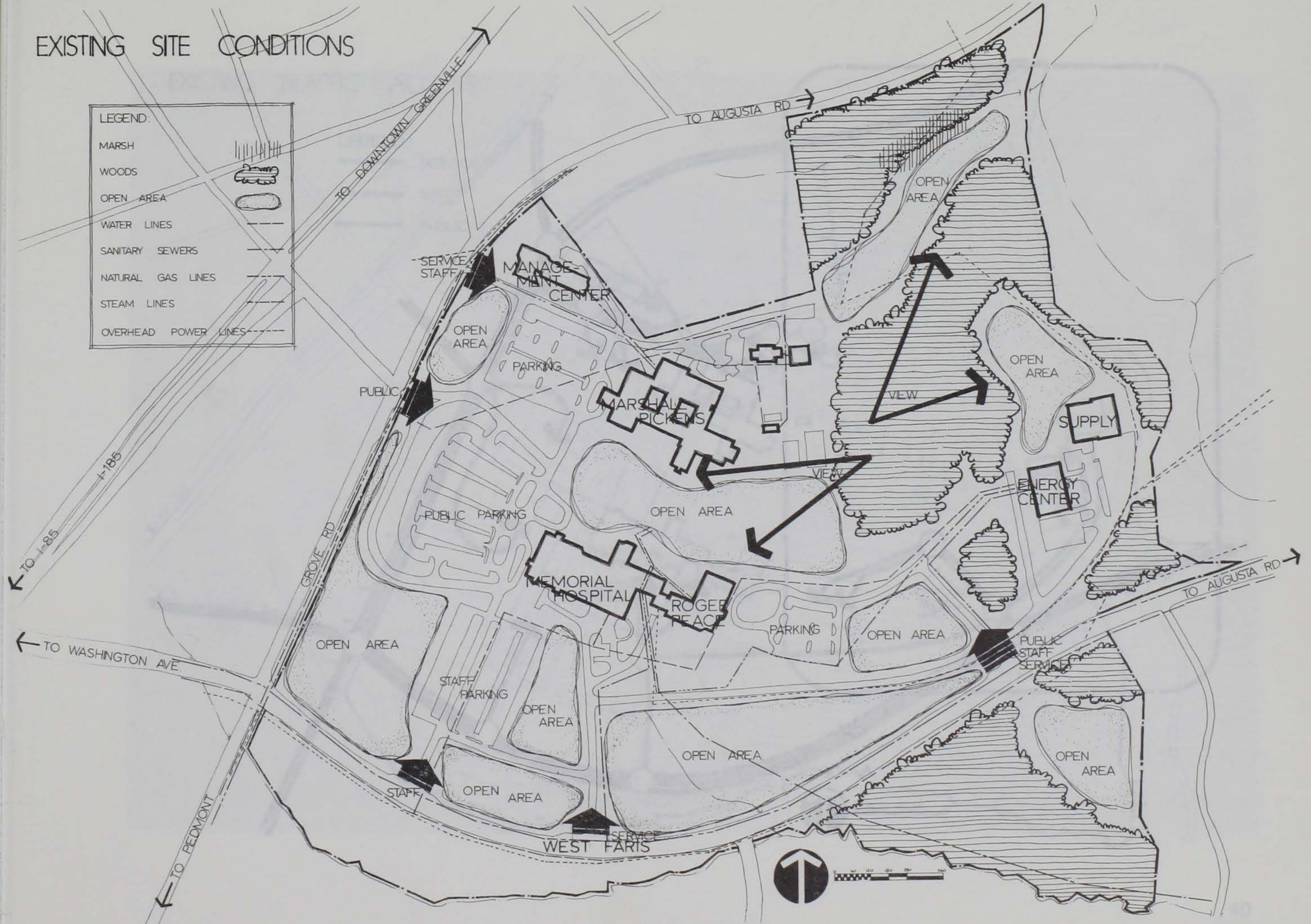
Greenville County is served by the Greenville Hospital System which provides facilities for the health care needs of the county and offers regional services for the Piedmont. Several special care facilities and an expanding hospital plant are located on the Greenville Memorial health care complex on West Faris Road in the southwestern section of Greenville. The soon to be expanded Greenville Memorial Hospital, Marshall Pickens Mental Health Center, and The Child and Adolescent Re-Education facilities give a regional character to the health care complex. For this reason this site for a regional center for physically handicapped children was selected as the environmental context in the design problem.



EXISTING SITE CONDITIONS

LEGEND:




MARSH	
WOODS	
OPEN AREA	
WATER LINES	
SANITARY SEWERS	
NATURAL GAS LINES	
STEAM LINES	
OVERHEAD POWER LINES	

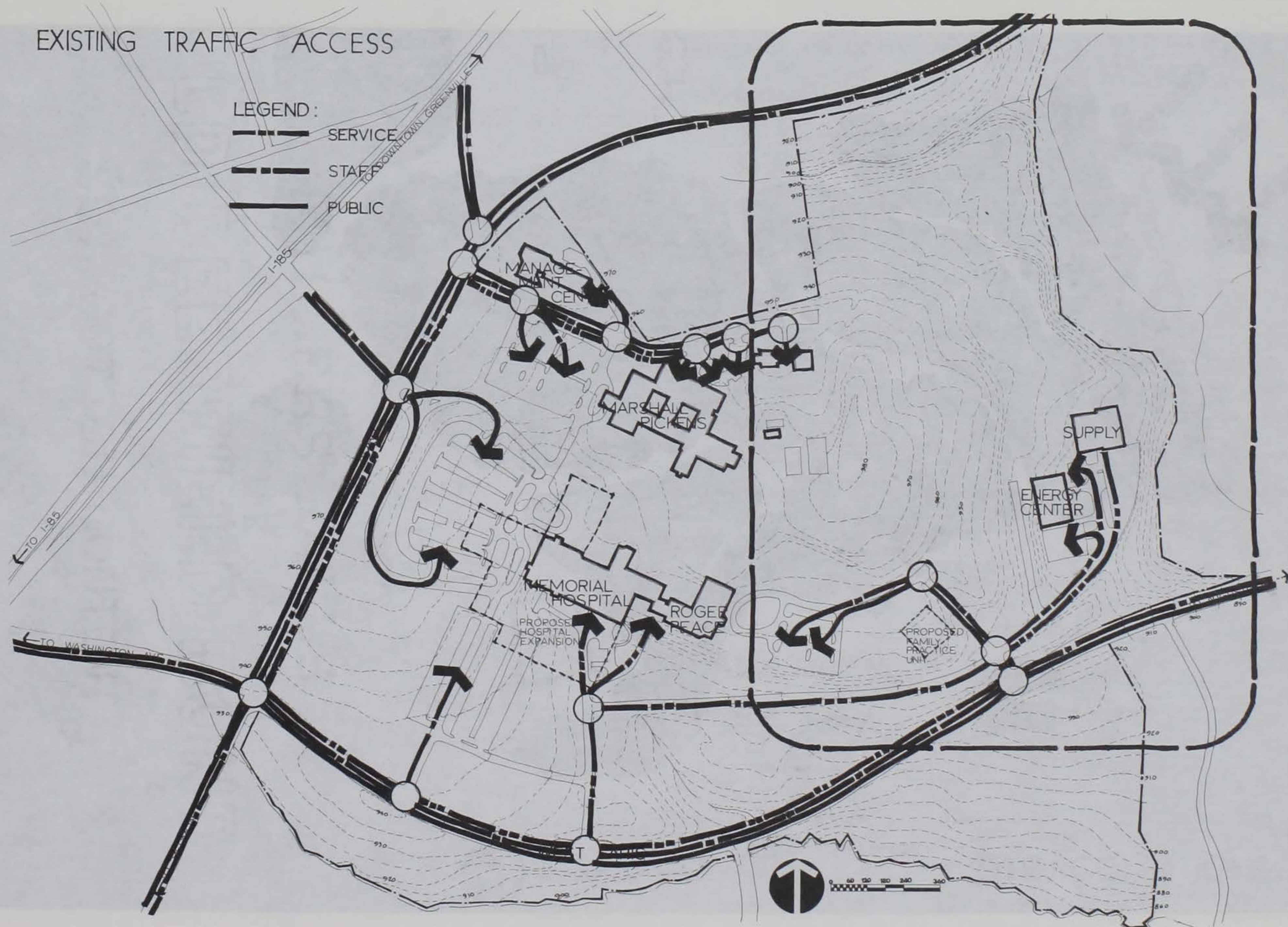


Clintson University Library

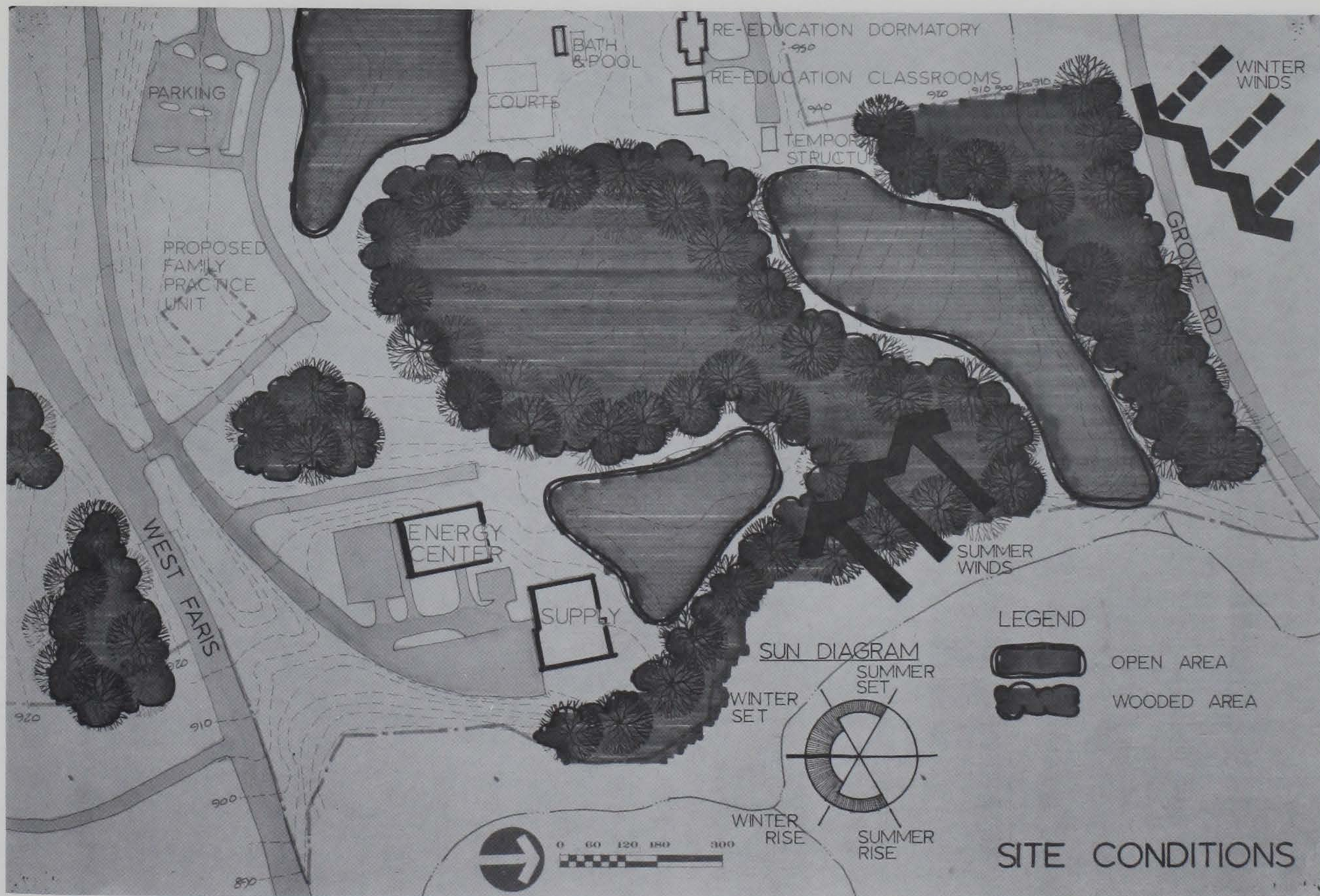
EXISTING TRAFFIC ACCESS

LEGEND:

