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A Better Environment for Disabled Children

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## ACKNOWLEDGEMENTS

This thesis has evolved from my ideas and experiences in interior design. During the past three years, I have been a graduate student in Korea and at R.I.T., My main focus has been the study of interior design as it relates to the environment of the disabled. Throughout this time, I have received support from many people. While it is impossible to thank everyone personally, I take this time to acknowledge a few people whose contributions made my thesis possible.

I should point out, however, that although I have received advisement from numerous sources, the responsibility for the content of this thesis is solely mine. While I was exploring the thesis, I discussed my ideas with many people and I particularly would like to thank Charles F. Lewis for his technical and constructive criticisms. Nancy Chwiecko contributed encouragement and I express my thanks to her as well. I also thank Cynthia Bock for her professional comments and information about health care facilities.

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## PREFACE

I have a dream to create superior health care facilities for the disabled. My father, who died when I was 18 years old, was a prosperous businessman, an educator, and a humanist. He encouraged my academic pursuits from my childhood. He always told me, "I want you to help people who are ignored and oppressed, due to the lack of power in our society".

Teaching social studies in high school helped me remember my father's wish. I decided to become a volunteer for the disabled. After four years as a volunteer I acquired the certification to teach the retarded. At that time, I believed I could benefit the disabled the most through education.

The closer I became to them, the more I desired to find other ways to help them. I saw that the disabled did not have access to public places, such as schools, shopping centers, parks, and theaters, because these facilities were not equipped to accommodate the disabled. They were isolated and segregated from the rest of society due to our indifference. Even institutions for disabled people were not adequately equipped with necessities such as grab bars, ramps, sinks, and fire exits for the disabled. Moreover, I discovered the lives of many disabled people living with their families were sometimes

more miserable than of those living in specialized institutions.

I then realized that the most important thing for the disabled was not an education, but a beneficial living environment. As a result, I decided to study Interior Design to equip myself so that I might improve the environments for the disabled. This has led to my decision to design a health care facility for my thesis.

Through this project, I have learned a great deal about designing interiors for the disabled. I believe that a specially conducive environment can enhance the happiness, learning abilities, and morale of disabled people.

I would like to work as an interior designer who improves living environments for the disabled and an inspector who evaluates facilities of public buildings for the disabled in my country.

It is important to emphasize that this concept is a derivative of philosophical principles, reflected in judicial and legislative activities which focus on the rights of handicapped persons to have conditions of their lives determined by their citizenship rather than by their handicap.

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# I. INTRODUCTION

## A Brief History of health care facilities in the United States

"The history of Health care facilities started with asylums for those suffering from mental illness."<sup>1</sup> Not until the late seventeenth and eighteenth centuries did demographic changes force an alteration in the pattern of welfare and encourage the institutionalization of the mentally disabled. However, the care and treatment of mental illness in nineteenth-century America was based on a philosophy which fused morality, social values, and science.

By the middle of the century, an extensive network of state-supported public hospitals had been established. By the end of the nineteenth century, as asylums became increasingly custodial and desperately overcrowded, new philosophies were sought. At that time, social and public responses to such individuals as mental patients and severely handicapped persons, therefore, were characterized more by concern for life-sustaining care than by an orientation to active treatment. "It was inspired partly by horror stories of overcrowded, inhumane institutions and partly by new forms of treatment that

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<sup>1</sup> M.J.Dear S.M.Taylor, Not On Our Street (207 Brondesbury Park, London NW2 5JN 1982) P37

allowed many patients to function in smaller community facilities or even at home until the 1950s.”<sup>2</sup>

In the 1960s, several critical studies led to the establishment of minimum standards for residential care facilities. These standards prepared the way for deinstitutionalization and the community health care movement.

The decade of the 1970s saw remarkable changes in both the social perspective on handicapped persons and in the number of health care facilities based on these changing perspectives. Two significant occurrences had tremendous impact in the history of health care. The first was derived from a report on two New York State institutions by Senator Robert F. Kennedy. The other important impact resulted from a videotaping of life in a New York state institution in the early 1970s. These two events helped to educate the public on the poor conditions of health care facilities and fostered change in public opinion and interest in health care institutions.

In 1972 a landmark decision was made in an Alabama case. It states that mentally retarded persons have a right to treatment in the “least restrictive” alternative to the objective of maintaining the greatest degree of freedom, self-determination, dignity, and integrity of body, mind, and spirit for the individual while he or she participates in treatment or receives services. “A

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<sup>2</sup> “Community Treatment for the Retarded.” New York Times. (August 17, 1995) p22

resolution was passed to recommend 'residential facilities consisting of small living units, each replicating a normal home environment to the closest extent possible' and 'that such residential facilities take absolute precedence over further capital investments in existing or large scale institutions'."<sup>3</sup>

In the 1980s, the main focus of the policy of deinstitutionalization was the reduction of and prevention of the need for residential living in large institutional environments. Equally important was the promotion of the placement, with appropriate habilitation and support services, of people in more normal living environments within the community. With the promulgation of deinstitutionalization and normalization, there was increased interest in evaluating the qualities of environments, the differentiation and typing of various kinds of environments using physical, behavioral, and psychosocial criteria, and the assessment of individual adaptive growth as it relates to environmental qualities.

"The primary social principle underlying the concept of the least restrictive environment is the commitment to finding a place for handicapped individuals in settings that enhance their participation in the society."<sup>4</sup> The importance of this principle is not tied merely to basic social values, although in large measure it originated from

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<sup>3</sup> "Residential facility for the Retarded." National Association for Retarded Citizens 1976 p3

<sup>4</sup> Bruiniks, Robert H. and Lakin, K. Charlie, Living and Learning in the Least Restrictive Environment (Baltimore, P.H. Brookes Pub. CO. 1985) p72

them, but stems also from the fact that it is a powerful habilitation concept. The group home setting has resulted from this concept.

In January 1992, the Americans with Disabilities Act (ADA) became effective. This Act is the most significant legislation ever enacted for people with disabilities. It requires that the disabled have equal access to public accommodations, public transportation, employment, and telecommunication services. All public and commercial buildings, such as restaurants, hotels, retail establishments, doctors' offices, and theaters, must be modified, if necessary, to remove obstacles that prevent handicapped persons from using these facilities. All health care buildings and facilities must comply with this Act. Consequently, the disabled now have better environments supported by these legislative initiatives.

The ADA significantly increased social commitment toward enhancing opportunities for disabled children. Disabled children have been known to have relatively less ability to adapt to different settings than non-handicapped children who have generally been raised in normal social settings. From a strictly educational perspective handicapped children should be immersed in normal social environments as much as possible if they are to be given the maximum opportunity to learn to participate in society.

At the turn of the twenty-first century, knowledge, expertise, and conducive attitudes have continued to improve the quality of living environments for handicapped children. In the future, human service professionals will need to utilize the values of society to teach handicapped children meaningful skills and develop the best environments for them.

## B. Proposal

The inclusion of accessibility features when designing buildings and facilities is a key factor in enabling persons with disabilities to achieve independence. Rehabilitation, treatment, training in activities for daily living, and the elimination of environmental barriers, will give many of these individuals the opportunity to live, study, work, and participate in regular community activities. This will support their human potential regardless of physical disabilities.

A supportive living unit, in which both staff and environment are designed for the intended population, is a prerequisite, above all, in improving the lives of both the physically and developmentally disabled.

During my preliminary research, I discovered that most children's group homes were renovated houses which were not specifically designed to accommodate handicapped individuals. While a number of excellent facilities for challenged adults and the elderly already exist, few quality facilities exist for children in the U.S..

This might be explained by differences in age distribution. The rapidly increasing population of the elderly has created higher demands for better services from the health care system. "Whereas only 5.4 percent of



the U.S. population was over 65 years old in 1930, the 1991 figure was 12.6 percent. Older people tend to have a greater number of chronic health problems, require more visits to the doctor, require a longer period of recuperation after an illness, and need more hospitalization than a younger population.”<sup>5</sup> Consequently, the federal and state governments have responded to their requests as well as to business markets created by their construction. “Children receive significantly less support than the elderly and adults under 65. Among the disabled, the elderly receive most support, followed by adults under 65. On the average, the disabled elderly are the most preferred group....”<sup>6</sup>

While there are various health care facilities for different age groups and different disabilities, there exists much room for improvement. Relatively speaking, the need for creating better health care facilities for disabled children has been less considered than for the elderly in the U.S..

Adequate and appropriately designed group homes are a basic health care component for disabled children, if we acknowledge their rights as human beings. Rather than any particular style of architecture, the needs of these children and modern concepts of social treatment

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<sup>5</sup>Janet R. Carpman and Myron A. Grant. Design that Cares (737 North Michigan Avenue Chicago IL 1993) p4

<sup>6</sup> Fay Lomax Cook, Who Should Be Helped? (275 South Beverly Drive Beverly Hills, California 90212,1979)

should be the basis for the building plan of a residential health care facility. It should not be expected to duplicate a family home, but should be designed to create a warm, attractive, homelike atmosphere for their daily living. A cold, depersonalized appearance, complicated layouts, and institutional restriction of the activities of children's everyday lives should be avoided.

The purpose of this thesis is to explore the design of a health care facility with particular consideration given to the needs of children with multiple disabilities. To achieve my goals of accommodating their physical, psychological, and mental impairment, I have designed a health care facility which has residential areas for multiply disabled children. My design provides facilities for living, social activity, medical treatment, and physical therapy; in total three Group Homes for the multiply disabled children. The children are placed in a group home according to their age and disability: Building A is for children with multiple disabilities and impaired vision, Building B houses children over twelve years old with multiple disabilities, and Building C is reserved for children under twelve years old with multiple disabilities. Administrative offices and a Medical Center have been designed to achieve the above-mentioned goals.

The size of the Administrative and Medical Center would accommodate patients living in the three Group Homes. Each Group Home is independent with regard to

food preparation and management. "From the point of view of the children, unit services rather than central services and facilities are preferable."<sup>7</sup>

While I was developing concepts for my design, I adapted the concept of the "village" organization used at the Al Sigi Center for handicapped children in Rochester, New York. (see Figure 1) I determined that the independent "village" approach would be most appropriate for handicapped children living in Korea, a small and overpopulated country, since Korea does not currently provide public transportation. The potential efficiency of management and economy of operation would support increased numbers of group homes for disabled children in my country.

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<sup>7</sup> "Standards for Group Home Service for Children.." Child Welfare League of America (440 First Street, NW, Suite 310, Washington, DC 20001-2085, 1978) p46

## C. Philosophy of Design

Designing a health care facility is a complex process that must satisfy a multitude of competing criteria including emphasis on environmental accessibility. To explore a design solution which could meet the needs of my native land, I decided to oppose current American trends of total separation of Administrative and Medical facilities from residential facilities. My project is, therefore, composed of numerous areas which have diverse functions such as offices, medical facilities, and residential spaces.

The functional characteristics of each space, as well as the relationships among spaces, must be considered. For example, an office area must provide efficiency, while the group home should stress comfort, incorporating affirming, "homelike" design details such as incandescent, residential lighting fixtures in the dining room, and residential furniture in the bedrooms. The medical area's interior must provide clear visual order and a bright, inviting atmosphere, focusing on physical comfort and social contact, as well as efficiency.

When a building must include several diverse functions, it is often desirable to organize spaces according to their purposes. Functional separation of interior spaces, or zoning, includes the provision for

privacy, security and a degree of freedom in shaping interlocking space of varied configurations with appropriate (and varied) finishes while still creating a unified composition.

The prime function of the circulation system is to get people and materials to their destinations. The circulation pattern, thus, should be clear, safe, efficient and provide security among various units.

Additionally, "The Americans with Disabilities Act (ADA) requires that all facilities remove barriers that prevent a physically handicapped person from having equal access to the facility...."<sup>8</sup> Thus, each part of the building must provide access for the disabled such as those included in my design.

"A 1980s' revolution in health care design stresses that medical facilities distance themselves from the "illness" images in favor of a "hospitality" image."<sup>9</sup> Medical care is a combination of science and emotion. The design, therefore, must balance human needs and technological needs and the therapeutic aspects of design must also be considered.

Important considerations include the use of nature, art work and the architectural finishes selected. Nature is no longer limited to the outdoors. It has become an integral part of interior design. Atriums, greenhouses,

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<sup>8</sup> The American Institute of Architects.. Opening All Doors: The ADA Videoconference. (1735 New York Avenue, NW Washington, DC 20006 1992) P67

<sup>9</sup>Janet R. Carpmann and Myron A. Grant, Design that Cares (737 North Michigan Avenue Chicago IL 1993) p19

planters, and aquariums, all allow constant greening of the indoor environment. Nature has been used as a therapeutic tool for a wide variety of patients, including psychiatric, pediatric, geriatric, and rehabilitation patients. Plants provide the opportunity for physical activity and social interaction. Plants can provide interest and diversion.

The use of natural daylight is also important. A skylight, like the one I have designed, saves energy by reducing the need for electric-light sources, and more importantly, it promotes a natural light quality in the interior.

Art work can be an important element in interior design. It may foster emotional stability, comfort, interest, and stimulation. Interesting patterns, colors, shapes, and other decorations can encourage imagination, as well as physical activity and play. Playful elements are designed to entice reluctant young residents through the doors of the Medical Center.

Carpeted corridors are often suggested as a way to “soften” a harsh health care environment. Carpeting is considered more comfortable and psychologically warm than most hard-surface flooring. Carpeting has also been found to reduce ambient noise levels and injuries from falls.

Vinyl wallcovering facilitates easy clean up, and may appear more home-like than walls painted in solid colors.

As it is far more difficult to repair than paint, careful consideration needs to be given to the actual locations of use.

Lighting is an important element in defining the characteristics of spaces. Higher light levels may define special spaces or points of decision, such as reception areas or major intersections. Softer lighting would be more appropriate for rooms with quiet activities such as bedrooms.

In the design of health care facilities for children, color schemes, consideration of codes, informed selection of finish materials, selection of lighting, arrangement of furniture, availability of windows, and accommodation of family members are all important in improving the quality of life for these children.

## II. COLLECTION OF INFORMATION AND ANALYSIS

### A. Research

Quality design will enhance quality of life. Quality design results from utilizing past experience in architecture and interior design to improve upon existing design theories. Research is a tool through which health care providers and designers can discover what residents, staff, and visitors need in order to gain a sense of comfort and well-being in their built environment. The purpose of health care facility design research is two fold. One; to gain information and two; to apply that knowledge toward the goal of improving the environment.

In order to gain insight on improving the quality, efficiency, and function of health care delivered in new and existing facilities, I visited several health care facilities: four group homes for multiply disabled children, special institutions for multiply disabled children (Al Sigl Center) and for adults with mental retardation (Monroe Developmental Center), two nursing homes for the elderly, and "On with Life" (care and treatment center with a comprehensive head injury rehabilitation program for the mental disorders caused by accidents) in Ames, Iowa.

