PROTOTYPICAL DESIGN FOR A PROPRIETARY CHILDCARE CENTER LOCATED IN CHRISTIANSBURG, VIRGINIA

by

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Thesis submitted to the Faculty of the

Virginia Polytechnic Institute and State University

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

Housing, Interior Design and Resource Management

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January, 1992
Blacksburg, Virginia

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THE DESIGN OF A CHILDCARE CENTER:
AN ENVIRONMENT FOR CHILDREN AND ADULTS

by

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Housing, Interior Design, and Resource Management

(ABSTRACT)

This study draws on the theory and methodology of many fields to propose an alternative way of conceptualizing and conducting inquiry into the issues of daycare center design. The application of this approach is then illustrated using the collected data to design an actual childcare facility.

Qualitative interviews were conducted with directors and selected staff members of two different childcare centers, as well as with the parents of children currently attending each center. Analysis of the data collected reveals that there are many factors which shape and affect daycare center design options, including site size, finances, geographic location, number of children to be cared for and staff size.

The objective of this study was to design a prototypical proprietary daycare center in Christiansburg, Virginia for a client whose requirements were for a single building to accommodate three groups of users: 1. approximately 122 children from the ages of 6 weeks to 12

years, 2. the adults needed to staff the center, and 3. the parents of the children attending the center. Design features that were found to be advantageous to the development of a daycare center in the course of field study (i.e., full height walls for sound control, ample storage, easily reconfigured furnishings, natural interior lighting, staff break room) were incorporated into the proposed structure. This research contributes to a more complete understanding of daycare center design problems which affect the adults who interact with the center, as well as the children who attend the center.

ACKNOWLEDGEMENTS

As I complete this thesis, I feel that it is a summation of my experiences in graduate school at Virginia Tech and it causes me to reflect back on this portion of my educational career and those who have helped me along the way. I will attempt to mention some of the many people, without whose guidance, support, and belief, this thesis may have never been written.

Primary thanks go to Joan McLain-Kark, my major advisor and thesis committee chair. Her direction, sustained interest, insightful editing, and critical appraisal have, to a great degree, made the production of this thesis possible.

The members of my thesis committee, Janet Sawyers and Eric Wiedegreen, also deserve a large measure of thanks. Their instruction, advice, and comments concerning information within their particular fields of expertise proved to be indispensable.

I also extend my appreciation to the Directors and staff members of Rainbow Riders Childcare Center and Tomorrow's World Childcare Center. They graciously allowed me to interview them and enter their facilities and probe so that I could understand how they functioned and be better

able to eliminate deficiencies of design in a new structure as well as incorporate what did work well in their centers. I'd also like to thank the parents of children attending these daycare centers for their thoughtful and honest answers to the questions that I put to them. Their valuable input allowed me to further refine my design solution.

Finally, I dedicate this thesis to Katherine, T.J. and Matthew. It is through them that I once more became aware of the world of childhood and was inspired to write this thesis. Thank you for your love and support.

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CHAPTER I

INTRODUCTION

Origin and Importance of the Project

Numerous social changes have affected the modern family and have created a pressing need for expanded daycare facilities. While these changes are numerous and complex, they have had profound implications for the design of quality daycare facilities. By far, the major social change affecting the care of children has been the dramatic increase in the number of women who are now employed in jobs outside the home (Hofferth, 1979). For the first time in history, a majority of school-age children have mothers who work. Further, the fastest growing group in the labor market is mothers of preschool children, especially children under three years of age (Papalia and Olds, 1986).

The fundamental and most obvious cause of this dramatic rise in maternal employment is economic (Galinsky, 1988a). The desire to maintain or improve the family's standard of living coupled with rising prices has led to a need for increased income in most families. Although these financial needs may be the principal reason for mothers to work, there are others. To be specific, mothers may work outside the home because they like their jobs, because they want to have careers, because they want to get out of the house and meet

people, have new experiences, or simply to avoid boredom, loneliness, or frustration. The women's movement has also contributed to the increase of working mothers by bringing pressure against job discrimination, by encouraging new employment and educational opportunities for women, and by making it fashionable to be a working woman (Clarke-Stewart, 1982).

A second social trend that has implications for the daily care of children is the increase in dissolution of families through divorce. Today in the United States, nearly one half of all marriages end in divorce and over one million children are affected by these failed marriages on a yearly basis in this country. Even though the remarriage rate has kept pace with the divorce rate, studies indicate that between marriages a divorced mother usually lives alone with her children and works full time. And when she does remarry, she is likely to continue her outside employment (Hofferth, 1979).

There has also been an increase in the number of unmarried women having and keeping their children. Whether divorced or never married, a single mother is more likely to live alone and to be employed (Clarke-Stewart, 1982).

Another social change affecting the need for childcare is the decreasing availability of other relatives such as

grandparents, older siblings, and aunts to provide childcare services. The trend towards smaller families has both immediate and long-range implications for childcare. Most families have just two children, who are relatively close in age and therefore older siblings are not available to care for younger brothers or sisters. These smaller families have also led to a smaller network of aunts and older cousins who had formerly been available for childcare. Geographic mobility has also decreased the likelihood that these few relatives will live nearby (Clarke-Stewart, 1982).

The need for childcare alternatives has also been promoted by changes in social values regarding the appropriate roles for parents and children. There has been a move away from the traditional belief that parents should devote their lives to their children, making sacrifices in their own comfort and personal lives to ensure that their children have it better than they did. In contrast to their parents, today's parents are less child-oriented and are raising their own children with the independence to eat, play, dress, and do as they please. The goal for both parents and children in these families seems to be personal fulfillment and this new attitude frees parents from feeling that exclusive childcare is their duty (Clarke-Stewart, 1982).

For these reasons then, many families are finding it desirable or necessary to make arrangements for the daily care of their children beyond what they themselves can provide and more and more families are looking for daycare to be the solution. At the same time, there continues to be a limited number of daycare centers in this country. There are many reasons for this.

First, the expansion of daycare services has not been strongly supported by government or private groups. Secondly, many service-oriented organizations, such as governments, unions, and charitable agencies have been reluctant to make a large investment in daycare service because it is expensive to provide. Finally, as a business venture, running a daycare center is not very profitable, and so few commercial organizations or independent entrepreneurs have been attracted to this market (Clarke-Stewart, 1982).

In the same way, up to this point in time there has not been much emphasis on the design of the physical environment of the daycare center. This is because, for the most part, centers are located in shared spaces in buildings that were not designed for this use. Recently, though, designers are beginning to realize its importance, as evidenced by the establishment of the national Task Force on Daycare Interior

Design directed by Antonio Torrice and Ro Logrippo and the release of a position statement by the American Society of Interior Designers (ASID) concerning childcare. ASID advocates available and affordable quality daycare, as it relates to the built environment, and that it be safe, functional, and supportive in meeting the growing societal demand for daycare (American Society of Interior Designers, 1988).

Purposes and General Objectives of the Project

The objective of this project is to design a children's daycare facility to be built in Christiansburg, Virginia whose proposed physical environment is safe, clean, healthy, and is sensitive to the social, emotional, intellectual, and physical needs of the children. In addition, the goal of this project is to design a physical environment which will enhance the process of learning and playing at every developmental level of the child.

Equally important, the design of this childcare center will not overlook the need to produce and maintain a supportive environment for the adults who will also be users of this space - the staff and parents of children being cared for at the center. These adults must maintain a sense of autonomy in relation to an environment which will be developed to mostly accommodate activities at the reduced

scale of children if they are to be able to ably function within it and produce quality work.

A program environment where everything is child scaled may be seen as being appropriate for children, who generally spend most of their young lives surrounded by adult scaled environments such as their homes. But such a setting may be stifling and oppressive to the adults, such as caregivers and parents, who must share this space with children.

Justification for the Design

The need for meaningful and practical information about the design of child care facilities that are responsive to demands of all of its users is critical. An effective planning of the space utilizing evaluative design techniques will take place. Careful consideration will be given to the adjacency of spaces to facilitate communication and efficiency in the physical layout of the center. Innovative and thoughtful furnishings and casework designs are among the many unique developments which will be highlighted in the design presentation portion of this study.

The design ideas and forms generated by this study shall be of use by designers, architects, daycare administrators, and others who have an interest in developing quality environments for the care and training of children.

CHAPTER II

REVIEW OF RESEARCH AND DESIGN OF DAYCARE ENVIRONMENTS

This chapter begins with background information on the thesis including a short description of the various types of daycare center settings and their particular attributes. This chapter then proceeds to highlight the inquiries of specialists from the research fields of child development, environmental psychology, and design into the production of the preschool as an environment which fosters the physical, intellectual, social, and emotional well-being of the children attending a daycare center, the staff that care for them, and the parents of these children who spend time within the center. An interrelationship is demonstrated between these many diverse sources of information from different fields and disciplines. Finally, the chapter concludes with a review of published articles on daycare installations, current practice and case studies.

Types of Daycare Centers

A daycare center is the most visible and easily identified alternative childcare arrangement. A center may provide care for fewer than fifteen children or more than three hundred and are usually divided into classes according to the children's ages.

Compared to other daycare arrangements, centers have

certain advantages. For the most part, they are stable, keep predictable hours, and are publicly accountable and are easily monitored by parents. They usually have some staff with training in child development and are likely to offer children educational opportunities and the chance to play with other children in a child-oriented, child-sized, safe environment that is well-stocked with materials and equipment (Clarke-Stewart, 1982).

Although there is a tremendous variation among daycare centers, some differences can be predicted by knowing the type of center you are dealing with: franchised or independent, parent cooperative or corporate, etc. A major difference between centers relates to the source of support. Some are private, supported by parent fees, while others are public, and are supported by government funds. The many variations within the public and private types of daycare center have been reviewed by Clarke-Stewart (1982) and these are discussed below.

Proprietary centers. These are private daycare centers run for a profit. They have no eligibility criteria and will take anyone who can pay the fee. Usually they are quite small and often located in converted stores or shops.

Franchise centers. These are also private, profit-making centers. Generally, a prototypical model of a

daycare center is developed and then it is replicated on a large scale throughout the country or a region. All of the centers in a childcare chain such as this have uniform facilities and programs. On the whole, they are well equipped, in new buildings, with nutritional food and some educational activities.

Community church centers. They emphasize personal attention and affection from caregivers rather than physical facilities. They are often located in old buildings, such as a church or community hall, and have limited recreational facilities. They do not stress health care, social services, or education.

Corporate childcare centers. A small but growing number of corporations, factories, hospitals, universities, and trade unions provide daycare as a fringe benefit for their employees. Usually the center is at a site near the company building, and offers a full range of services including education, recreation, and health care in a well-equipped physical setting.

Parent cooperative centers. In private cooperative centers parents do a major part of the care, maintenance, and decision making, usually with the guidance of a paid director and some teachers. These centers usually stress education rather than equipment, food, or health services.

Public service centers. These government funded centers offer the widest range of services, from meals to medical attention, and meet standards to insure adequate physical facilities, equipment, staff, and educational programs. There is usually an emphasis on children's cognitive development, in a stimulating environment offering books, music, lessons, and conversation.

Research centers. This category includes only a small minority of the total number of daycare centers, but these are significant because much of the research on the effects of daycare has been done in this type of facility. Usually affiliated with a university, these centers demonstrate what is currently thought to be optimal daycare practice. The physical environment is stimulating and spacious and the educational curriculum is based on the latest in child development research as well as time proven preschool activities.

Review of Related Research

The daycare center is on its way to becoming a social institution in this country, reflecting the culture of which it is part and transmitting to the young a view of the world as well as specific skills and knowledge. Although psychologists are often preoccupied with the effect of daycare on cognition and achievement, other social

scientists have taken a broader and more socially oriented perspective.

Psychologists look at the daycare center and schools in general as an institution with general functions in relation to the passing on of cultural norms to the young, but also as an environment for the development of the individual. The years that the child spends in these settings are spent as members of a small society in which there are tasks to be done, people to relate to, and rules that define the possibilities of behavior. Such experiences presumably affect aspects of social behavior and development such as the sense of self, the belief in one's own competence, images of life possibilities, relationships to other people, views of justice and morality, the conception of how a social system beyond the family functions, and how self and system interact (Minuchin & Shapiro, 1983).

School should not be looked at as being either more or less influential than the family or socioeconomic realities on the development of the individual. These are interacting systems, and experiences in any system may either confirm or modify experiences in other contexts. It seems essential to accept the fact that school is a major social institution with an inevitable impact on individual development and social attitudes.

The preschool environment is a protected one, bounded by the classroom and limited in scope. According to Minuchin and Shapiro (1983), preschool children have little concept of the classroom as an organized society. They interact with one or two classroom teachers, who are particularly significant figures for the young child, and with individual peers or in small groups. Preschool children are finding ways to make and maintain social contact, communicate needs, and express frustrations. Patterns of behavior based on family experience are modified in the school environment as children move towards social patterns that are mutually established with other people and viable for this setting.

The concept of school as context draws on the work of psychologists who have formulated an ecological approach to the understanding of human development and the relationship of people with their environment. Among the first researchers to call attention to the setting as a necessary focus in both studying and explaining behavior were Lewin (1951) and Barker and Wright (1955). Their concept of behavior settings identifies the ecological niches within which people tend to function in predictable ways. Thus, the classroom, the playground, and the home constitute different behavior settings in the child's life. These

investigators contend that behavior settings elicit and organize certain kinds of behavior, and define a setting to include both the tangible properties of the environment and the behavior patterns associated with it (Barker & Wright, 1955).

Rapoport (1982), confronts environmental behavioral research using a nonverbal communication model. The author approaches this behavior through observation, recording, and then analysis. What may be most noticeable about the preceding studies is their findings of the essentially social nature of almost everything that takes place in school. Much of school learning occurs through interactions between teacher and children , or between child and child. The rules of how to behave in classrooms are social rules. Achievement has consequences for social interaction as well as for feelings of personal competence.

Effect of the Daycare Environment on Adults

Maria Montessori, the archetypical designer of children's environments (Greenman, 1988), spent much time in the observation of children, turning her ideas into materials and principles and creating ideal settings in which she believed children could more readily learn. She was a pioneer in the use of child scaled furnishings, equipment, and toys which allowed children to behave

competently and feel that they had power within their environment. Child scale is critical where we expect children to become independent. Utensils, sinks, toilets, water fountains, and storage units should be scaled to maximize the child's self-reliance.

A daycare environment where everything is child scaled may be seen as being appropriate for children, who spend most of their lives surrounded by environments scaled to adults. But such a setting may be repressive and inhibiting to the adults, such as caregivers and parents, who also share this space with children. The daycare environment is one in which the staff may spend 2000 hours or more during the course of the year living and working with children (Greenman, 1988). One of the most critical factors in quality child care is the human factor. A daycare center which creates a positive climate, that is an environment in which everyone functions, both contributing to it and drawing comfort from it, leads to a productive, confident, and motivated staff. This is very beneficial to the care workers and to the children with whom they interact (Jorde-Bloom, 1988).

The spatial arrangement in an early childhood center can play a powerful role in shaping attitudes about work and influencing moods and dispositions (Bell, Fisher, & Loomis,

1978). Environmental variables such as temperature, light color, noise, ventilation, and the general layout and design of space can help or hinder staff in carrying out their jobs (Dodge, 1978; Prescott, 1981). Another aspect of this dimension is the degree to which staff have the proper equipment, materials, and resources to do their work effectively. Environments that are poorly equipped and do not provide sufficient or well-used space can be both frustrating and stressful to work in. Physical setting is an interesting dimension because it both influences and reflects the climate of an organization (Steele & Jenks, 1977). To further explain this concept, when people work in a setting that they perceive to be negative and unsatisfying, they tend to not want to take care of that environment.

In their research into caregivers perception of working conditions in a child care environment, Kontos and Stremmel (1988) note that although there is no direct empirical evidence that working conditions and quality in day care are related, indirect evidence and common sense suggest that they are. As a way of reinforcing this particular point, Kontos and Stremmel discuss the subscale of items related to "adult needs" included in a study by Harms and Clifford (1980) to be rated by subjects in determining their relative

importance to the quality of an early childhood program. These items included: storage for personal belongings, availability of a professional library, professional development opportunities, and space to meet and rest away from children.

The job satisfaction of early childhood education teachers is influenced by person-environment interaction, among other factors (Jorde-Bloom, 1986). The physical design of work environments can have an effect on psychological and physiological states as well as social behavior (Hall, 1966). Taking care of young children is physically demanding. Health risks include lifting children, bending over frequently, and sitting on child-size chairs. It is a necessity to have space that is attractive and well designed for the adults as well as the children (Galinsky, 1988b).

The child care setting should reflect the needs of the adult inhabitants. It also facilitate and support the performance and functioning of staff and parents. The daily logistics of group daycare make environmental support critical. The ease of performing the tasks of set up and clean up, storage, communication with parents, and other standard tasks determines the energy left to teach and care for children. A mixture of adult and child scale is

valuable for both caring and learning and minimizes the adult discomfort of functioning in a too small world (Greenman, 1988).

Figure 1 shows an extensive list developed by Greenman (1988) which is useful to consider when analyzing what adults actually do in the childcare environment and what the environmental implications of those actions may be. In addition, the role of the parent within the daycare center must be considered. The environmental issues affecting parents which are of concern when designing a center, as outlined by Greenman, are indicated in Figure 2.

Good environmental planning facilitates adult relationships. The group childcare environment must be one which is a good place for adults to be with children and with other adults. It should be a place where adults are physically comfortable and have the tools and equipment to work with, and where social relations are friendly and relaxed

Activities and Environmental Issues of Concern to Childcare Staff in the Design of a Childcare Center

Think and plan - Where? When? Work space?

Stock and Restock Shelves - Storage: Amount, Accessibility, and Location?

Prepare and Do Activities - Storage? Equipment? Activities?

Clean Up and Maintenance - Sinks? Janitor's closet? Equipment?

Teach and Guide - Time? Environmental support?