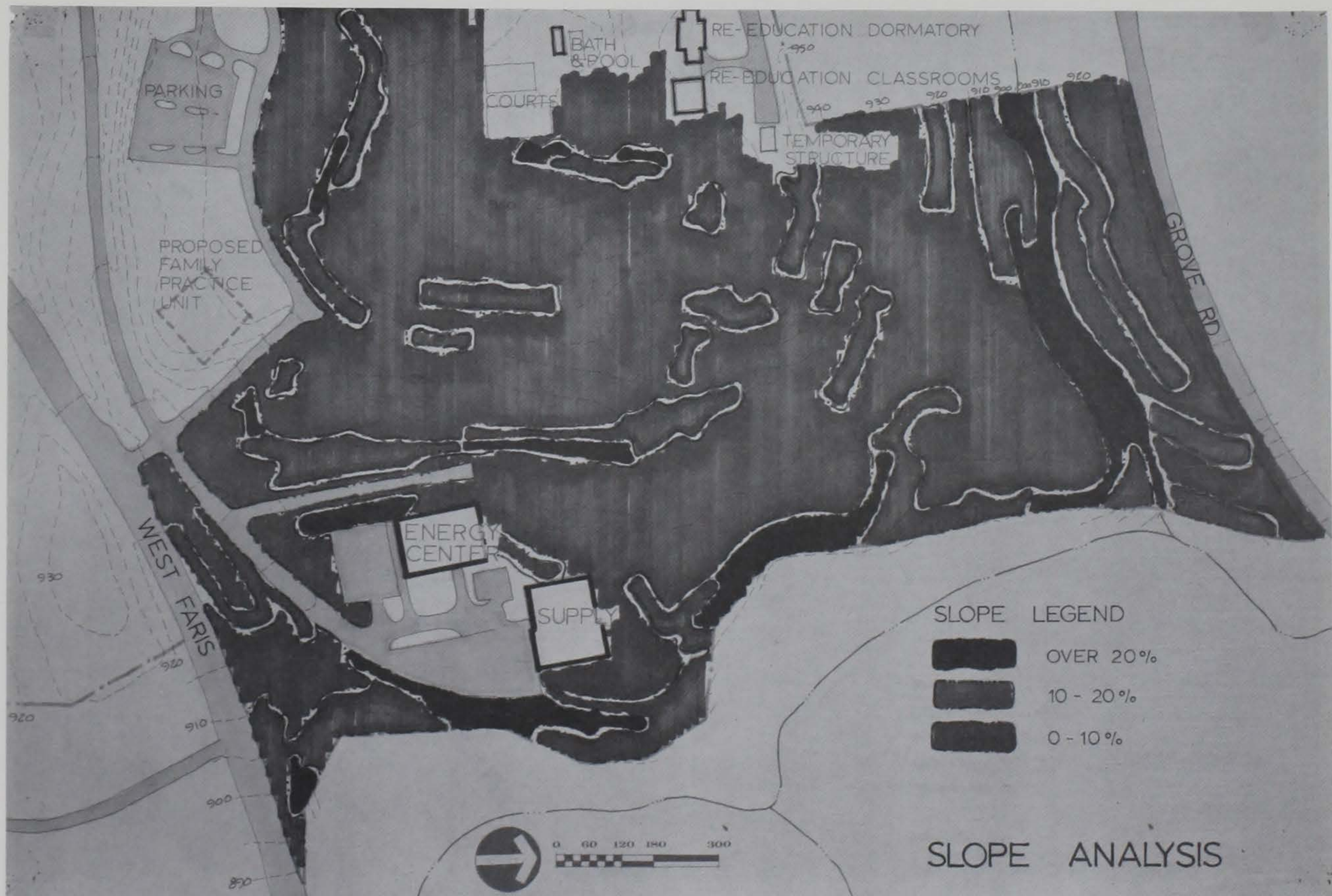
-  SERVICE
-  STAFF
-  PUBLIC

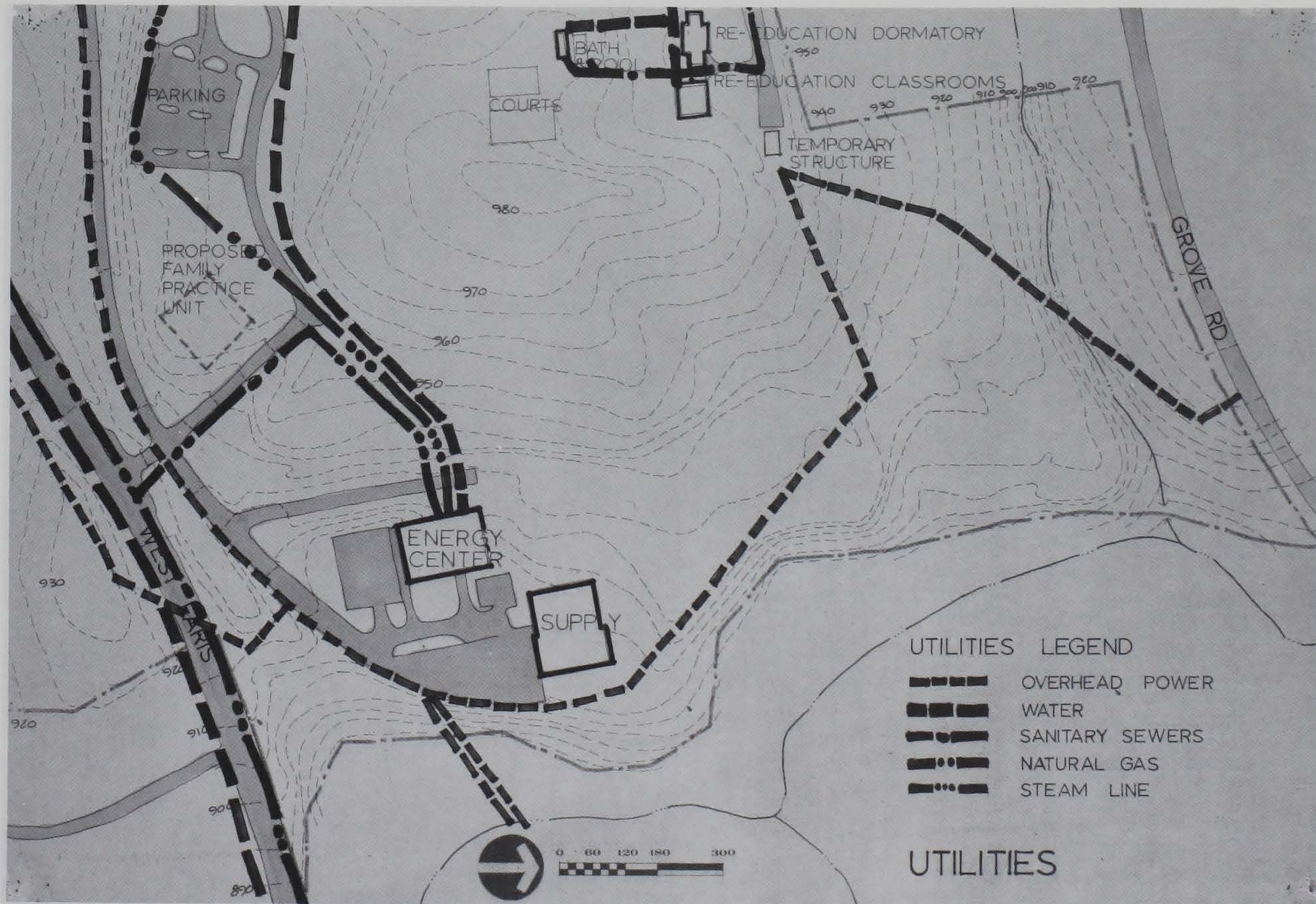


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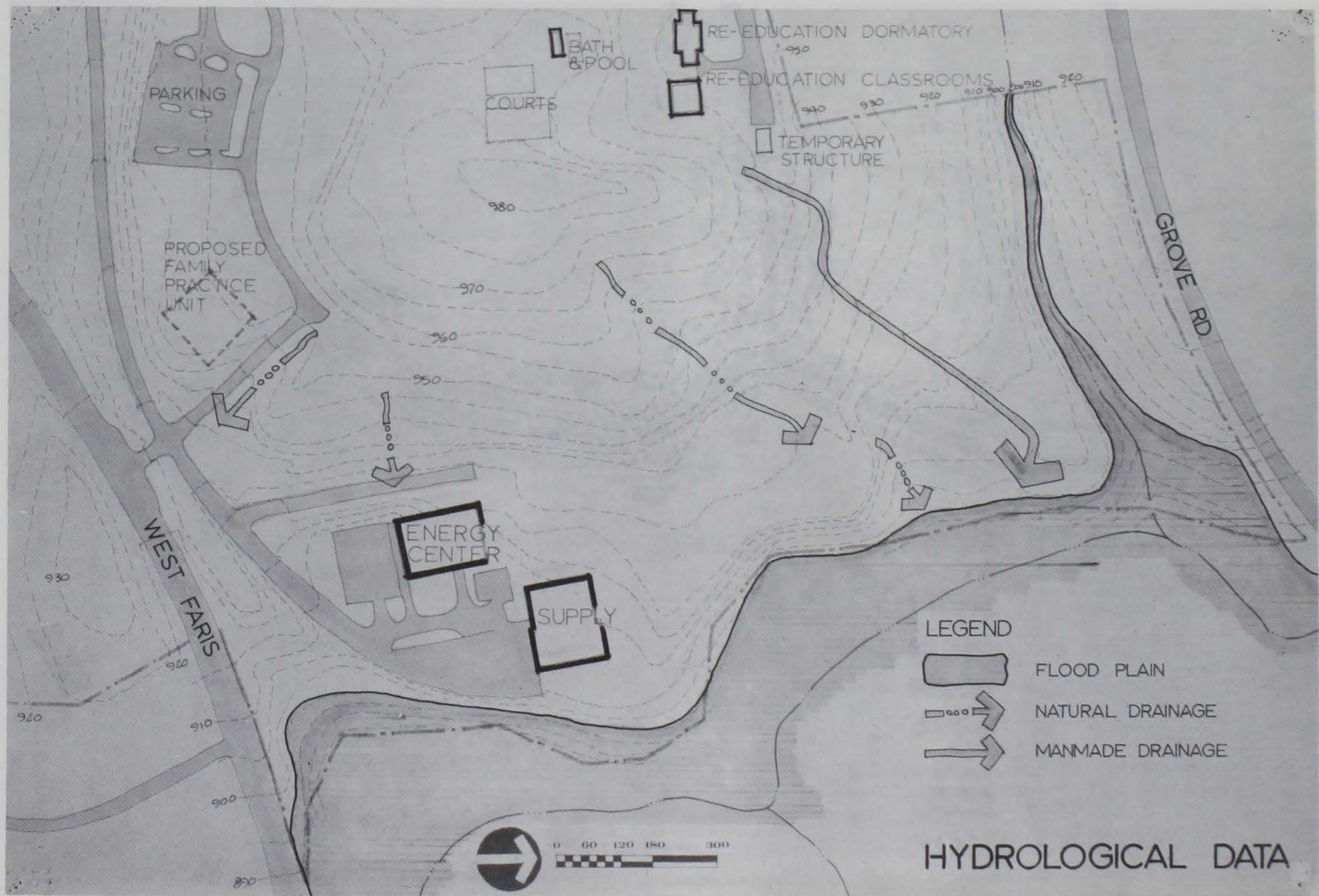


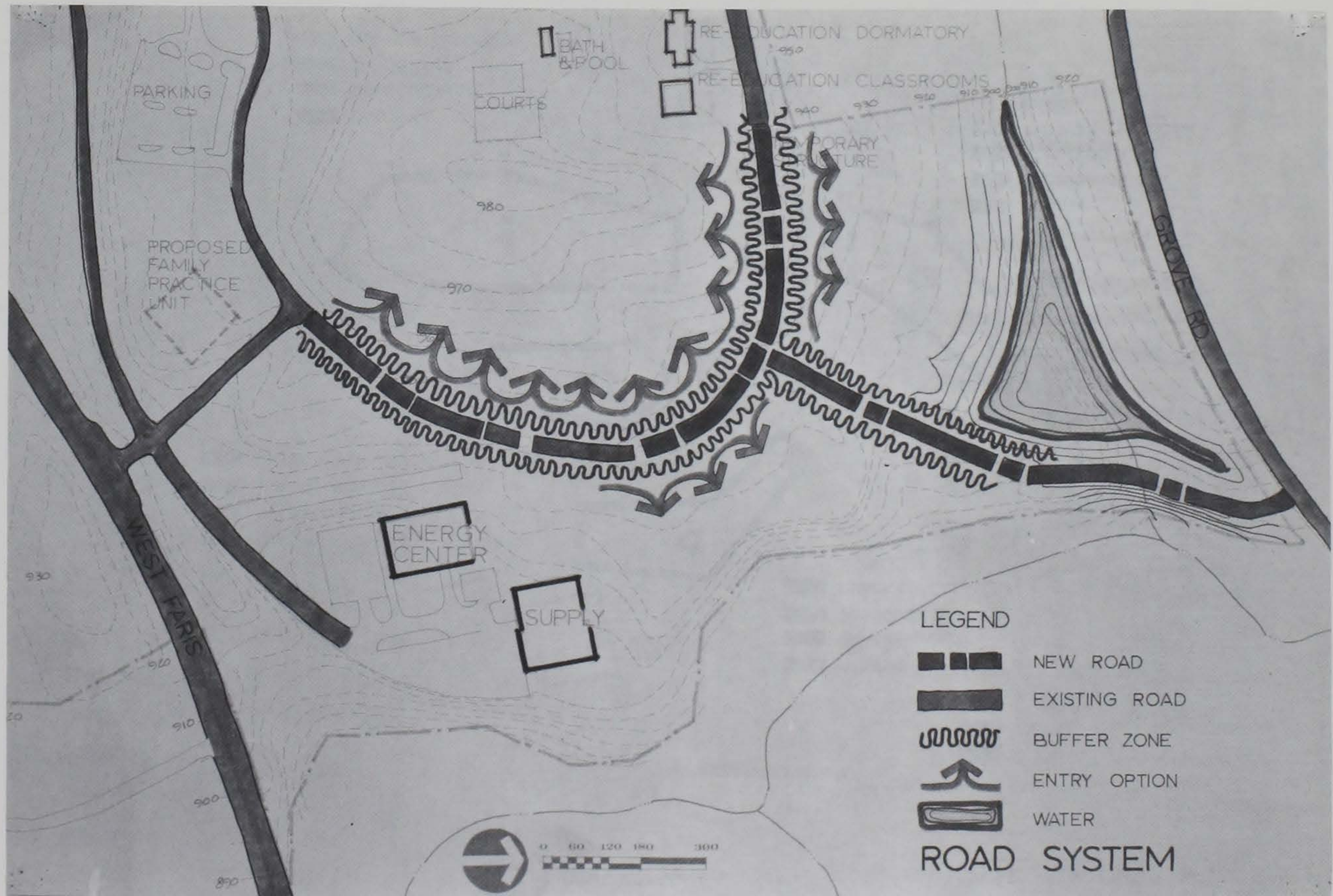
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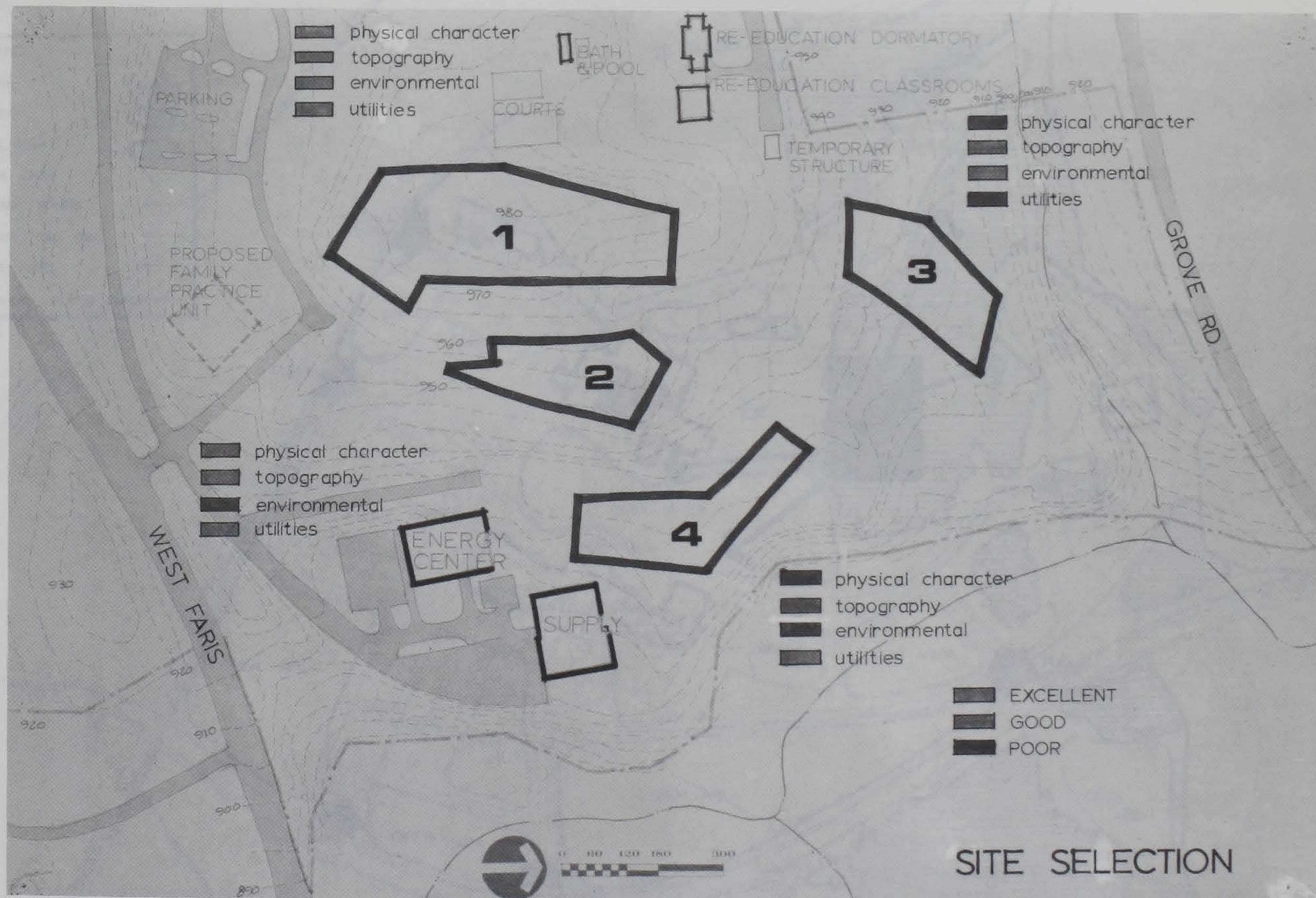


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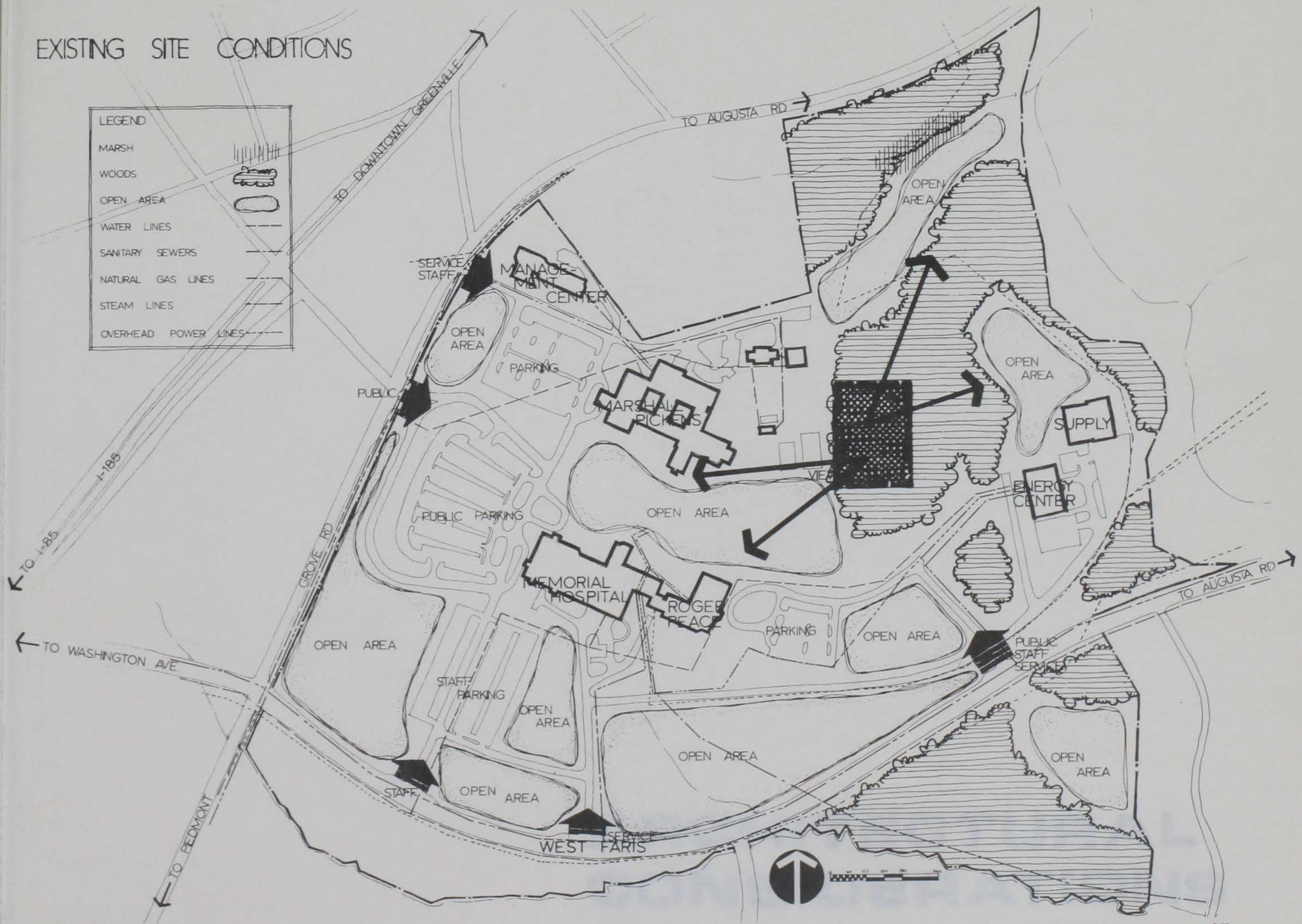


EXISTING SITE CONDITIONS



EXISTING SITE CONDITIONS

LEGEND	
MARSH	
WOODS	
OPEN AREA	
WATER LINES	
SANITARY SEWERS	
NATURAL GAS LINES	
STEAM LINES	
OVERHEAD POWER LINES	



**ARCHITECTURAL
CONSIDERATIONS**

OF PENNSYLVANIA UNIVERSITY LIBRARY

ARCHITECTURAL PROPOSAL:

The purpose of this study was to formulate the program and physical development of an innovative regional facility which would prepare the physically handicapped child in the Piedmont Region of South Carolina to move into the mainstream of community life.

Parameters were established and used as the design criteria which formed the basis for the architectural solution. Using this author's problem seeking and problem solving techniques the following concept and schematic drawings were developed. This solution is not intended to answer all of the complex problems which would be generated by such a state wide system of regional facilities, but rather an attempt to identify one possible alternative to the existing state delivery system.

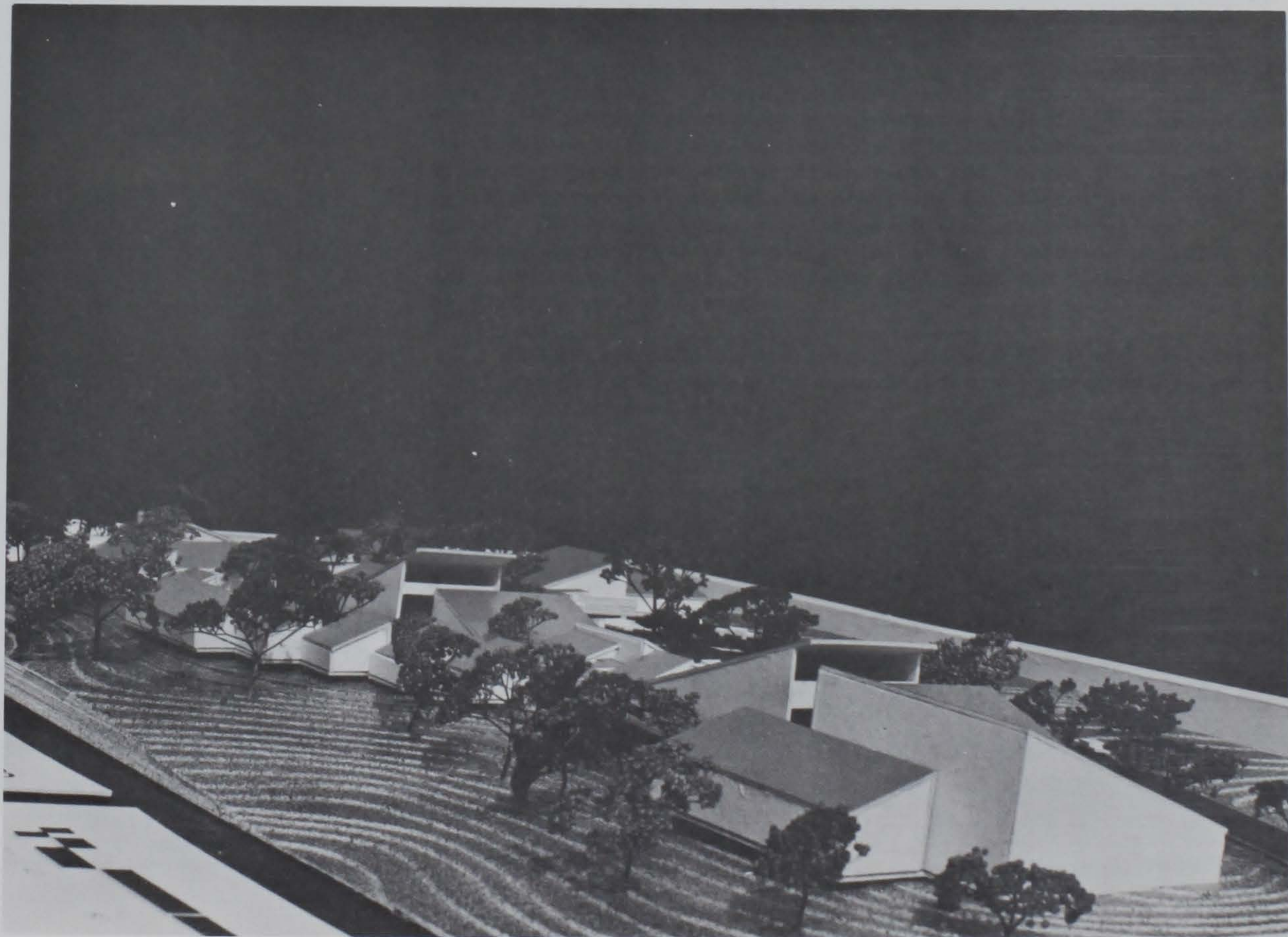
The "street" concept formed the basis for the physical plan of the facility providing an external circulation spine and interaction area for the children. The center was divided up into three major areas: the residential units (living), the educational units (school), and the therapeutic units (recreation).