The majority of the group homes I visited had been renovated private residences. These houses did not initially provide for barrier-free design or the special needs



of the residents. As a result, these group homes have problems. Some group homes are too small to accommodate eight to ten children with multiple disabilities. For example, the width of the corridors is less than four feet, which is too narrow for both a wheelchair and a person to pass simultaneously.

Although health care facilities such as the Al Sigl Center and the Monroe Developmental Center in Rochester, New York, were initially created for the disabled, they were built before 1980, and thus, exhibit inadequacies and minimal amenities. Residential units clustered around the Monroe Developmental Center create a very institutional setting, with the interior environment of each residential unit resembling a hospital or nursing facility rather than a home.

On the other hand, an example of an ideal health care facility is in Ames, Iowa. "On with Life", managed by the state, is a facility for inpatients who need minor care or treatment for mental disorders after receiving hospital treatment. They are assisted by approximately eighty people including doctors, nurses, therapists, and a large number of volunteers for the eight to twelve patients who live there as temporary residents.<sup>10</sup>

The design of "On with Life" separates the patient area and the administrative area. In the patient area, all walls are curvilinear in plan. The walls are covered with

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<sup>10</sup> These numbers were reported to me by Gerald T. Fehn, the Director of Public Relations & Development for "On with Life", during my visit to the site.

vinyl wallcovering or pastel stained wood. Additionally, there are pictures and graphics on the floor and walls. The art work and graphics are used by staff as recall triggers of patient experiences, and to assist a patient with recovery of a lost memory. While "On with Life" has necessary high-tech equipment and care facilities, the environment also provides warmth, and the opportunity to recreate memories. Every patient room is provided with enough space to turn a wheelchair. Each is supplied with a large accessible closet, a dresser, a high-back chair, a bedside table, a television, a radio, a comfortable side chair for visitors, a bed, and wide windows with floral curtains. Gerald T. Fehn, the director of Public Relations & Development for "On with Life", indicated his great satisfaction with the design of this facility. He boasted that "On with Life" is one of the best health care facilities in the United States.

My research next led to the development of a building program including proposed furnishings, and square footage, as follows :

## Group Home

Type of rooms		Furnishing for room	Square footage	Remarks
1	Entrance	closet	72 sq.ft.	
2	Living room	fire place 1 table 1 side table 1 sofa 2 comfortable chairs plants	160 sq.ft.	
3	Storage		20 sq.ft.	
4	Lounge	1 dining/game table;3' dia. 4 dining chairs 3 lounge chairs 2 side tables 1 TV; table/stand	180 sq.ft.	
5 9 11	Single room	1 single bed 1 dresser 1 closet; 5 lin. ft. 1 visitor chair 1 bedside table	110 120 sq.ft.	
6 10 12	Double room	2 single beds 2 dressers 2 closets; @ 5 ft. 2 visitor chairs 2 bedside tables	235 245 sq.ft.	
7	Porch	5 side chair 1 table 1 side table	215 sq.ft.	with wood floor

8	Bathroom	1 stall 1 sink 1 shower	85 sq.ft.	
13	Activity room	1 folding table 10 chairs 1 wall mounted tack board send area synthesizer artwork storage audio equipment	315 sq.ft.  60 sq.ft.	
14	Bathroom	1 bath tub w/ seat 1 stall 1 sink	110 sq.ft.	
15	Staff Office	2 desks 2 desk chairs 2 files 2 side chairs 1 tack board 1 marker board	150 sq.ft.	
16	Storage with Cleaning supplies	shelves	30 sq.ft.	
17	Conference room	1 table 6 chairs 1 marker board 1 TV 1 VCR 1 projector closet	125 sq.ft.	
18	Refuse and Soiled utility room	3 waste baskets	57 sq.ft.	

19	Kitchen and Dining room	counters; 16'-6" lin. ft. 1 refrigerator 1 table 1 dining table 6 dining chairs 1 microwave 1 range 1 dish washer	153 sq.ft.	with storage above and below the counter with wheel chair access
20	Medication room	1 counter 1 sink 1 medication cart 1 refrigerator	55 sq.ft.	with one locked cabinet above and below the counter
21	Laundry with Linen and Clean storage	1 washer 1 dryer ironing counter cabinet waste baskets 1 sewing machine	55 sq.ft.	
22	Storage	10 cabinets 2 cabinets	70 sq.ft.	
23	Staff Bathroom	1 stall 1 sink	40 sq.ft.	
24	Garage	ramp; 10'-6" lin. ft. van	400 sq.ft.	

*Administrative and Medical Center*

Type of rooms		Furnishing for room	Square footage	Remarks
1	Entrance		100 sq.ft.	space for storage of at least 2 wheel chairs
2	Social Coordinator's office	1 desk 1 desk chair 1 file 1 bookcase 2 side chairs	100 sq.ft.	
3	Nurse's office	1 desk 1 desk chair 1 file	108 sq.ft.	
4	Doctor's office	1 desk 1 desk chair 1 file 1 bookcase 1 tea table 2 side chairs	135 sq.ft.	
5	Dietician's office	1 desk 1 desk chair 1 counter 1 refrigerator	120 sq.ft.	with storage above and below the counter
6	Bookkeeping and Medical Record office	2 desks 2 desk chairs 6 files 1 safe 2 side chairs	170 sq.ft.	

7	Social workers' office	2 desks 2 desk chairs 1 file 1 bookcase 3 side chairs	155 sq.ft.	
8	Conference room	1 conference table 10 chairs 1 maker board 1 TV 1 VCR 1 screen 1 project storage	230 sq.ft.	
9	Administrative Assistant's office	1 desk 1 desk chair 1 file 1 bookcase 2 side chairs	115 sq.ft.	
10	Administrative office	1 desk 1 desk chair 1 file 1 bookcase 1 cupboard 1 tea table 2 side chairs	144 sq.ft.	
11	Reception area	1 information desk 1 desk chair 4 comfort chairs 1 table 1 end table 1 art work	200 sq.ft.	waiting area included
12	Garden	trees birds bird houses	450 sq.ft.	inside garden

13	Playground	2 swings with 2 slides 1 play house 1 picnic table with bench 1 seesaw 1 trampoline	650 sq.ft.	floor : cork
14	Physical and Occupational Therapy room	2 desks @18"x24" 2 desk chairs w/casters 1 marker board 1 tack board 1 parallel bar stairs 1 weight/pulleys 4 side chairs 1 mat table; 5'x7' 1 standing table 1 bicycle 1 mirror; 2'x6' 1 bookcase 2 file cabinets 1 ball	480 sq.ft.	
15	Employee area Break room	6' linear counter 1 table 6 dining chairs microwave refrigerator coffee maker	243 sq.ft.	



	Men's locker room Women's locker room	2 comfortable chairs 1 side table 6 lockers 1 bench 6 lockers 1 bench		
16	Examination room	1 desk 1 desk chair w/casters 1 sink 1 bed 2 side chairs w/arms cabinet storage waste basket red bag waste basket	230 sq.ft.	for medical waste
17	Nurse's station	1 counter 16"x7" 2 secretarial chairs 6 lin. ft. book shelf 1 back counter 1 tack board 1 marker board 1 chart rack 1 refrigerator for specimens	100 sq.ft.	

18	Lounge with Kitchenette area	1 TV w/table 1 game/dining table 4 dining chairs 4 comfortable chairs 2 tables 2 side tables 1 bookshelf plants 1 counter 1 refrigerator 1 microwave	425 sq.ft.	
19	Medication room	1 counter 1 narcotics locker 1 refrigerator 1 treatment cart	70 sq.ft.	double lock
20	Patient double bedroom	2 single beds 2 bedside cabinets 2 closets 2 dressers psyc unit lamp 2 lamps 2 high-back chairs 2 visitor chairs	310 sq.ft.	with curtain  special lamp construction reg. Shelter proof
21	Patient single bedroom	1 single bed 1 bedside cabinet 1 closet 1 dresser 1 high-back chair 2 visitor chairs	180 sq.ft.	



25	Vending machine area	2 vending machines 1 cabinet 1 telephone booth 1 drinking fountain	75 sq.ft.	
26	Public restrooms: Men's restroom  Women's restroom	1 stall 1 urinal 2 sinks  2 stalls 2 sinks	160 sq.ft.  150 sq.ft.	handicap accessible
27	Soiled utility	1 medical waste barrel 2 waste barrels	140 sq.ft.	
28	Janitor	1 sink	30 sq.ft.	
29	Storage	shelf 9 cabinets	220 sq.ft.	

### *Landscaping*

Area		Equipment	Square footage	Remarks
1	Parking lot		3400 sq.ft.	20' x 9' per car
2	Ramps	grab bars		as required

3	Courtyard	2 barbecue grills 2 tables 4 benches umbrellas	972 sq.ft.	concrete paving  for sun protection
4	Swimming pool	pool 75' 1 1/2" x 45'-0" life safety equipment	6183.45 sq.ft.	with fence
5	Playground	1 basketball court 2 football goal posts	4000 sq.ft.	

## **B. Survey of Al Sigl Center; facilities and site conditions**

The Al Sigl Center is located on Elmwood Avenue in Rochester, New York. (see figure 1) The Al Sigl Center is an environment that encourages abilities and growth toward independence for the disabled. Eight rehabilitation agencies share and cooperate while maintaining their distinct missions and programs. Thousands of children and adults having a broad range of disabilities, enter and move freely about the Al Sigl Center in buildings designed to meet their needs.

The Mary Cariola Children's Center (MCCC) is one part of the Al Sigl's many branches; its purpose is to enable children with multiple handicaps to reach their greatest potential. MCCC serves over 450 children from birth to 21 years of age. Mary Cariola Children's Center offers residential, educational, therapeutic, and support services. Preschool and school-age educational programs are individual programs offered to teach children tasks, such as lifting a spoon and feeding oneself, looking up to indicate a "yes" response, making a bed, or dressing oneself. Physical and occupational therapy, speech therapy, behavior modification, medical and psychological consultation, and nursing services are also part of the school day, and are a key to the children's growth and development.

The location of group homes is generally determined by easy access to public transportation for use by the staff and children. Accessibility of public transportation encourages independent use by older children in accessing technical and vocational schools. Additionally, use of public transportation also is more cost effective than having staff transport children to and from various services and activities. Ideally a group home is located with good access to hospitals, clinics, psychiatric services, churches, schools, specialized educational facilities as well as grocery and clothing stores.

The grounds should be attractive, with lawn, shade trees, and flowers, and should afford sufficient space for outdoor activities.

In designing a group home, such factors as age of children, behavioral problems, and physical disabilities should be taken into account in determining variations in space requirements, arrangement of physical facilities, equipment, etc., to ensure accessibility inside and outside of the building.

One large old house and two vacant dormitories which belong to the New York State Psychiatric Center, stand opposite the Al Sigl Center on Elmwood Avenue. (see figure 1,2) Renovation or removal of these buildings was under discussion by the Monroe County Legislature at the time of my initial research. Initially, my analysis regarding location and environment suggested this area as an ideal

site for my Thesis proposal. From this site, disabled children could go to the Al Sigl Center on foot using an underpass or overpass to connect Al Sigl Center with the Group Homes. In addition, Monroe Community Hospital, Highland Hospital, Strong Memorial Hospital, Highland Park, and many elementary schools are located nearby. By car, shopping malls and downtown are only ten minutes away. The area is also located on several bus routes.

Upon further examination I determined that, while this site was appropriate, stringent code requirements could not be accommodated in the existing buildings without compromising the project's program.

I then decided to design a prototype facility which was not site-specific.



### C. Code requirements

In the United States, there are a number of codes that are applicable to this kind of project. These codes include the Americans with Disabilities Act (ADA), American National Standards Institute (ANSI), the State Mental Health Code, Social Services, American National Standards, and Standards for Group Homes Services for Children. Barrier-Free design for people with disabilities is now mandated by Federal law under the ADA of 1990, which became effective in 1992. This Act sets guidelines for accessibility to places of public accommodation and commercial facilities. These guidelines are to be applied to the design, construction, and alteration of such buildings and facilities.

The American National Standards Institute developed the first handicapped accessibility standard (known as ANSI A117.1) in 1961. This standard states that "these specifications and these guidelines are based upon adult dimensions and anthropometrics."<sup>11</sup> If buildings, facilities, or portions thereof serve children primarily, the architect and interior designer should adjust the dimensions and other provisions to make them suitable for children.

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<sup>11</sup> American National Standards Institute, American National Standard (11 West 42<sup>nd</sup> Street New York, NY 10036, 1986) p12

"The public accommodations section of the ADA affects patient and visitor areas in health care facilities. According to the law, in new construction of health care facilities, all public and common areas must be fully accessible to everyone. Fifty percent of the rooms must be accessible in an extended care facility and/or nursing home, and 100 percent in special care facilities such as rehabilitation centers."<sup>12</sup> The following are some ADA and ANSI guidelines that apply to this project:

(1) Corridors: "The minimum clear width for single wheelchair passage shall be 32 inches at any point and 36 inches continuously, and minimum width for two wheelchairs to pass is 60 inches."<sup>13</sup>

(2) Accessible bedrooms must have a 60-inch-diameter circular maneuvering space.

(3) On each side of patient beds, minimum clear floor space of 36 inches is needed in accessible patient rooms.

(4) Readily accessible doors must have 32 inches of clear width.<sup>14</sup>

(5) Health care facilities must provide handrails along circulation routes, and resting areas with seats along lengthy corridors. Handrails provide physical support for individuals with impaired vision and ambulation problems. Handrails must be rounded on top and

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<sup>12</sup> Ibid, Design That Cares, p218

<sup>13</sup> Ibid, American National Standards, p16

<sup>14</sup> Ibid, Design That Cares, p218

behind to fit a person's hand and designed to be between 1 1/4 inch and 1 1/2 inches in diameter.

(6) Grab bars in the bathroom must be mounted between 32 and 34 inches from the floor and 1 1/2 inches from the wall.

(7) Public rest rooms and bathrooms should provide more wheelchair-accessible toilet facilities than currently required by code, according to ANSI, an agency which provides technical design criteria for building codes and other regulations.

(8) According to the ADA, accessible routes within the boundary of the site shall be provided from public transportation stops, accessible parking and passenger loading zones, and public streets or sidewalks leading to building entrances.

(9) Buildings, facilities, elements, and spaces that are on the same site should be connected.

(10) Ramps: Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp. The maximum slope of a ramp in new construction shall be 1:12, and the maximum rise for any ramp run is limited to 30 inches.