Manage Children's Traffic - Layout? Furnishings and Equipment?

Lift and Hold Children - Lifting minimized (diaper tables)?

Converse with Children - Acoustics? Furniture? Layout?

Meal Set Up, Serving, Clean Up - Storage? Equipment? Sinks?

Toileting - Room size and scale? Storage? Layout?

Work with Adults - Space size and scale? Individual space?

Communicate - Message space? Meeting space? Equipment and materials?

Record Keeping - Materials? Storage space?

Manage Staff and Parent - Space size and Scale? Layout? Traffic/ Furnishings?

Host for Parents and Visitors - Space size/Layout? Closets? Furniture?

Parent Confidant and Advisor - Private space?

Figure 1. Activities and Environmental Issues of Concern to Childcare Staff in the Design of a Childcare Center (Adapted from Greenman, 1988)

Activities and Environmental Issues of Concern to Parents in the Design of a Childcare Center

Separate from/Reunite with Their Children
Layout? privacy?

Visitor/Participant Communication
Space size and scale? Closets? Furniture?

Nursing Infant
Privacy?

Observer
Layout? Observation Spot?

Consumer/Evaluator
Communication/Display space?

Learner
Communication/Display space? Meeting space?

Figure 2. Activities and Environmental Issues of Concern to Parents in the Design of a Childcare Center (Adapted from Greenman, 1988)

The Physical Setting of The Daycare Center

Are assumptions that the physical setting of the daycare center facilitates or inhibits particular types of behavior valid? Do children relate differently to others because space is ample rather than restricted, or because classrooms are organized in certain ways? In modern times educational planners have given considerable thought to school architecture, assuming that there is an important relationship between the setting and the behavior within it (Proshansky, Ittelson, & Rivlin, 1976). Research testing this assumption has established some connections between environment and behavior. At the same time, it is clear that the physical setting is not independent of other features; it contributes to child behavior within the school context but is by no means a final determinant.

Preschool education has its roots in the nursery school movement, which primarily served children of middle class families. Such schools usually had multiple developmental goals. They fostered interaction with peers, trusting relationships with adults, the expression of ideas and feelings through language and other media, the development of motor skills, and the expansion of the child's knowledge of the environment (Biber, 1972; Swift, 1964).

Since the beginning of the nursery school movement, educators have considered the classroom setting a potential force for growth. They have made careful decisions about appropriate space, classroom design, numbers of children, and play equipment. Such decisions had two characteristics: They were embedded in a framework of goals for children and they were generally evaluated through informal observation. When social scientists entered the preschool classroom, they brought with them the psychologist's focus on the factors that influence behavior, the ethologist's methodology for documenting behavior (McGrew, 1972), and a general orientation toward scientific investigation. We now have systematic studies of the impact of physical settings, though the studies are often fragmented and must be reconnected to educational goals and to broader definitions of context in order to be of use in a study such as this.

Research into the preschool setting has some identifiable characteristics. The scope of the context is the single classroom; the focus is on small social units, such as small groups; and all studies are observational, since preschool children are poor sources of self-report data. Studies on the impact of the preschool physical setting usually investigate positive social interaction, productive play, conflict, or aggression. The context

variables most frequently studied are space, noise, room arrangement, materials, and activity settings.

Space and Density

A large number of preschool studies address the question of density (the ratio of people to space) and attempt to assess the effects of crowded conditions on social interaction. The impetus for this comes not only from educational issues but from a body of sociological research on crowding that has reflected social concern about urban density. This research, conducted principally with adults, has indicated possible connections between crowded conditions and social withdrawal, increased conflict, and a sense of stress (Freedman, 1975; Sundstrom, 1975). Studies of preschool children have generally tested hypotheses along the same lines.

A number of studies (Bates, 1970; Price, 1971; Rohe & Nuffer, 1977) support the suggested linkage between density and social withdrawal - children show less social interaction and cooperative play under conditions of high density. Additionally, Smith and Connolly (1977) found that a combination of density with another source of stress, such as not increasing the amount of play materials when social density increases, leads to an increase in aggressive

behavior among children. There was no rise in conflict if toys were increased proportionately.

Spatial Arrangement of the Childcare Environment

The effect of the environment in early childhood education is based on an interactionist theory of development (Phyfe-Perkins, 1980). Phyfe-Perkins also suggests that the three aspects of a child's interaction with his physical environment that are most often analyzed include: (1) The fixed and semi-fixed features, which range from doors and windows to colors and textures; (2) The amount, variety, type, and display of movable objects or materials; (3) The activity settings, which may include both objects and physical space.

Preschool educators have usually balanced open space and sheltered corners in the classroom, separating areas for noisy activities such as block building from areas for quiet activities such as puzzles or looking at books. The goal, thus, has been to facilitate both concentration and sociability, and to allow a flow of movement around the room that is not at cross purposes with ongoing activity (see Figure 3 for some possible space layout strategies).

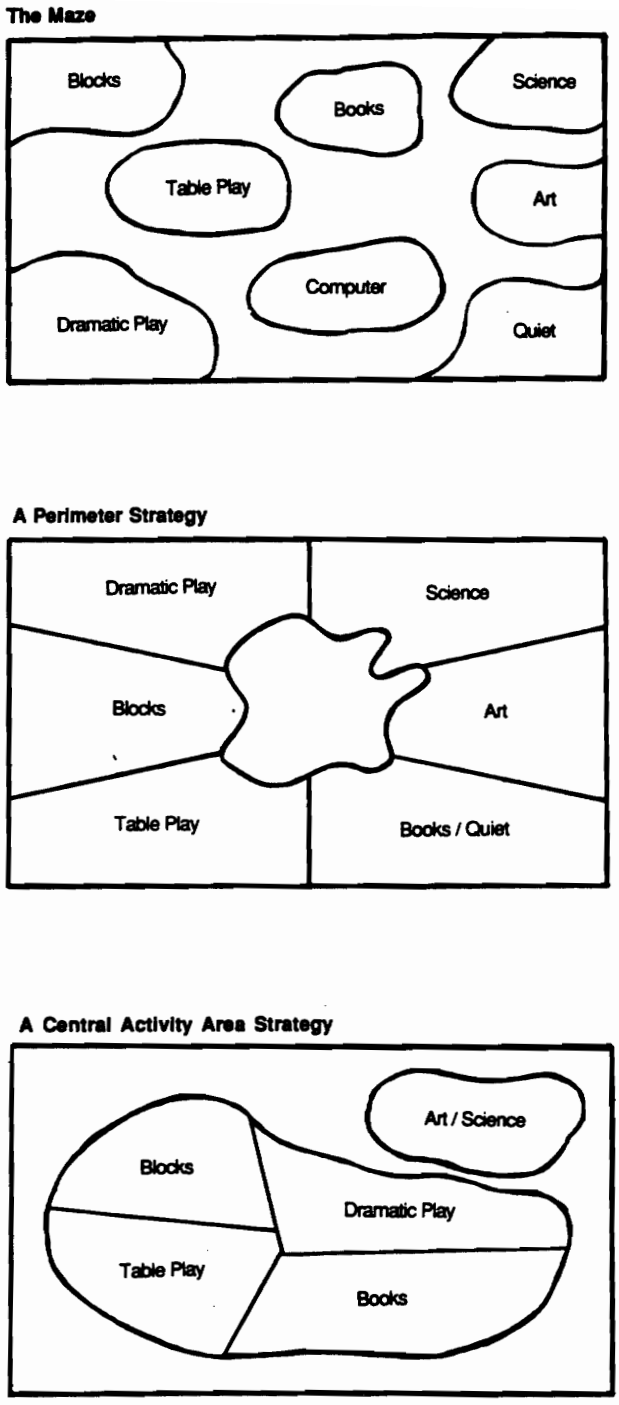


Figure 3. Some Strategies for Space Layout in Childcare Center (Adapted from Greenman, 1988)

Specific studies of room arrangement have tested the effects of classroom organization on social play, constructive activity, and disruptive behavior. Rogers (1976) found, for instance, that the social play of 4- and 5-year-olds was active whether the room was well organized, with open pathways and protected play space, or cluttered. However, maximum organization fostered the most desirable pattern. Children were significantly more verbal than physical, and their physical behavior was more productive than disruptive.

Spatial boundary-making in the classroom has been studied by Krantz and Risley (1977). They were interested in reducing inattentive or disruptive behavior during teacher-directed activities, such as storytelling time. Because they considered inattentive behavior a byproduct of customary classroom procedures in which children are allowed to sit at will around the teacher, they created a bounded area for each child by marking the floor with masking tape. They found significantly more focal attention and less peer contact and distraction under these conditions. The physical rearrangement produced the same effect as teacher reinforcement of attention, and the investigators concluded that manipulation of the physical environment may sometimes be a simpler way to generate desirable behavior.

Educators often create well-defined activity centers on the assumption that physical clarity helps the child understand spatial order, find equipment, and make choices. The impact of spatial boundaries has been studied by Rohe and Nuffer (1977) who partitioned activity areas and found that cooperative behavior increased. Partitions were especially effective in fostering constructive activity under conditions of high density, when distractions were potentially most compelling.

An extensive discussion of the principles of spatial arrangement within the childcare environment has come from Kritchevsky, Prescott, and Walling (1977). The points they make are: (1) Space makes invitations to children. Arrival in an extended open space encourages movement; and (2) More integrated experiences are likely for children when a fit is obtained between these spatial invitations and teachers' expectations for child activity.

Greenman (1988) indicates that there can be a fine line between settings that work for the inhabitants and build in support, and settings that are designed to work a certain way no matter who is the teacher. Greenman maintains that the daycare environment can and should be geared for its participants, with space adjusting as change and learning occur. As children develop, the program changes or new

equipment is introduced, the structure of the space, time and routines should have the ability to be altered to extend learning or to make life easier. The adults, by their relationship to the environment, are teaching children that reality is constructed, that one simultaneously shapes and adapts to the environment.

Another drawback to an unforgiving environment is that this type of setting reduces involvement unless people can put something of themselves into the setting. Users of the environment should be able to enhance their sense of intellectual or emotional engagement with the setting so that they are able to invest some of themselves into the objects that they make or transform. Good space in a children's setting offers character with flexibility.

Another issue of concern is that of the time taken to make the transition from one activity to the next and how this is accomplished. Children in day care settings were observed by Prescott (1973) to take between 14% and 26% of the school day to make the required transitions.

Noise Control

Available evidence indicates that both noise and crowding have a negative influence on a child's cognitive, language and motivational development (Wachs, 1990).

Sounds can evoke strong physiological and psychological reactions. They may calm us or induce stress. Our sense of space is partially derived from the sounds we hear within a setting. Children and adults differ in their tolerance for noise and their need to make noise, and so the acoustical properties of a space take on great importance.

Noise is one area where research findings are sufficiently consistent to warrant the concern of designers, in order to temper adverse environmental conditions. Intensive background stimulation can, for a variety of reasons, exert a negative impact on the developing child. This is true in particular of the effects of ambient noise in the child's environment. The need for efforts to deal with this problem is made more acute in the light of the evidence that indicates that adaptation to noise and similar conditions of background stimulation is highly selective and transitory.

With regard to noise and activity from interior sources, careful attention to the layout of the interior space, focusing on the use functions of these areas, can yield significant results. For example, the separation of utility areas and other places that are likely sources of noise from play and study areas is an obviously desirable situation. In the design of interiors, we will need to

coordinate the activities taking place within the setting, aesthetics, and the psychological requirements of the users of those spaces. Background noise can be further reduced through acoustical insulation of interior walls, appropriate selection of sound-absorbing construction materials, and muffling of appliances and other equipment. Further, a concept stemming from the research literature that may be of particular significance in this context is the stimulus shelter (Wachs, 1979). In this regard, the primary play or study areas of the school can be given special attention as far as location and acoustical insulation are concerned. More specifically, certain rooms or small enclosures that are removed from activity and noisy areas can be explicitly incorporated into interior design plans, and these places can be made available to the child to serve as buffers from environmental stimulation. Access to such places would enable the child to control exposure to background noise and activity levels to a degree.

In a broader vein, designers of environments for children may derive some general benefit from the affordance perspective. Unlike the traditional design emphasis on form in a geometric or abstract sense, an affordance perspective stresses the action possibilities that environmental features and environmental settings encourage or permit: "We

modify the substances and surfaces of our environment for the sake of what they will afford, not for the sake of creating good forms as such" (Gibson, 1976). Because of this functional orientation, the affordance framework may aid the designer in explicitly formulating design features with user characteristics in mind. In the case of designing environments for children, a sensitivity to the physical and psychological attributes of children at different periods of development can act as a guide in the creation of functionally appropriate environmental features. The value of the affordance concept specifically is that it extends psychological/functional considerations of the individual to an analysis of the environment. It suggests an approach to a psychologically meaningful description of the environment, and for this reason it should be of potential value to the design professional.

Aesthetics

The aesthetics in a children's setting are a trade-off of cost, convenience and health concerns. For instance, plants and animals require tending, but present to children an opportunity to learn the value of living things, and therefore should be included in a childcare center (Greenman, 1988).

In the 1950's, Maslow and Mintz (1956) conducted a study on the effects that beautiful surroundings have on human mental functioning. The results of this experiment indicated that the setting had a real impact on the judgment of the volunteers who took part in the study toward their perception of 'energy' and 'well-being' in the faces of photographs of people that they were asked to look at while present in either a "beautiful", "average", or "ugly" room. What the researchers did not reveal to the examiners administering the exercise was that its real purpose was to look at people's reactions to their surroundings, including the reactions of the examiners themselves. Interestingly enough, the behavior of the examiners in the areas of job performance and satisfaction were consistently affected by the setting in which they conducted the experiment, neither examiner noticed any change in their own behavior (Mintz, 1956).

The lighting found within a childcare setting is a great contributor to the aesthetic appeal of the space. Lighting can be utilized to give a space warmth and character and highlight specific areas and features. Light and shadow alter perceptions of the volume, shape, color, and texture of the objects found with in this setting. A variety of living and learning spaces can be created by

using a mix of different types and wattages of lighting. The uniform fluorescent lighting most often used in childcare facilities tends to wash out colors, flatten perceptions and diminish a sense of focus in the space, but is often used because it is cost effective and allows for maximum flexibility within the space (Greenman, 1988).

One of the latest developments in lighting has been the improvement in the ability to have full spectrum light (which includes the ultraviolet rays normally absent from a fluorescent luminaire) for use in the daycare setting. Capable of providing the closest reproduction to natural light, this fluorescent light makes colors and details appear sharper and truer to life as a result of the even light spectrum which it emits. It also has the ability to help increase the productivity of children and caregivers (Staff, 1990).

Color must also be considered when attempting to create a pleasing mood and when highlighting features within a childcare setting. It can tie spaces together or aid in the creation of boundaries or make a space feel larger or smaller, depending on what colors are used. Our physiological reactions to colors are well documented: cool colors can exert a calming effect, while warm colors may stimulate (Torrice & Logrippo, 1989).

Visual clutter, a sensory overload brought on by the display of an overabundance of graphics used in the center in addition to the artwork of the children, should be avoided. Senses are dulled and fatigue sets in when confronted by these targets for attention (Olds,1989). The aesthetics of the center are greatly improved by the careful location of display areas along with a limitation on the amount of artwork shown.

A study concerning the aesthetic development of preschool children (Bowker & Sawyers, 1986) has indicated that the formation of the child's ability to discriminate between various works of art begins at this early age. In fact, even at this initial stage in the evolution of their aesthetic sensibilities, these young children start to show an increased preference for artwork of a particular style.

Review of Daycare Installations and Current Practice

Childcare centers are beginning to show a new social commitment to quality teaching in comfortable and pleasant surroundings. The Child Development Center located in Austin, Texas shows great innovation in its design (see Figure 4). It features a 60-foot diameter canopy for a reading area which also helps to stimulate a mostly external orientation of the play and learning functions. A meandering walk unobtrusively connects various play areas

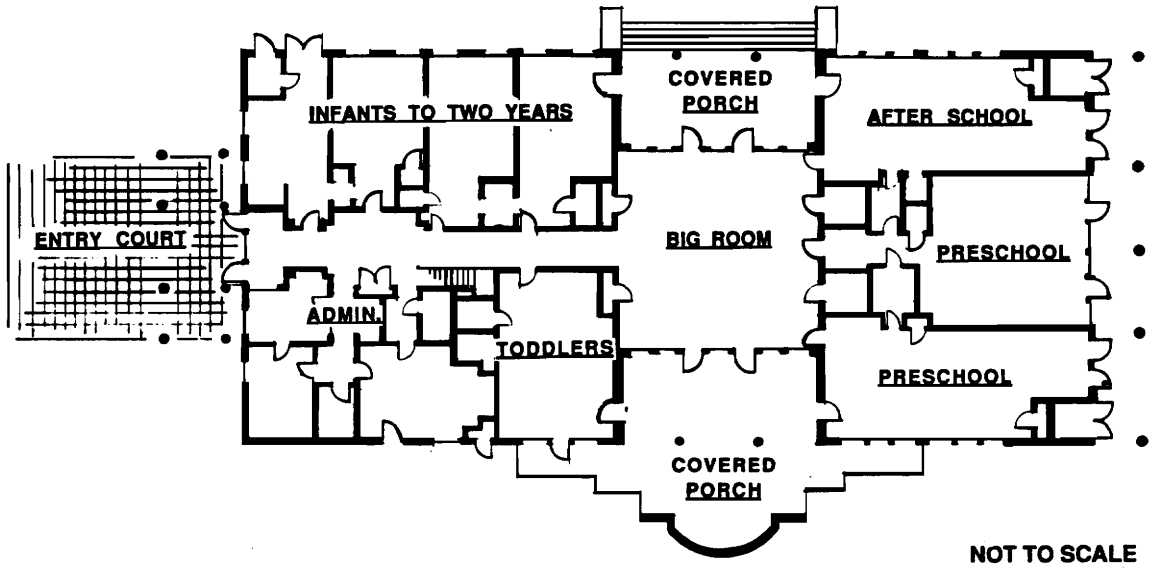


Figure 4. Plan of Child Development Center, Austin, Texas (Adapted from Barna & Tilley, 1989)

designed for specific developmental levels. The actual building focuses on a central activity area and emphasizes a smooth transition from indoor to outdoor with assorted covered porches (Barna & Tilley, 1989). This facility, which will accommodate 100 children, is the largest childcare center which will be reviewed here.