Three residential units were provided to house children who for educational, family, or logistical reasons needed to remain at the center on a five day resident basis. These children would return to their homes every week-end to be with their families. The three residential units are based on the age grouping concept discussed earlier in this study on page 27. Each child is given a wide range of private to public spaces from his own room to the indoor play spaces. A control station for the residential staff, isolation room, and visitor's suite for parents and other visitors completes the typical residential unit.

A covered drop-off area for the day students adjoins the covered canopy of the residential units to form the street link to the school. Both residential and day children begin each day at the same point reinforcing the concept of the separation between home and school.

The classrooms are designed to initially hold eight students

is such but are large enough to accommodate an additional four per-



APPROXIMATE UNIVERSITY LIBRARY

in each but are large enough to accommodate an additional four pupils providing for the additional expansion of the educational program without the need for an additional expansion of the school's physical plant. (In talking to health care professionals they felt that day student enrollment would probably increase while residential enrollment should remain relatively constant.) The interior play space is directly adjacent to the classrooms providing areas for outdoor discussions and larger than class size activities to occur as well as providing for recreational functions. These open areas combined with the covered but non-enclosed street give many overprotected and sheltered children easy access to the out of doors so that they can become more aware of their natural environment.

The recreational units form the terminus for the street and provide a gathering space for outside assemblies and before entering the gym or pool areas.