(11) New construction is also required to make at least 50 percent of all public entrances accessible. Accessible entrances to enclosed parking, pedestrian tunnels, and elevated walkways are also required.<sup>15</sup>

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<sup>15</sup> Ibid, Design That Cares, p218

In addition there are fire code guidelines for group homes for children. These standards require "All buildings should be located, constructed, and equipped to guard against hazards. Housing for children should comply with state, provincial, and local fire regulations and should be periodically inspected at least once a year."<sup>16</sup> All buildings should be carefully examined from the standpoint of maximum fire protection. New buildings should be of fire-resistant materials. Old buildings should have sprinkler and smoke detectors. Fire exits, doors, and hallways should be well lighted and identified by back-lit exit signs. These areas also need to be kept clear and ready for use. There should be more than one exit from all buildings and from each floor. An automatic fire control system is important to the safety of children and staff. All electrical and heating installations should be approved by the Underwriters' Laboratory and should be installed accordingly. Where storage of gasoline, kerosene, fuel oil, or other highly flammable material is necessary, adequate provisions should be made to meet all requirements of safety and fire codes.

Group homes in New York State must also comply with rigorous New York State Mental Health Guidelines and Social Services Guidelines.

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<sup>16</sup>Ibid, "Standards for Group Home Service for Children.", P27

### III. DEVELOPMENT OF THE DESIGN

#### A. Initial ideas and schematic diagram

When I began developing the design of this facility, I felt that the spirit of human dignity needed to be the focus of this design. When I decided to incorporate the design of three Group Homes for disabled children with an Administrative and Medical center, I first considered a modular space organization with symmetrical geometry similar to a Greek temple. (see Figure 3)

Drawing on my ideas, I was careful not to destroy the harmony of balance and proportion, or mirrored images.(see Figure 4)

To develop the schematic design, I sketched a square which had four angles. (see Figure 4) I also considered the shape of the Al Sigl center, which is composed of several rectangles. (see Figure 1) I imagined that one angle could be for the Administrative and Medical Center, and the other three angles could be for the three Group Homes. The four corners could be used as pathways between the Group Homes and the Administrative and Medical Center.

Easily comprehensible circulation is important to any building, particularly for first-time visitors, staff, and visually disabled individuals. While developing this design,

I added the shape of a circle to create spaces and clarify circulation paths. (see Figure 4) The manner in which these spaces are arranged clarifies their relative importance and functional or symbolic role in a building's organization. The spatial organization of buildings and the spaces within them is dependent upon a number of factors such as: functional proximities, dimensional requirements, hierarchical classification of the spaces, and requirements for access, light, or view.

After considering a number of methods to organize space and revising the program, I determined that a centralized organization would work best for this facility as it would provide easy access between the Administrative and Medical Center and the three Group Homes. This method also permitted development of small-scale spaces in the Group Homes along with large spaces in the Administrative and Medical Center.

Centralized organization utilizes forms that are relatively compact and geometrically regular and can be used to serve as an object-form within a defined field or volume of space. "Centralized organization is a stable, concentrated composition that consists of a number of secondary spaces grouped around a large, dominant, central space."<sup>17</sup> (see Figure 5,6,8,10,13) This differentiation among the secondary spaces allows the

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<sup>17</sup> Francis D.k.. Ching, Architecture Form Space & Order (Van Nostrand Reinhold Company, Inc. 1979) p206

form of centralized organization to respond to varying conditions of its site.

I also applied radial organization to the Group Home spaces. "Radial organization of space combines elements of both centralized and linear organizations."<sup>18</sup> (see Figure 7,22,30) Strictly speaking, centralized organization is an introverted scheme that focuses inward on its central space; radial organization is an extroverted scheme that reaches out to its context. With its linear arms, it can extend and attach itself to specific elements or features of its site. As with centralized organizations, the central space of radial organization is generally regular in form. The radiating arms can also differ from one another to respond to their individual requirements of function and context. This arrangement results in a dynamic pattern that visually suggests a rotational movement about the central space.

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<sup>18</sup> Ibid, Architecture Form Space & Order (Van Nostrand Reinhold Company, Inc. 1979) p224

## B. Spatial relationships

There are several theories that guide the creation of spatial relationships. My goal is to synthesize the theories of spatial relationships to both separate and join these diverse functions. (see Figure 5)

“Adjacency is the most common type of spatial relationship. It allows each space to be clearly defined and to respond, each in its own way, to its functional or symbolic requirements.”<sup>19</sup> Through the use of an adjacent relationship, two spaces that are separated by distance can be linked by a third, intermediate space. The intermediate space can differ in form and orientation from the other two spaces. The intermediate space can, if large enough, become the dominant space in the relationship, and be capable of organizing a number of spaces about itself. The degree of visual and spatial continuity that occurs between two adjacent spaces will depend on the nature of the plane that both separates and binds them together.

In my site plan, the Administrative and Medical Center are linked with the three Group Homes through the use of an adjacent relationship. The Center also is separated from the three Group Homes through the use of

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<sup>19</sup> Ibid, *Architecture Form Space & Order* (Van Nostrand Reinhold Company, Inc. 1979) P200



pergolas as the intermediate space. Due to its relative size and more public nature, I located the Administrative and Medical Center in the center of the complex. The three Group Homes are clustered at angles around it. (see Figure 5) Each building has its own independent entrance with ramps for easy access by individuals using wheelchairs. The Administrative and Medical Center has a main entrance for the general public as well as an entrance from each of the residential units. (see Figure 6)

The three pergolas connect the entrances between each Group Home and the Administrative and Medical Center. (see Figure 5,21) The pergolas have tree walls, concrete pavement, and glass roofs to provide shelter while people move conveniently between the units.

Four separate parking areas serve the four units. A swimming pool, private terraces, a courtyard, and a playground are located between the buildings; sheltered from wind, and from public view. (see Figure 5,21)

### C. Hierarchy of spaces

Most buildings normally consist of a number of spaces that are related to one another by function, proximity, or a circulation path. Buildings arranged and organized with requirements for various kinds of spaces, can be grouped into a functional cluster. Based on my research, and the general and technical consideration of the spaces, I determined that this program required about sixty rooms with various functions. I also determined that a hierarchy of spaces -that is assigning the symbolic and/or functional importance of various spaces- would enhance the clarity of the design proposal.

At first, I made groupings of similar functions, and determined locations for each group. In the Administrative and Medical Center, the public and office areas are positioned closely to the entrance. The medical area is between the office area and the inpatient area to facilitate use by residents and staff. The inpatient area is a medical ward used to accommodate children who may need observation or isolation from other children who are well. The inpatient area is located opposite public and office areas to ensure privacy and independent use of the inpatient area, and to ensure a quiet and bright

environment. The utility area is placed between patient and office areas.

Each Group Home is entered, by visitors, through a vestibule which includes storage for coats. The public spaces, such as the children's play space, living room, lounge, kitchen and dining room are located close to each other and near to the entrance for convenient access by visitors. (see Figure 7)

Utility rooms are in the center since they do not require windows, and can easily be accessed from the bedrooms. Children's bedrooms and communal spaces are located along the perimeter where they are provided with visual access to the outdoors and nature through large windows.

The hierarchy of the program spaces is as follows:

### ***1 Administrative and Medical Center***

A. Public area according to frequency of use:

- 1) Entrance
- 2) Reception area
- 3) Waiting room
- 4) Public rest rooms
- 5) Vending machines
- 6) Telephone booth
- 7) Drinking fountain

- 8) Interior park
- 9) Interior playground

B. Office area according to both frequency of contact with people and status of occupant:

- 1) Social Coordinator's office
- 2) Social worker's office
- 3) Conference room
- 4) Nurse's office
- 5) Doctor's office
- 6) Dietician's office
- 7) Bookkeeping and Medical Records office
- 9) Administrative Assistant's office
- 10) Administrative office

C. Medical area according to the relationships of spaces:

- 1) Physical and Occupational Therapy room
- 2) Examination room
- 3) Nurse's station
- 4) Medication room

D. Inpatient area according to utility by patients:

- 1) Patient room
- 2) Patient bathroom
- 3) Lounge with Kitchenette
- 4) Visitor's suite

- (a) Living room with kitchenette
- (b) Bedroom
- (c) Bathroom
- (d) Patio

E. Other spaces according to utility:

- 1) Employee's area
- 2) Linen storage and Clean utility
- 3) Soiled utility
- 4) Janitor
- 5) Storage

**2 Group home.**

A. Public areas

- 1) Entrance
- 2) Living room
- 3) Kitchen and Dining room
- 4) Lounge
- 5) Office
- 6) Conference room
- 7) Activity room
- 8) Porch

## B. Bedrooms

- 1) Double bedroom
- 2) Single bedroom

## C. Bathrooms

- 1) Bathrooms for disabled children
- 2) Bathroom for staff

## D. Other Spaces

- 1) Medication room
- 2) Laundry with linen and clean storage
- 3) Storage with Maintenance and Cleaning supplies
- 4) Refuse and Soiled utility room
- 5) Garage

## **IV. APPLICATION**

### **A. ADMINISTRATIVE AND MEDICAL CENTER**

As mentioned before, the trend in American health care designs is to break away from the “illness” image in favor of a “hospitality”/“home-like” image. The design of health care facilities has long focused on the functional process of delivering health care. Unfortunately, and unnecessarily, this approach has often resulted in facility designs that ignore the psychological needs of patients, staff, and visitors.

Access to normal living amenities, such as exposure to nature, can be particularly helpful in creating a stimulating environment. In particular, patients and visitors have needs with respect to Physical Comfort, and Regulation of Social Contact. These interactions must be a central concern when designing health care facilities with attached residential living units for children.

“Physical Comfort”, a measure of how individuals experience their environment, is affected by noise levels, temperature, odors, lighting, as well as by how successful those individuals are in manipulating their environment to comfortably position themselves within it.

“Regulation of Social Contact” (privacy and personal territory) means the design must allow for visual and

physical privacy, acoustical privacy, and individually determined social contact.

From the design of heating-ventilation-air-conditioning (HVAC) systems and bathroom grab bars to the selection of floor coverings, health care facility architectural and interior design decisions can directly affect the health and safety of the facility's users.

Another important role of health care facility design is to help prevent illness and injury. By code, poisonous, flammable, and harmful materials must be kept in locked containers, available only to authorized adults. A building's, heating, water supply, sewage disposal, lighting, ventilation, fire protection, and other health and safety measures, must comply with codes and ordinances established by state, province, county, or city. (see Figure 8)

### *1 Reception and public areas*

The interior design of the main Entrance and Reception area support the criteria of physical comfort and social contact. A well-designed main Entrance to a health care facility provides direct visual access to the information desk from the main Entrance. The Entrance area needs to be large enough to accommodate both ambulatory people and wheelchair users throughout the area.



In my proposal, the main Entrance encompasses enough space for at least 2 people in wheelchairs. (see Figure 9) The height of the information desk is low enough, 30 inches high for wheelchair users to talk comfortably with staff or to complete written forms.

The Reception area plays an important role in projecting a caring image and good first impression. It is a major feature of this shared public area. There is a Waiting room in the Reception area that is protected from the corridor but is near a major circulation path. (see Figure 10) The waiting area is located adjacent to public restrooms, drinking fountains, vending machines for refreshments, telephones, and other amenities. (see Figure 11) All facilities in the Reception area permit wheelchair accessibility. To facilitate added privacy, public restrooms are accessed from hallways rather than through the waiting room. There are two sinks, a bathroom stall, and one urinal in the Men's public restroom. In the Women's public restroom, there are two stalls and two sinks. Each of the public restrooms has a stall and a sink with grab bars to assist the wheelchair user. There are two vending machines, a telephone, and a free-standing drinking fountain in the same area beside the Public restrooms. These are also wheelchair accessible.

It is important that the proper atmosphere exists when parents and their children are first introduced to the center. Open Waiting areas throughout the building have

been furnished with comfortable contract seating, arranged with color accents in pastel tones. To visually stimulate and provide an interesting and inviting area for people waiting, a number of design features are utilized. Included are aquariums, mobiles, paintings, plants, art work, and current reading material for children and their families. Waiting areas should accommodate people in wheelchairs and provide flexible seating that allows people to arrange themselves in groups of varying sizes. The type of seating in my project provides as much comfort and support as possible. (see figure 12) The seats have no sharp edges and have high backs and armrests for comfort and safety.

Interior design details such as floor covering and lighting can also make a significant difference. Lighting affects the ambience and comfort of the Waiting area. Corridors are illuminated in order to facilitate safe and comfortable movement. Generally, bright, cool white fluorescent lighting is considered institutional. On the other hand, indirect, warm, white fluorescent or incandescent lighting is considered friendly.

The atrium or interior "Park" is illuminated by a skylight by day, and incandescent lamps supplied by wall sconces at night. Indirect lighting, and other noninstitutional lighting such as table lamps and recessed spotlights for waiting areas, are preferred.

A resilient carpet is selected for ease of wheelchair movement, "with a pile height less than ½ inch or ¼ inch for people with less than normal strength and either an uncut or tip-shear high-density pile, so that wheelchairs and carts are not pulled in another direction by the carpeting...."<sup>20</sup>

Wall and door boundaries are articulated by door trim and baseboard colors that contrast with their surroundings. Handrails are provided in the corridor for physical support and for people who have impaired vision.

Health care facilities are often perceived by children as scary places. They are often seen as sterile, spooky buildings with funny smells and overly bright, greenish-cast lights. Nature, on the other hand, holds deep meaning for most of us. It is a place of peace, refuge, and tranquillity, and a symbol of life and growth. It is an integral part of a humane and caring environment. Providing access to nature is not only beneficial, it is necessary. It is not a luxury or an optional feature. When people look at natural scenes, they seek a sense of involvement and richness that gives them reason to continue viewing. Bringing nature indoors holds psychological benefits similar to those gained from access to nature outdoors. Accordingly, I have used plantings in an interior landscape to create an image of nature that will give people a sense of peace when they enter the facility. Enclosed by a sloping glass

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<sup>20</sup> Ibid, Design That Cares, P90

skylight, the area provides a real sense of destination including a small park, aquariums, and a playground. (see Figure 13) A densely planted area, with birds and bird houses, supplies additional visual interest. The natural light provides stimulating varieties in sun patterns. Birds and bird houses provide more to view, and a greater variety of textures. In my work, the skylight and screen walls which protect the birds are shown. To facilitate the maintenance of the plants and birds an access door is furnished.

Two big cylindrical aquariums, resembling columns are 3' in diameter and 20' tall. They are positioned on either side of the Waiting area, provide nature indoors and also act as partitions which distinguish between the corridor and Waiting area. (see Figure 12) Art work, a statue of a little angel, located at the Entrance and near the Waiting area, is a symbol of hope and an aesthetic counterpoint.

My hope is that this environment will enable parents and children to wait comfortably while not disrupting other people. A play area is oriented away from most waiting room seats, and is separated by a barrier, so that adults, who choose not to, do not have to become involved with children's play.