This is a rather atypical daycare center. With its generous allotment of functional space both indoors and outdoors, its design is very site specific in that such a great focus on outdoor activity is possible because of the particular climate in which it is located. The outdoors itself becomes an adjunct to the indoor classrooms and not just a playground, which is so often the case.

Stride Rite Corporation has built an Intergenerational Daycare Center within its headquarters in Cambridge, Massachusetts. It has been uniquely designed to provide daycare to children and elders in the same facility.

The design of the center allows a traffic pattern that encourages informal interaction between children and elders while also providing privacy for each group. The center is divided into two separate wings which are connected through a large central area. The children's wing has four classrooms for different age groups and the elders wing has three rooms designed for a variety of quiet and noisy

activities. The central core area houses administrative offices, a kitchen and dining facility, and a resource center which includes a conference room and library (Stride Rite Corporation, 1987).

Because of the population increases being experienced at both ends of the age spectrum, care of the young and old will continue to be an area of concern. This prototypical facility could very well be paving the way for the introduction of many more intergenerational centers in the future.

The Rockingham Estate daycare center in London, England (Figure 5) has incorporated some rather unique low cost and functional design details into its structure built to accommodate 30 children between the ages of 2 1/2 and 4 years of age.

The entrance lobby is in effect a large storage area. Each side has cabinet space, a coat storage area, a place to park infant strollers, and a changing room. These particular features recognize the needs of the largely pedestrian population of the parents whose children attend the center. On a constricted urban site such as this, these amenities are often overlooked in the design of this type of facility. A second lobby passes underneath a square wooden structure. A low entrance is formed with seats on either side for

waiting parents and a small staircase leads to a quiet area above which is used by careworkers to take children away from the busy activity of the main play hall if need be. Unfortunately, these stairs also provide a hazard for the children in that they provide an unsafe opportunity for climbing and therefore increases the risk of injury. Extra precautions, such as gates installed at the top and the bottom of the stairs, needed to be taken in order to minimize this danger.

The single multi-use hall located in the center of the facility also presents somewhat of a problem. With ancillary rooms situated directly off it, it appears that, at times, this type of layout would result in friction if conflicting activities were simultaneously taking place in these adjoining areas.

A skylight located at the peak of the building's roof runs the length of the structure and provides an ample amount of natural lighting to the interior. The center incorporates many good design decisions, based on experience and insight into the needs of the children occupying the space. These include lavatory doors with adequate gaps that don't trap small fingers, non-slip flooring, percussive valves on knee push valves to prevent flooding, and the use

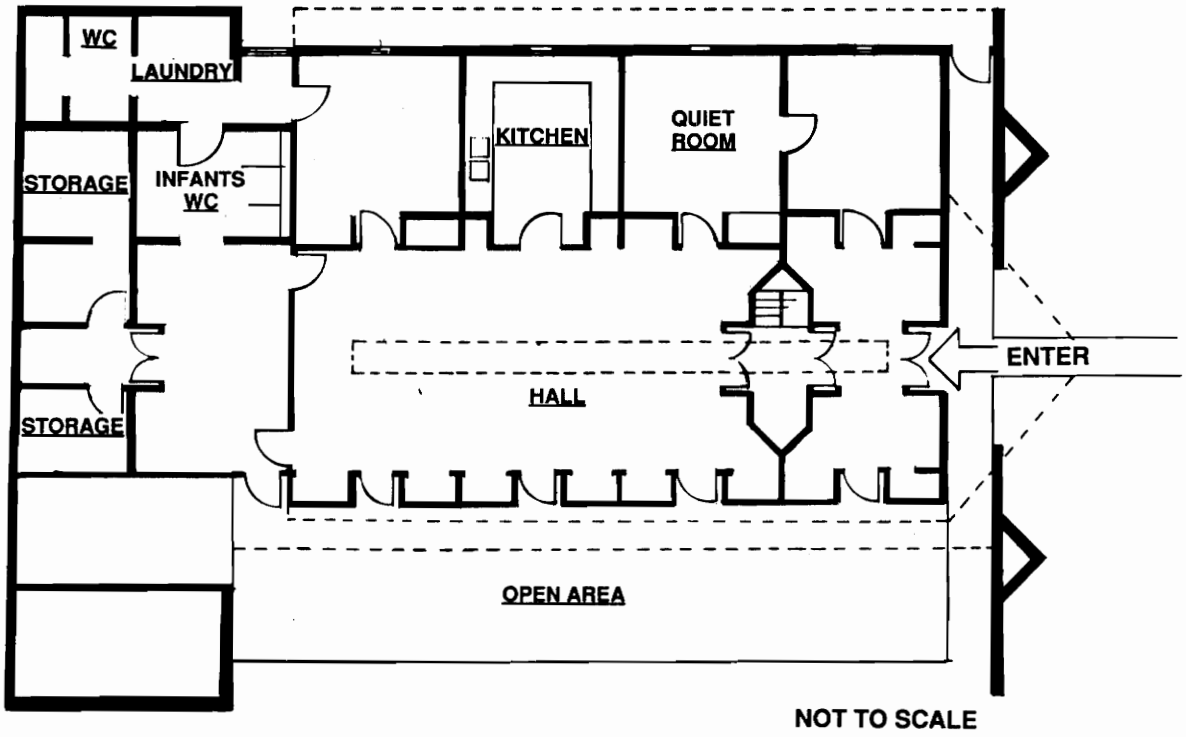


Figure 5. Plan of Rockingham Estate Daycare Center (Adapted from Rigby, 1988)

of shower trays set at a suitable height to create water and sand play trays. All interior doors have low level viewing panels, delayed door closers, and simple lever door handles (Rigby, 1988).

Compromise and creativity are essential when designing a childcare environment to meet the needs of child users of the space and the adult users of the same facility. These have been explored with success in Jumoke, a day care center built within the shell of a two story brick former workshop in London, England (see Figure 6).

Two separate functions are contained within the building. Training sessions for child care workers are held on the second floor and there is also a small nursery in which their children may be looked after. There are full-time day care facilities located on the first floor of the facility.

The various playrooms in the center demonstrate a variety of contrasting characteristics in regards to layout and color to create a homelike atmosphere and so that the children will not be in the same type of space all day.

The glazed doors of the playrooms give adults and children a view from room to room even when they are shut. Safety and supervision by the staff are also enhanced with this detail. The ceiling is high and there is a

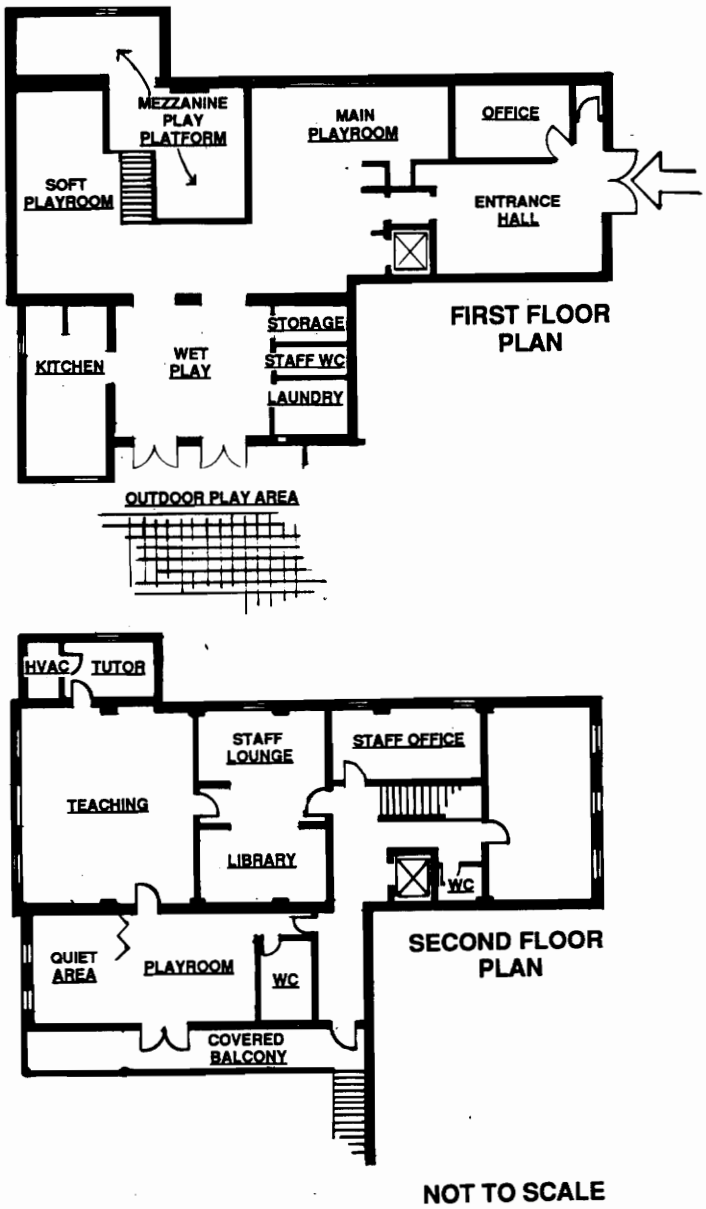


Figure 6. Plan of Jumoke Day Care Center

(Adapted from Owens, 1989)

substantial amount of natural light flooding the interior because of the roof skylight and large exterior windows.

An elevator has been provided for disabled visitors and the stairs also have child-height handrails. The building contains facilities for adults: two teaching rooms, a lounge/library area, and two offices (Owens, 1989).

Although the level changes within the center add to the variety of space and to the ease of supervision of the children by adults, there are some problems with the design of the center. The exterior covered balcony shown on the second floor plan in Figure 6 is not used at all because of the staff's fear of children falling from the balcony as well as concern that children might tumble down the many stairs leading to it from the outdoor play area. Also, the existing form of the building is too narrow to have a circulation route with rooms off of it, so access is through the main play spaces, which is not an ideal situation.

The town of Reggio Emilia in northern Italy is the site of one of the most renowned examples of community-supported child care systems in Western Europe. Three aspects of the program at this location are relevant to the topic of this study: the program at this school reflects a commitment to a supportive relationship between home and school, advocating a cooperative partnership between parents and teachers, the

curriculum is based on projects and the arts, and most relevant is the use of space to support the goals of the curriculum.

Rebecca New (1990) indicates that while the furnishings within the center are of good quality, the visual appeal of the school and classrooms is not the result of a large budget allotment used for the purchase of these items. Rather, it is the result of a creative and meticulous consideration of the potential of the environment to meet the goals of the program.

The space within the school informs and stimulates both children and adults in many ways. The childrens' artwork and on-going projects are displayed to keep families informed and interested in the activities of their children as well as raising the curiosity of other children in the projects. Classroom walls, doors, windows, and other surfaces are used as display areas and gardens and courtyards extend the classroom to the outdoors (New, 1990).

The environment and the curriculum complement each other and are not easily separated. The appealing physical layout of the center is such that rooms connect in ways that promote a sense of community, yet allow smaller spaces where children may work on their own over a period of time. Classrooms are open to a large area that connects the

individual classes to the entire school. A centrally located kitchen is surrounded by windows so that the activities within may be observed. Another important area of social exchange between children and adults has been provided for by the creation of rooms in which parents can meet with each other and families may gather.

Perhaps the greatest contribution a preschool in Reggio Emilia can make for education in America is to reveal the potential for enhancing children's creative and intellectual development. In this country, we often neglect these expressive arts in favor of competing demands in the curriculum. Bredekamp (1987) and Hoffman & Lamme (1989) have acknowledged that the contribution of the arts within a personally meaningful and intellectually stimulating environment of an early childhood curriculum is developmentally appropriate.

A childcare center in Washington, D.C. called Huckleberry Cheesecake (Figure 7) has been designed so as to create a nurturing environment to stimulate a child's natural curiosity and desire to learn. Within each classroom, smaller areas such as a raised platform that can be used for theatrical performances or where a child can choose to go to read, nap or play. Additionally, each

classroom has an area that can be used flexibly to expand classroom activities.

Safety precautions also abound in the center, from rounded edges used on some surfaces where appropriate to the wrapping of other surfaces with carpet in order to soften blows.

Analysis

From this review of a few of the articles published concerning daycare installations in various locations throughout the world, it has been demonstrated that the varied concerns of a particular daycare program dictate the final layout of the facility. The range of types of daycare alternatives has been shown. Some of these centers have been realized in the renovated quarters of an existing structure, while others are located in a building expressly built to house the particular program. This does not seem to have effected in any way the ingenuity of the resolution of the design program.

A tremendous variety of solutions to meeting the needs of the program, the children, and the staff and parents is shown, with benefits being evident for all concerned. They incorporate provisions to meet the functional requirements of the daycare curriculum by the creative design of physical space. Cost effective and functional design

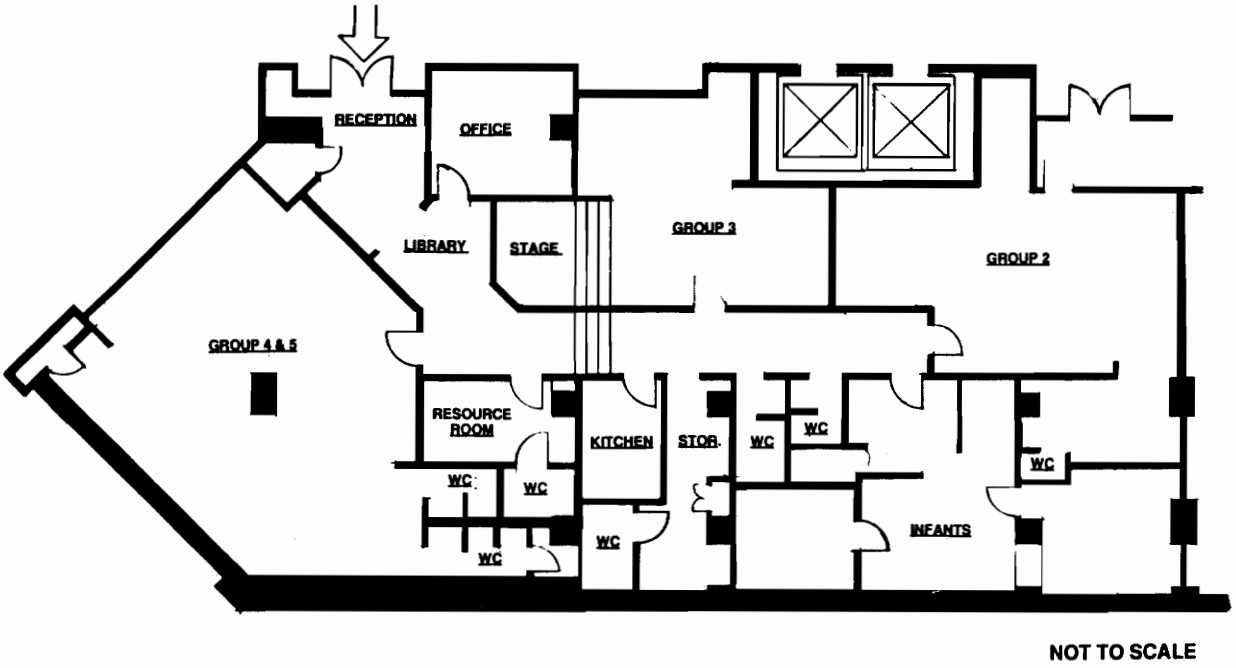


Figure 7. Huckleberry Cheesecake Childcare Center

(Adapted from Wagner, 1991)

details such as the exploitation of natural light to supply some amount of interior illumination, the use of color, a centralized and highly visible positioning of support areas are some of the innovative provisions which have been made within these centers. Another is the almost universal development of a physical environment for the separation of activities when necessary, but are also flexible enough to allow and encourage interaction between adults and children and adults and adults when required.

These centers demonstrate something which is all too often a rarity in daycare centers - a concern for the creation of a pleasant environment which takes into consideration the concerns of both the child and the adult user groups. That is, they have taken care to provide a place which is conducive to the education of children and the adult job of teaching, supervising, and caring for these children in a space which also respects their needs. These are centers that we can learn from; they give us new design directions to follow and to build on.

It is the aim of this thesis to expand on these ideas and to further develop innovative solutions to the difficulty of integrating children and adults into the same childcare facility. Providing for the needs of these two user populations presents an obstacle to be surmounted, but

it is an issue whose questions will be answered by this study.

CHAPTER III

PROGRAMMING

This chapter outlines the methodology related to the collection of data in order to formulate the design objectives for the development of a childcare environment. Systematic observation was undertaken at two daycare centers so that there would be a fuller understanding of their functioning and routines.

In order to better understand the spatial relationships and needs of the children and staff at the centers, behavioral mapping studies were done. These were followed up with the administration of an evaluative interview instrument to daycare center staff and children's parents. These interviews of childcare workers and parents were essential so that there would be input as to how each center either did or did not meet its intended goals, and where there may have been room for improvement so that the centers would be more in line with their stated goals.

Collection of the Data to Formulate Design Objectives

A variety of reasons may be suggested for the consideration of children and built environments as a distinct topic to be considered for research in the design of the environment. All of these reasons derive ultimately from the fact that children and adults differ as population

groups along dimensions that are critical for environmental design, including physical size, cognitive development, social competency, personal mobility, autonomy, and control (Ziegler & Andrews, 1987). Because of this, children act differently from adults within and upon the built environment and they also react differently from adults to the built environment.