A LIVING-EDUCATIONAL CENTER FOR PHYSICALLY HANDICAPPED
MENTALLY ALERT CHILDREN
ROBERT L. JAMESON



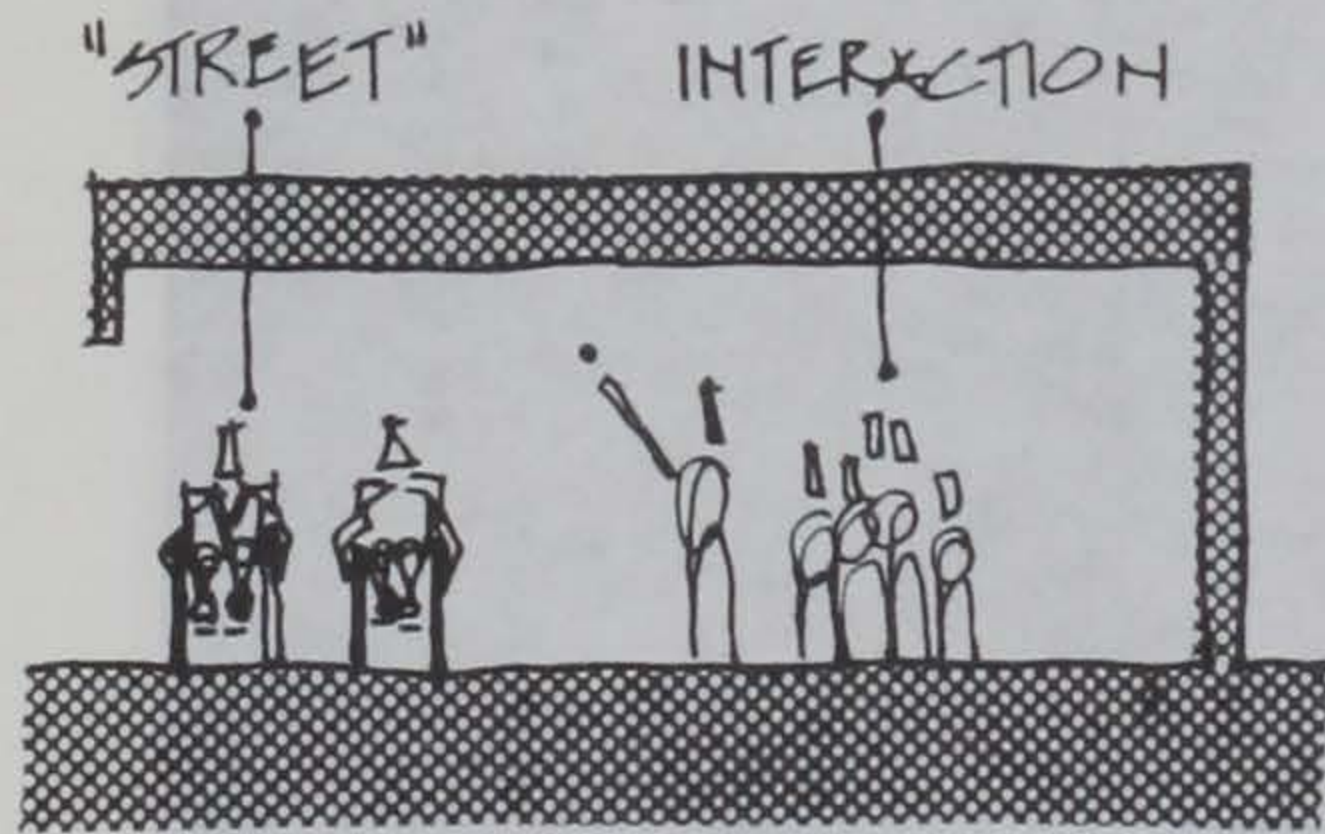
A LIVING-EDUCATIONAL CENTER FOR PHYSICALLY HANDICAPPED
MENTALLY ALERT CHILDREN

ROBERT L. JAMESON

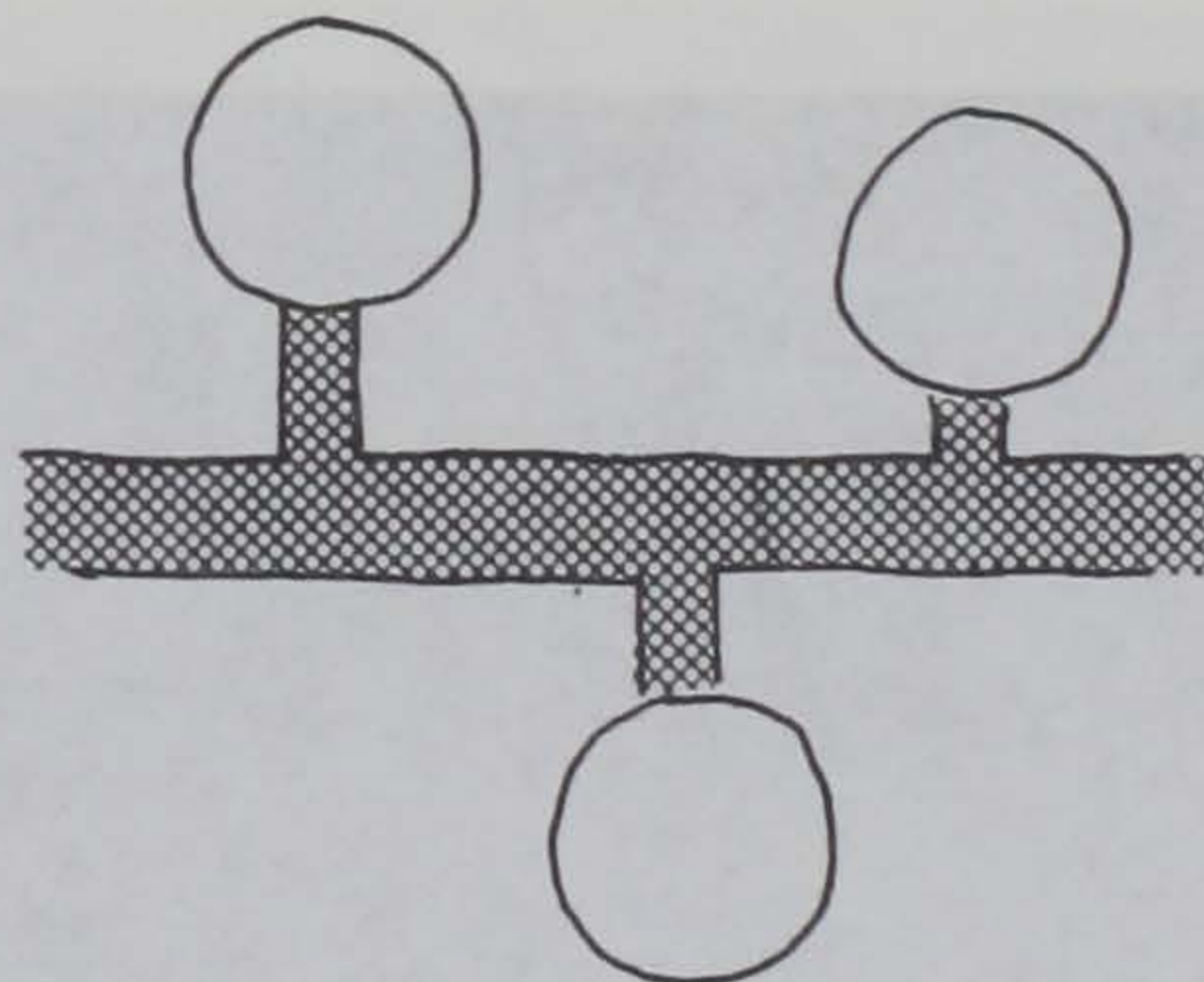
COLLEGE OF ARCHITECTURE

SPRING 1976

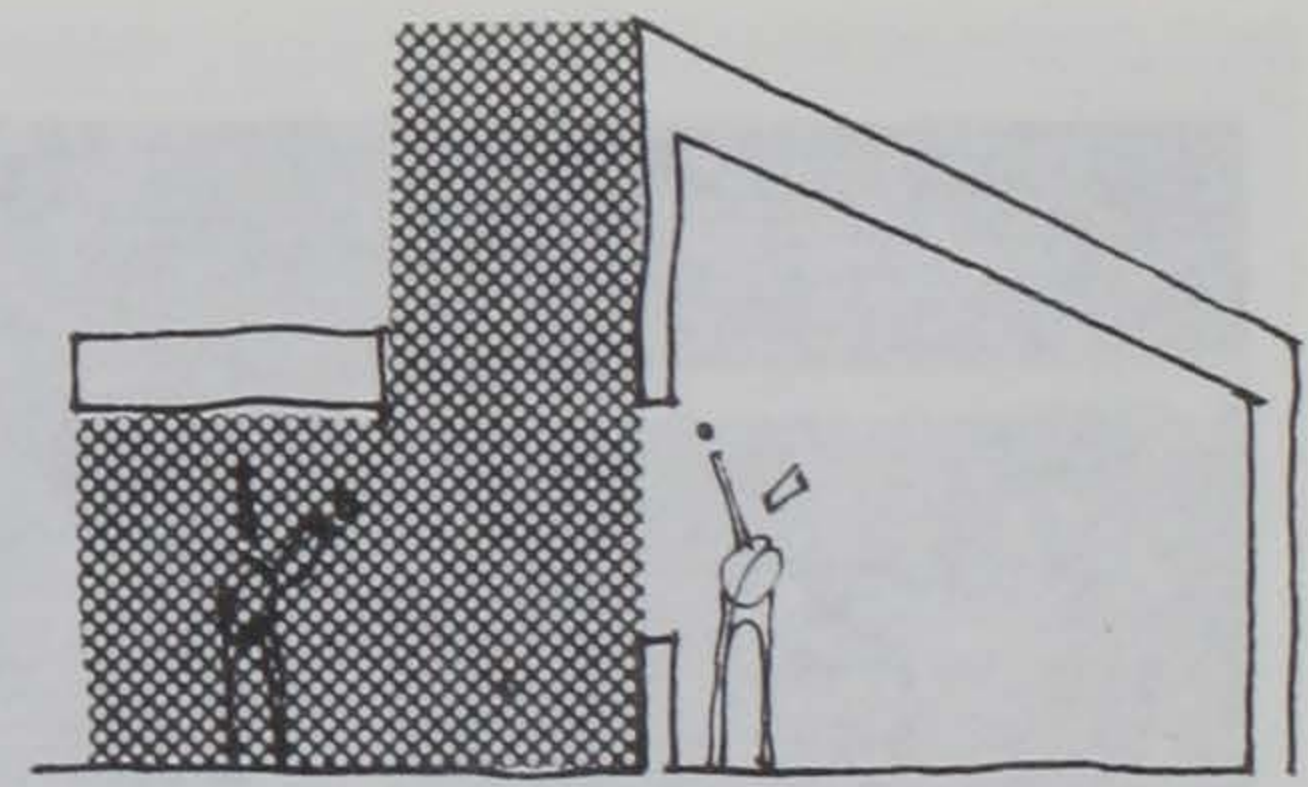




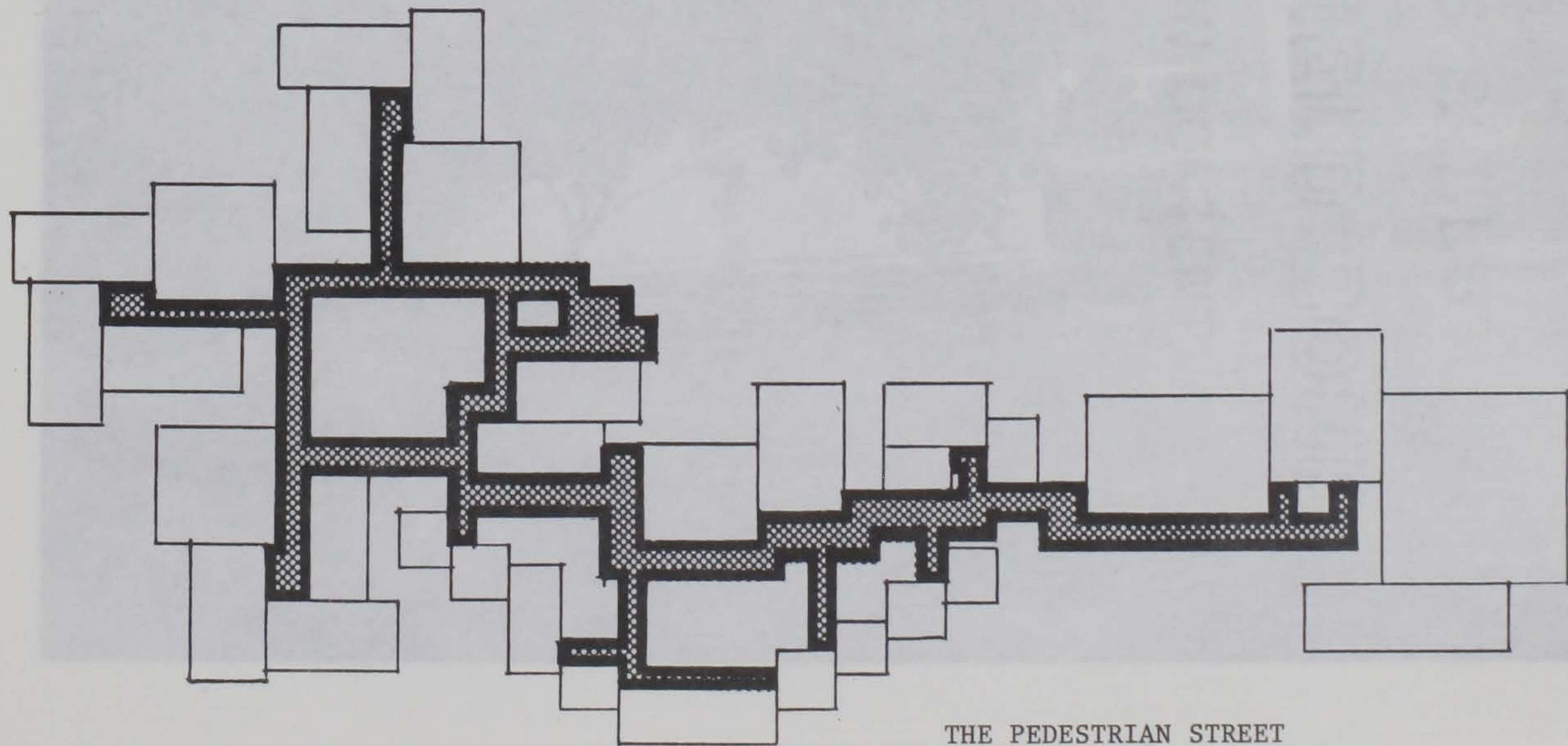
CORRIDOR AS A PEDESTRIAN STREET & INTERACTION AREA



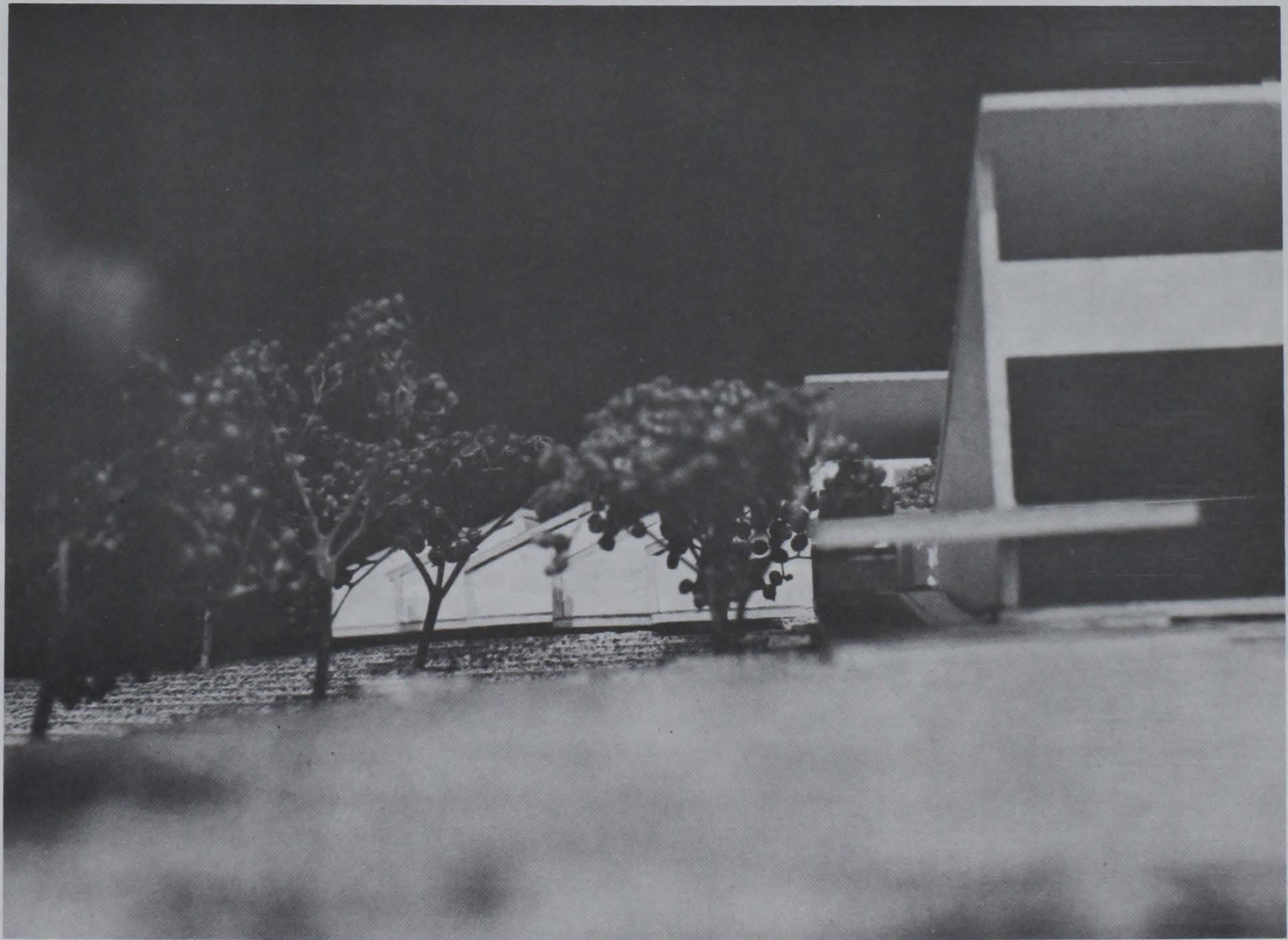
LINKAGE SYSTEM

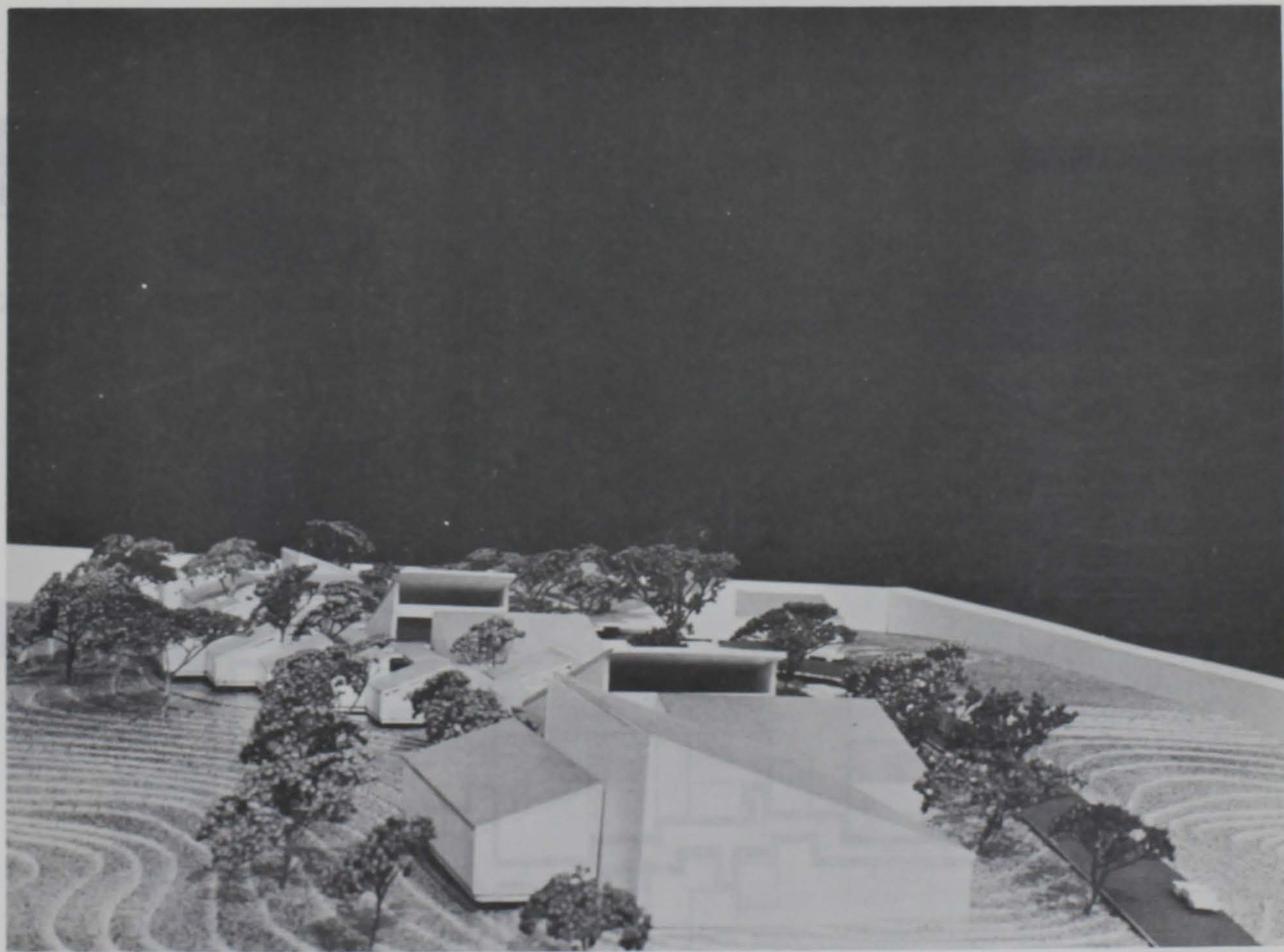


VARIETY IN SCALE

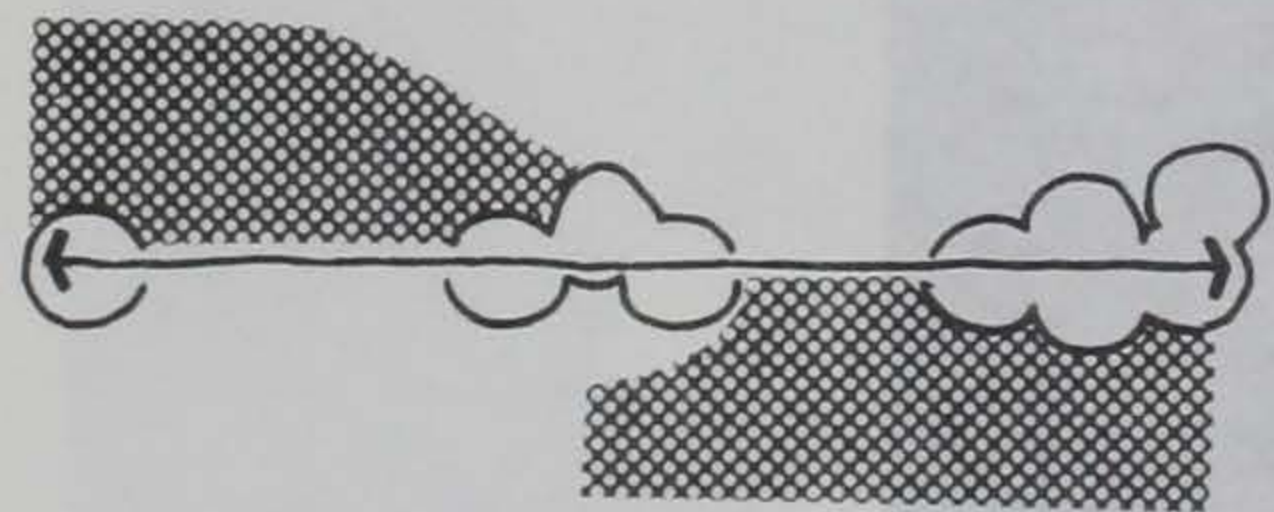


THE PEDESTRIAN STREET





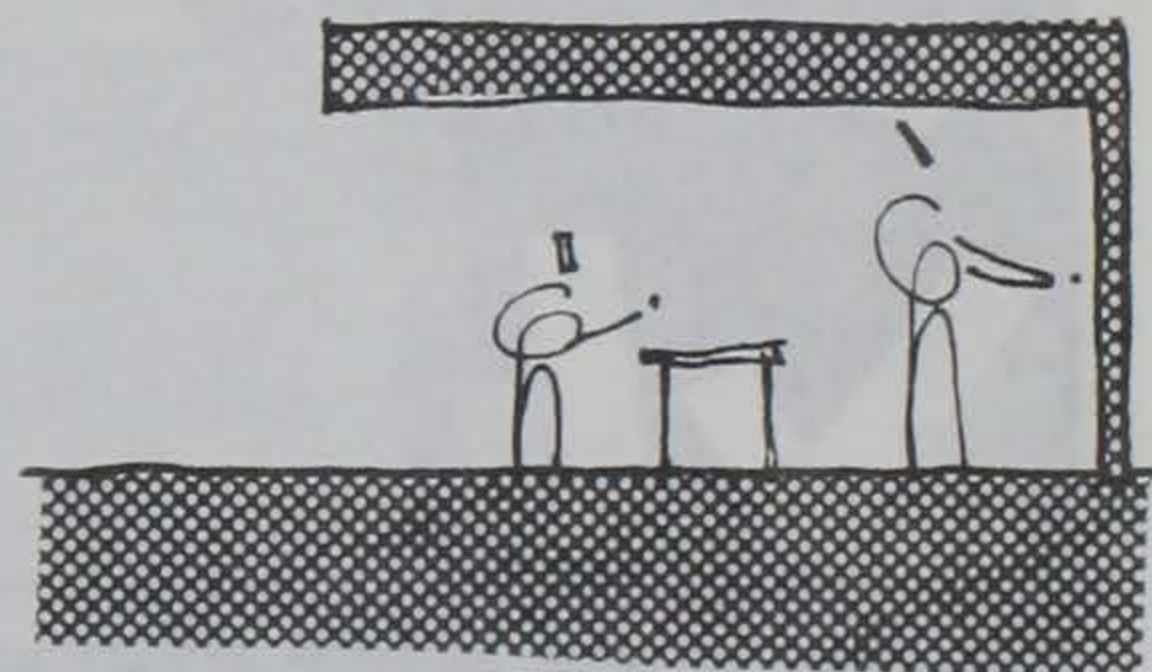
THE RESIDENTIAL ENVIRONMENT



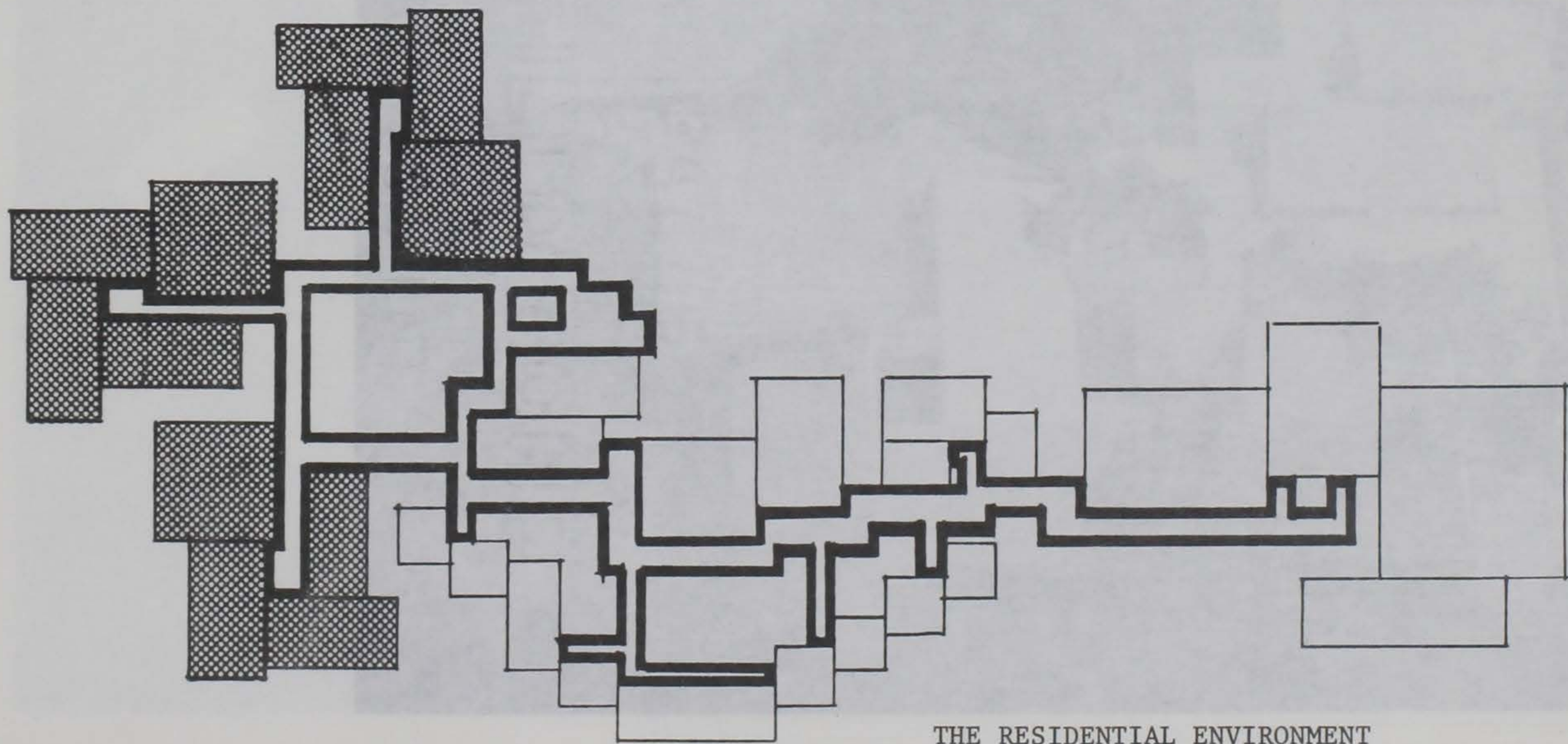
RANGE OF PRIVATE TO PUBLIC



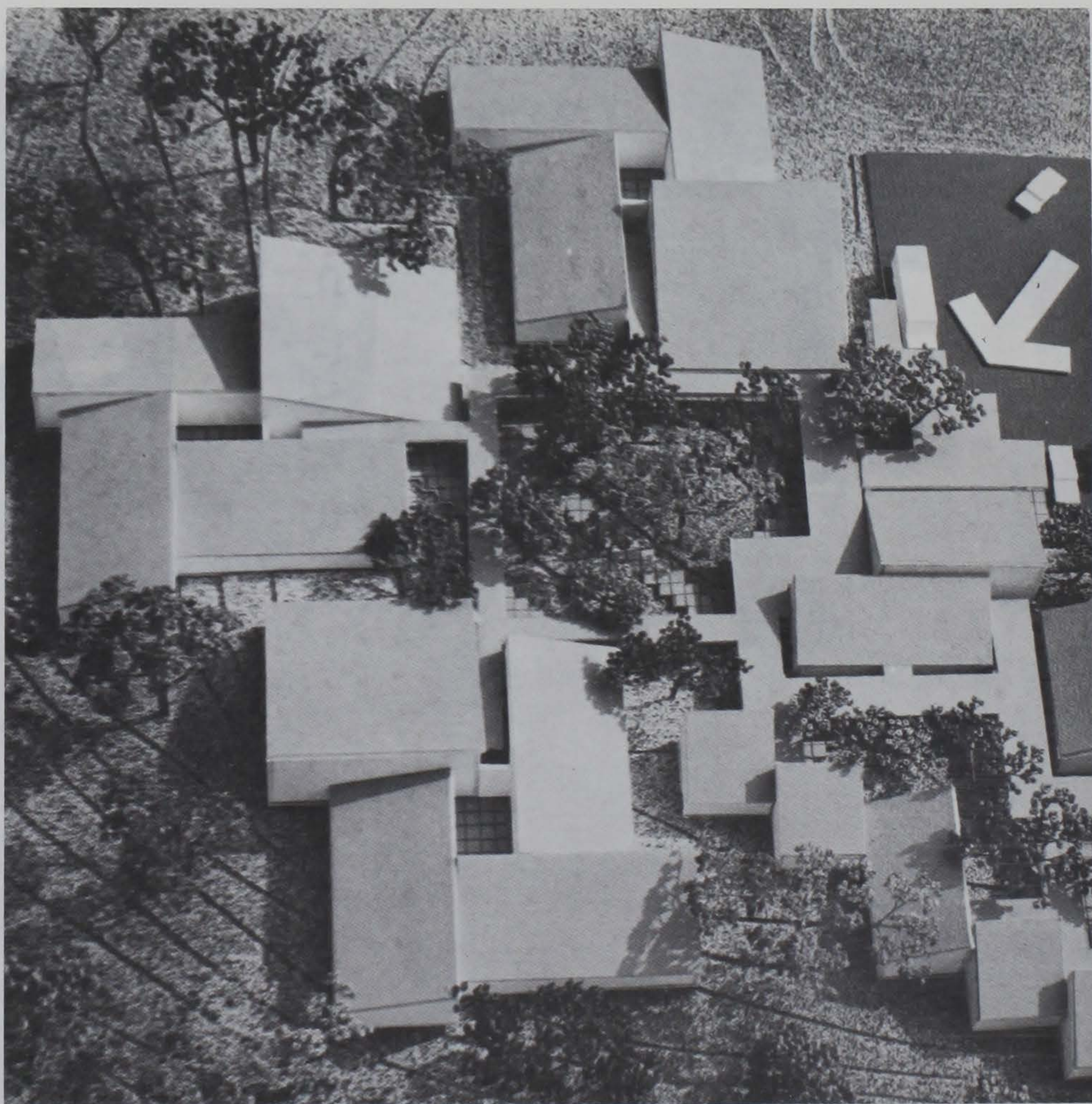
SEPARATION OF LIVING AREAS FROM LEARNING