In my project, an inside Playground is designed on the opposite side of the Park. (see Figure 14) Its main purpose is to occupy Group Home residents and other

children who come to the Waiting area. This indoor playground provides a safe, weather-proof environment in which children can swing, slide, seesaw, trampoline, and play in the play house, or use the picnic table and benches. This area utilizes safe and sound-attenuating materials. For instance, a cork floor, and a wood and glass wall help prevent children's injuries and absorb the sounds of noisy play. In my preference, low wood finished walls are extended with panels of glass to the skylight ceiling. The glass is designed to enhance transparency and make a friendly open impression, while permitting supervision by parents and staff who observe from the other side. In addition, benches along major circulation paths provide good opportunities for people-watching.

There are ten offices in the Administrative and Medical Center.(see Figure 15) The offices are on either side of the entrance. One side includes the Social worker's office, Conference room, Administrative Assistant's office, Administrative office, and Social Coordinator's office. The other side is occupied by the Nurse's office, Doctor's office, Dietician's office, Bookkeeping and Medical Records office. They are located to maximize efficient contact with other people. The location of the Conference room is determined by the frequency of use of this room. Bookkeeping and Medical Record offices are located away from the Entrance, due to their confidential functions.

Offices are comfortable, attractive, and equipped for efficient operation. They are built with soundproof materials to isolate them from nearby noisy places such as the Entrance, Waiting Area, and Park. State-of-the-art equipment supports economical and accurate dictation-transcription, accounting, and statistical reporting. The offices are designed so that furniture can be arranged for unobstructed face-to-face conversations. Each office has side chairs and privacy, both of which are essential for interviews.

Furniture with sharp or protruding edges has been avoided in most areas. There is adequate storage space for office supplies and records. A records vault with fire protection, and fire-resistant files that can be locked, assure protection and preservation of case records.

## *2. Medical areas*

The Medical area is for children from the Group Homes who become ill or need physical examinations or therapy. (see Figure 16) It includes an Examination room, a Physical and Occupational Therapy room (both of which have offices), a Nurse's station, a Medication room, a Single and a Double inpatient room, and a Bathroom and a Lounge for inpatients. The design of this area balances human needs and technological needs.

It is important to give sick children pleasure and interest, to mitigate fears, in the health care environment. "Architects and interior designers can contribute to a more dignified atmosphere conducive to healing."<sup>21</sup>

Except for the Examination room and Physical and Occupational Therapy room, all medical spaces are separate from public spaces and accessed through a separate corridor. (see Figure 16) An automatic door (controlled by an electronic eye) at the entrance to the inpatients' area, facilitates ease of accessibility, safety and independence from public spaces.

Even in the 'hospital' space, institutional taint is minimized. According to my research of medical facilities, "Since not much can be done in terms of accessories, a logical step would be to add interest with imaginative decorative effects in the form of designs or patterns on the walls. More interest comes from pattern in the carpet or a carryover of the wall designs to the carpet...."<sup>22</sup> For instance, the hospital corridor is transformed by patterns of different shapes and colors. The walls and floor in the corridor of the inpatient area have various rhythmical patterns of geometric shapes which are composed of rectangles, circles, ellipses, triangles, and diamonds with different colors. (see Figure 16, 17, 18) Additionally, the shapes of patient rooms are

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<sup>21</sup> Jean Gorman, "Critical Condition." Interiors 1515 Broadways NY NY 10036 (December 1992): P96

<sup>22</sup> Frank and Rudolf H. Mahnke, Color and Light in Man-made Environments (115 Fifth Avenue New York, New York, 1987) p87

softened through the use of quarter circles. (see Figure 17) This creates a different atmosphere from the other places in the Administrative and Medical Center.

The same color carpet and wallcovering was used in the medical area as in the Group Homes, to give a home-like impression. The different shapes and colors may distract and reduce the fear most children have of medical treatment. The corridor also has an exterior door to accommodate escape from a fire or other emergency. (see Figure 16)

All health care providers have an interest in promoting quick recovery of patients, and in providing conditions that allow staff to function most effectively. Spatial organization and design must enhance the efficient work of physicians and nurses. I have, therefore, located their offices, treatment rooms and ancillary services in close proximity.

For patient comfort I have provided art work in Examination rooms to act as distractions to help pass the time spent anticipating the exam. I have also provided hanging space for clothing and a mirror for grooming after examinations, as well as appropriate ambient and task lighting. (see Figure 19)

The Physical and Occupational Therapy room provides adequate space to accommodate several pieces of equipment.



Benches in the corridor are for patients waiting to use Examination room and Physical and Occupational Therapy room.

The Medication room is located beside the Nurses' station to be easily controlled by nurses. (see Figure 19) First aid supplies and prescribed medicines are stored in a locked cabinet, not accessible to the children. The Nurses' station is located near the entrance of the inpatient area and close to the Examination room for effective supervision. The provided space permits two nurses to work simultaneously. (see Figure 19)

### *3. Patient areas and Visitor's suite*

Inpatients spend the majority of their time in one room. This one room serves as their bedroom, living room, dining room, physician's office, parlor, and sometimes even their bathroom. I considered how an inpatient's room can be designed to meet the needs of patients and visitors for privacy, physical comfort, and ease of communication. The area should provide adequate circulation space for medical emergency personnel and equipment for efficient access to the patient, and an unobstructed circulation area to ensure access for wheelchairs and walkers.

In determining the optimal arrangement of elements, it is important to consider patients' preferences, because they may differ from the preferences of the health care staff. For instance, although side-by-side and toe-to-toe arrangements are two possible ways for beds to be placed in a double room, "patients prefer the side-by-side arrangement for visual privacy because they do not have to look at the other patient."<sup>23</sup> I decided, however, to have a different arrangement according to the shape of the patient room. The arrangement of beds gives an adequate sense of territory with a window for each patient.(see Figure 17)

The two bedrooms, divisible by privacy curtains, include a window which the code requires for each resident. The dividing curtain provides much privacy; and being able to manipulate the curtain at will is very important to patients. I used a wallcovering with a floral pattern because it brings the familiarity of "home" to them.

Only rooms which have quiet functions are located near patient rooms and sound-attenuating materials are used in constructing patient walls. Fire-retardant, easily washed wall fabric to muffle sound, and protect walls from wheelchair abrasion is also provided.

Views of the outdoors are particularly important to inpatients. A lack of windows in hospitals (and offices) can

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<sup>23</sup> Ibid, Design That Cares, p161

negatively affect the mental and physical health of patients and staff. Looking out the windows gives children something to do, and can help orient them to the time of day, season, and the weather. In my project, I provided many, large windows.

To further the appeal of this inpatient area, the interior designer should scale down the size of furniture for children whenever possible. Articles such as chairs, beds, and closet rod height can be scaled to childlike proportions. The furniture in the Group Home, which houses children under twelve years old, is designed with these proportions in mind. Included in the inpatient room is a tackboard, a bedside table with stand, adjustable mirror, a dresser, shelf, clock, artwork, and a closet. (see Figure 17) Furniture with sharp or protruding edges has been avoided.

“Color influences the perception of a setting or one’s behavior in that setting. Color is one of the useful design devices for making inpatient rooms feel less institutional and more homelike.”<sup>24</sup> “Research shows that in pediatric wards every effort should be made to create an appealing and colorful environment for children and never create a total ward environment in only warm or only cool hues (this applies to all areas of a health facility)....”<sup>25</sup> In other research, “The most frequently used colors in health care facilities are pastel orange, yellows, peach, light green,

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<sup>24</sup> Ibid, Design That Cares, p175

<sup>25</sup> Ibid, Color and Light in Man-made Environments p89

turquoise and blue....”<sup>26</sup> From my research, I designed patterns of several colors on the walls and floor of the corridor to attract the children’s attention. In the inpatient room, the floral vinyl wallcovering with peach and light green offers a more cozy atmosphere, and the blue carpet is meant to feel cool and clean and reduce tension.

Lighting contributes to comfort, ambience, and task accomplishment in the patient room. Using a mix of fluorescent and incandescent lighting should be considered with dimmer switches placed within easy reach of both staff and patients.

Because of the weakened state of most inpatients, the bathroom for care patients requires special design features. (see Figure 17, 18) Some states require these features by code. Safety issues are of particular concern in and around patient bathrooms. The bathroom door swing should allow adequate clearance, instead of blocking the path to the toilet or sink. In addition, space must be available so that staff can assist patients within the bathroom. To accommodate ambulatory as well non-ambulatory children, (even though the code requires that the sink is at least 34 1/2 inches and no more than 36 1/2inches high), I have provided lower sinks which have been adjusted to children’s scale.

Shower areas should contain grab bars, a foldable seat, nonslip flooring, and shower controls that are easy to

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<sup>26</sup>Ibid, Color and Light in Man-made Environments p98

understand and manipulate. My key considerations when designing toilet areas were safety, ease of reaching and manipulating such items as the toilet paper dispenser and flushing lever, ease of sitting on and rising from the toilet, and adequate space to accommodate nurses.

Many inpatients are encouraged to get up from their beds as part of the recovery process. They are more likely to ambulate when they have attractive places to go to. An inpatient Lounge serves this purpose, and the location of the Lounge is critical. (see Figure 19) It is centrally located, close enough to most patients' rooms, so they will feel it is within a comfortable walking distance and will be more likely to visit that destination.

Since parties and dining are to be encouraged, I provided more space than is necessary for merely sitting. Furnishing and entertainment options available within the patient lounge may also affect a patient's sense of well-being. A lounge is likely to attract patients when it is furnished with comfortable, movable, and durable seating. Because the patient lounge will be used by a number of people at any one time, subareas within the room are easily formed using furnishings or dividers. In this way, small groups of individuals can comfortably participate in an activity without disturbing other patients or staff.

Attractions include plants and appealing artwork, a view of the outside, and a variety of entertainment

options, such as a television, stereo, a pool table, and movie screen.

It is advisable to have a kitchenette with a refrigerator and microwave in the Lounge as well. It is intended for brief cooking or reheating. The staff may also consider allowing noninfectious patients to eat their meals together in the patient lounge; this will afford them companionship and an additional opportunity to get out of their rooms. Since eating in the Lounge is desirable, tables, which may be stored nearby when not in use, should be available. People often want to inspect a social area before they enter it, to see what is going on and who is there. This design provides a generous, doorless opening to allow patients a preview of Lounge activity, so that they can decide whether or not to participate.

My health care facility offers a special service of overnight accommodations for family members or friends that may come to visit those who may be very sick and require a long health care stay. Visitors may want to remain close to the facility for a few days, weeks, or months. Some family members come from great distances and simply cannot afford to pay hotel fees for any length of time. Families and friends of patients have a variety of needs in conjunction with patients' health care visits or stays, but they may become so immersed in the patient's needs that they neglect their own. Facilities should be provided to meet the visitors' needs.

Visitors need privacy, escape, a place where counselling can be done, and places to reflect and ease their tension. For this reason, I designed a Visitor's suite with a bedroom, a living room with kitchenette, a bathroom and a patio. (see Figure 20) This area has a different atmosphere from that of the patient area. The suite looks like an apartment with a different color floral wallcovering, oak furniture, and draperies. I have provided a bedroom with two twin beds. The bedroom has a residential atmosphere with a vanity, tea table, two comfortable chairs, a big closet and two big windows. The living room has a futon and two dining tables which could serve for two families. During the summer, families can use the patio to eat or enjoy the outside. (see Figure 21) The bathroom has a sink with a mirror, a stall with grab bar, and a bathtub.

#### *4 Utility areas*

An Employee's room is located beside the Physical and Occupational Therapy room. (see Figure 19) Employees can use nearby doors to access the facility from the outside as well as to access Group Homes A and B. There is a kitchenette for preparing meals, a dining table with six chairs, and separate locker rooms for men and women, each with six lockers and a bench.

Linen storage and Clean utility spaces supply patient's blankets, clean sheets and pillows, and general utility equipment, including labor-saving devices such as electric cleaners and polishers which are provided for use by maintenance personnel.

A well-equipped Janitor's closet, near the Soiled utility room, has a slop sink and ventilated space for storage of mops.

The Soiled utility room has a refrigerator for specimen storage, three trash cans, and a door to the exterior. Storage is also provide for recreational supplies, health care equipment, furniture, and so forth. (see Figure 11)



## **B. Group Homes**

Group Homes should be well constructed, durable, attractive and functional in design. Construction and arrangement of the Group Homes should have adequate space for all activities of daily living, including recreation, privacy, group activities and visits from family, community acquaintances, and friends.

Group homes should enable each living group and the child care member assigned to it, to be housed in a unit containing all the rooms required to meet their living needs. "As a minimum, buildings, heating, water supply, sewage disposal, lighting, ventilation, food preparation, fire protection, and other health and safety measures must comply with the codes and ordinances established by the state, the county and city where the group home is located."<sup>27</sup>

The plan should provide for comfort, convenience, and easy maintenance, as well as minimum effort in staff supervision of children inside buildings and on the grounds. The special needs of handicapped children should be considered in planning doorways, halls, placement of windows, etc.

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<sup>27</sup> "Group Home Living Unit." Child Welfare League of America (440 First Street, NW, Suite 310, Washington, DC 20001-2085, 1984) p39

Choice and arrangement of furnishings and equipment for the children should be comfortable, secure, inviting to children, and promote cooperative endeavors as well as quiet and activities. Furnishings should be sturdy and durable enough for the use and comfort of the children.

The living unit should be a homelike residence in a residential area. It should be designed to meet the needs and characteristics of the children who will live there. (see Figure 22)

In choosing colors for the walls and floorcoverings, it is important to take into consideration the impact of color on children and adults. A well-qualified and practical interior designer can assure effective use of materials, colors, and design. The total environment of the group home should convey to each child a sense of personal worth and entitlement to a safe and pleasant home.

### *1. Public areas*

It is most desirable to separate public space and personal space to ensure privacy and dignity. (see Figure 23) In my proposal, there are three separate Group Homes, each having a Living room where children can gather for reading, study, and relaxation. It is intended to be an attractive and cheerful place for children, and to provide a bright atmosphere with many windows.

“Small children are likely to favor warm and luminous colors such as red, orange, pink, yellow. With these colors their inner feelings are released.”<sup>28</sup> There is also research which suggests “Some researcher reported a strong preference for violet among preadolescent children....”<sup>29</sup> “Under no circumstances should there be too many radically different colors in the major area....”<sup>30</sup> In my proposal, by using a violet carpet, pink floral vinyl wallcovering, and pastel upholstery, of related hues and complementary colors, I created a more homelike place that gives dignity and grace to the public area.