There are also certain environments that are designed explicitly for children's activities or for children as users and finally, given the basic differences between adult and child subjects, different methods of data collection and measurement are necessary to capture the quality of children's interactions with the built world around them (Michelson, 1977).

Just as children of different ages see the world through different eyes, so must we, in seeking to explore their understanding of the world around them, approach them in a variety of ways. Children's cognitive development and their awareness and use of the world around them are achieved essentially through the process of creative learning: furthering our understanding of these processes similarly requires creativity in research design, ingenuity in the development of age-appropriate methodologies, and sensitivity to their application. As the child's cognitive

and physical world expands, so does our appreciation of it (Bechtel, Marans, & Michelson, 1987).

Children generally have less input into the design of the built spaces they inhabit than do adults. Children are not active participants in choosing the environments that they will inhabit and use. Adults generally exercise choice over these settings. It is not unreasonable to suggest that, to a considerable extent, children who cohabit the same space as adults are occupying a different, although contiguous, space.

Children's and adults impressions of the environment vary, in part because children are physically and cognitively different from adults and in part because they do, to some extent, use different physical spaces and facilities. We can expect, then, that their perceptions and evaluations of their built environment will be different from those of adult users of the same space (Little, 1980).

We can expect that in order to find out how children interact with the built environment, how they use it, perceive it, and evaluate it, we will need different tools from those used to study the behavioral interactions of adults with their environments. Some research methods that are frequently used with adults may be less useful with children, others may be very practical with children.

Given the distinctive characteristics of undertaking research with children as subjects, many of the questions of research in person-environment relations involving children remain similar to those addressed in research involving adults. These may be grouped into three categories: questions concerning children as the users of the built environment - behavior, patterns of activities, and utilization of environmental settings and facilities; questions concerning children's perception of the built environment; and questions concerning children's perception of environmental settings that focus on the child's evaluation and appraisal of environments - the nature and quality of children's attitudes towards given environmental settings (Bechtel et al., 1987).

Given the difficulties and differences involved in gathering data from children, it is not surprising that they have been so ignored by environmental designers and evaluators. A common alternative to dealing directly with children is instead to ask adults such as parents and teachers to report on children's usages and preferences. Sometimes this is done in addition to, rather than in place of, questioning or observing the children themselves.

Very young children have far greater difficulty in responding to direct questioning. Because their language

and literacy skills are less developed than those of adults, direct observation of physical behavior is more common than interviewing. Researchers often use both strategies, with observation usually preceding the interview and generating the relevant questions. Perhaps the best combination of methods to use is one that includes structured parent or caretaker interviews with brief, direct observation of behavior. Observation remains the best tool for evaluating place- and space-related variables for young children, and a daycare study such as this has the additional advantage that children can be observed doing what is both natural and constructive for them: manipulating concrete play objects and interacting with their classmates (Smith & Connolly, 1972).

Systematic Observation Method

This study is a systematic multi-site naturalistic examination using a qualitative exploratory-descriptive methodology (Sommer & Sommer, 1980). The sites that have been selected for the investigative phase of this study are two proprietary daycare centers. These are Rainbow Riders Childcare Center located in Blacksburg, VA. and Tomorrow's World Childcare Center located in Christiansburg, VA. These were chosen because they represent two different approaches to care of children, both in the size and the layout of the

facilities in use, ratio of staff to children, educational programs, philosophies, and accreditation.

Rainbow Riders Childcare Center is located in a freestanding building which was constructed in 1987 specifically to be used for the care of children. This facility and its program is one which meets the accreditation criteria established by The National Academy of Early Childhood Programs, whose standards represent the current consensus of the early childhood profession regarding the definition of a high quality program for young children.

Tomorrow's World Childcare Center is located in a leased space located on the lower floor of commercial property. It subscribes to a plan of age appropriate lessons and activities which staff share with the children being cared for at the center. Its program is not accredited.

Interview

The initial course of action that was taken to provide the raw data for this design thesis were in-depth interviews. Interviews with key members of each center's staff were utilized as was a questionnaire for the children's parents which was either administered in person or over the phone (see Appendix A). Items and subject matter chosen for inclusion on the survey questionnaire were based on the information displayed in Figure 1 and Figure 2, which delineate the activities and environmental issues of concern to childcare workers and parents in the design of a childcare center and their reactions and attitude toward elements and features of the built environment of their particular center.

Behavioral Mapping

Following this phase of the information gathering process and in order to provide additional input to be used for purposes of design development and to verify information gathered from respondents to the survey questionnaire, behavioral mapping will be utilized. This technique of describes the users by age, gender, and their uses of a specific currently operational daycare site (Ittelson et al., 1970).

Behavioral mapping can be used to describe behavioral density and diversity, and to yield profiles of activity types and group types. Activity maps can be constructed to compare the distribution of activities over environmental settings, and individuals can be tracked and their behavior recorded at intervals, to compare level of social behavior (verbal, nonverbal, isolated) over settings (Holahan, 1978). For the purposes of this study, behavioral maps were constructed in 15 minute intervals during an observation period of two hours per day in each daycare center. These observation times, which took place over a two week period, were conducted during the normal hours of operation of each center. Classroom spaces were subdivided into observational quadrants for the purpose of aiding the recording of activities in a localized portion of the room.

This process concentrated on accurately recording childrens' and adults' behavior. However, the focus of the observations was on the built environment, specifically which aspects of it either positively or negatively affected the behaviors of the children and adults. Thus, not all behaviors were recorded in detail.

Areas of interest covered included the childrens' use of materials, their behavior with one another and during dramatic play, as well as their relationship with adults and

in adult-directed activities. Adult performance in the areas of set up and clean up for various projects, storage, communication and interaction with other adults, and other standard tasks which occur throughout the course of the day were also monitored. Demonstrations of adult physical stress, such as lifting and bending, which could have a detrimental effect on health, were noted. These observations took place in the individual classrooms and in the more public circulation areas of the daycare center.

Figures 8, 9, 10, and 11 show floor plans of Rainbow Riders Childcare Center along with an example of the type of floorplan for each individual classroom in the center which was used to monitor and record the movements and activities of the children and staff within that particular room. In addition, Figure 12 shows a floor plan of Tomorrow's World Childcare Center.

The floor plans for both centers are shown again in the next chapter. They will include annotation describing existing positive and negative design features noted during the observation phase of this study (Zeisel, 1981). The activity recording instrument used along with the behavior maps in order to more fully indicate the actions taking place at the time the observation was being undertaken is shown in Appendix B.

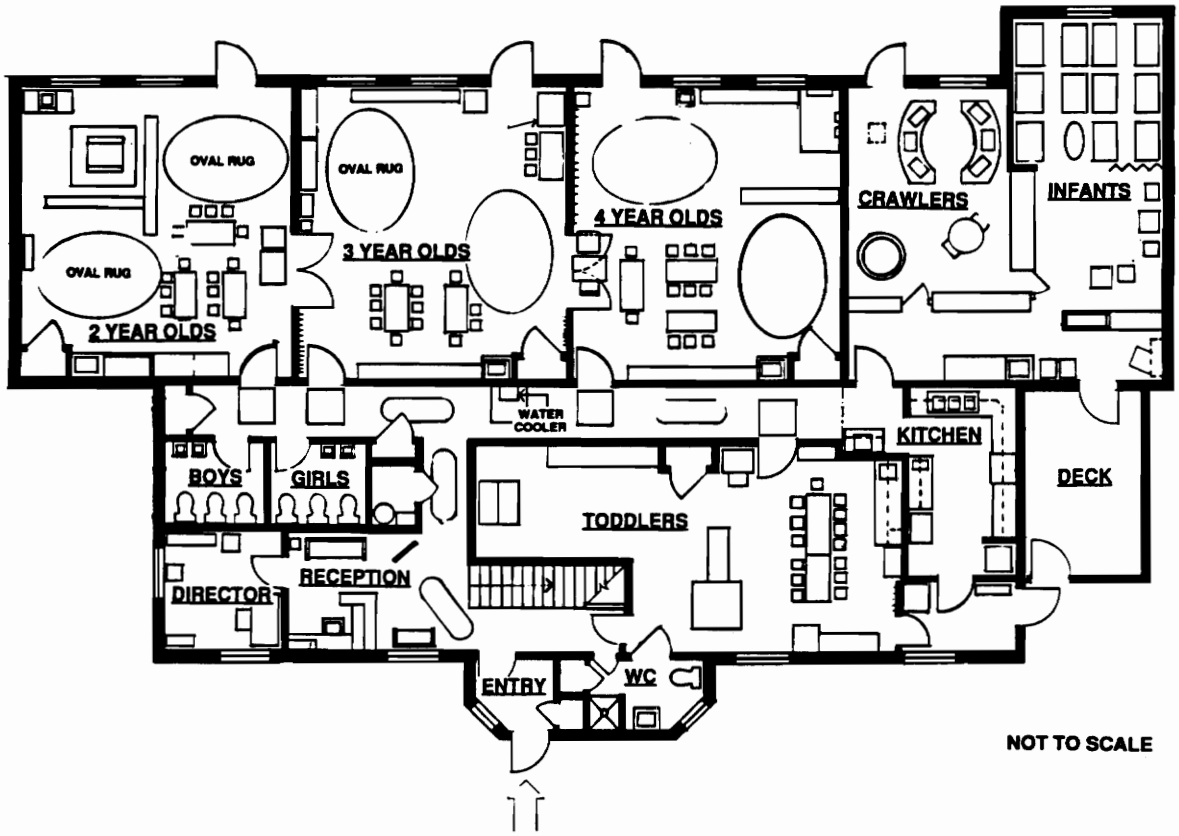


Figure 8. Plan of Rainbow Riders Childcare Center First Floor

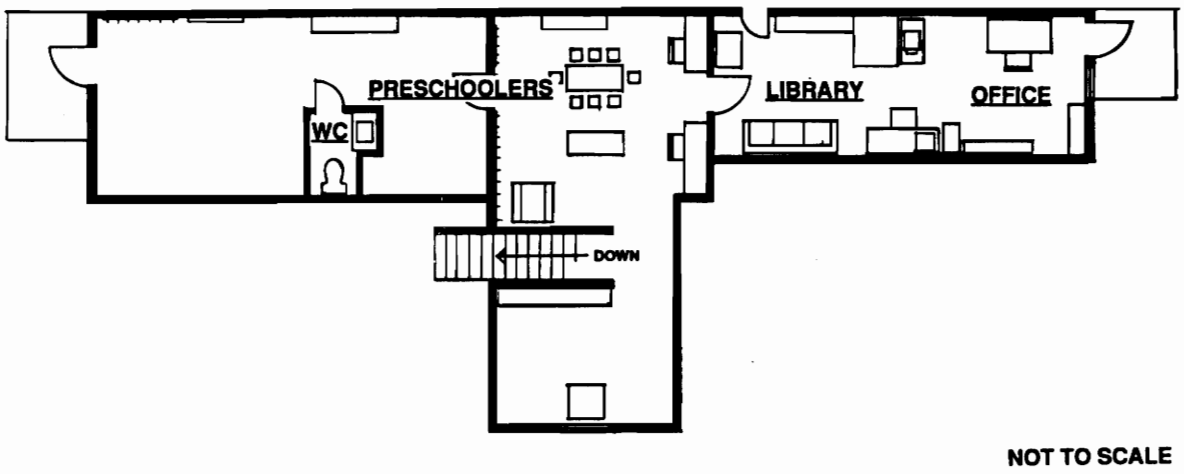


Figure 9. Plan of Rainbow Riders Childcare Center Second Floor

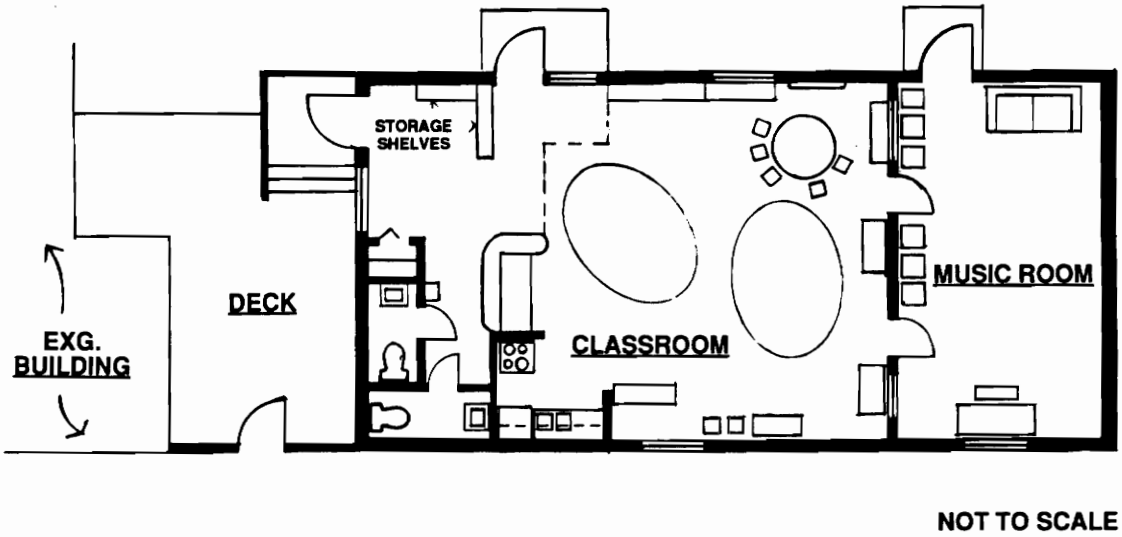


Figure 10. Plan of Rainbow Riders Childcare Center Schooler's Area

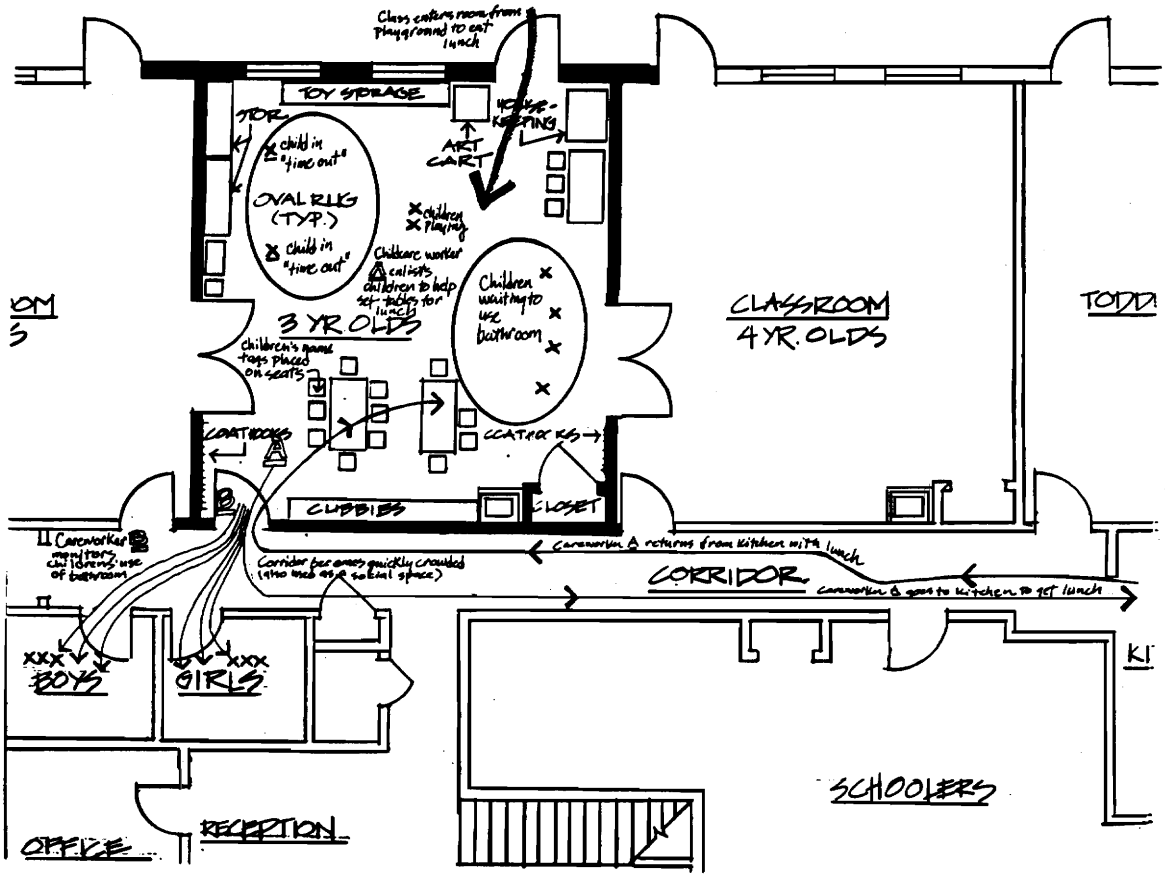


Figure 11. Example of Individual Room Plan Used for Behavioral Mapping at Rainbow Riders Childcare Center