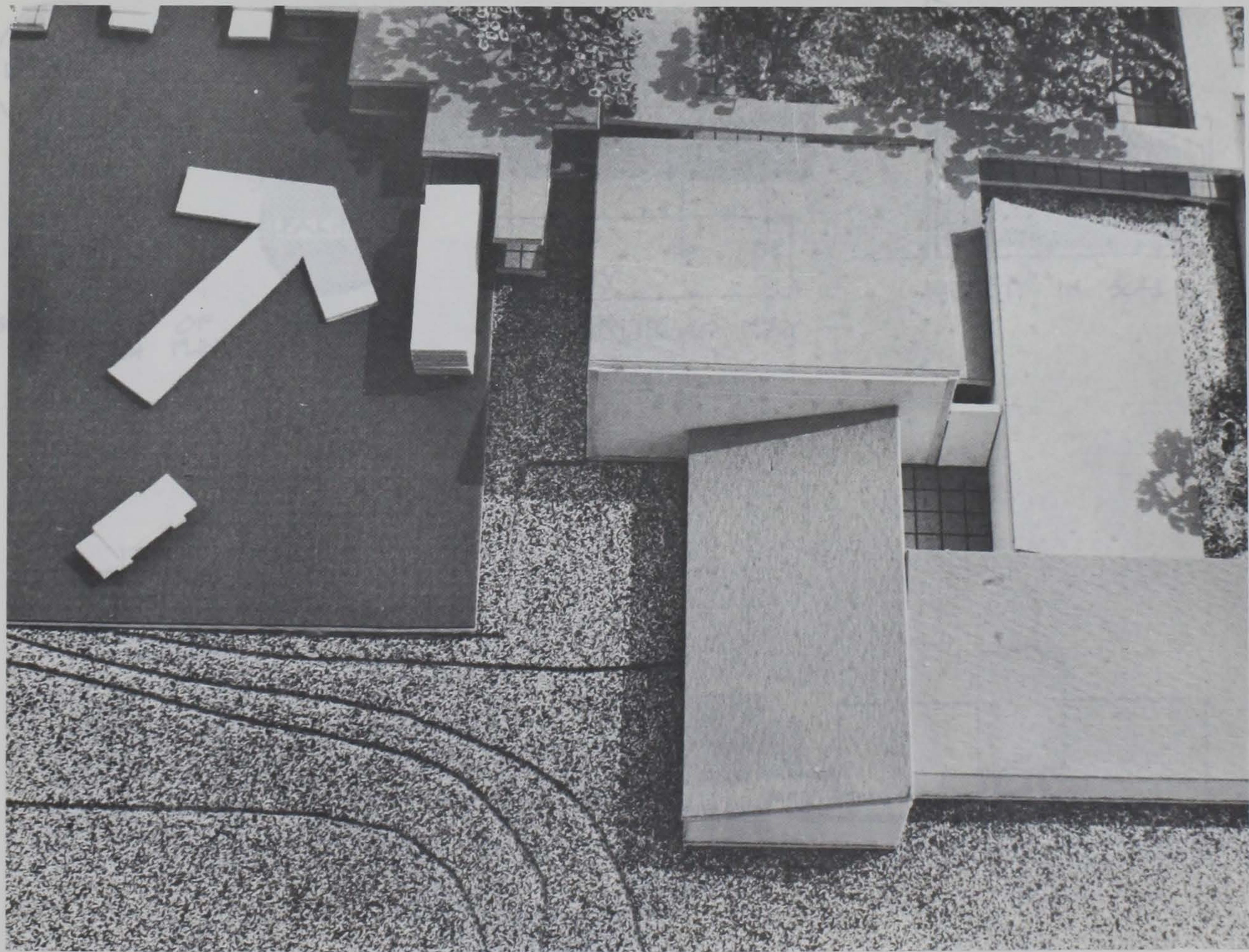


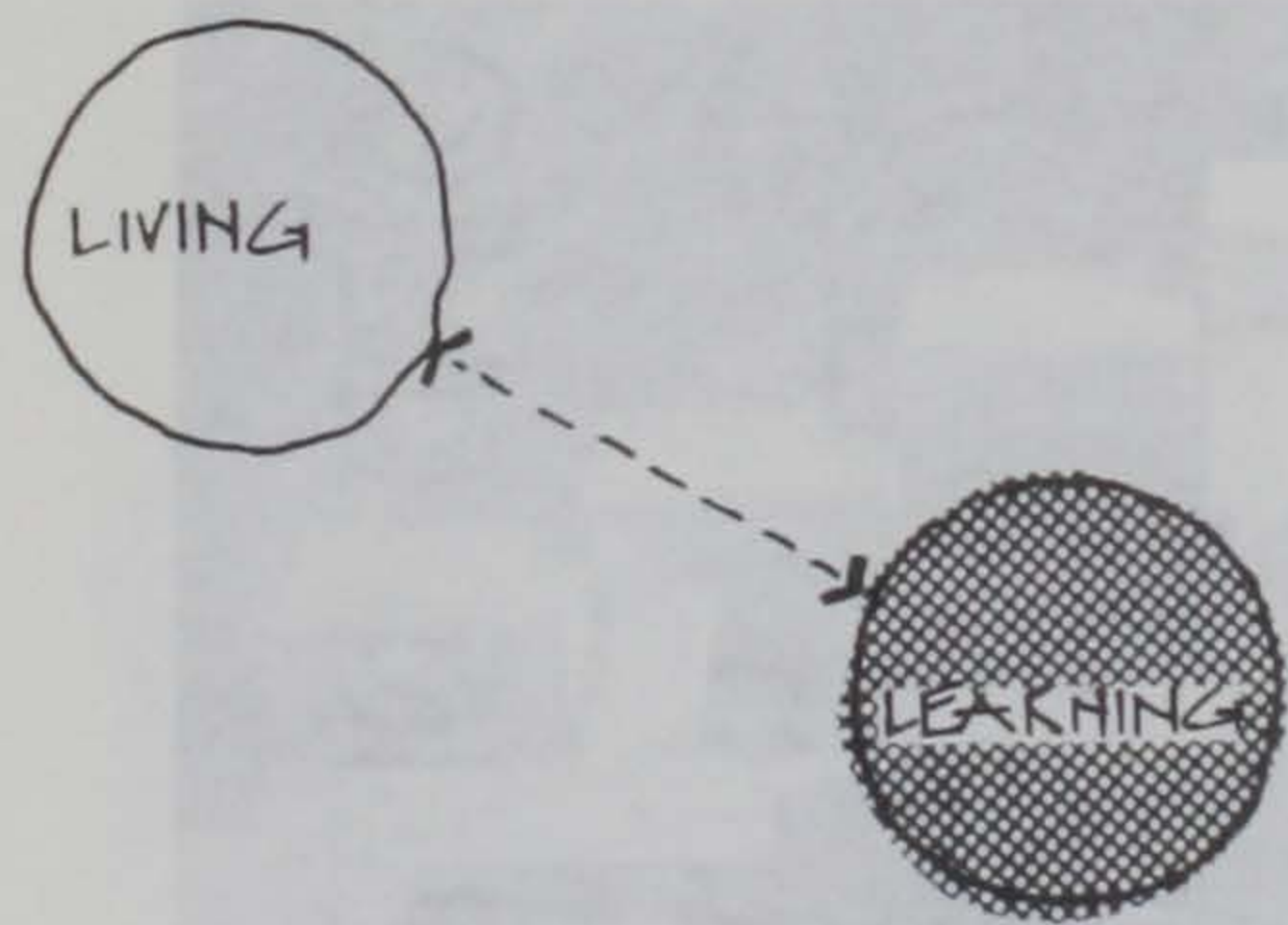
SCALE FOR THE CHILD



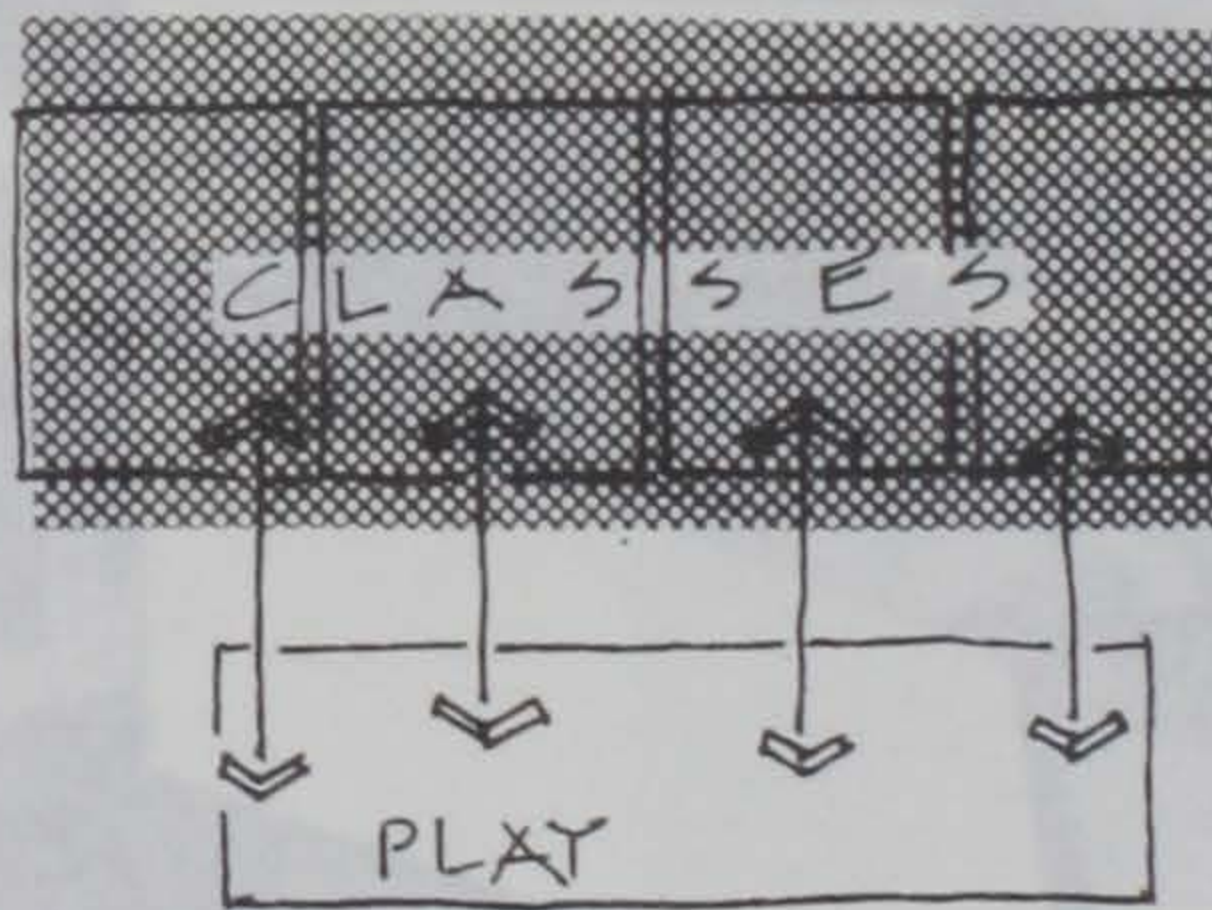
THE RESIDENTIAL ENVIRONMENT



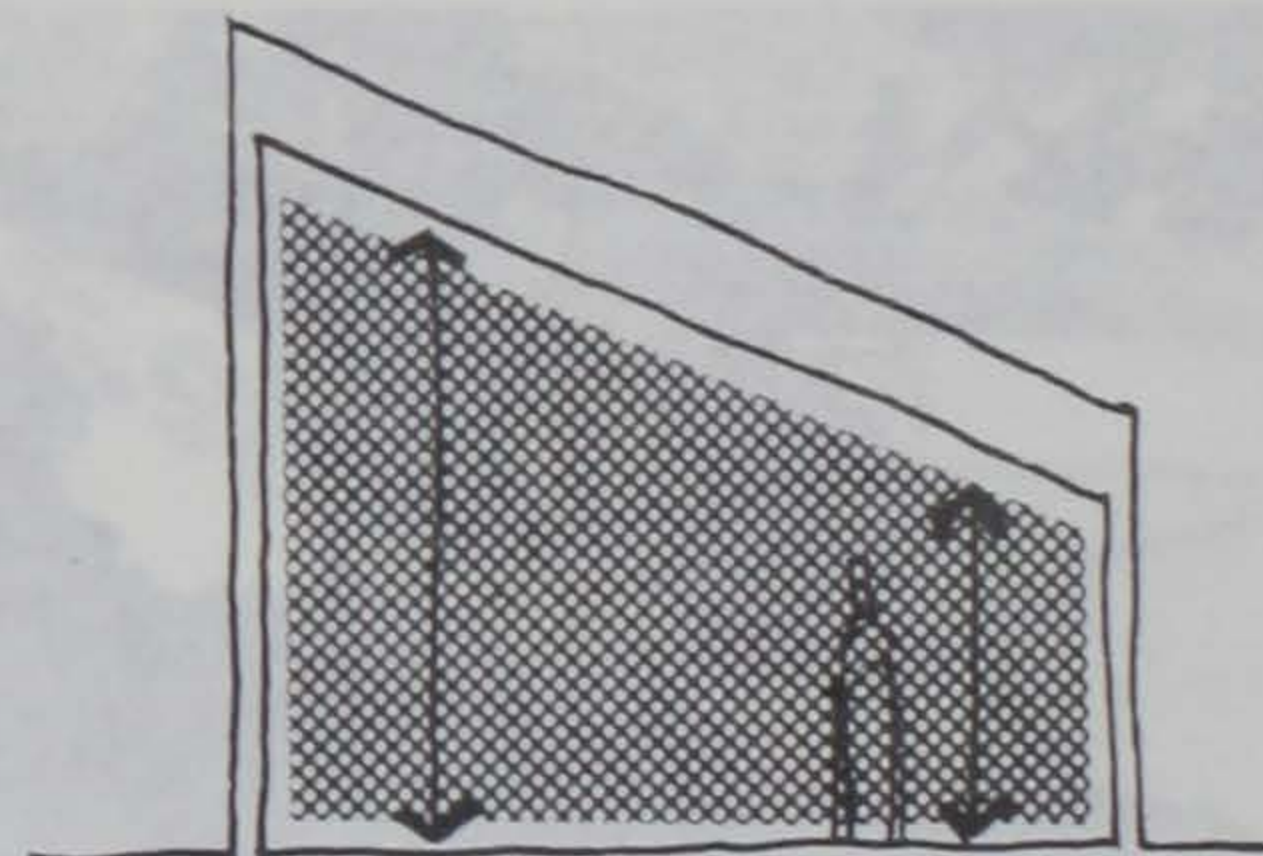




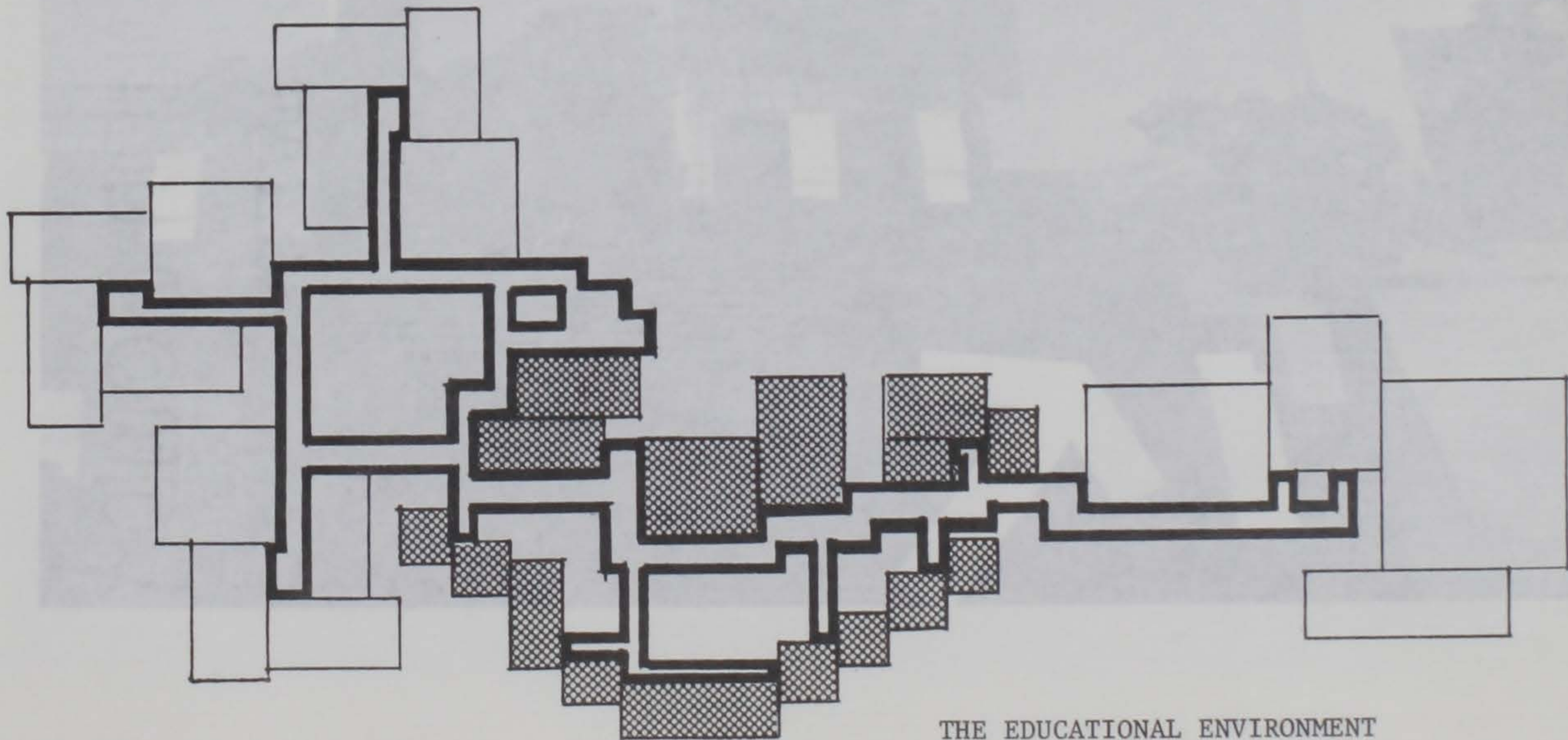
SEPARATION OF LIVING FROM LEARNING FUNCTIONS



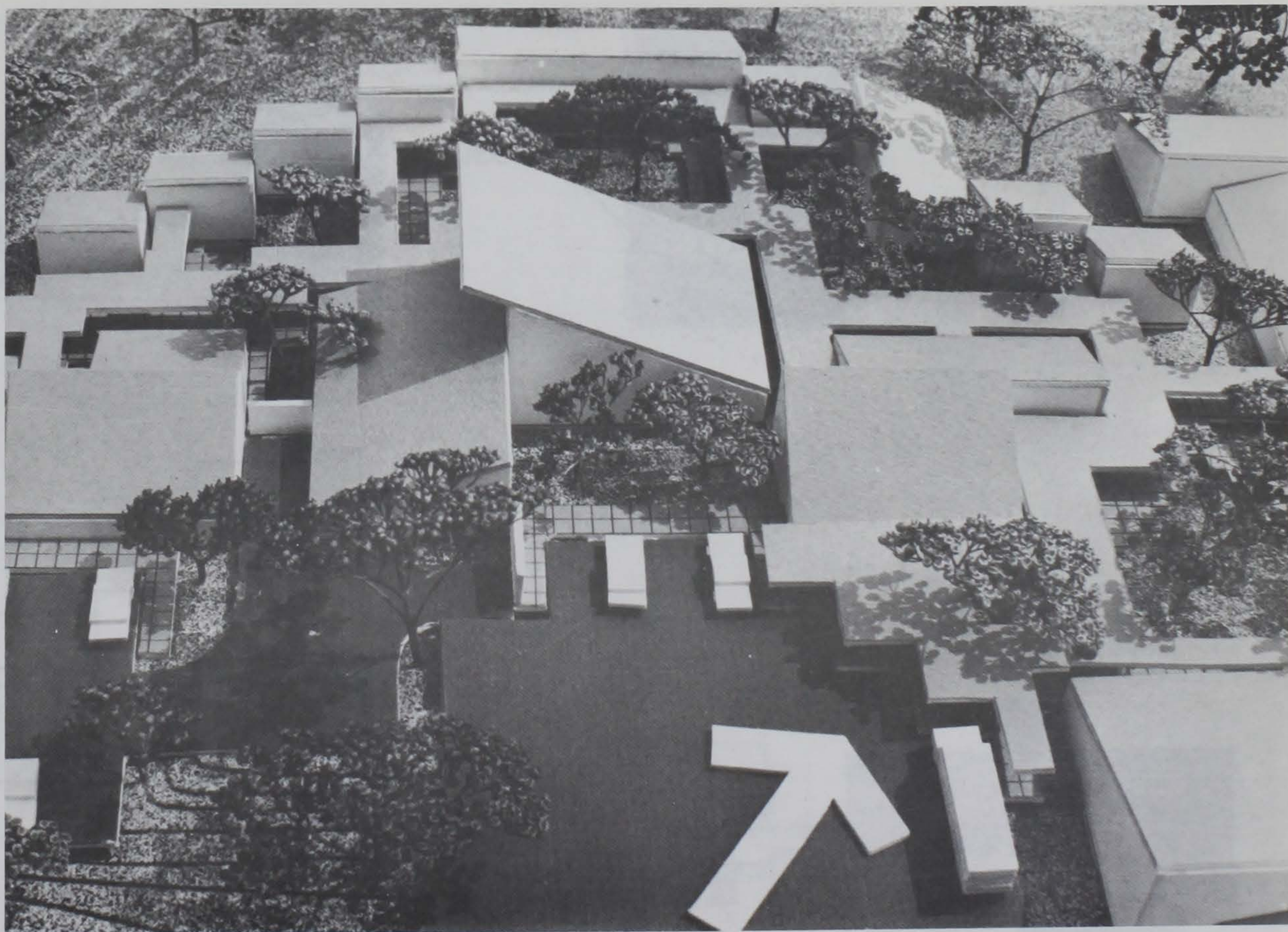
ACCESSIBILITY TO PLAY