“The most successful wall colors for Living rooms are warm hues....”<sup>31</sup> The atmosphere of the Living room is cozy, attractive and inviting. There are books, magazines and newspapers, a grandfather’s clock, television, a stereo system, a non-working fire place (to provide the symbol of hearth without its potential hazard), as well as plants and flowers to help create a homelike environment. Curtains, rugs, pictures, and other accessories can be chosen with the children’s participation, when feasible, and with their interests in mind. (see Figure 24)

In addition to the Living room in the individual Group Home, adequate space and equipment is available for recreational and cultural programs. A Lounge plays this

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<sup>28</sup> Faber Birren, Color & Human Response (115 Fifth Avenue, New York, New York 10003, 1978) p117

<sup>29</sup> Ibid., Color & Human Response p118

<sup>30</sup> Ibid., Color and Light in Man-made Environments p88

<sup>31</sup> Ibid., Color and Light in Man-made Environments p100

role in my work. (see Figure 24) A well-arranged, carefully planned Lounge makes it easy and natural for a group to assemble with care givers at various times during the day. Group activities help children develop a feeling of ownership and inclusiveness. The lounge provides a place to do a variety of activities. Children can play cards, sing songs together, or relax in comfortable lounge chairs. The Lounge uses sound-absorbing materials for ceilings and carpeting, as they are adjacent to bedrooms in my project. As in the other public spaces, Lounge finishes include violet carpeting and floral vinyl wallcovering to enhance a warm, welcoming atmosphere.

In my project I have included a well-lighted and ventilated play space for games, individual hobbies and active play. Densely populated communities may have adequate recreational and community facilities nearby; but less densely populated areas may have to incorporate more space within the Group Home and depend less on outside facilities.

The Activity room may be adapted to the specific needs of the residents and to neighborhood patterns. Books, magazines, and materials for arts, hobbies and crafts are important in developing the cultural, educational and personal interests of the children and should be easily accessible to them.

The Activity room is designed as flexible space, using folding tables, folding chairs, and moveable equipment to accommodate other functions such as dance, athletics, and active play. Storage space with shelving is provided for art materials and sports equipment. It is arranged to make it readily accessible. Noise and activity of the children is insulated by using sound-attenuating materials in the walls and ceiling. (see Figure 25)

The group home should have a sufficiently well equipped kitchen to prepare meals for children and staff. (see Figure 26)

A well-equipped kitchen is essential to good service and is helpful to children who are learning about food preparation, service of food, and dishwashing. The size, amount and kind of equipment is determined by the needs and the number of persons at the group home. The kitchen is well lighted and equipped for control of heat and odors. Walls and floors are of attractive and easy-to-clean materials.

The dining area is arranged and equipped so that the children can have their meals together making dining an enjoyable socialable experience. Attractive dishes, silverware, placemats or tablecloths, and napkins will add dignity to mealtimes and encourage children to develop orderly living habits and manners.

Full compliance with local and state fire and safety regulations for the kitchen equipment is essential in the Dining room and Kitchen. Dining and meal preparation are both accommodated in the one large room in my project. It facilitates easy movement from food preparation through completion of the meal.

The Group Home has a modern Kitchen with a stove, sink, microwave, refrigerator, dishwasher, garbage-disposal unit, and storage space for snacks and other supplies. There is appropriate storage for supplies below and above the counter. The sink is designed for disabled children so that children may help the cook. Assisting and participating in kitchen activities can increase the self-esteem of disabled children.

Pictures, furniture, and other decorative amenities are used to make the Kitchen homelike and inviting.

A door to the Garage allows direct access to the vehicle and deliveries; particularly useful in bad weather. (see Figure 27)

The Dining room has recessed incandescent lights, a pendant light above the dining table, and sconces on the walls. Indirect incandescent lights in the Dining room offer a cozy and more home-like environment. An adjoining Refuse room is available for equipment, and garbage, which should be stored apart from food and eating areas, and with proper odor control.

In my project, an Office and a Conference room are provided for staff members who take care of the children. These spaces are attractive, comfortable and constructed with sound-absorbing materials, furnishing efficient working environments for the staff. (see Figure 25)

My project also includes a Porch with wood flooring, wallcovering, and several windows. The Porch may be used for passive or active recreation in bad weather. (see Figure 28)

## *2. Bedrooms*

As demonstrated in my work, sufficient single and double bedrooms are available for flexible use in the Group Homes. (see Figure 7) Single bedrooms should be available for those children prone to overstimulation, and particularly for adolescents, who often prefer to have a room of their own. Each child should be able to have and enjoy some privacy alone or with friends, as well as groups. All sleeping rooms should be outer rooms, well ventilated with views of the outside climate. The furnishings and decor should be appropriate for the age and activities of the children in the group, as well as attractive and easily cleaned.

No more than two children ever occupy one bedroom, so that the individual needs of each child in the

group can be met and each child can feel that he or she has a room to enjoy privately or with a few friends. At least one-third of the bedrooms should be single rooms for children who especially need them, regardless of the age of the children served by the center.

In my project, each Group Home has three Single rooms and three Double rooms which are cozy and cheerful. Walls are washable, and designed for children to mount pictures of their own choosing.

Light pastel wallcovering in each room has a theme in order to encourage the imagination of the children in the Group Homes. Themes such as the zoo, the sky, the flower garden, birds, sea, and Disneyland can stimulate a child's creativity and may suggest a story to the children. (see Figure 29) The child can choose his or her room of preference, whenever possible. They are encouraged to contribute their ideas to the decoration of the Group Homes.

The rose colored carpet (without pad) is meant to be warm, and the proposed selections of light yellow, blue, and beige pastel tones in vinyl wallcovering are bright and easily cleaned.

I saw a child (at a group home I visited) walking in big artificial fur slippers due to the cold floor, and babies having their diapers changed on the cold linoleum floor. This seemed very uncomfortable and unhealthy to me. For this reason, I propose a traditional Korean heating system.



The Korean heating system is a radiant system which consists of hot water pipes in a concrete floor. As a result, much of the heat goes directly up through the floor, and the rest of the heat is supplied to walls. It is beneficial for disabled children, particularly for those with multiple disabilities, who have difficulty sitting in a chair. They usually use chairs and beds, but if they need or want, they can easily lie down or sit on the warm floor.

Each child has a separate bed, equipped with level springs, a clean, comfortable mattress, bedding appropriate for weather and climate, and plastic mattress covers or other protection from bed-wetting, if necessary. To enhance individuality and a sense of self-worth and responsibility, each child has an individual chest of drawers, a bedside table, an individual closet with clothes racks and shelves within easy reach, a place for individual personal possessions, and play equipment or toys. A good mirror in each room is also helpful for children to view and admire their own physical appearance.

Adequate exits are provided, according to code, with no dead end corridors more than twenty feet in length.

### *3. Bathrooms*

There should be a sufficient number of separate toilet and bathing facilities for boys, girls, and staff, with a ratio of at least one toilet, bathtub or shower, and washbasin to four children, and with provisions for privacy. To be adequate, three kinds of Bathrooms were designed (one of them for the staff), since the mix of bathrooms, showers and toilet facilities could vary according to the age and needs of the children who live in the home. Two of the bathrooms are for multiply-disabled children. (see Figure 30) One of the two has a bathtub with chair, a stall, and a sink with mirror. The other one has a shower, a water closet, and a sink with mirror. All facilities have ADA required grab bars, and promote convenience, privacy and independence. Bathrooms in Group Homes need to be designed for safety, wheelchair access, and nursing assistance. My design provides wider space than the code requires.

An important consideration in planning the Bathroom is the extent to which it facilitates health and personal hygiene and assists the children in living together as individuals. The floor is made of non-glare and non-slip tile. Painted ivory colored walls are easily cleaned. Children have a designated place for their personal care

items such as toothbrushes, towels, washcloths and soap. Extra towels and tissue are stored in cabinets in a storage room. There must also be an adequate supply of hot and cold water at all times.

#### *4. Other*

General utility equipment, including labor-saving devices, that provide easy maintenance of the home should be kept readily accessible. The Laundry area contains a washing machine, dryer, iron, a sewing machine, ironing board and other equipment for suitable care of clothing for children who are adept enough to participate in daily household tasks with adequate supervision. The Group Home has a comfortable, well ventilated and well lit utility area for storage of equipment. Adequate storage space is located in the center as well as other Utility areas, for household supplies, games and sports equipment, crafts supplies, frequently used household furnishings, clothing, bedding, and linen which is conveniently within reach of the Group Home staff. (see Figure 30)

The Medication room faces the office in order to prohibit access by the children. One of the cabinets below and above the counter remains locked, available only to staff.

Adjoining the Dining room is a Garage with a ramp to provide handicap access to transportation in inclement weather. The size of the Garage is sufficient to shelter a van which is usually used for Group Home transportation. (see Figure 27)

## C. EXTERIOR

Outdoor spaces provide needed relief and respite. In addition, the aesthetics of outdoor space has important psychological value. It is not enough merely to plant a few trees and set down a bench or two. My design has additional open lawn, between the courtyard and swimming pool, for activities. My proposal also includes lighting for outdoor spaces to enhance nighttime safety and aesthetics. Parking facilities, a Courtyard, Swimming pool, Playground, and walkways are included. (see Figure 5)

### *1. Parking lots*

Parking areas should be provided for families, visitors, and staff. The design of the parking system needs to fully take into consideration safety, physical comfort, convenience, and accessibility. In my project, there are four parking lots; each near the Entrance of one of the four buildings. "With the passage of the Federal Americans with Disabilities Act, providing for the transportation needs of disabled people is incorporated into public policy."<sup>32</sup> One or two handicapped-accessible parking spaces are

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<sup>32</sup> Ibid, Design that Cares, p46

reserved, and clearly marked with the international symbol for handicapped access. These handicapped-accessible parking spaces are close to the facility, so that the distance from designated parking spaces to the health care facility is kept to a minimum.

## *2. Courtyard, Swimming pool, and Playground*

Outdoor space for play, enjoyment, and rest should be considered one of the most important parts of health care facilities for children. Design of these spaces is determined by the number and ages of children in care, and the availability of recreational resources to the Group Homes.

In my design, the Courtyard may be used for outside meals, and is furnished with a table and bench, and barbecue grills. A concrete slab provides access for wheelchairs. A supervised Swimming pool, 75' 1 ½" x 45'-0", is enclosed with protective fences and conforms to local health and safety regulations. The depth of this Swimming pool can be adjusted to accommodate children's ages and swimming abilities. These specifications were recommended by a RIT swimming coach.

The Playground is equipped for playing supervised ball games such as basketball, football, and volleyball. It

is well drained and properly surfaced for all children to engage in various kinds of activities. Space is also available for vegetable and flower gardens, permitting individual garden projects by children, as well as an area for playing ball.

### *3. Ramps*

Ramps are constructed to encourage visits to the other Group Homes, or the Administrative and Medical Center by the children. (see Figure 5) In order to accommodate all users, circulation surfaces made of concrete allow wheeled equipment to proceed easily. Handrails also provide physical support and make it easier for frail children to receive some outdoor exercise.

A consideration in my design is that ramps are wide enough for two wheelchairs to pass each other or for two or three children to walk side by side. In addition, a well-designed bench with arms, and a drinking fountain are provided. At night, the lighting of outdoor spaces of Group Homes helps make the environment look inviting, feel comfortable, and remain safe.

## V. SUMMARY

I sought a new approach in designing children's health care facilities—a design that not only cares *for* residents and visitors but a design that also cares *about* them. Caring is an objective that is appropriate for environmental design at all levels, from basic building layout to the design of door handles. The design guidelines presented are drawn from many different sources—research of needs, regulations, and preferences of health care facility users.

My focus is on Group homes for children with multiple disabilities. I recognize their compelling needs, and the traditional non-existence of patient input into the design decisions that affect them. I also recognize the inherent stress involved in visits to health care facilities and the relationship between facility design and stress.

My project offers the beginnings of a more humane approach from the research to the design of health care facilities—facilities that residents, patients and visitors will recognize as caring places. All resident and visitor spaces (resident facilities, public spaces, reception and waiting areas, corridors, inpatient rooms, medical areas, inside and outdoor activity spaces, and parking areas) represent my concern.



I put great effort into my design, utilizing everything that I knew, felt, imagined and confirmed from research throughout my work. I would like to provide the best facility for children with multiple disabilities. A Group Home is a basic facility for living, therefore, I want to create more home-like environments in comfortable, safe, convenient, and therapeutic places.

A Group Home should not only be a resting place, but also an activity place. I have proposed this project as not only a living unit or caring place, but as a pleasant place where children can play, study, and grow in both indoor and outdoor facilities.

The quality of health care environments today is restricted by limited support of communities. It would be beneficial, for there to be other health care facilities, like the Al Sigl Center, located near Group Homes. In addition, the Administrative and Medical Center included in my proposal could help the financial viability of the project by sharing management of three Group Homes and the complete care of the children's health. I created a "village" for disabled children which could function within normal towns like Brighton, New York, or more importantly, in Seoul, Korea.

This thesis represents only the beginning of my commitment to a future where my efforts will be focused on designing better health care and living facilities for the disabled.

## **BIBLIOGRAPHY**

American National Standards Institute. 1986. American National Standard 11 West 42<sup>nd</sup> Street New York, NY 10036.

Birren, Faber. 1978. Color and human Response 115 Fifth Avenue New York, New York 10003.

Bruiniks, Robert H and Lakin, K Charlie. 1985. Living and Learning in the Least Restrictive Environment Baltimore, P.H. Brookes Pub. Co.

Carpman, Janet R. and Grant, Myron A. 1993. Design That Cares 737 North Michigan Avenue Chicago, IL 60611.

Ching, Francis D.K. 1979. Architecture Form Space & Order Van Nostrand Reinhold Company, Inc.

"Community Treatment for the Retarded." New York Times 17 (August)1995: 22.

Cook, Fay Lomax. 1979. Who Should Be Helped? 275 South Beverly Drive Beverly Hills, California 90212.

Dear, M.J. and Taylor, S.M. 1982. Not On Our Street 207  
Brondesbury Park, London NW2 5JN.

Gorman, Jean. "Health Care Facility Planning: Critical  
Condition." Interior 1515 Broadways NY NY 10036  
(December 1992): 96.

"Group Home Living Unit." Child Welfare League of  
America 1984. 440 First Street, NW, Suite 310, Washington,  
DC 20001-2085.

Mahnke, H. Frank and mahnke, H. Rudolf. 1987. Color and  
light in Man-made Environments, 115 Fifth Avenue New  
York, New York 10003.

Opening All Doors : The ADA Videoconference. A three-  
part Series for Architects and Allied Professionals On the  
Americans with Disabilities Act. 1992. The American  
Institute of Architects. 1735 New York Avenue, NW  
Washington, DC 20006.

"Residential Facility for the Retarded." 1976. National  
Association for Retarded Citizens.

"Standards for Group Home Service for Children." Child  
Welfare League of America, 1978. 440 First Street, NW,  
Suite 310, Washington, DC 20001-2085.