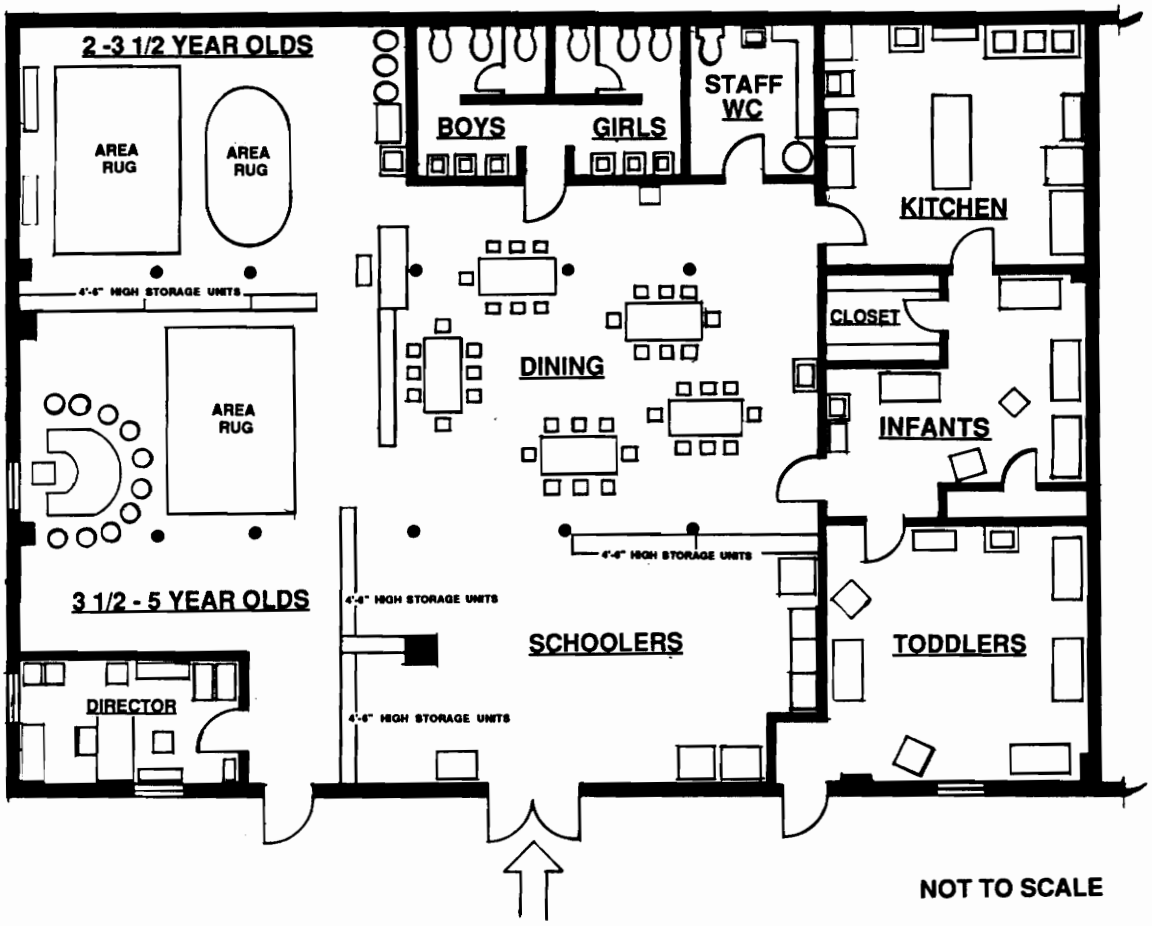


Figure 12. Plan of Tomorrow's World Childcare Center

CHAPTER IV

FINDINGS

In this chapter, the findings from the interviews of 3 daycare staff members and 2 parents of children in each daycare center will be presented. The physical organization of a daycare environment will be related back to the experiences and concerns of the persons interviewed.

In the course of the discussion, reactions to the current physical layout of the two daycare centers and considerations of some of the setting variables introduced in Chapter 2 (space arrangement and density, noise, lighting, aesthetics) will be introduced and a synopsis will be given of findings revealed by the interviews. Pilot interviews were conducted with a daycare center staff member and a parent of a child in the center in order to see how they would interpret the questions being asked of them. Some questions did require some clarification and the amended questionnaires are presented in Appendix A.

Results of behavioral mapping studies conducted at Tomorrow's World and Rainbow Riders childcare centers will be discussed. The findings are shown to make a strong contribution to the final design solution.

Physical Layout

The mostly open space layout of Tomorrow's World Daycare Center utilizing 4'6" high storage units serving as "walls" to designate the various areas within the center (see Figure 13) was felt by the center staff to have its assets as well as its drawbacks. On the positive side, this type of layout does allow for full height adults to easily see over the storage units in order to monitor the activities of the children.

Negatives noted with this lack of floor to ceiling walls with the requisite doors to isolate groups if needed include the difficulty in controlling the wandering behavior of some of the children. There is also a problem with noise from one group of children distracting the children in another group and also making it difficult for these children to clearly hear the caregivers' instructions.

The observation phase of this study verified that there also has to be a careful consideration of activities being carried on by different groups within the center. Conflicting activities, such as quiet reading by one group and active dancing with music by another group located in an adjoining area, can make for a difficult situation.

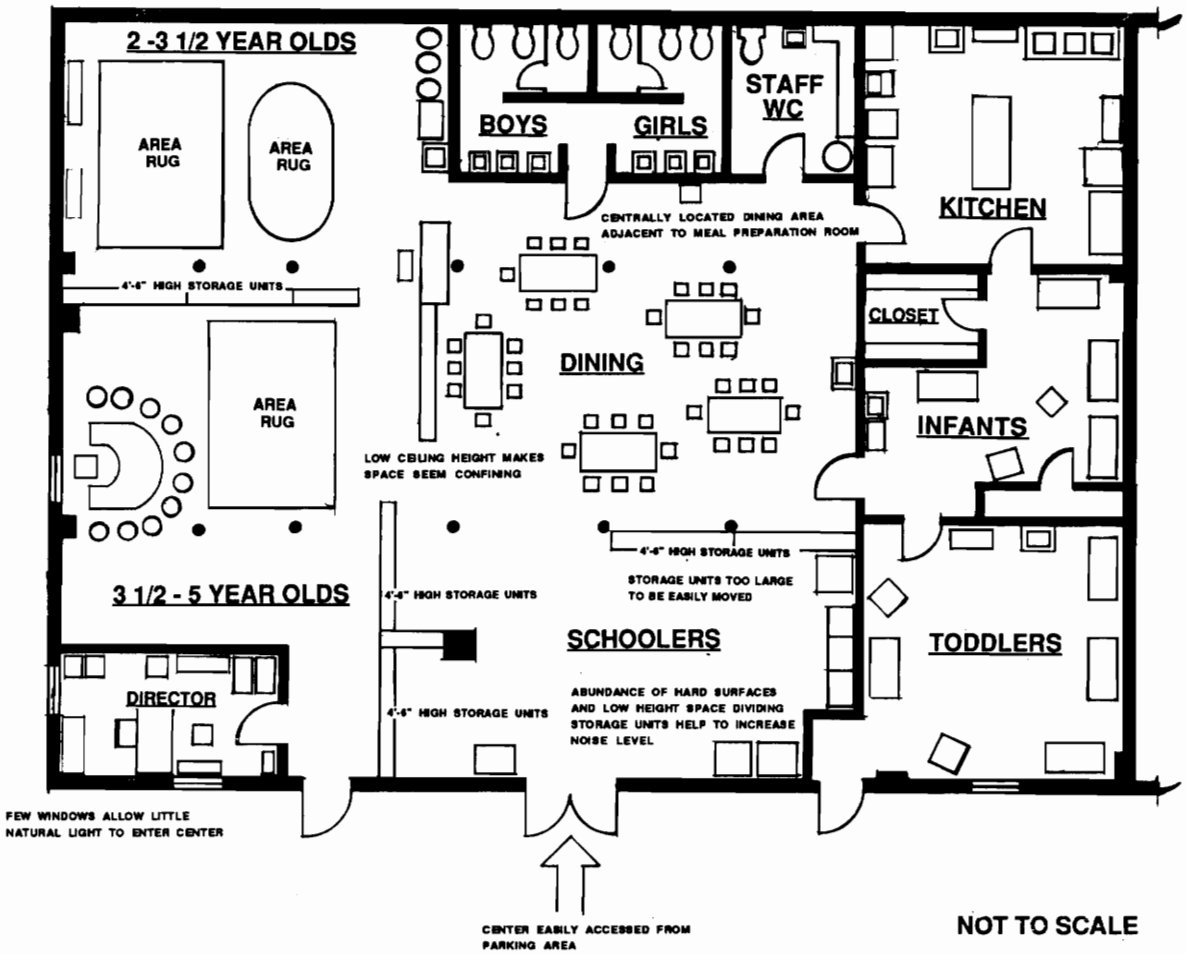


Figure 13. Annotated Plan of Tomorrow's World Childcare Center

In the summer, when the older school age children are in attendance at the center on a full time basis, because of their numbers and vocal ability, there is a very noticeable increase in the noise level. Staff members note that rainy days, which confine the children indoors, will make for an appreciable jump in the level of noise at both Tomorrow's World and Rainbow Riders.

Rainbow Riders, on the other hand, has classroom spaces that are separated by walls as well as doors. The center also has a division of age groups by different floor levels. In fact, the older children which make up the schoolers group are in a building which is adjacent but separate from the remainder of the center (see Figures 14, 15, 16). This physical separation tends to alleviate some of the problems caused by noise, but all is not completely well within the building containing the majority of the children. Staff members are quick to point out that although the double doors found on the walls common to three of the classrooms easily allow for large group activity between two rooms when they are opened, more often the doors allow distracting sounds from adjoining rooms to intrude into their classroom. During the observation phase of this study, it was noted that the narrow corridor running the entire axis of the building presented its own set of problems. It prevented

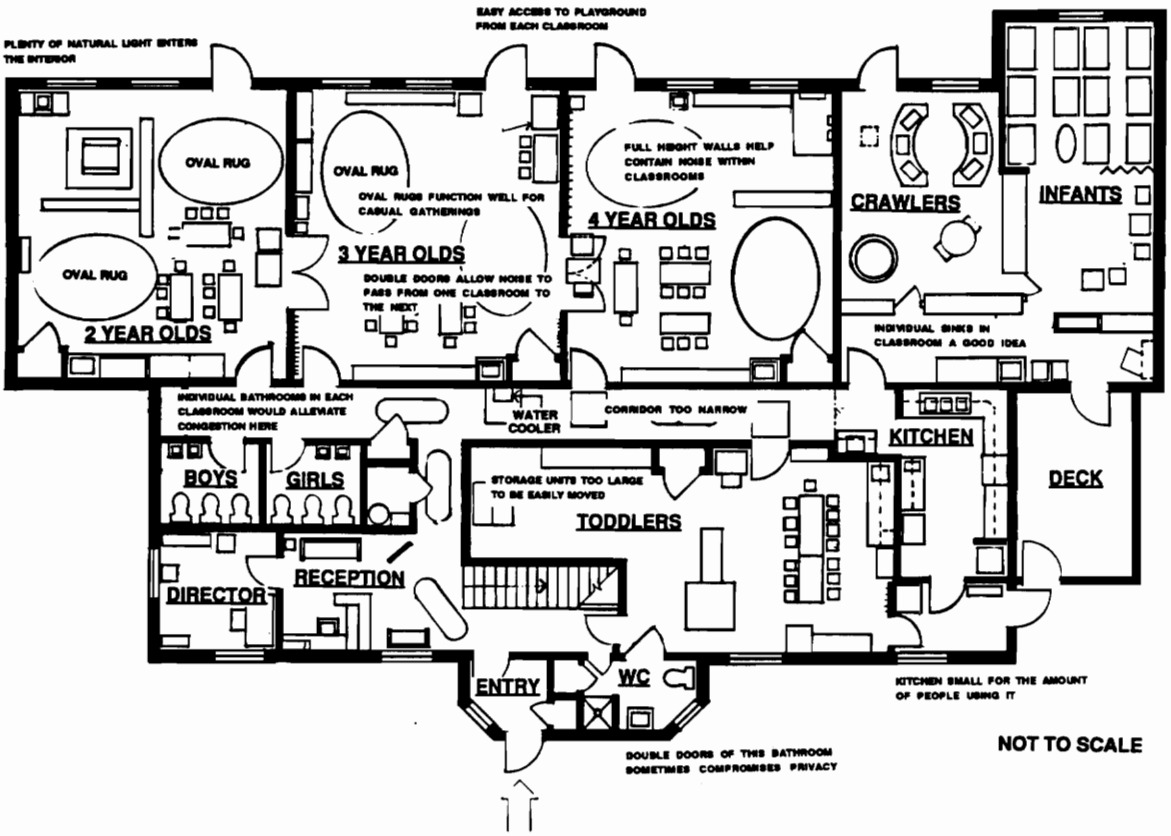


Figure 14. Annotated Plan of Rainbow Riders Childcare Center, First Floor

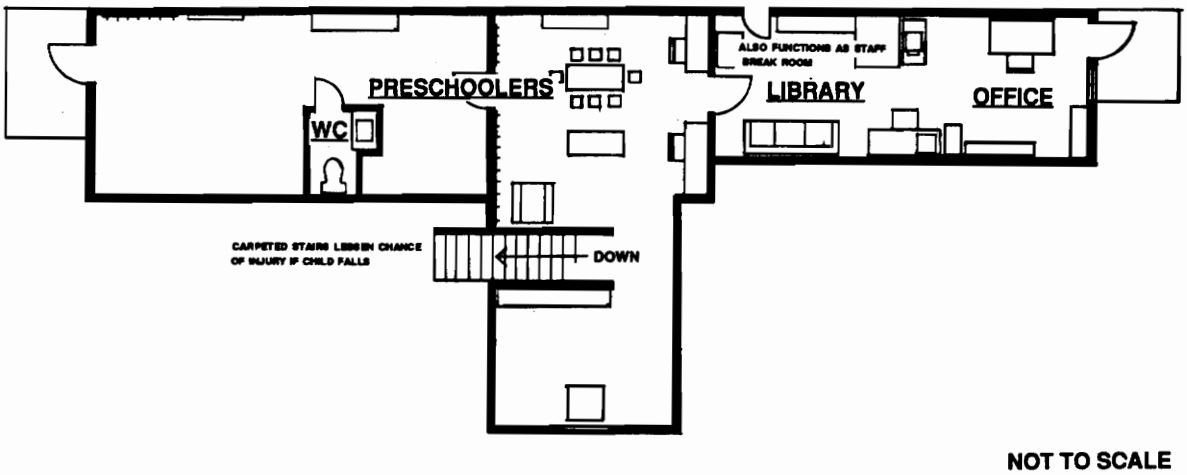


Figure 15. Annotated Plan of Rainbow Riders Childcare Center, Second Floor

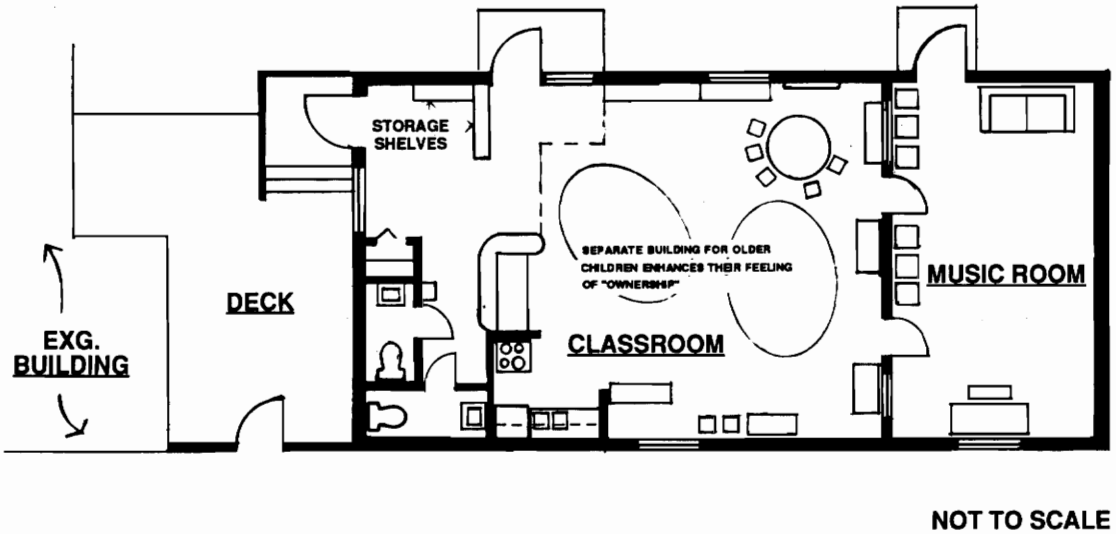


Figure 16. Annotated Plan of Rainbow Riders Childcare Center, Schooler's Area

people from easily getting by each other when they passed. The corridor also quickly became a major conduit of noise if several classroom doors leading to it were left open at the same time.

Classroom Dimensions

Classroom sizes at both centers meet and slightly exceed the 25 square feet per child requirement as to ratio of children cared for within the space and the dimensions of the room as mandated by the State of Virginia. Some staff members felt that a larger classroom space would be more desirable. This enlarged space would allow for long term projects by the children to be left set up over a period of time while they were being worked on, instead of having to put it away at the end of the day because of a lack of room.

A larger space would also allow the inclusion of larger pieces of furniture, such as a sofa, within the classroom. Caregivers feel that this would add to the homelike feel they strive to achieve in the classroom. Additional larger play and learning items for the children, such as a reading loft, crawl-through tunnel, seesaw, and risers which would allow for manipulation of the floor height, are desirable. Although these require an increased amount of space, a larger room would make the inclusion of some these objects possible.

Furnishings

It was uniformly agreed by all staff members at Tomorrow's World and Rainbow Riders that the most useful furnishing within the children's areas were the storage units, which allowed the children to easily choose and put away a toy of their choice when they were done playing with it. It was noted that when it came time to reconfigure the classroom space, it was very difficult to move the heavy 8' long shelving units found in both centers easily across the hard surface flooring. Observation study verified this to be true. There was also a unanimous agreement that there is not enough storage available.

Childcare workers in both daycare centers felt that some of the most useful furnishings were the childsize tables and chairs and area defining carpets used on the hard surface flooring. These highly adaptable items were used for most activities.

Dining

Meals and snacks are served at both centers from complete kitchens contained within the centers. Tomorrow's World serves all food in the main multi-use space. There are sufficient tables and chairs so that all the children can be fed at two seatings for each meal. The amply sized kitchen, located directly adjacent to this area, is off-

limits to the children, but is well situated for the adults who serve the food to the children when they are seated.