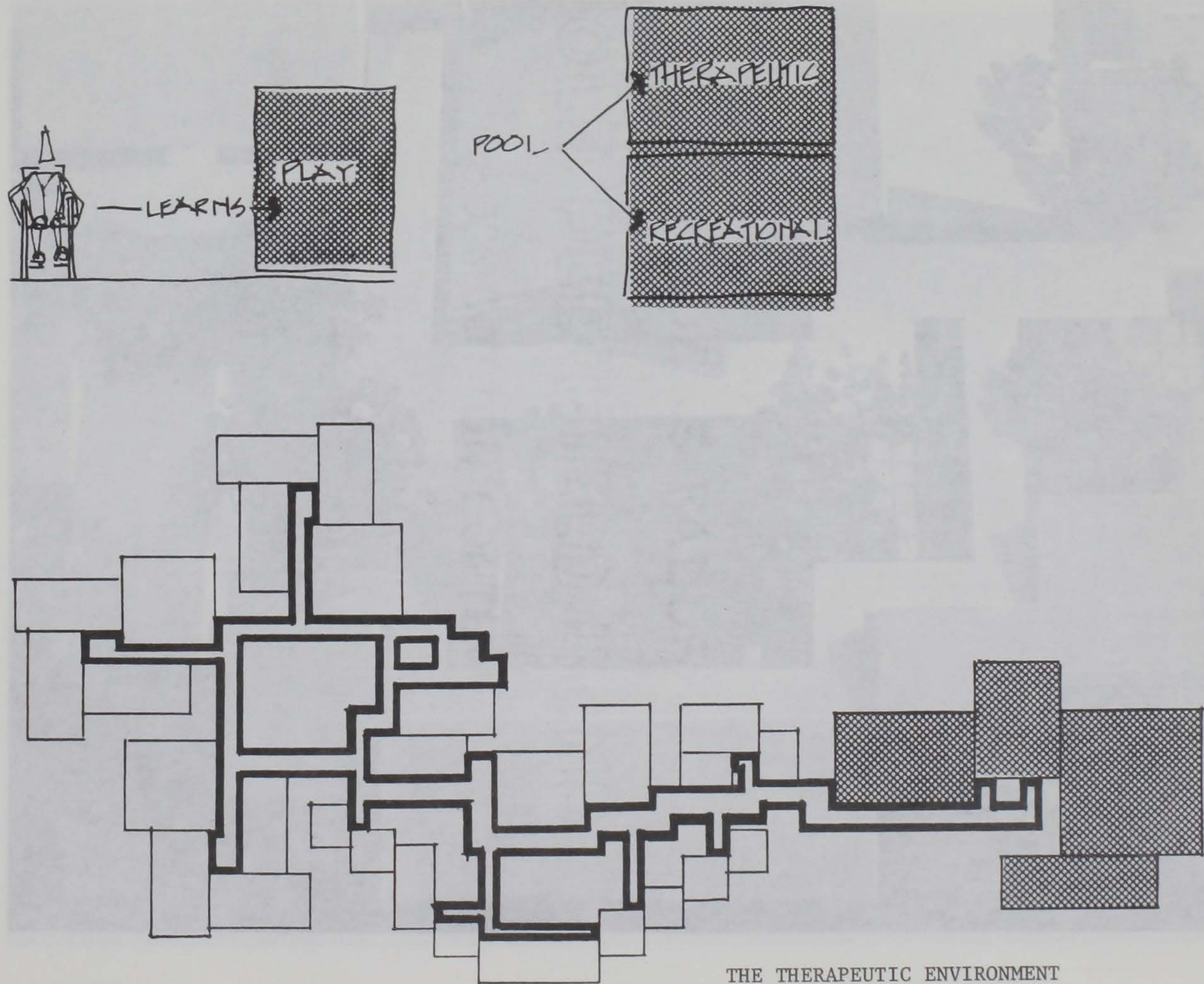


VARIETY IN SCALE

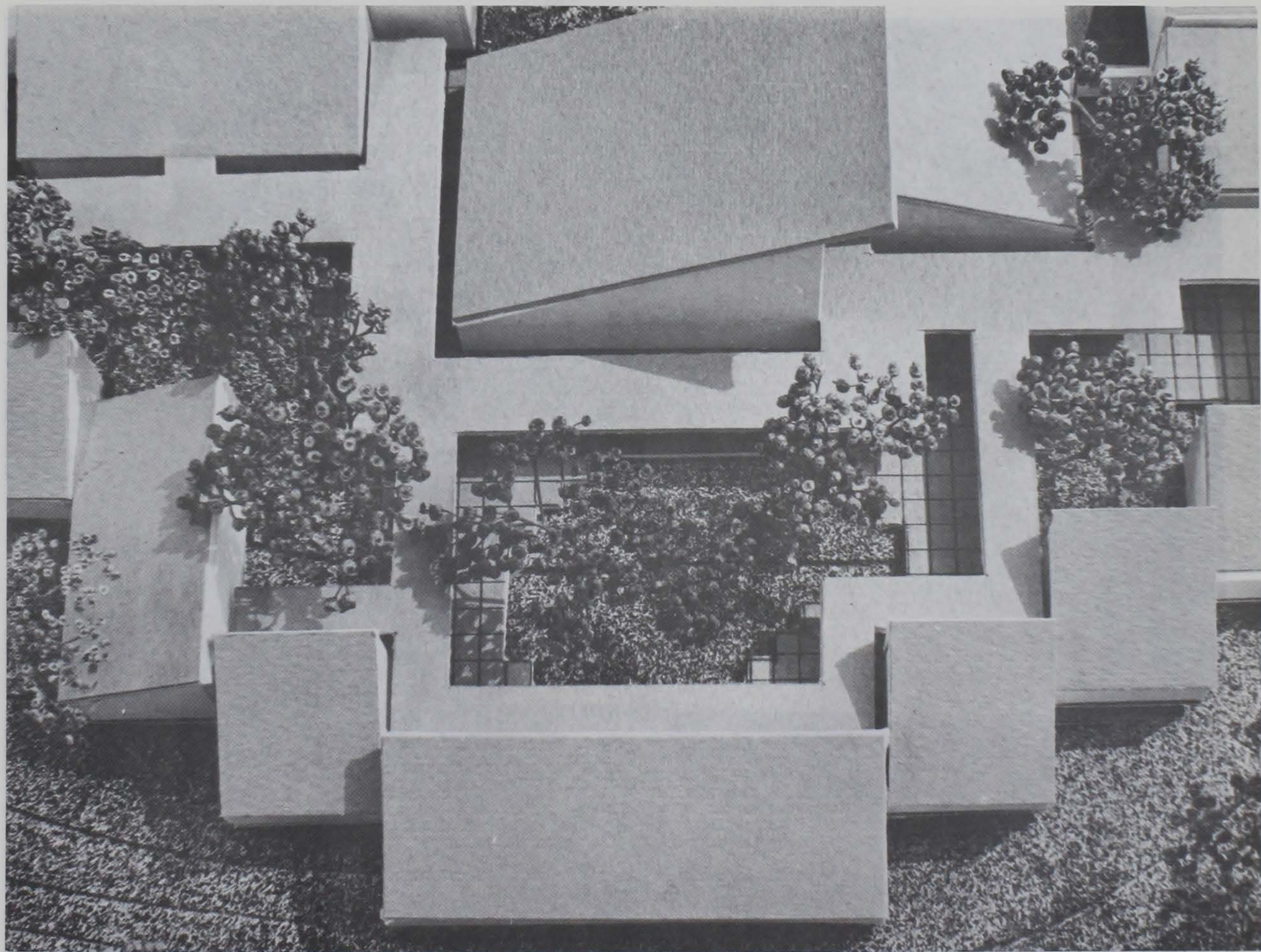


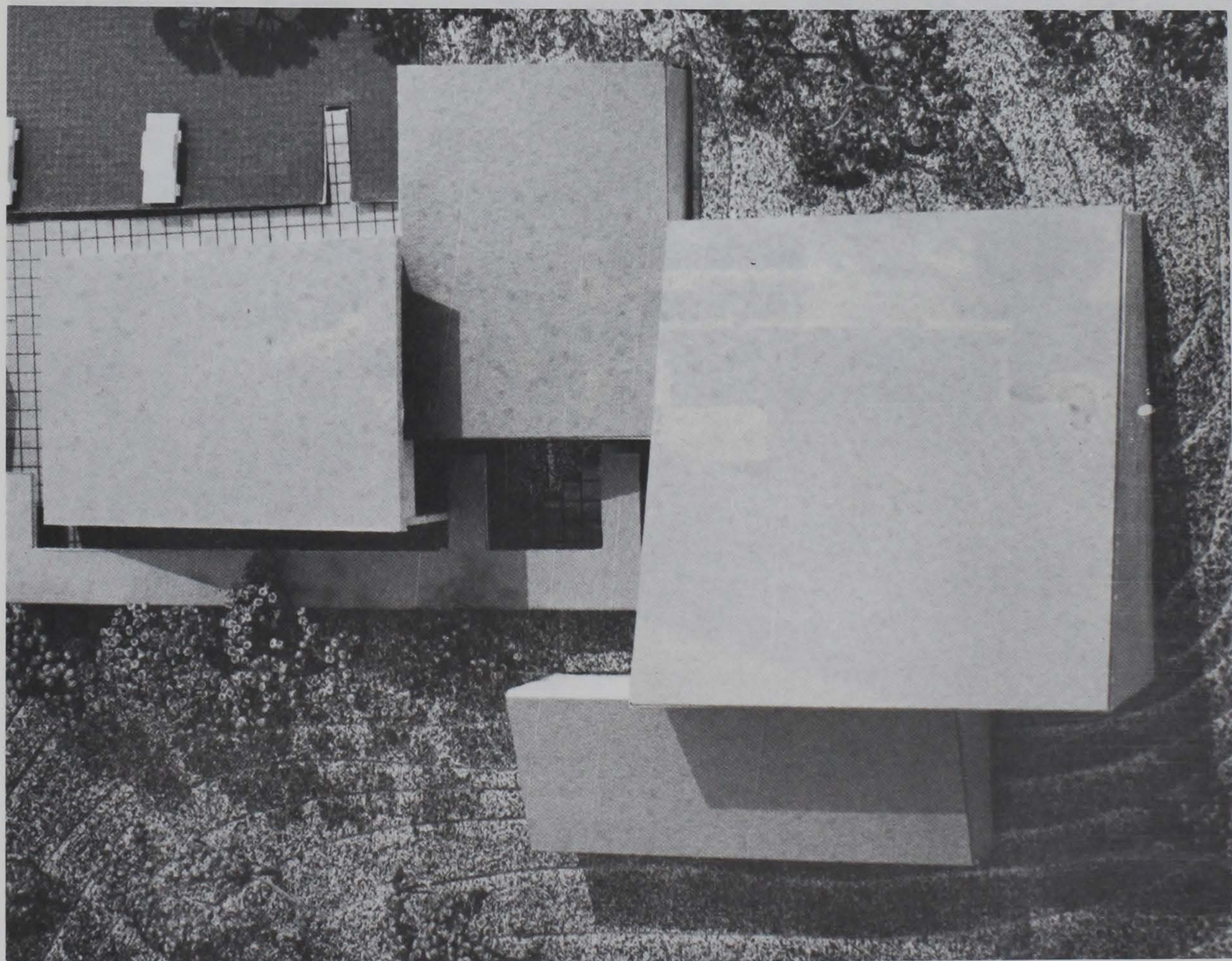
THE EDUCATIONAL ENVIRONMENT

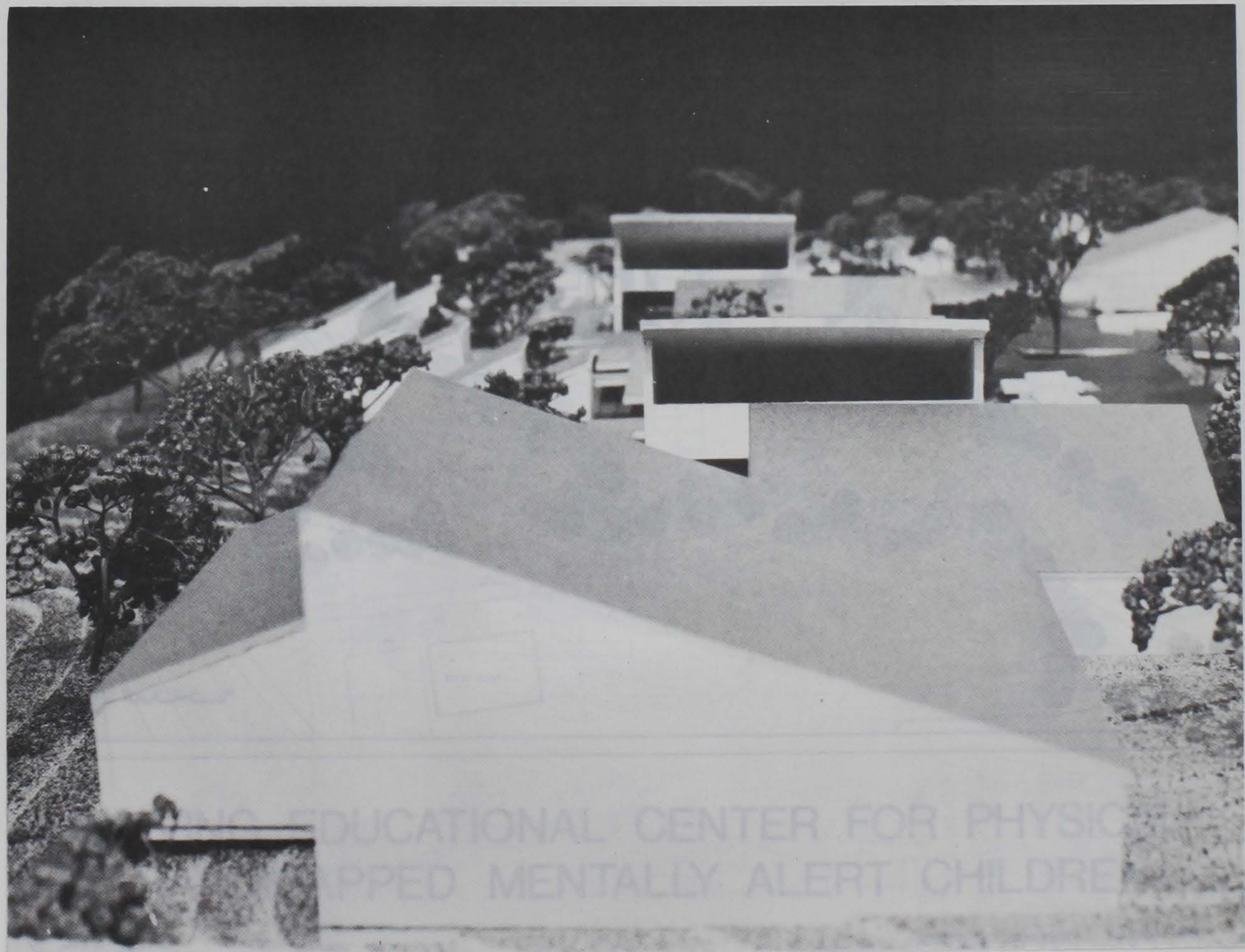




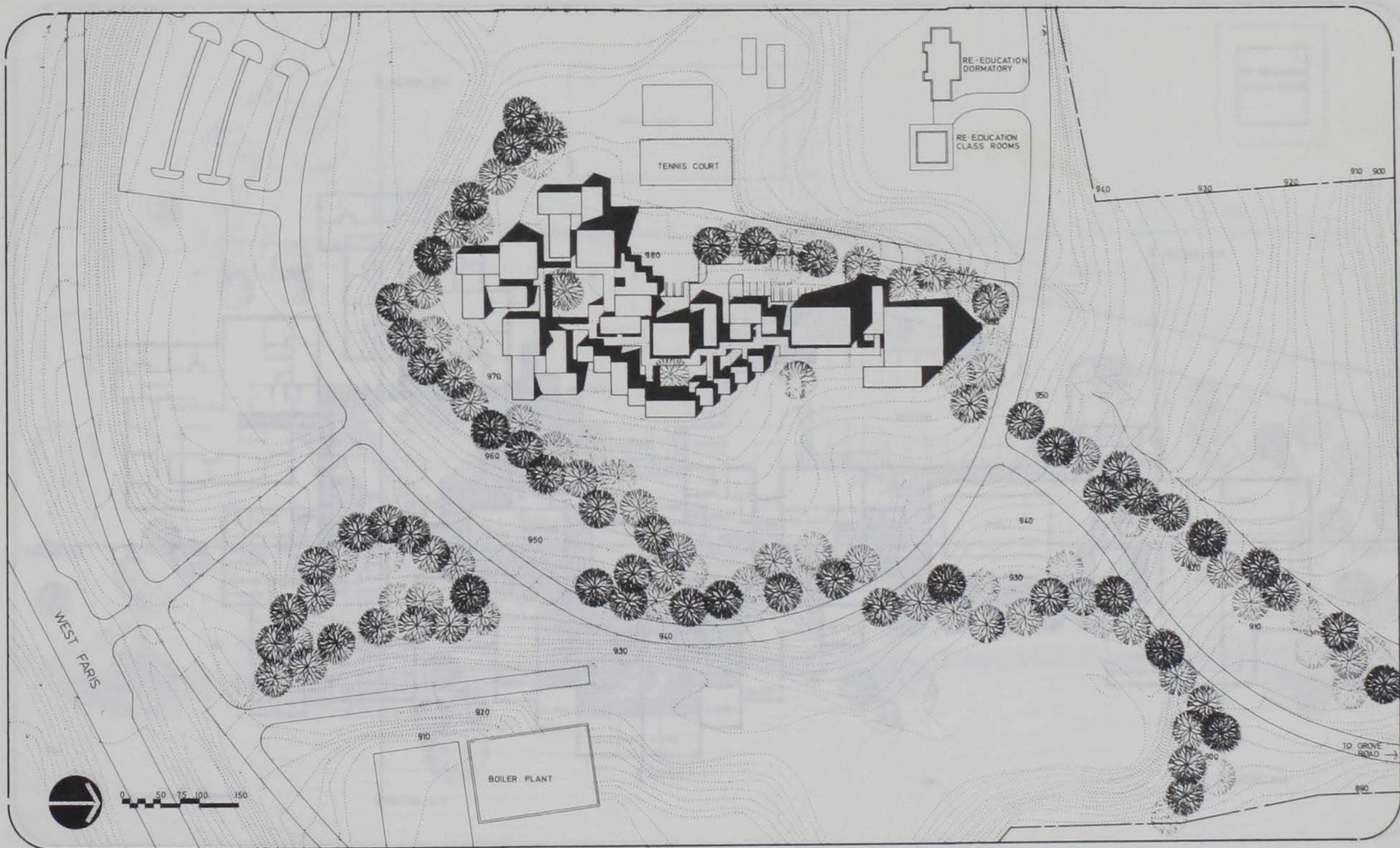
THE THERAPEUTIC ENVIRONMENT







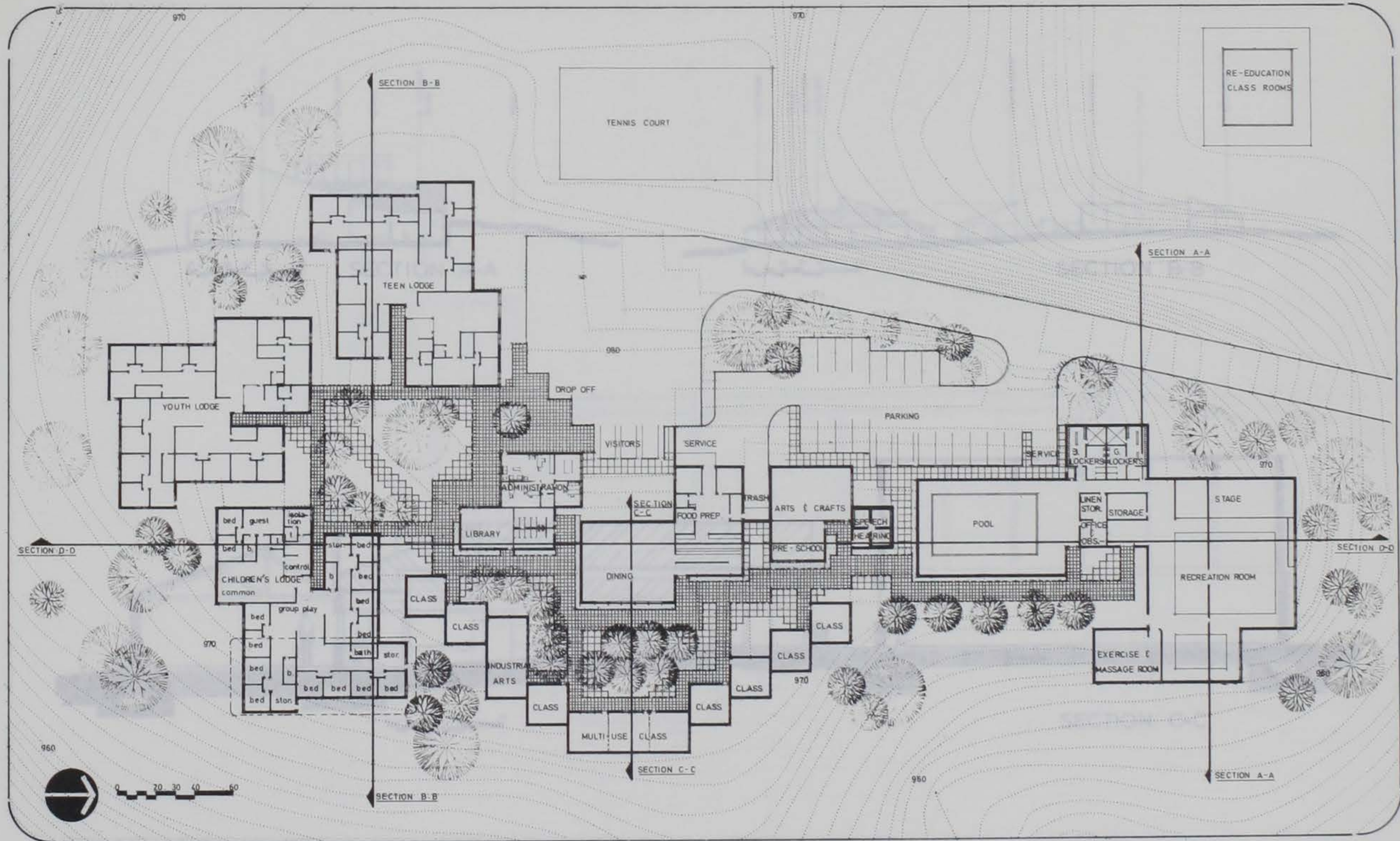
EDUCATIONAL CENTER FOR PHYSICALLY