Fig. 1 AL Sigl Center, Elmwood Avenue



One old house & two vacant dormitories

Al Sigl Center

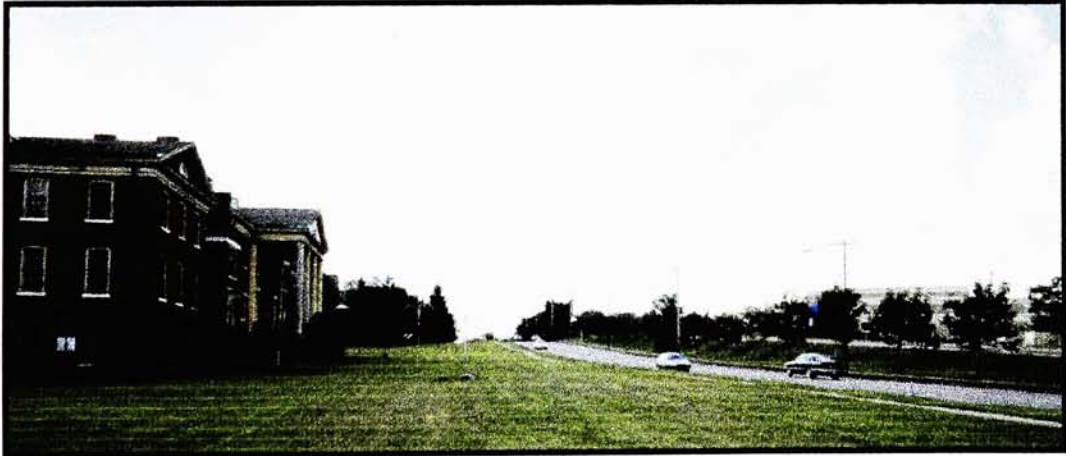


Fig. 2 One large old house and two vacant dormitories



Fig. 3 Sketches of Greek Temples



FIG. 325. Parthenon. a. (above) From the west; b. (below on facing page) From the east

FIG. 203. Delphi, Marmaria. The stoa looking west



FIG. 240. Bassae. Temple of Apollo. Reconstruction drawing of interior from north

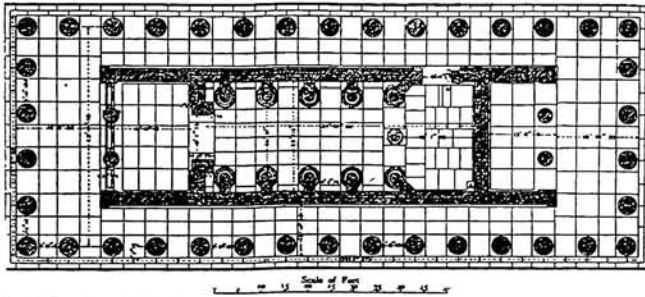


FIG. 238. Bassae. Temple of Apollo. Plan

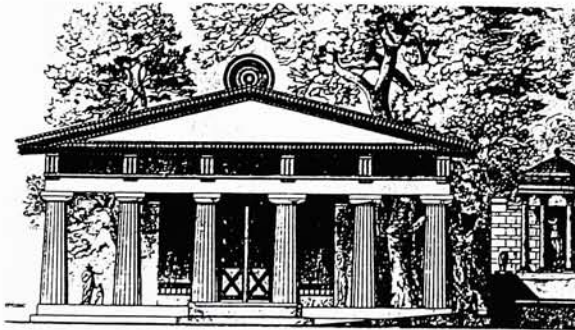
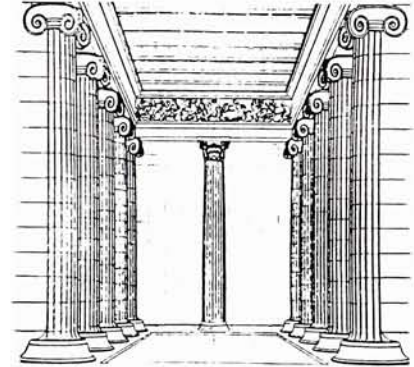


FIG. 84. Olympia. Temple of Hera. Reconstruction drawing



FIG. 326. Parthenon. From the northwest

Fig. 4 Development of idea Sketches

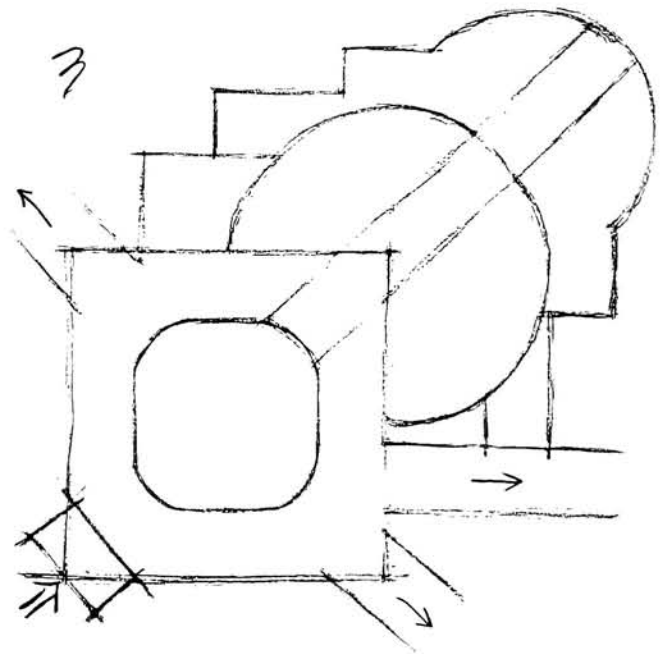
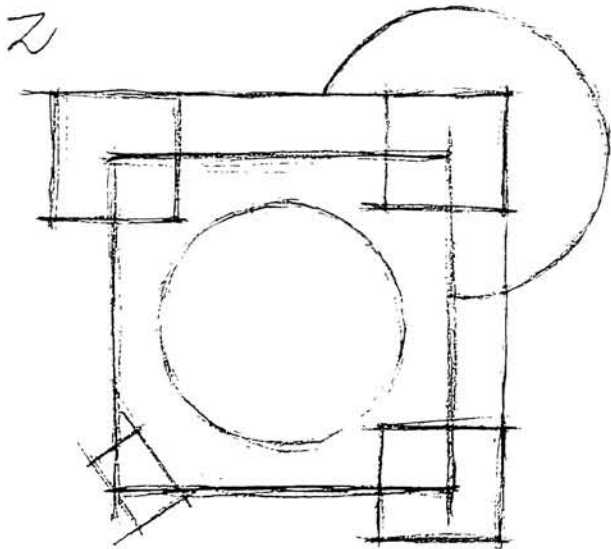
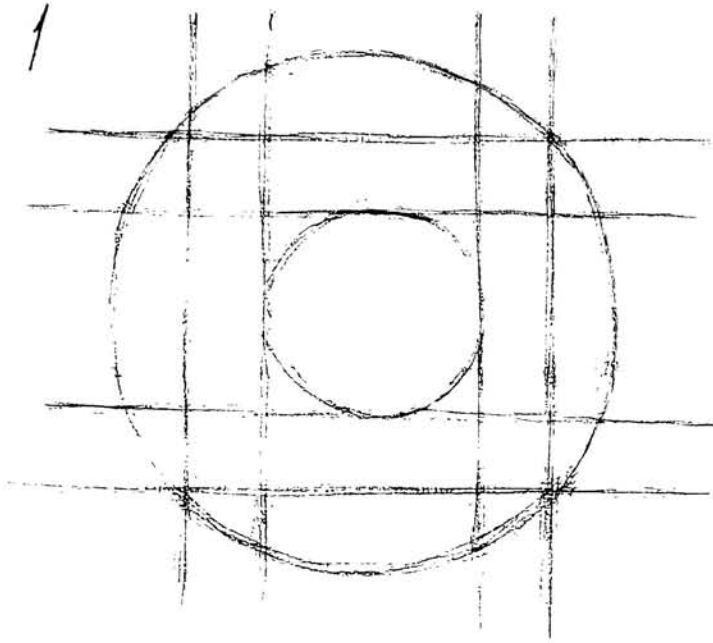


Fig. 5 Site plan

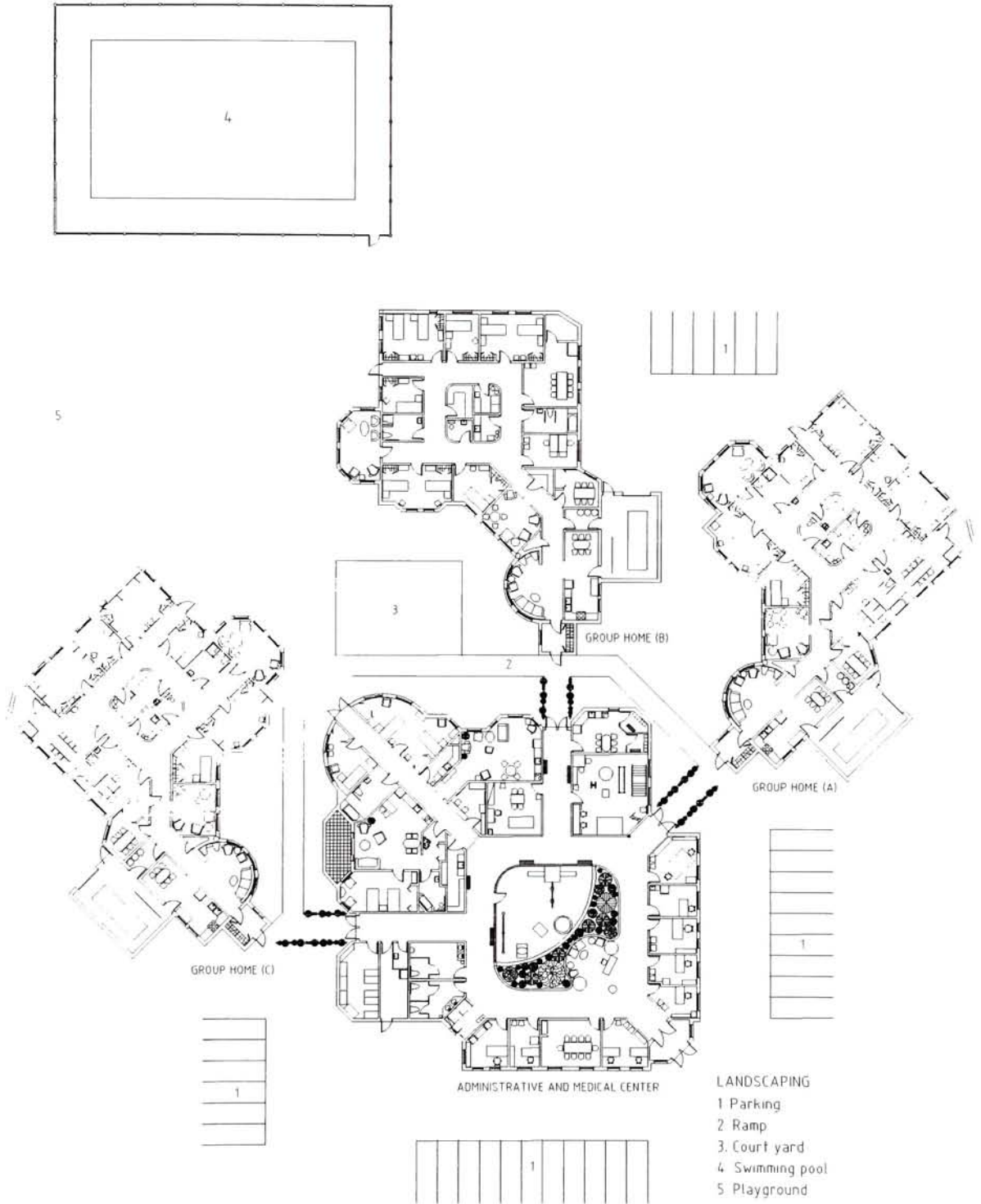


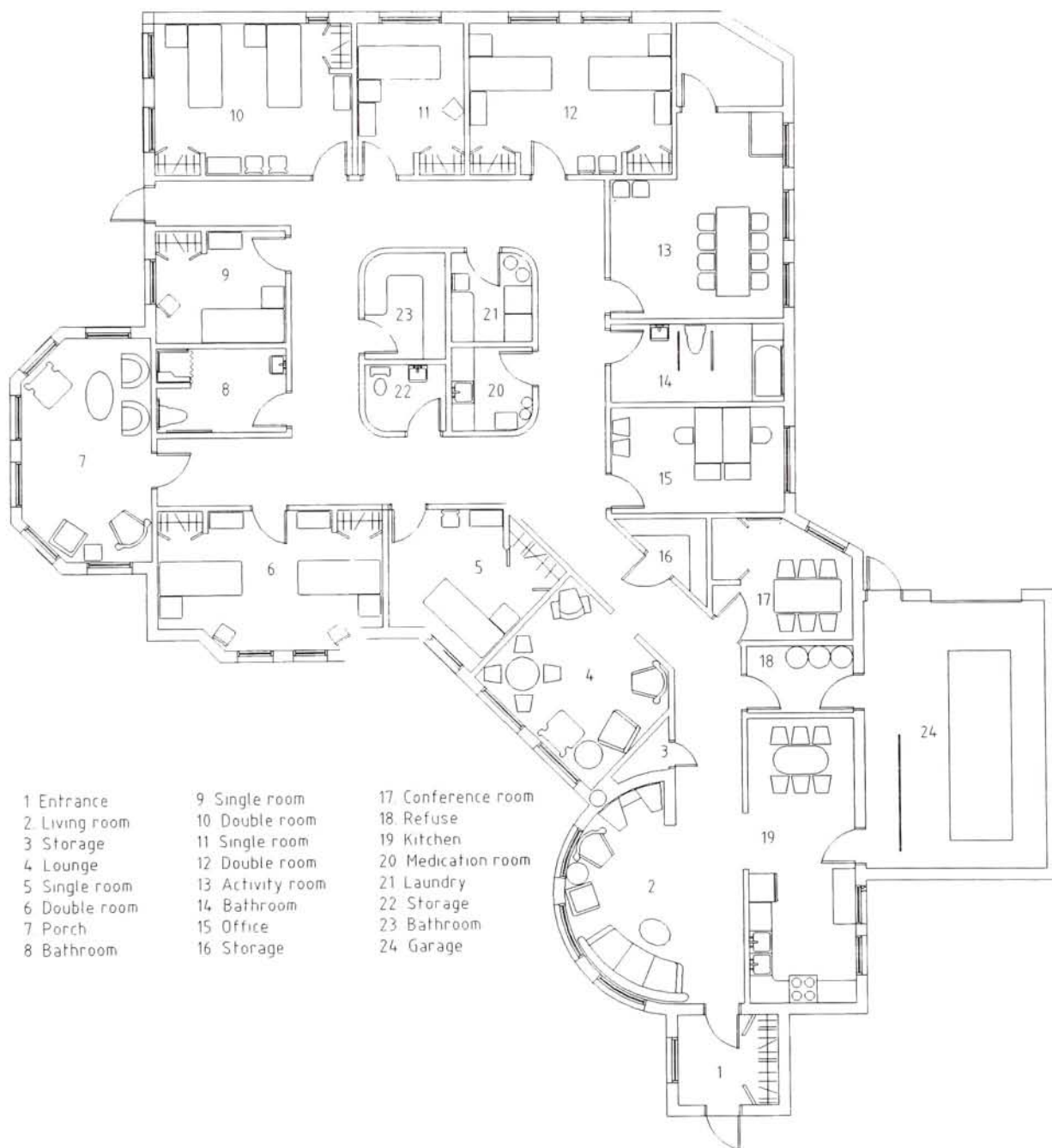


Fig. 6 Floor plan of Administrative and Medical Center



- |  |  |                                    |
|--|--|------------------------------------|
| 1. Entrance                              | 11 Reception area                          | 23 Visitor's Suite                 |
| 2. Social coordinator's office           | 12 Garden                                  | A Living room and Kitchenette      |
| 3. Nurse's office                        | 13 Playground                              | B Bedroom                          |
| 4. Doctor's office                       | 14. Physical and Occupational Therapy room | C Bathroom                         |
| 5. Dietician's office                    | 15 Employee's room                         | D Balcony                          |
| 6. Bookkeeping and Medical record office | 16 Examination room                        | 24 Linen storage and Clean utility |
| 7. Social workers' office                | 17 Nurse's station                         | 25 Vending machine area            |
| 8. Conference room                       | 18 Lounge                                  | 26 Public restroom                 |
| 9. Administrative assistant's office     | 19 Medication room                         | 27 Soiled utility                  |
| 10. Administrative office                | 20 Patient Double room                     | 28 Janitor                         |
|  | 22 Patient Single room                     | 29 Storage                         |