Rainbow Riders utilizes a somewhat different method of meal service, the drawbacks of which were revealed while observations were taking place in the center. All meals and snacks are served to the children within their individual classrooms. The food and drinks are brought to each classroom by one of the caregivers in charge of that particular group. The siting of the kitchen at one end of the building proves to be beneficial to careworkers whose classrooms are situated close to that end of the building, and less so for careworkers who must carry food on trays some distance down the corridor.

Lighting

Both centers use a mix of natural light as well as ceiling mounted fluorescent fixtures outfitted with cool white tubes. With its freestanding building with windows along all exterior walls and skylights in the roof, it was noted during the observation phase that Rainbow Riders has a more abundant amount of natural light within the center than did Tomorrow's World, which only has windows along two exterior walls.

One childcare worker interviewed at Tomorrow's World said that the strip fluorescent lighting located on the

ceiling was preferable to other types of lighting fixtures because they had a built-in safety factor in that the children were unable to reach them and cause any harm. A caregiver at Rainbow Riders had a somewhat different viewpoint. He felt that the quantity of light was sufficient, but that the quality of light suffered with the use of only fluorescents as the sole artificial light source. His opinion was that there should also be provisions made for incandescent lighting within the classroom in order to produce a more homelike feel to the room on occasion. Although the Rainbow Riders staffers enjoyed the asset of natural light flowing into the classroom, two of the careworkers pointed out that because the skylights had no shading devices, reducing light within the room at nap-time was sometimes difficult on a bright and sunny day.

Flooring

Hard surface flooring materials with area rugs are used in both centers in all areas for children's use with the exception of the infant areas, which are fully carpeted with low pile broadloom, because these very young children spend a good deal of time crawling on the floor. A third of the staff members pointed out that the area carpets are appropriate for activities taking place while the children

are seated on the floor. To prepare the area for more messy art activities, all that needs to be done is to roll the carpet up and put it aside, leaving the hard surface flooring exposed. Three of the six staffers also mentioned that they had to be especially careful of the area rugs sliding on the hard flooring after the vinyl had been freshly cleaned and waxed.

The director of Rainbow Rider's indicated that his center has installed 6' wide sheet vinyl instead of 1' x 1' vinyl composition tiles on the floor because there are fewer seams through which water can infiltrate the sheet goods and therefore the flooring is less likely to peel and crack and consequently need to be prematurely replaced.

During the observation phase of this study, the appropriateness of the floorcovering choices was verified. It was also noted that the concentric pattern found on the braided oval rugs used at both daycare centers tended to suggest a symmetrical pattern of seating positions for the children to assume when they gathered around a teacher on the rug for a particular activity.

Parent's Views

All four parents interviewed (two from each center) had somewhat limited experience with childcare facilities. Their long term interaction with this type of setting had taken

place in the center in which they currently had their child enrolled. They all did indicate that they had some familiarity with alternative physical layouts of daycare centers, having been inside other facilities for brief periods during an open house situation.

One parent from each center noted that the parking lot of their respective centers became quite crowded at the end of the day when most of the children are being picked up. All of the parents found the easy to locate front entries of their center to be a plus in efficiently getting their children in and out of the center.

When questioned, all four parents indicated that it was possible to find a private space to confer with their child's teacher when necessary. These conferences can take place in a portion of the child's classroom, outdoors on the playground, or, for highly confidential matters, in the director's office.

There was also 100% agreement on the part of the parents on the issue of transmission of information by the center to the parents. They all found that the communications materials, charts, and notes with which the center attempts to keep the parents informed of their children's activities to be very adequate.

The Rainbow Rider's parents expressed the opinion that Rainbow Rider's look and dimensions put them in mind of a home, which was felt to be a positive aspect. But parents and staff alike feel that the rather narrow width of the existing corridors impedes pedestrian circulation on occasion and there would be a benefit to having wider hallways.

CHAPTER V

DESIGN PROGRAM

Proposed Outcome of this Study

The proposed outcome of this study is the development of a prototypical, cost effective design for a childcare facility which will be adaptable to a variety of site conditions. Using the guidelines for the creation of a structure of this nature as set forth by the state of Virginia to ensure the health and safety of users of childcare facilities, a proposed design for a center to be located in Christiansburg, Virginia will be developed.

The site of the center is easily accessible. It is conveniently located near a heavily travelled business area located just beyond the City of Blacksburg town limits in the town of Christiansburg (see Figure 17). This location should be an asset in drawing clientele for the center from these adjacent towns.

In order to promote the educational program and activities to be followed by the daycare center, the client has made specific requests as to what is to be included in the planning of the physical facilities

The program requirements as defined by the client include the design of a single facility which is able to

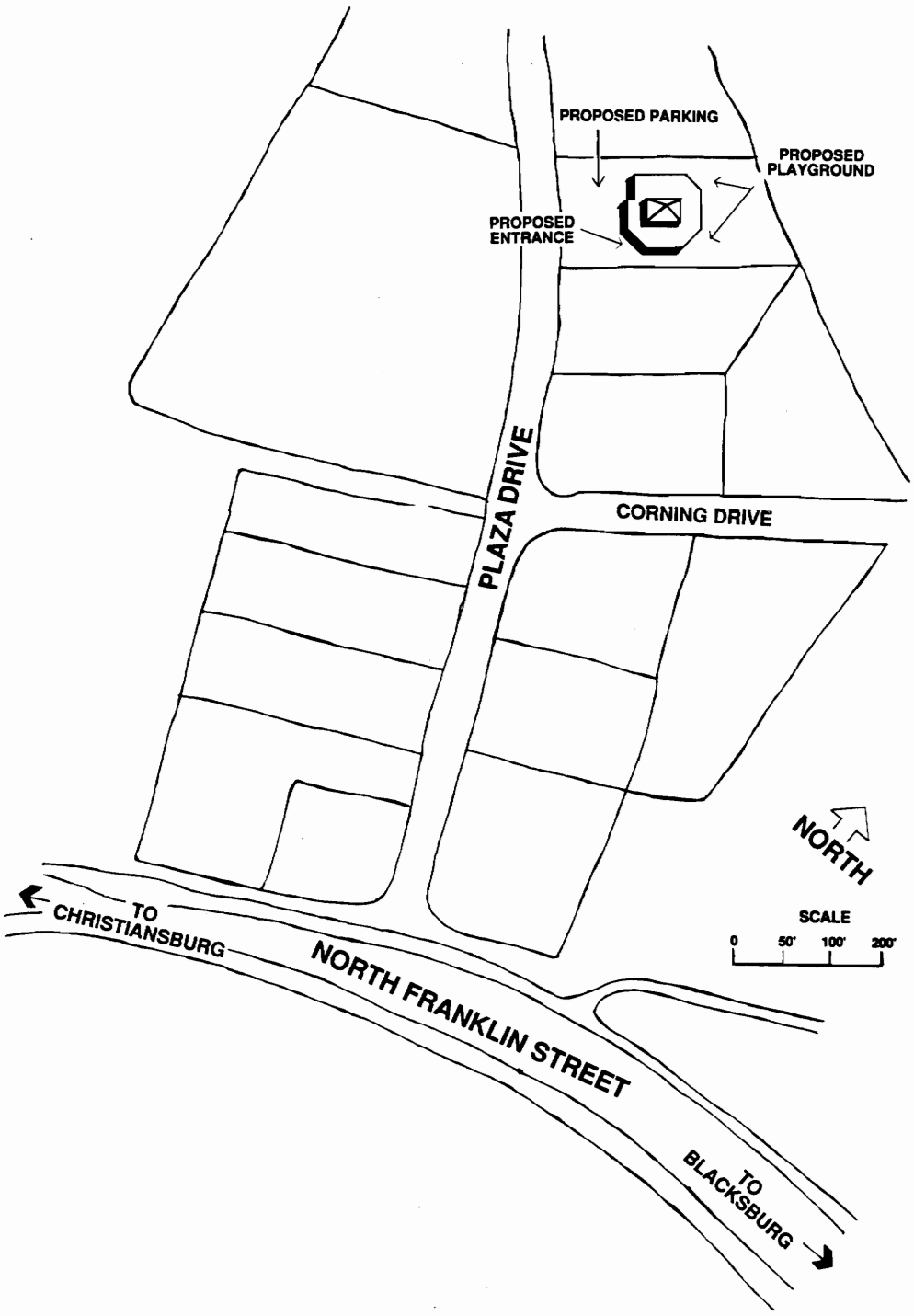


Figure 17. Location Map of Proposed Childcare Center

accommodate approximately 122 children, ranging in age from 6 weeks to 12 years and the staff required to teach and supervise these children. The breakdown of class sizes per age group and the number of personnel required to maintain state of Virginia mandated staff to children ratios are:

(12) infants and toddlers / (3) staff members required,

(20) 2 year olds / (2) staff members required,

(20) 3 year olds / (2) staff members required,

(30) 4 year olds / (2) staff members required,

(40) children for before- and after-school care (most often referred to as "schoolers") / (3 to 4) staff members required.

Staff to Children Ratio. The Department of Social Services of the Commonwealth of Virginia requires that centers have a minimum of 25 square feet of available activity space per child (Virginia Department of Social Services, 1989). The director of this particular facility feels that this allotment of space is inadequate and has requested that this center be designed to allow at least 35 square feet per child of activity space.

Indoor Areas. Individual areas have been requested for each age group which are able to accommodate age appropriate interest centers. The space used by the schoolers is to be a multi-purpose room, outfitted with furnishings more

appropriate to this age group. This space should also be considered for use for large gatherings of parents and staff at various occasions during the course of the school year, such as Parents' Night and seasonal get-togethers. All teaching spaces should have the ability to be easily reconfigured to accommodate a change in program activities, if desired.

Classroom dimensions will exceed state mandated standards and allow room for a variety of activities without the encroachment of one activity upon another. Classroom sizes are as follows:

Infant/Toddler - 940 square feet;

Two Year Olds - 800 square feet;

Three Year Olds - 800 square feet;

Four Year Olds - 1120 square feet;

Schoolers/General Purpose - 1800 square feet.

Placement of furnishings will strike a good balance between empty space and equipment in the space which stimulate activity.

Additional areas. There will be a separate area for children who are ill, injured or emotionally upset.

An office will be provided for the director.

A kitchen is required for the preparation of meals.

Space is needed for a staff lounge/library/meeting room.

Center will be equipped with restrooms for both children and staff.

Adequate storage space is a necessity throughout the center.

Finish selections. The interior and exterior surface finishes selected for the center shall be appropriate to their use and be of a low maintenance character. Adequate lighting shall be provided for all activities, with natural lighting preferred where possible.

Some of the more salient design features that have been incorporated into the final design for the childcare center are as follows:

Entry

A. Covered front walkway eases bad weather delivery and pick up of children. The entry overhang extends over the roadway and is high enough to allow clearance for a schoolbus to pass under it while in the process of loading and unloading the schoolers. Parking facilities are strategically located so as to eliminate any conflict between pedestrian and vehicular traffic.

B. Centrally located covered air lock entry doors allow for an energy efficient centralized access to the center.

C. The circulation corridor allows parents to easily and efficiently bring their child to his or her particular classroom in the morning without having to travel an unnecessary distance within the center.

D. Wide, relatively short corridors for smooth flow of pedestrian traffic,ease of passage throughout the center and control of noise.

E. Entire center is accessible to a person confined to a wheelchair.

Support Services: The centrally located core of support services for the use of children, staff, parents, and visitors:

A. Public restroom - 50 square feet, accessible to the handicapped.

B. Isolation room - 70 square feet, for the care of a sick or frightened child. Located so as to be readily supervised from the director's office.

C. Director's office - 120 square feet, furnishings required include a worksurface, chair, files, bookshelves, visitor chair.

D. Visitor waiting - 60 square feet, seating for 6.

E. Reception area - 50 square feet, with worksurface, chair, word processing capability, and adequate storage for daycare center records. Adjoins visitor waiting area, easily monitored by any staff member in the director's office.

F. Staff break room - 110 square feet, table and seating for four, with refrigerator, sink, microwave, and storage capability.

G. Large storage closet - 80 square feet, lined with shelves and providing bulk storage needs of the center.

H. Kitchen - 270 square feet, meets state standards concerning required equipment.

I. Janitor's closet/Mechanical room - 60 square feet, location of the heating, ventilation and air conditioning system for control of the thermal environment within the center for physical comfort and protection of users against the discomfort of temperature extremes.

The final design solution for this childcare center will meet the criteria established by the research and programming studies.

Chapter VI

DESIGN

Interviews with daycare center personnel and the parents of children attending the particular center brought to light both positive and negative aspects of the existing physical layout of each center. Based on these findings, positive features were retained and negative features were abolished or improved upon.

A proximity analysis chart, which helps to define the space adjacencies required in the final layout of the proposed childcare center, is shown in Figure 18. A plan view of the center, whose arrangement and room adjacencies are based on the proximity analysis chart is displayed in Figure 19. The placement of furnishings shown in the classroom for the three year olds are in a maze type of arrangement (see Figure 20). With the type of highly mobile furnishings recommended for use within the center, both perimeter and central activity area strategies (see Figure 3) may also be easily accomplished if so desired.

Please note the placement of the children's storage cubicles (cubbies) near the entry door to the room. This positioning allows parents to easily drop off and pick up their children with a minimum of interruption to other activities within the classroom.

So that a sense of the three-dimensional quality of the space is more easily conveyed, an axonometric view of the center is displayed in Figure 21 and a section of the structure is shown in Figure 22.