HANDICAPPED MENTALLY ALERT CHILDREN



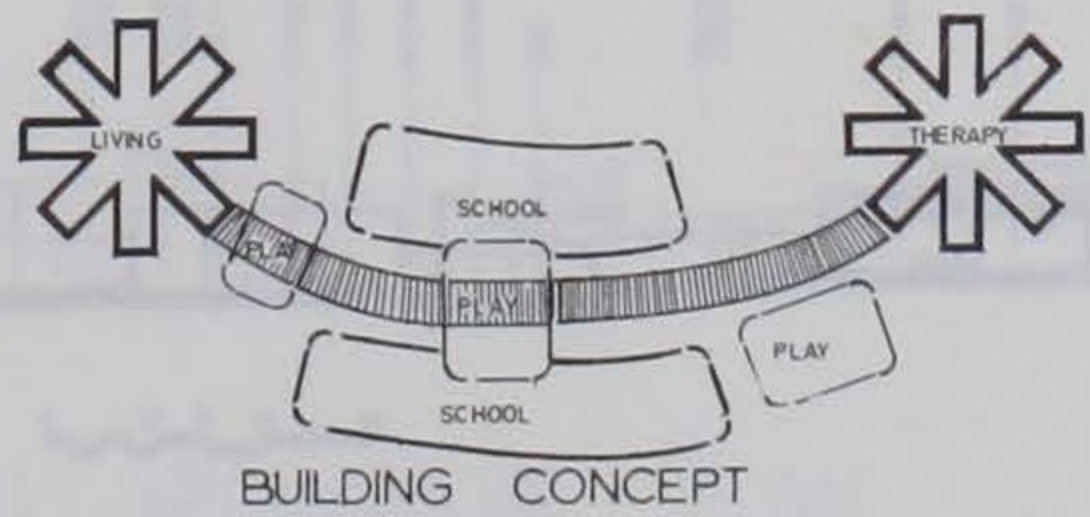
A LIVING-EDUCATIONAL CENTER FOR PHYSICAL- LY HANDICAPPED MENTALLY ALERT CHILDREN

SITE PLAN

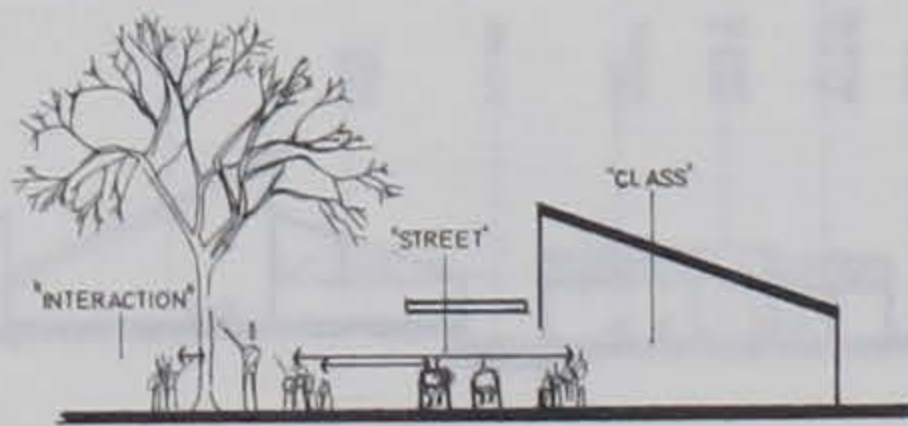
ROBERT L. JAMESON SPRING 1976



PLAN



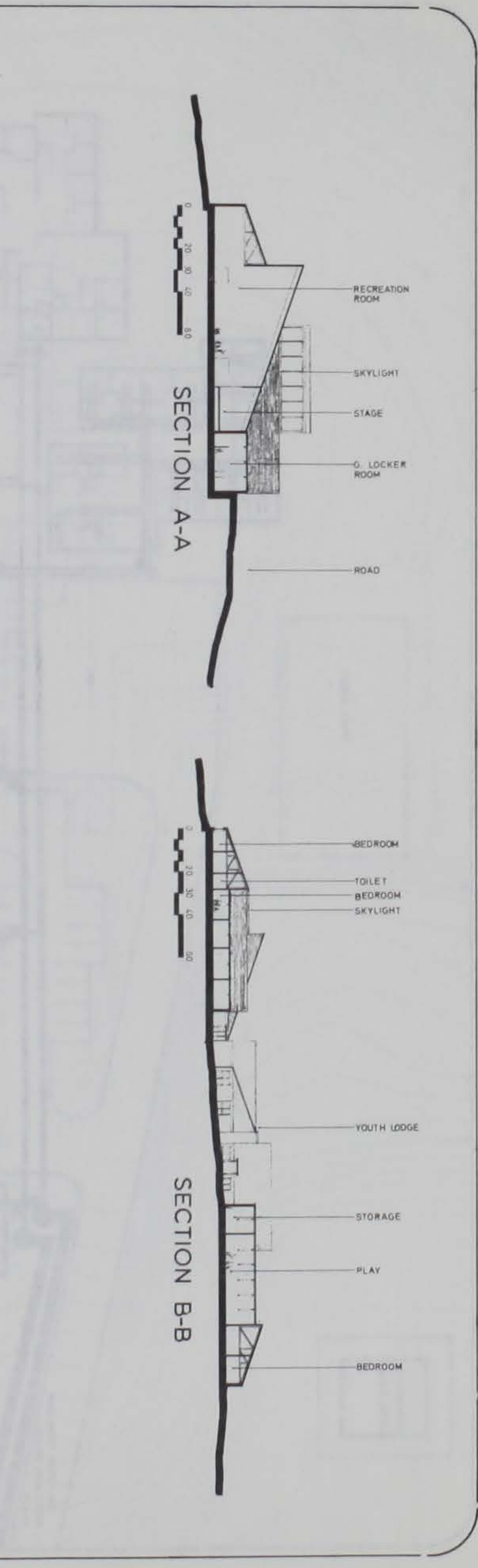
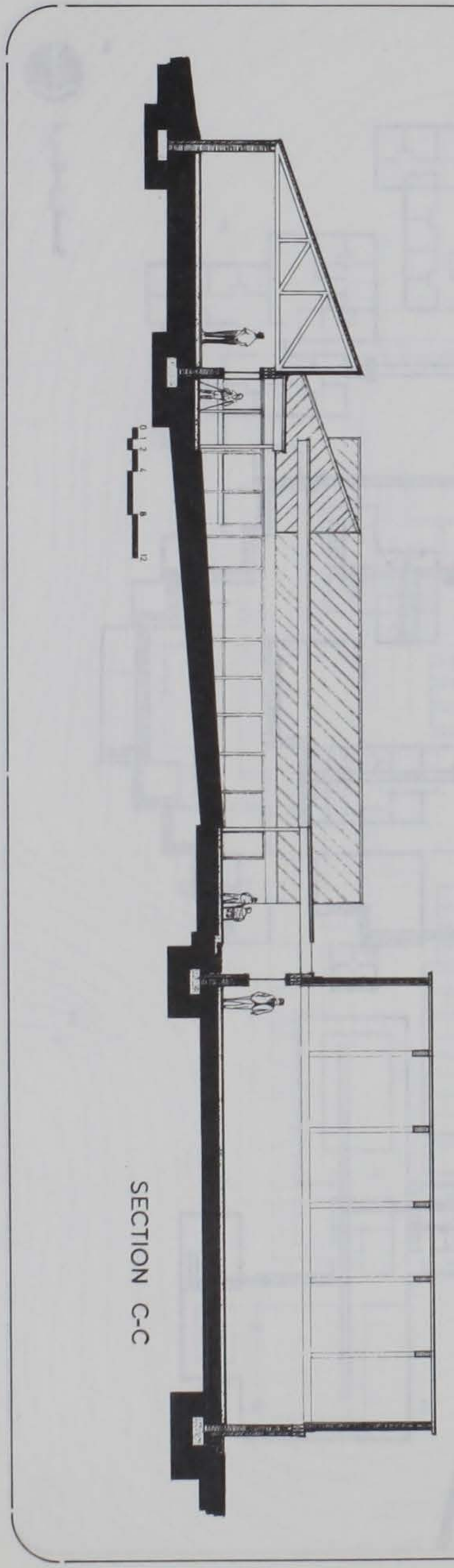
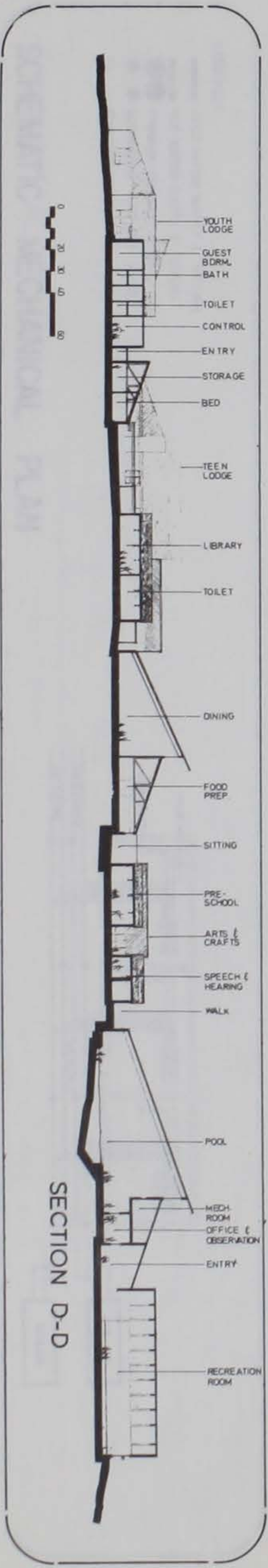
BUILDING CONCEPT