Fig. 7 Floor plan of Group Home



- |               |                  |                     |
|---------------|------------------|---------------------|
| 1 Entrance    | 9 Single room    | 17. Conference room |
| 2 Living room | 10 Double room   | 18. Refuse          |
| 3 Storage     | 11 Single room   | 19 Kitchen          |
| 4 Lounge      | 12 Double room   | 20 Medication room  |
| 5 Single room | 13 Activity room | 21 Laundry          |
| 6 Double room | 14 Bathroom      | 22 Storage          |
| 7 Porch       | 15 Office        | 23 Bathroom         |
| 8 Bathroom    | 16 Storage       | 24 Garage           |

FIG. 8 The Administrative and Medical Center



Fig. 9 The Entrance of the Administrative and Medical Center



Fig. 10 Circulation and Public area



Fig. 11 Vending machine area, Public restroom, Soiled utility, Janitor, and Storage

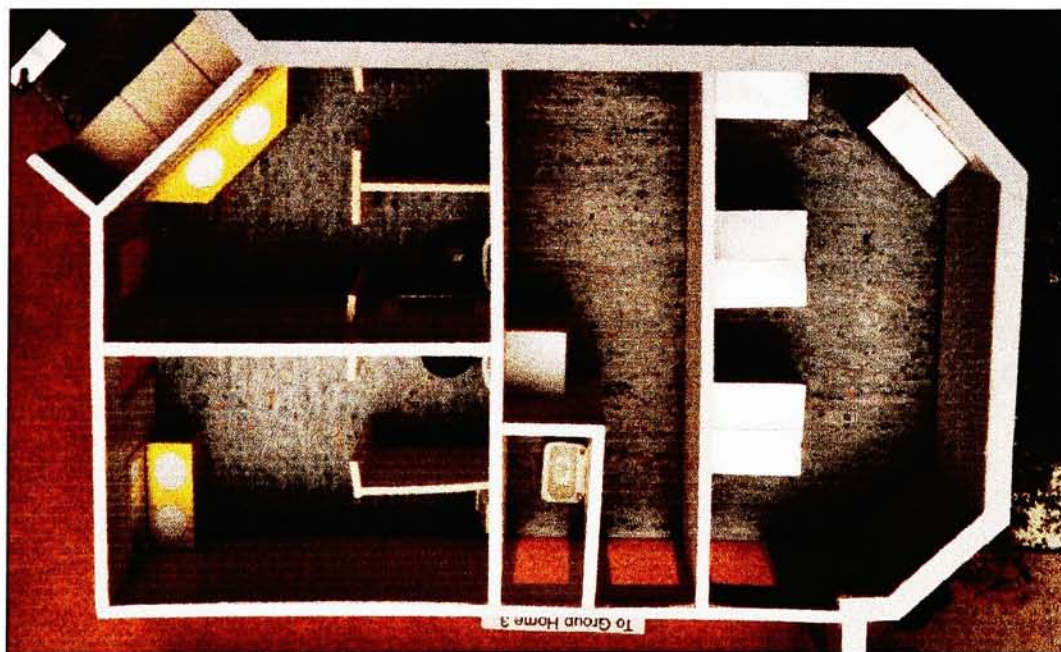
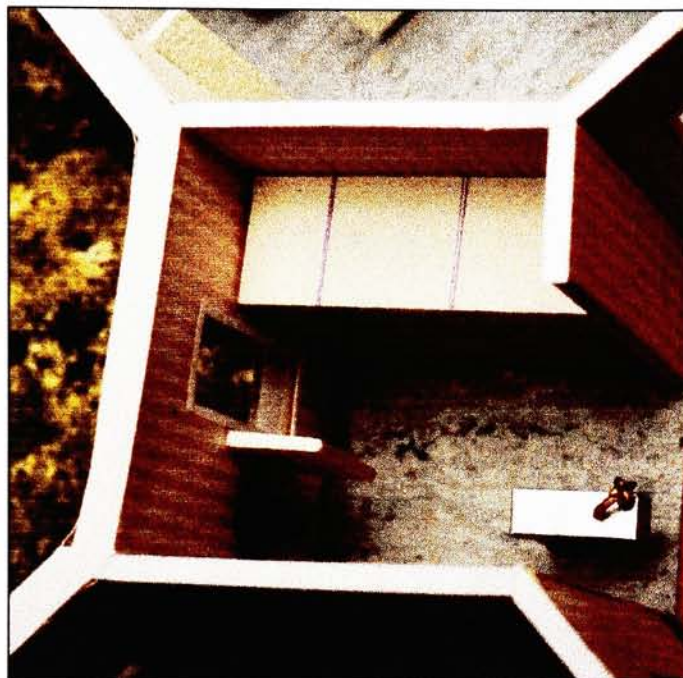


Fig. 12 Reception area and Waiting area

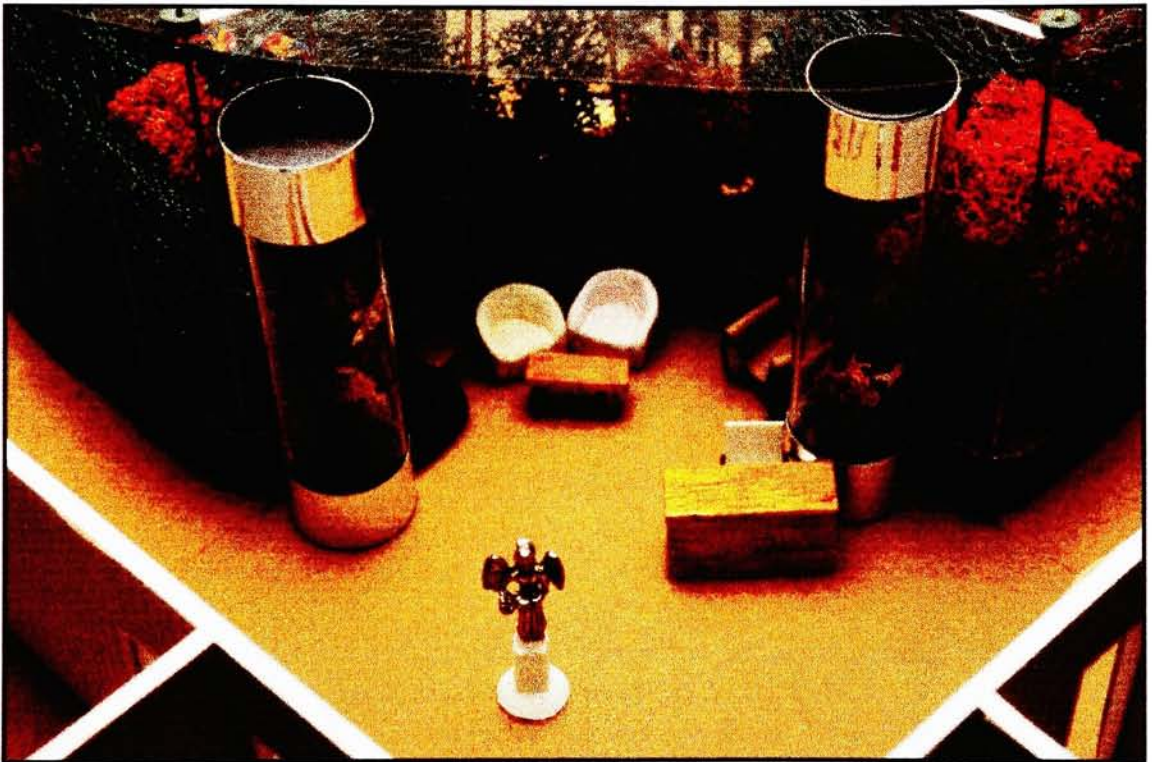


Fig. 13 Waiting area, Park and Playground

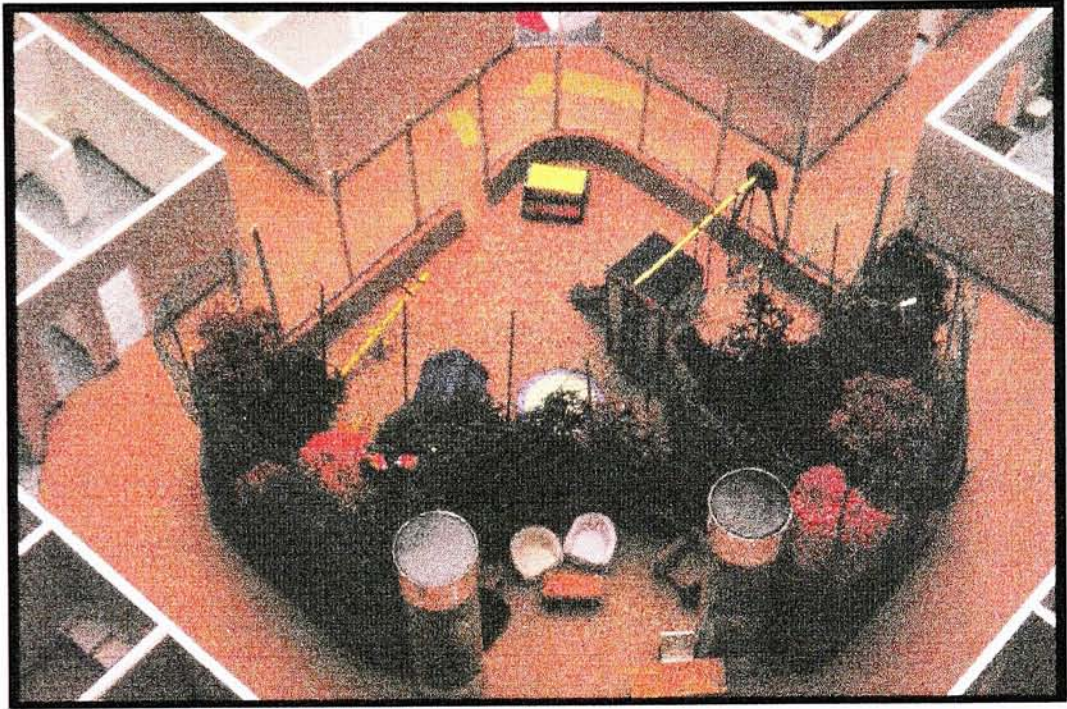




Fig. 14 Playground



FIG. 15 Office area

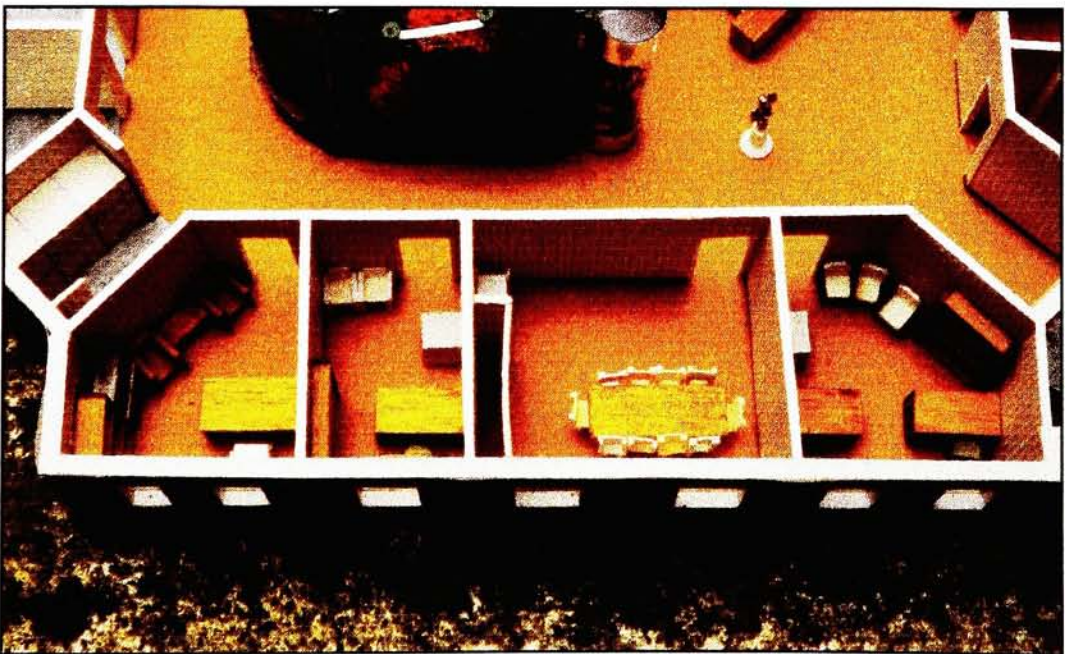


Fig. 16 Medical areas, Patient areas and Visitor's suite

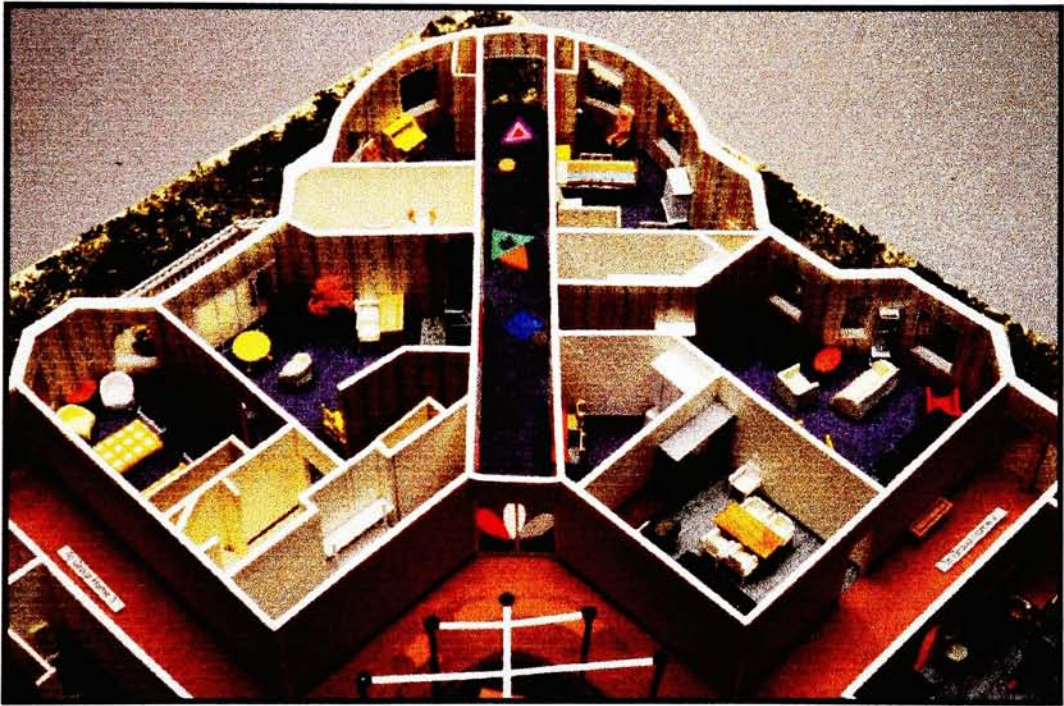


Fig. 17 Patient Single and Double bed rooms



Fig. 18 Medical area, Patient area and the corridor wall



Fig. 19 Physical and Occupational therapy room,  
Employee's room, Examination room, Patient  
Lounge, and Nurse's station