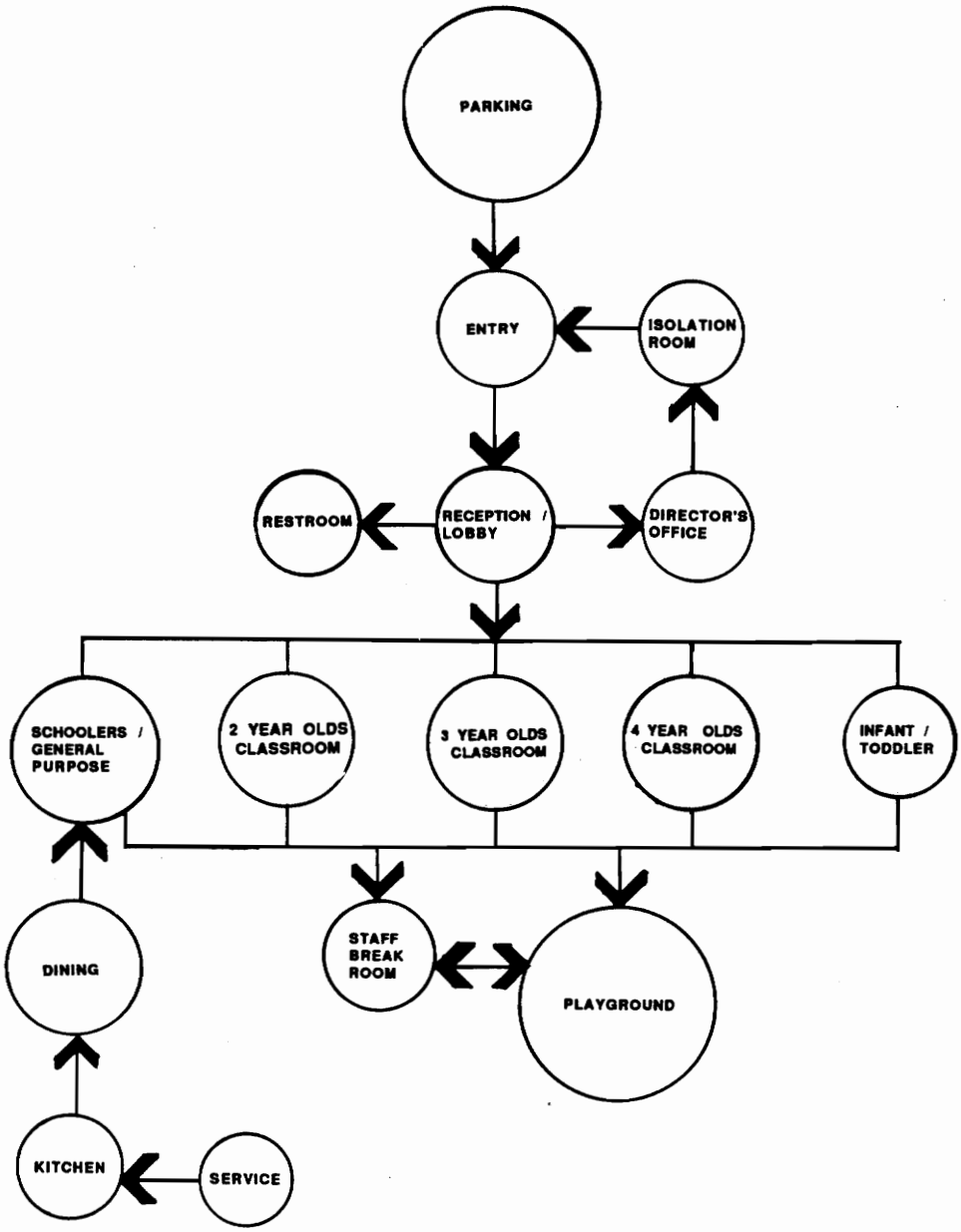


Figure 18. Proximity Analysis Chart

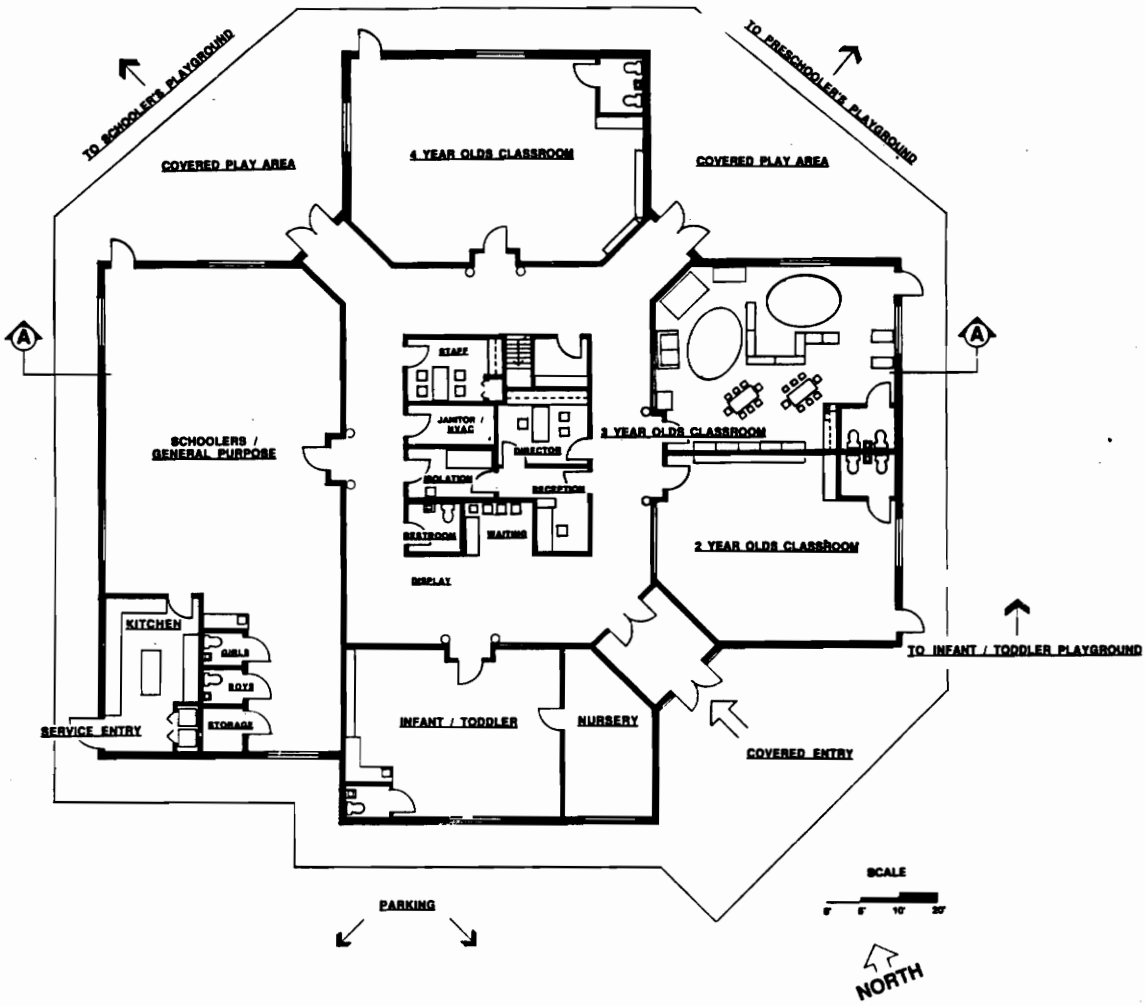


Figure 19. Floorplan of Proposed Childcare Center

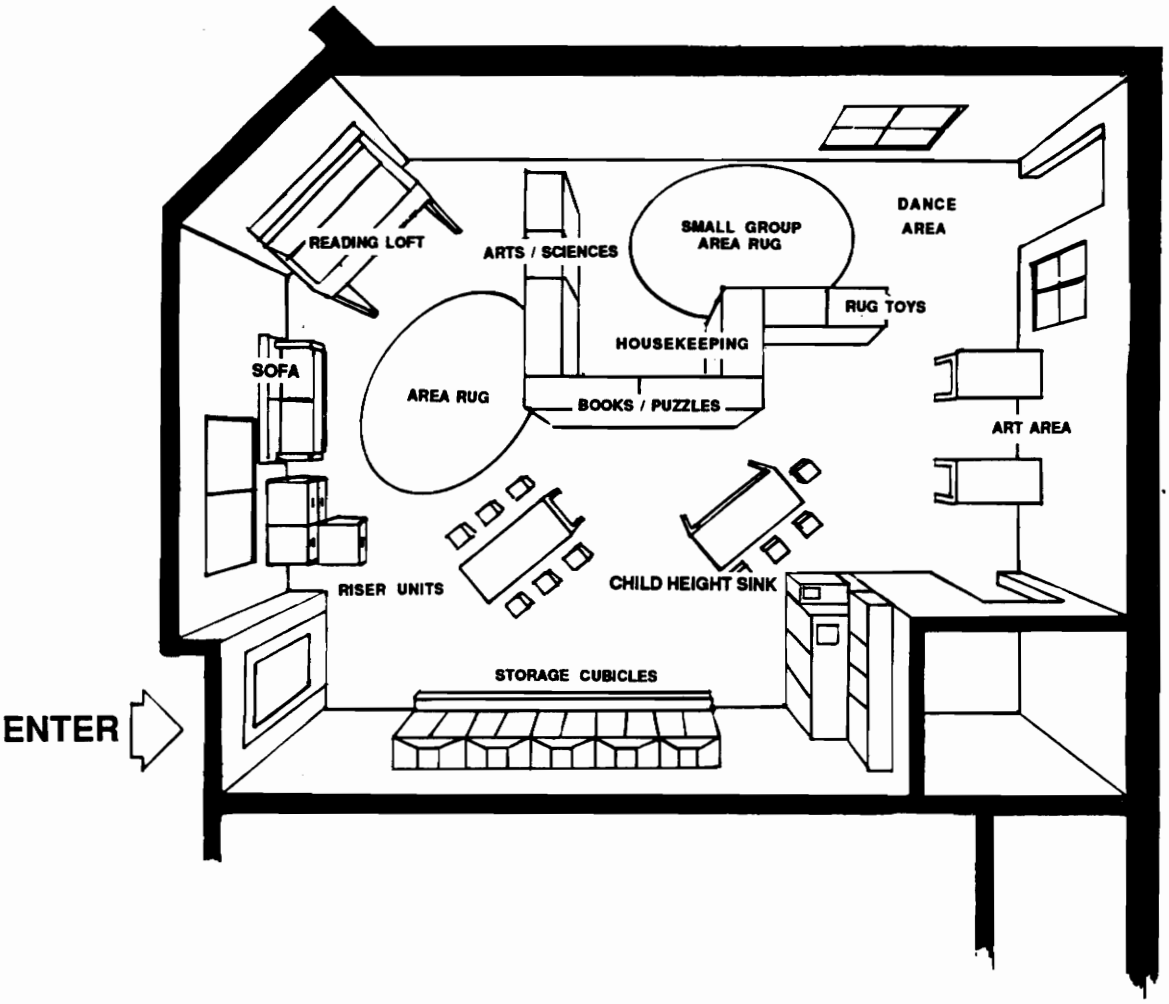


Figure 20. Possible Furnishings Placement in 3 Year Olds Classroom

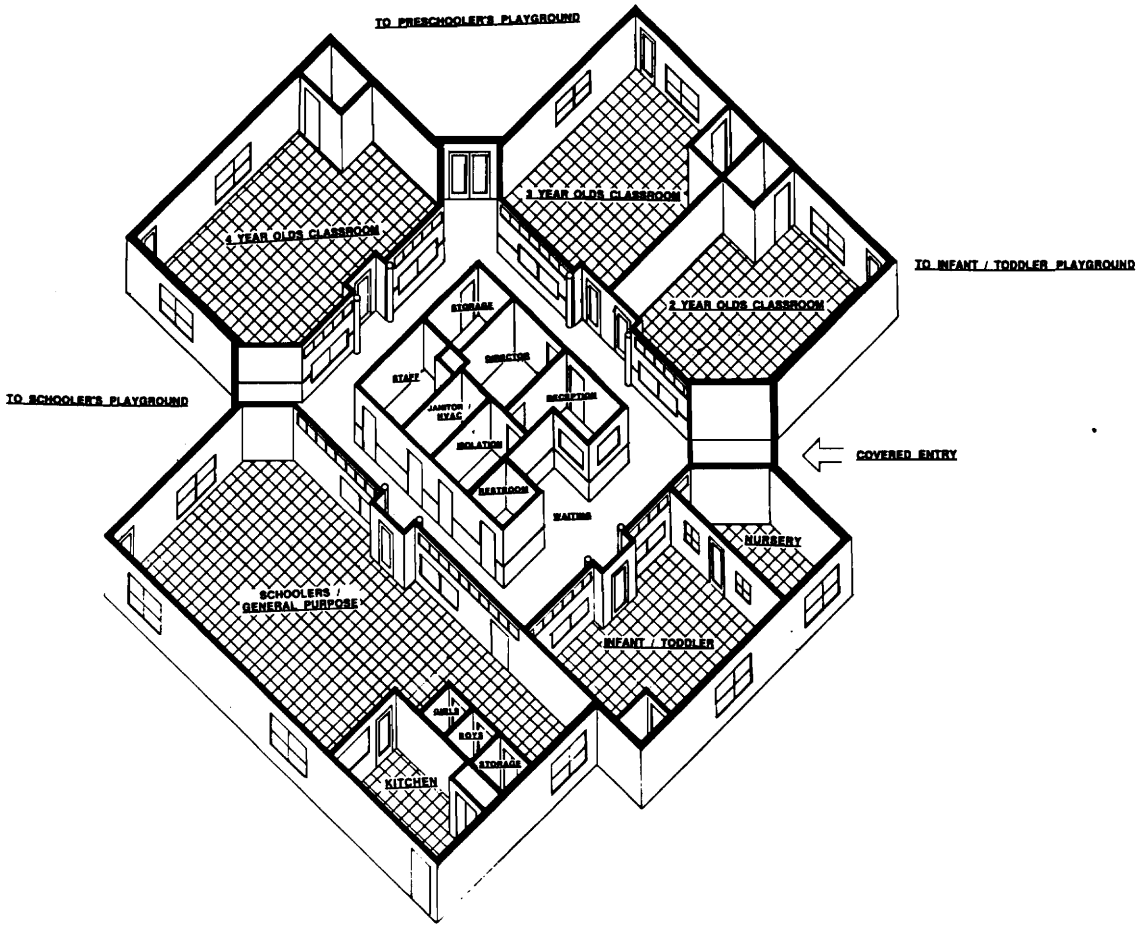
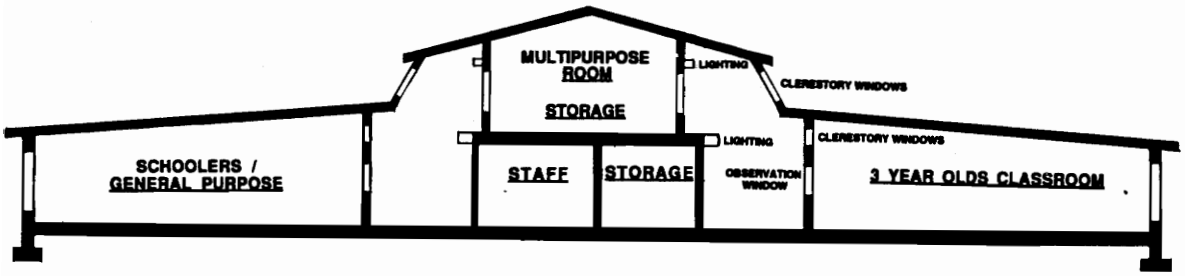


Figure 21. Axonometric of Proposed Childcare Center



SECTION AA

Figure 22. Section View of Proposed Childcare Center

Design Solutions

General Classroom Requirements:

A. Full height walls and doors for sound control and to contain wandering children.

B. All classrooms have direct or nearly direct access to the playground and covered play area (used in cases of inclement weather) at the rear of the building. This will ease the transition between indoor and outdoor activities for the children.

C. Each classroom is a self contained unit with no wall penetrations between it and any other classrooms for the control of noise.

D. There will be a zoning of sound within the center. The noisiest classroom (the schoolers) will be located at one end of the school so as to minimize noise disturbances with the other classrooms.

E. Stationary grouping of large item storage units and bathroom in each classroom to act as noise buffers between spaces.

F. Children's artwork will provide the primary decorative element within the classrooms. This will aid in getting the children to have a sense of "mine" when they are in their particular classroom. Painted murals, which tend to date

quickly and are not easily changed, will not be used.

G. Ceiling height of 9' allows for a sense of spaciousness while a sound deadening spray applied to a gypsum board ceiling helps with the control of noise. If a suspended ceiling is installed, acoustical tile will be placed within the ceiling grid.

H. Hang fabric from the ceiling to delineate a particular activity area on the floor below. This will also help absorb noise.

I. Multiple entrances and exits to each classroom for safety reasons.

J. Individual rooms for various age groups; children divided up according to their developmental levels.

Classroom Furnishings (see Figures 23, 24, 25, 26,):

A. All furnishings and equipment suggestions developed while keeping in mind that they must serve a functional purpose and be able to be reconfigured with minimal effort in order to accommodate large groups, small groups, and individual situations. These units will also be in a scale which is appropriate to the particular user.

B. Moveable storage furniture, with smooth rounded corners will provide a flexible use of modular components. Utilizing lockable casters which are of large enough diameter so as to be easily navigated over any irregularities in the floor surface and designed not to be easily tipped over, they will create a changing environment and maintenance free room dividers. These easily relocatable furnishings also tie in with children's fascination with creating imaginary settings with objects for which a definite use has not already been provided.

Children, with the help of adults, can be encouraged to create the kinds of space they wish, whether it be for "work" or play. See-through plastic bins used with this system are easy to clean, remain new looking longer, and reveal their contents at a glance (see Figures 23 & 24).

C. Multi-level platforms may be created with easily manipulated and sturdy riser units if a change in floor level is desired (see Figure 25).