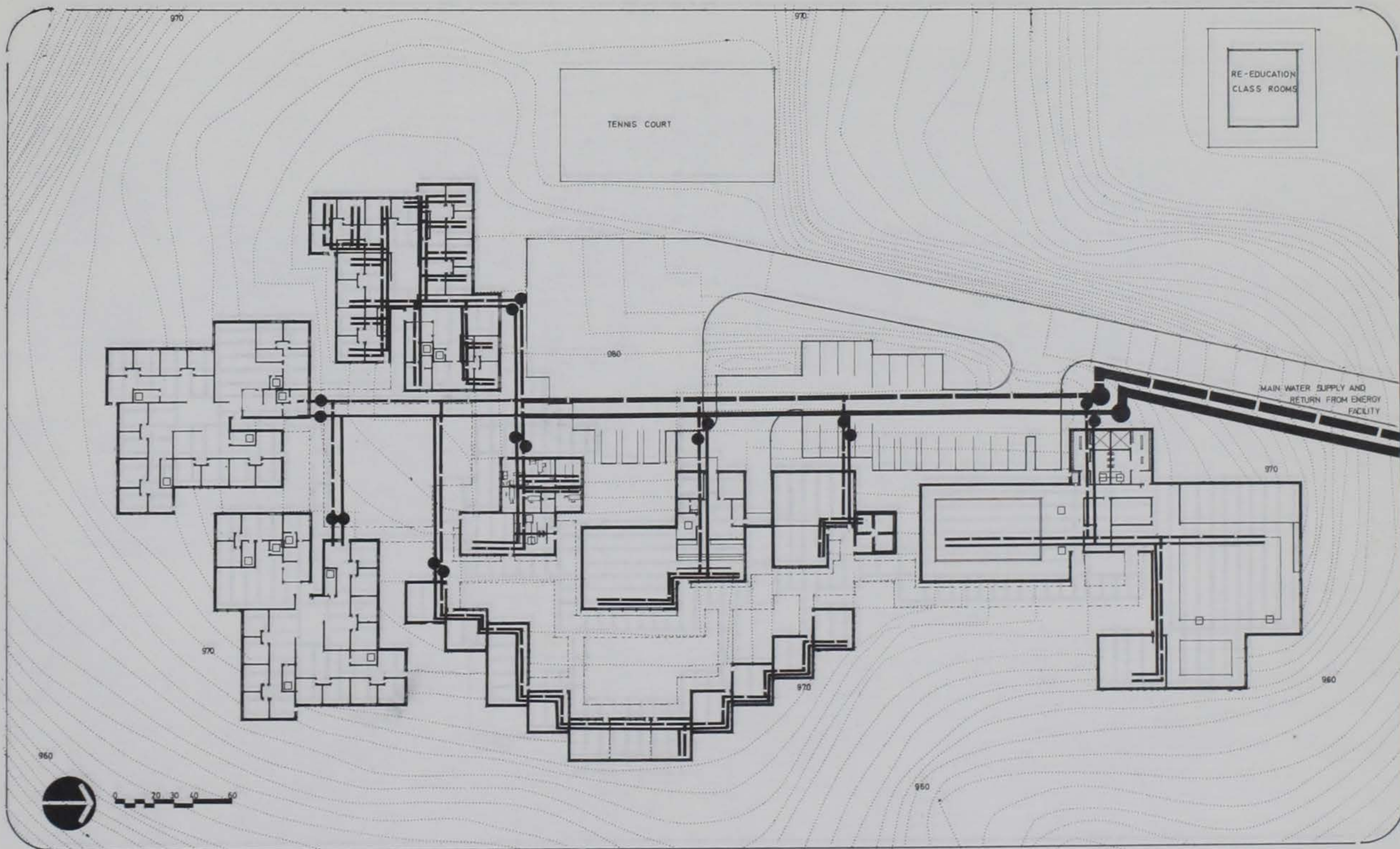


STREET CONCEPT



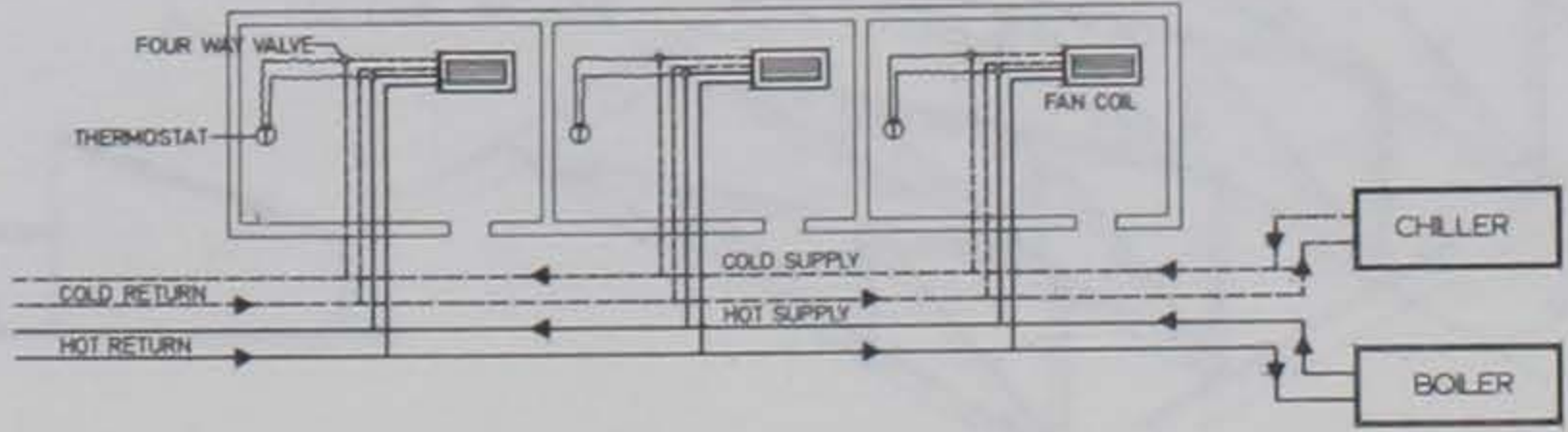
TYPICAL LIVING UNIT



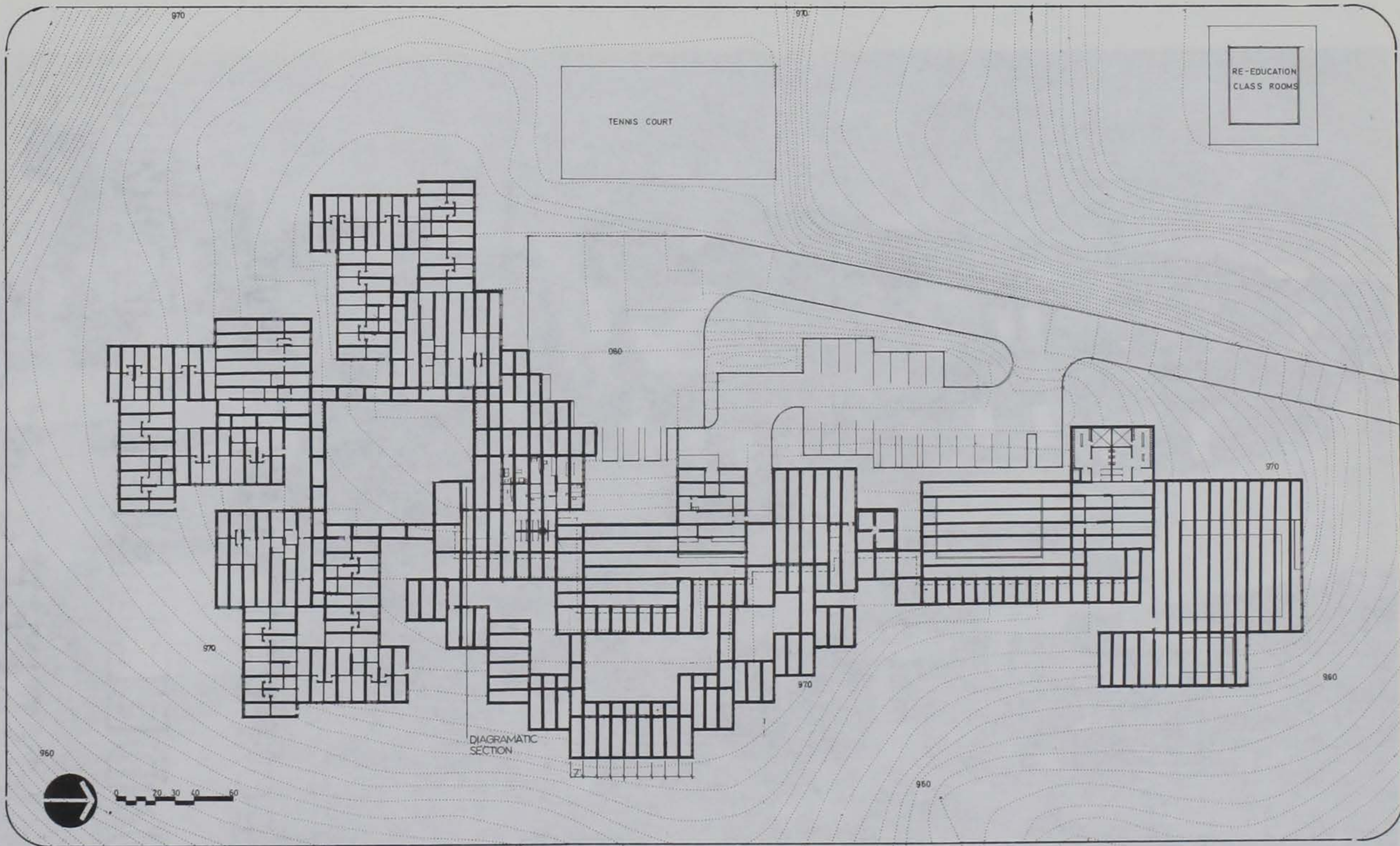


LEGEND :

- COLD WATER SUPPLY & RETURN
- - - HOT WATER SUPPLY & RETURN
- PRIMARY CUT OFF VALVE
- SECONDARY CUT OFF VALVE
- EXHAUST FANS



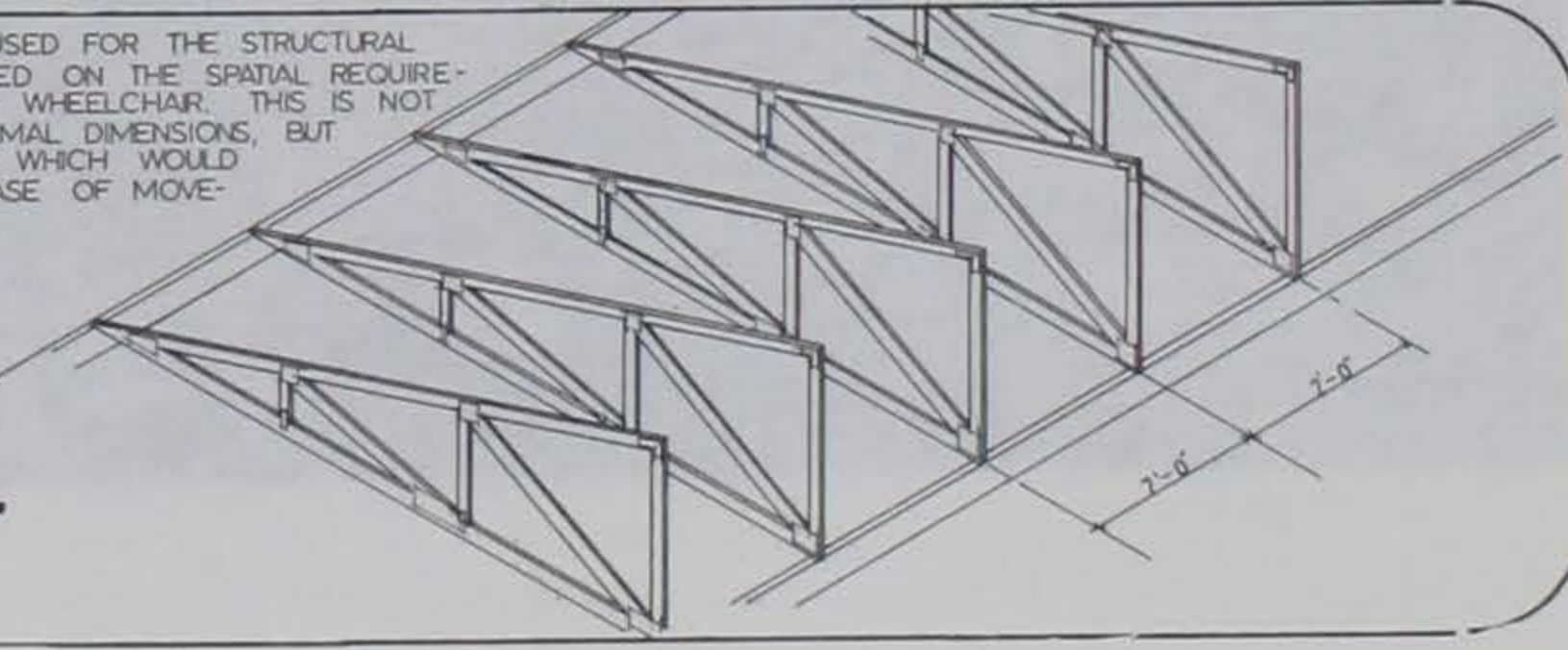
SCHEMATIC MECHANICAL PLAN

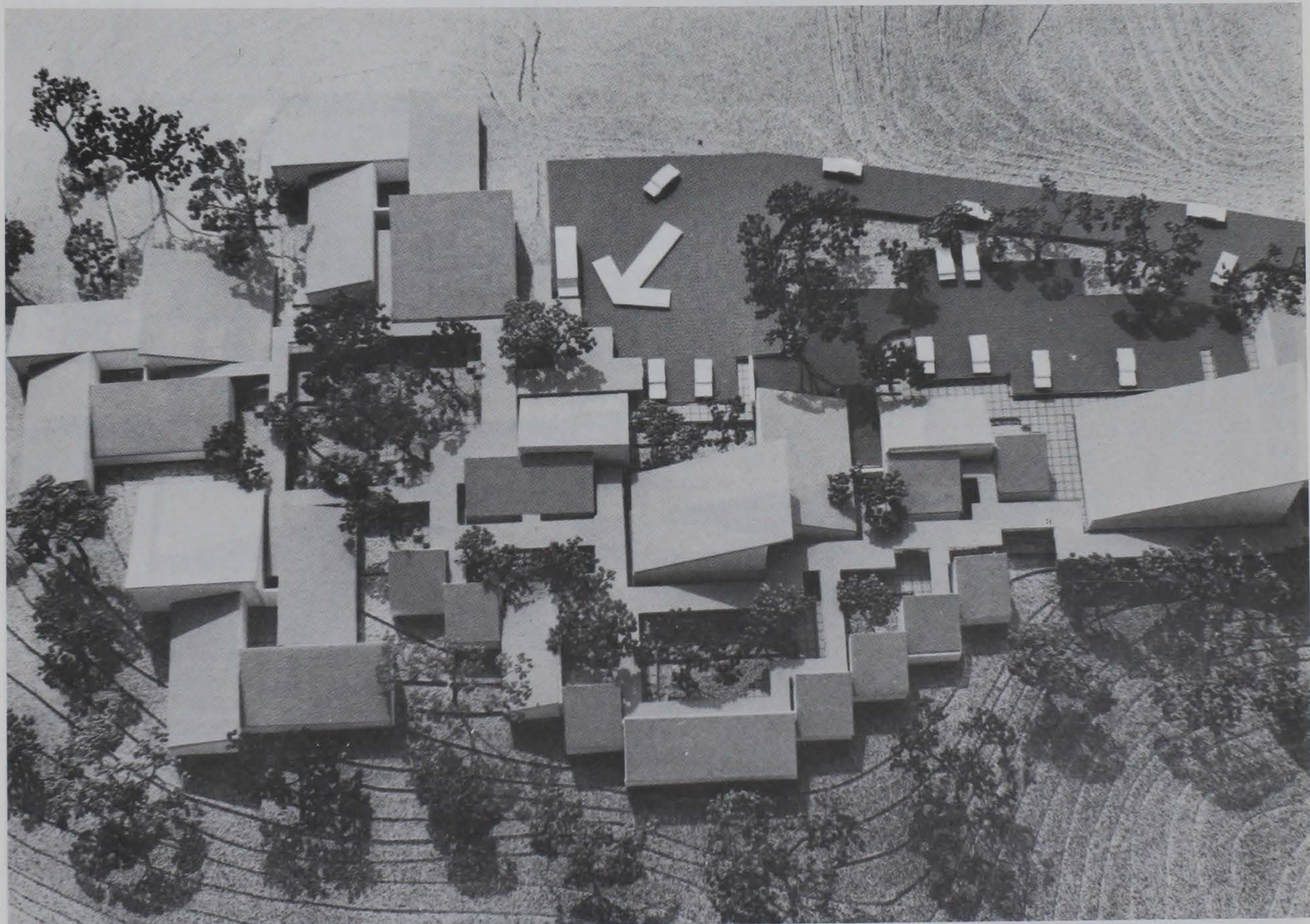


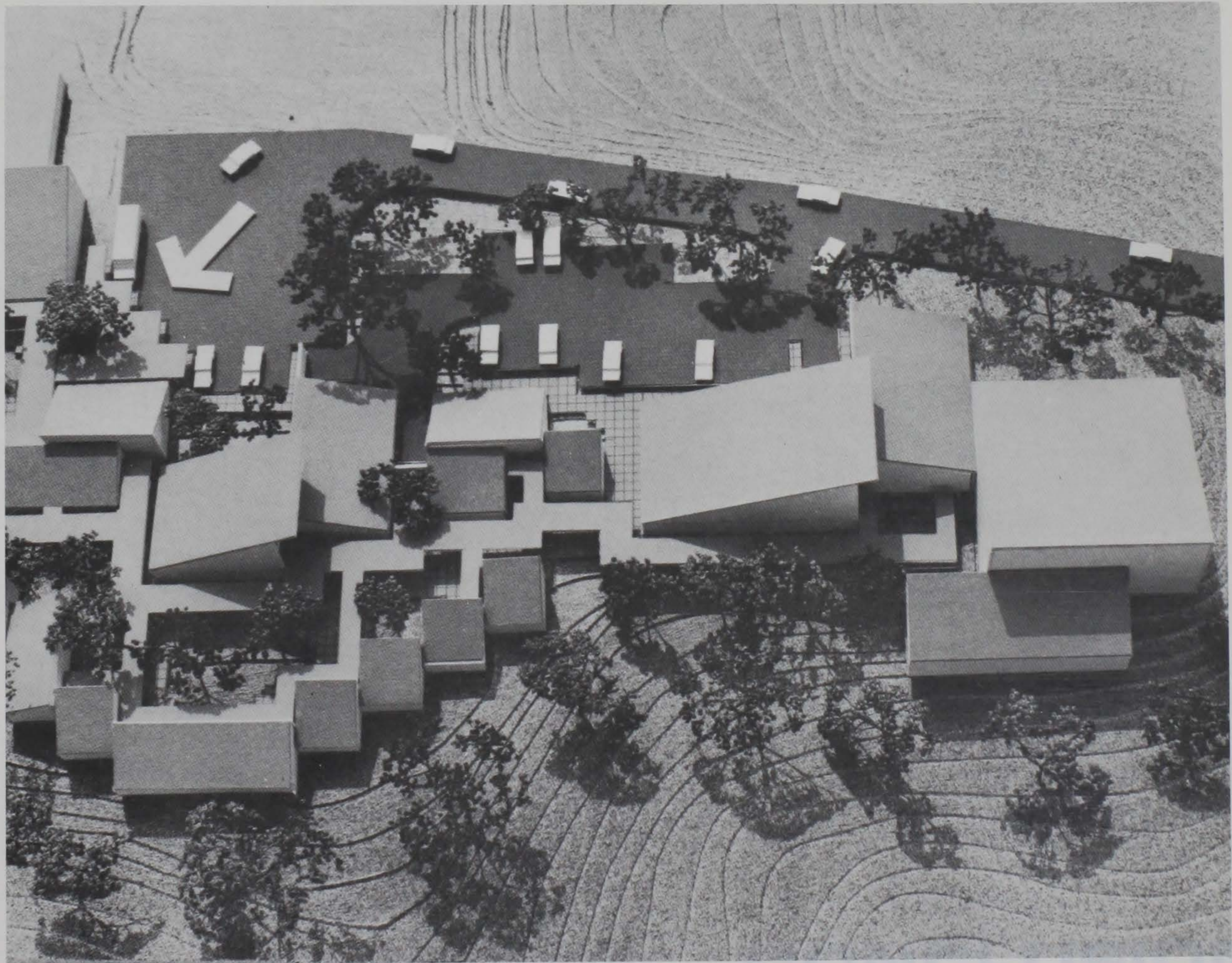
STRUCTURAL PLAN



THE 7'-0" MODULE USED FOR THE STRUCTURAL SYSTEM IS BASED ON THE SPATIAL REQUIREMENTS OF THE WHEELCHAIR. THIS IS NOT BASED ON MINIMAL DIMENSIONS, BUT ON DIMENSIONS WHICH WOULD ALLOW FOR EASE OF MOVEMENT.







CONCLUSION

SUMMARY

This study has attempted to form some kind of understanding of the needs of the physically handicapped child, how these needs are currently being met, and this authors proposal of how these needs could be met in the future. The existing system for responding to these needs is sporadic and fragmented and should be replaced by a state-wide system which could provide for the continual treatment, educational, and social needs of the physically handicapped from infancy to adulthood. Through the establishment of these services the handicapped are assisted in developing independent living techniques. This writer has identified one possible alternative in which the child, parents, educators, and health care professionals assist in establishing the child's potentials, affording him the opportunity for contributing to society, and how this alternative might fit within a preposed system.

EVALUATION

Several factors were established through the course of this study which this author felt were the primary parameters of design for this type of facility. These parameters were:

- 1) The separation of the living environment from the learning (school) environment.
- 2) The providing for a range of private to public spaces within the residential units.
- 3) The establishment of a child-centered environment rather than an adult-centered environment through the use of scale.
- 4) The providing for a range of spatial experience in the childs daily living patterns.
- 5) The use of the corridor as an interaction link between the child and his peers, the child and his environment, and the child and adults.

and,

- 6) The integration of play throughout the learning environment.

Only through a continual study and evaluation of therapeutic techniques and the effect of the built environment on the handicapped child can the design professional gain an understanding of the child's social, psychological and physical needs.

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TEXT CITATIONS

TEXT CITATIONS:

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