Fig. 20 Visitor's suite



Fig. 21 The Patio of Visitor's suite and pergola





Fig. 22 Group Home

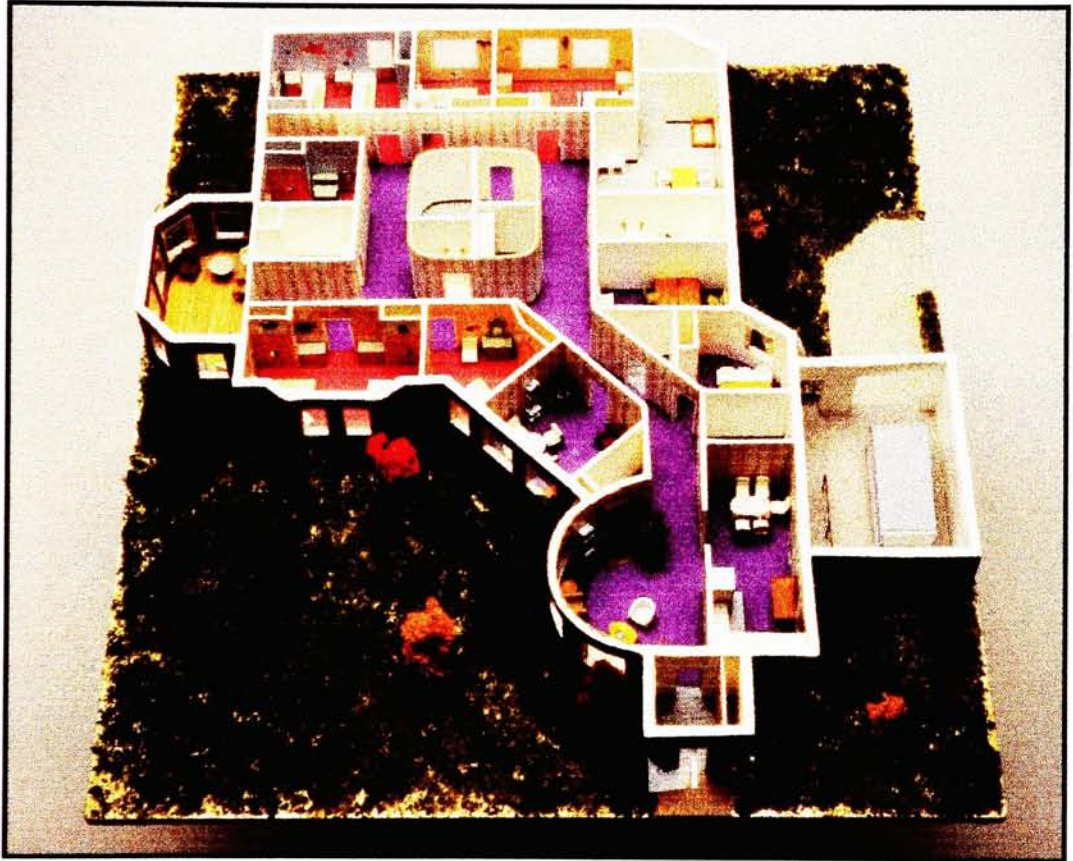


Fig. 23 Public area in Group Home

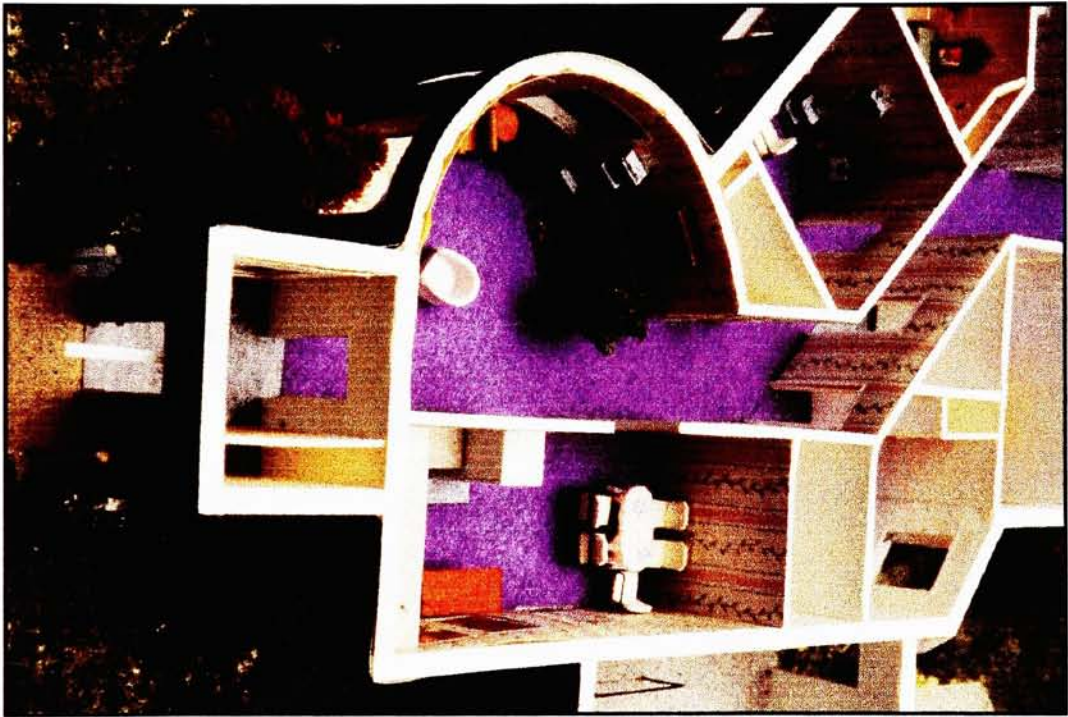


Fig. 24 Living room and Lounge



Fig. 25 Office area and Activity room

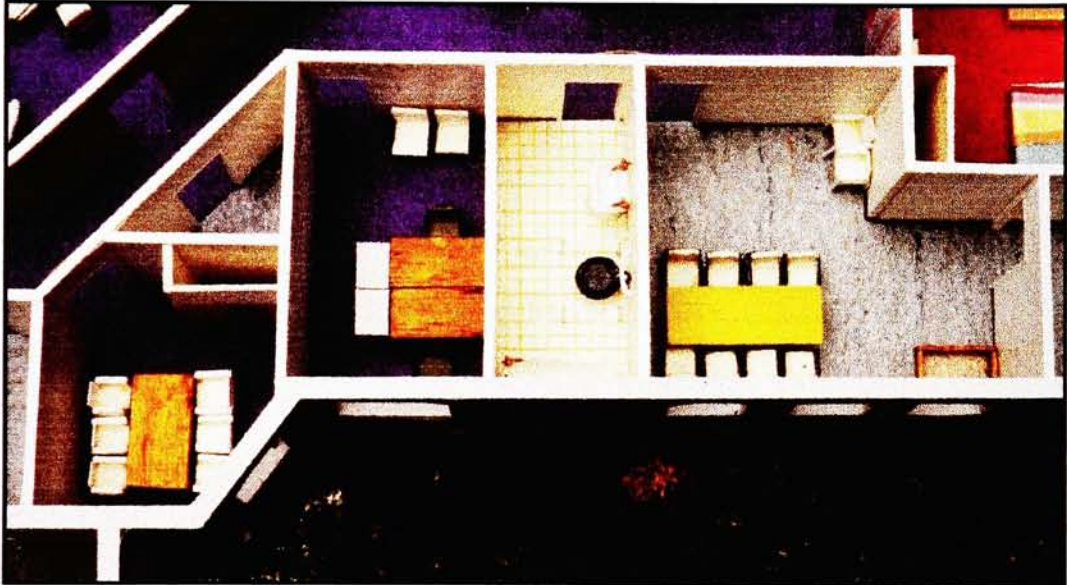


Fig. 26 Kitchen and Dining room



Fig. 27 Garage

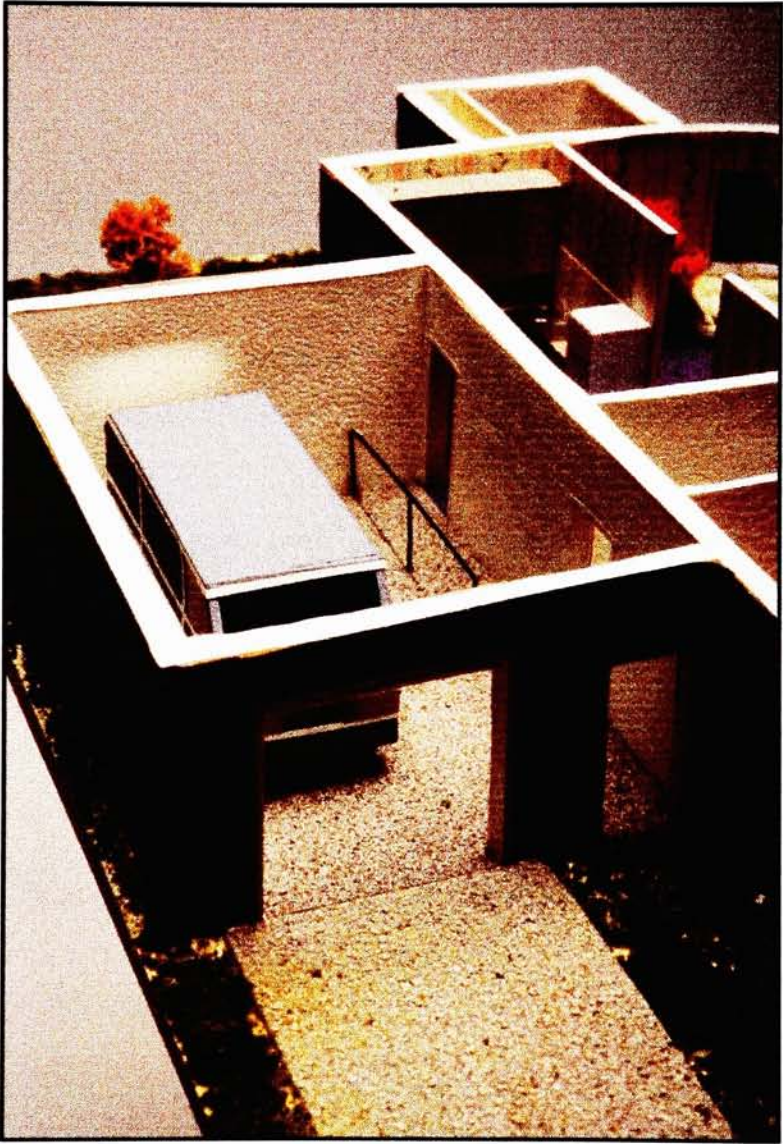
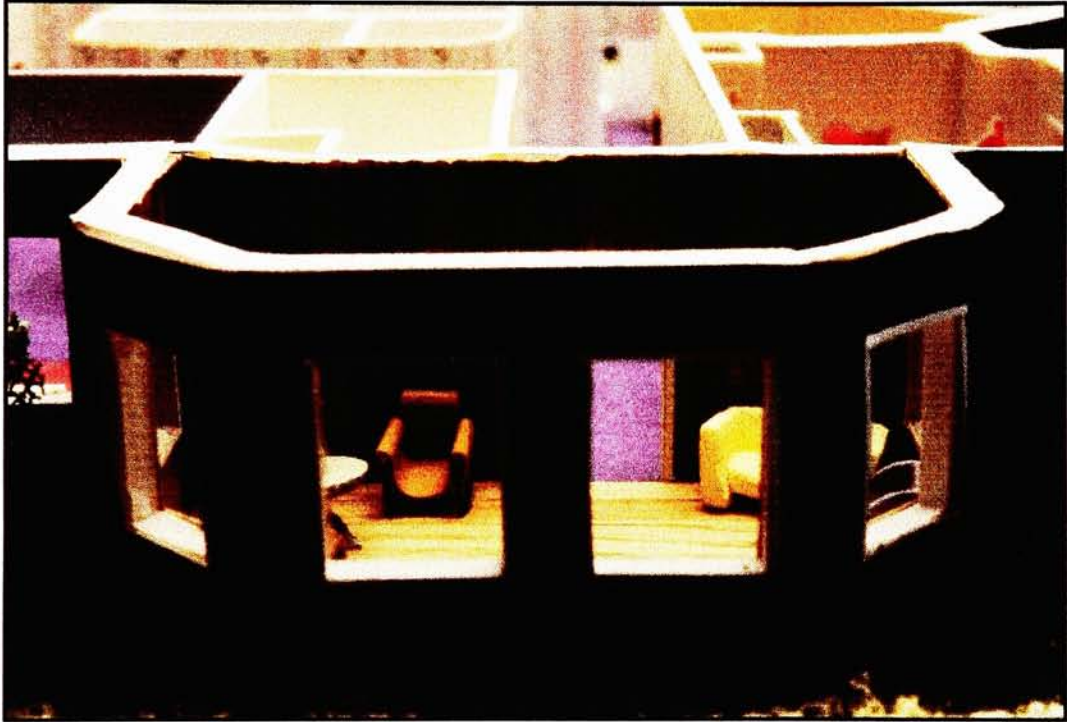


Fig. 28 Porch



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Fig. 30 Circulation, Utility area and Bathrooms