D. Moveable divider or partial wall created by the repositioning of castered storage units for different activities.

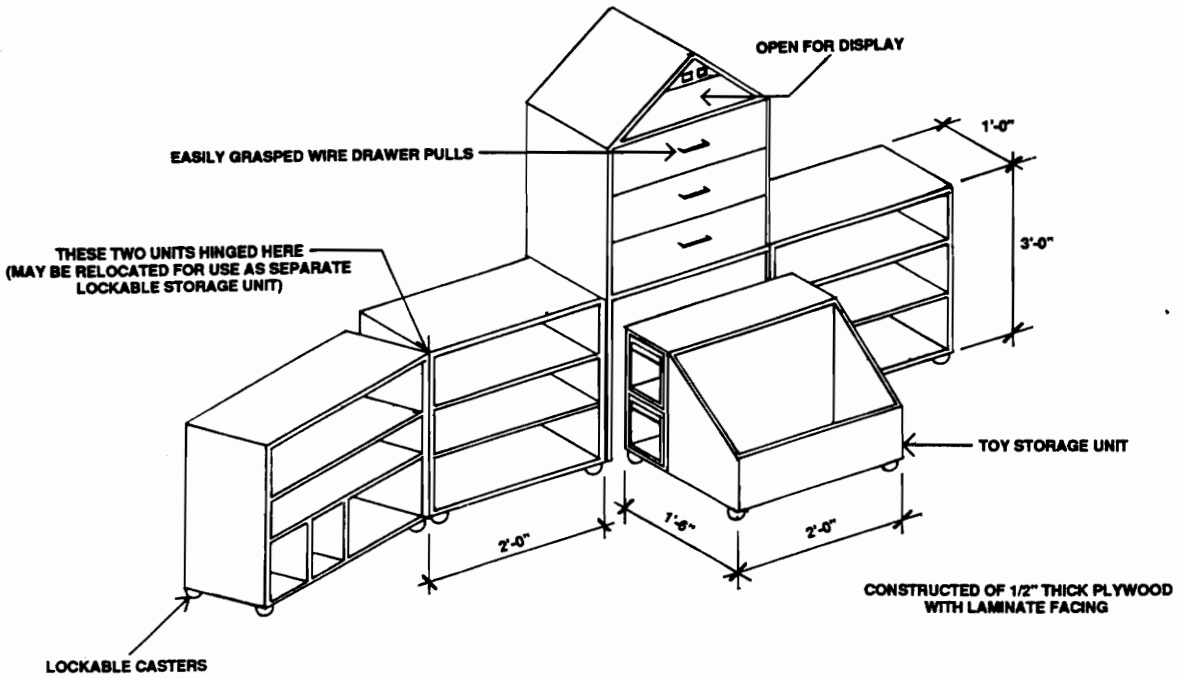


Figure 23. Modular and Moveable Classroom Storage Units

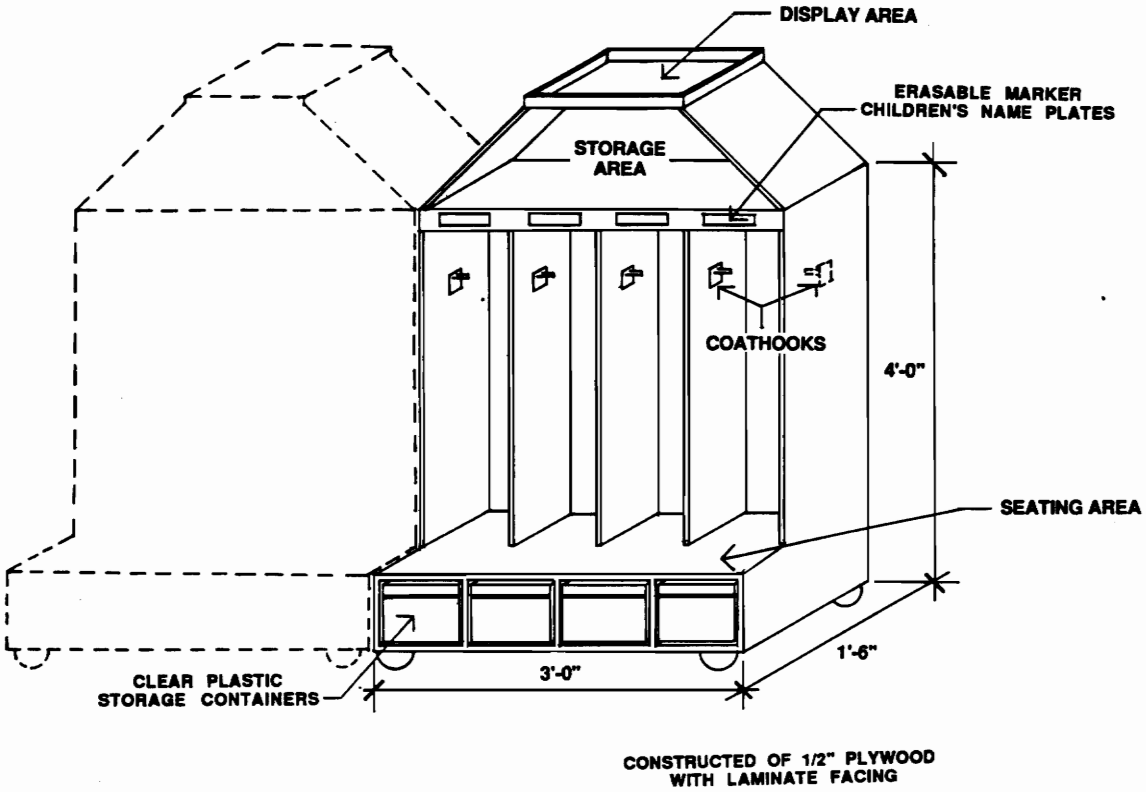


Figure 24. Moveable Coat and Belongings Storage Unit for 4 Children

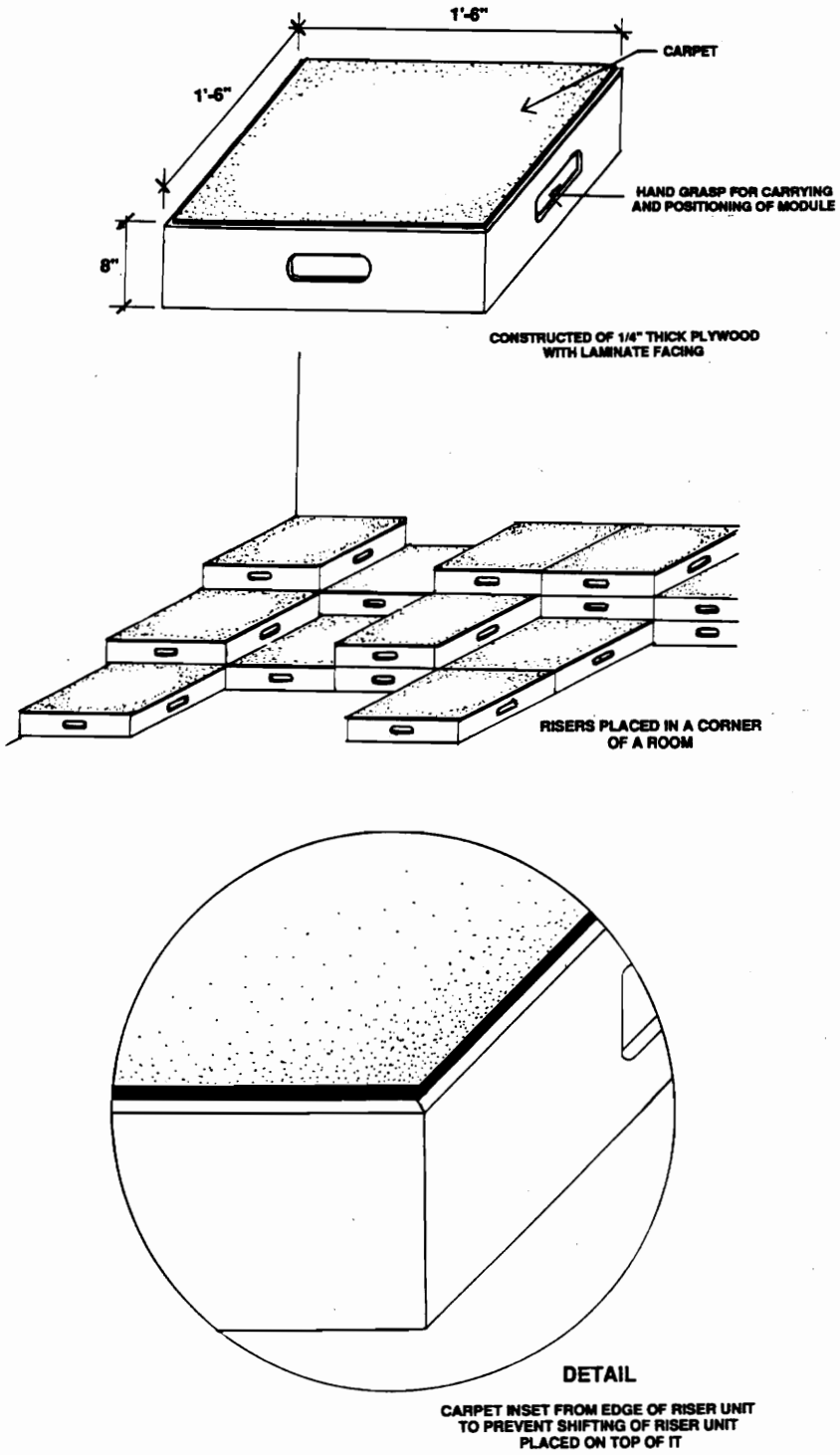


Figure 25. Riser Unit Used to Create Multi-level Platforms

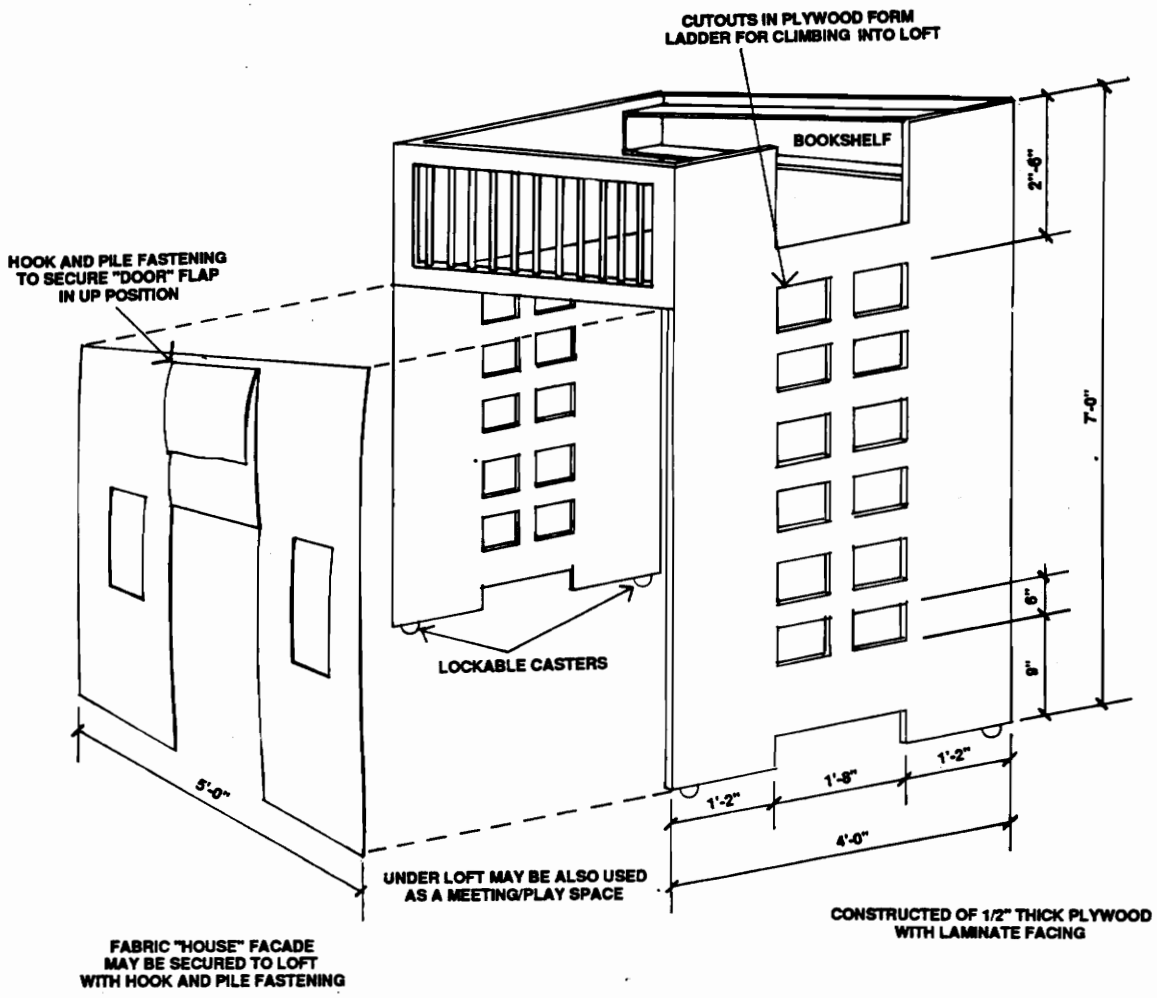


Figure 26. Reading and Play Loft

E. Storage units must be adequate in number and toys and other child safe items, such as art supplies, must be accessible to the children.

F. Durable, washable plastic laminate is used to face casework.

G. A rolling cart, garaged between two cabinets, provides storage for small toys in plastic bins and for oversized toys or laundry, which the children can help take to the washing machine on laundry day (see Figure 23).

H. The infant/toddler room will be fully carpeted and contain fewer tables and chairs than other classrooms because children at this age spend a majority of their time on the floor, with the floor acting as a table.

I. A shatterproof mirror will be installed horizontally on a wall in the crawlers area at a position a few inches from floor level so that crawlers may be entertained by the reflections seen in the mirror. A felt-like material may also be applied to the wall at his same height to allow these children to retrieve and play with toys adhered to it with a hook and pile strip (e.g., Velcro), which has been attached to the toy.

J. Cushions will be available for the children to see as they see fit - whether it be stacking them to create a fort, piling them up in a corner so that a private space is made, or pulling a couple over to a window to form an impromptu window seat on which to sit and share a book with a friend.

K. The average table height for the younger children will be 20", with a 12" high seat used for seated activities at the table. A table 26" high will be used for these children to work at while in a standing position. Table and chairs provided for use by the schoolers will be standard adult heights. These pieces may also be easily used by parents and staff when the center holds parent/teacher nights or open houses.

L. Lunch will be served to all age groups in the Schooler's/General Purpose Room. Fresh food for daily snack periods will be stored in a small refrigerator and cabinets within each individual classroom.

Natural Interior Lighting:

A. Windows located in the front of the building and clerestory windows allow adequate and even distribution of natural light to most points in

the interior of the center for most of the school day if the sky is not overcast.

B. Light control at child height windows (which are also tall enough in order to allow for adults to see out of and serve to connect the rooms to the out-of-doors) located within the classrooms is made possible by the use of low maintenance horizontal miniblinds. These will easily allow natural light to flood the room when fully opened or raised to the top of the window casing. They also can be easily closed so as to minimize the amount of light entering the room so that it may darkened for the children's nap time. Miniblind control cords must be secured at a height that will allow only adults to operate them and will prevent children from becoming entangled in the cord.

General Interior Finishes

A. The predominant interior finish color will be a neutral off-white with accent coloring. This will more easily reflect the light within the space. Wall surfaces in corridors are painted with a non-glare flat enamel finish for low maintenance and ease of cleaning. Wallpaper, when applied to

walls, is used above chair rail height to minimize wear and soiling by children.

B. A hard wearing multi-colored low loop pile carpet will be specified for use in office areas and corridors only. This carpet will be installed over a thin closed cell foam pad. This pad will serve a two-fold purpose - carpet life will be extended and it will be an asset in the control of noise in the corridors.

Finishes Within Classrooms (see Figures 27, 28, 29,).

A. A wallpaper border is installed at above chair rail height. This is at the eye level of a child, which would seem to be fine, but it interferes with the display of the childrens' artwork, which they would prefer to see. A chair rail is installed at 30" above the finished floor. It is constructed of wood covered with plastic laminate for durability and faced with a tackable material to which artwork can be fastened.

B. Tackable, demountable sound absorbing surfaces are mounted to the exterior walls of the rooms which are made of concrete block. This provides a surface to which childrens' artwork can be easily

tacked (using a stapler) and also aids in reducing the noise level in classrooms.

C. Liberal and well placed use of interior windows and full view doors for the transmission of borrowed light, as an aid in viewing activities within classrooms by those not in it, and to increase the sense of openness and non-confinement within the center.

D. Flooring will be easy to maintain textured pattern sheet vinyl on which area carpets with non-skid backings will be used to designate on-the-floor. seating, play, and learning areas.

Lighting

A. Mixture of lighting types used to allow for control of lighting. Ceiling mounted semi-indirect full spectrum fluorescent light fixtures are located around the perimeter of the ceiling with louvered light diffusers. This allows for an unusually uniform distribution of light within the rooms. To supply a more directed light, wall mounted sconces, track lighting, as well as lamps which are able to be securely clipped to a table or shelf will be used.

FINISH MATERIALS

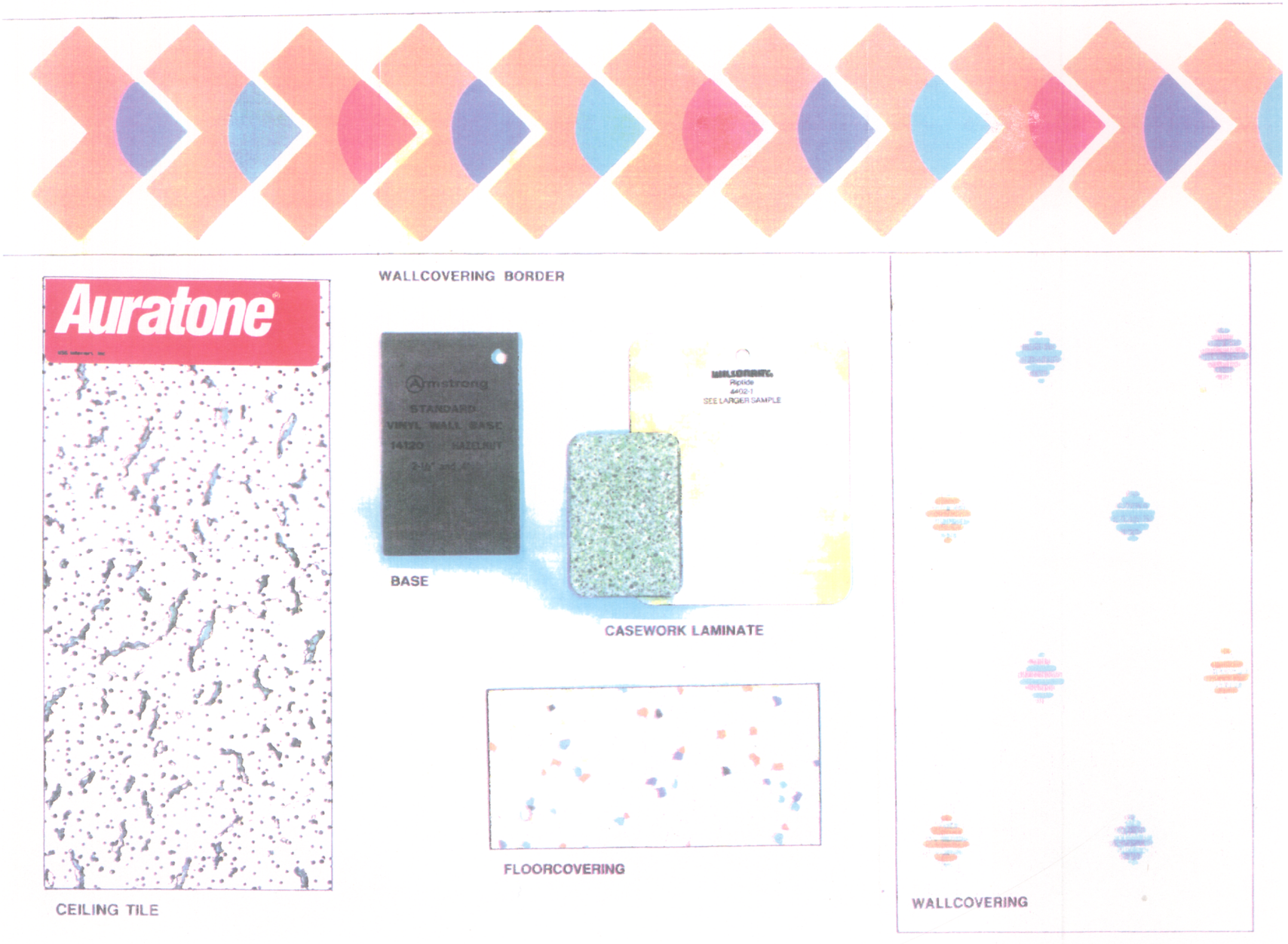


Figure 27. Samples of Finishes to Be Used in Three Year Olds Classroom

FINISH MATERIALS

MATERIAL	MANUFACTURER AND DESCRIPTION
FLOOR	
Sheet Vinyl	Armstrong Classic Corlon "Suffield", Color: 86800 Alabaster
BASE	
Rubber	Armstrong, 4" high coved base, Color: 14120 Hazelnut
WALLS	
Field Applied Vinyl	Genon, "True Direction", Color:218-834, 27" wide
Field Applied	J.Josephson,Inc.,"Caravan Border", Pattern: 687-6465, 4" high x 5 yards long increments
TRIM	
Paint	Benjamin Moore Satin Impervo Enamel, Color: OW1
CEILING	
Acoustical	United States Gypsum, 2'x 2' lay in panel "Auratone", Product number: 0562
CASEWORK	
Plastic Laminate (Bottoms)	Wilsonart, Color: Riptide 4402-6
Plastic Laminate (Tops)	Wilsonart, Color: Green Glace 4144-6

Figure 28. Finish Schedule for Three Year Olds Classroom

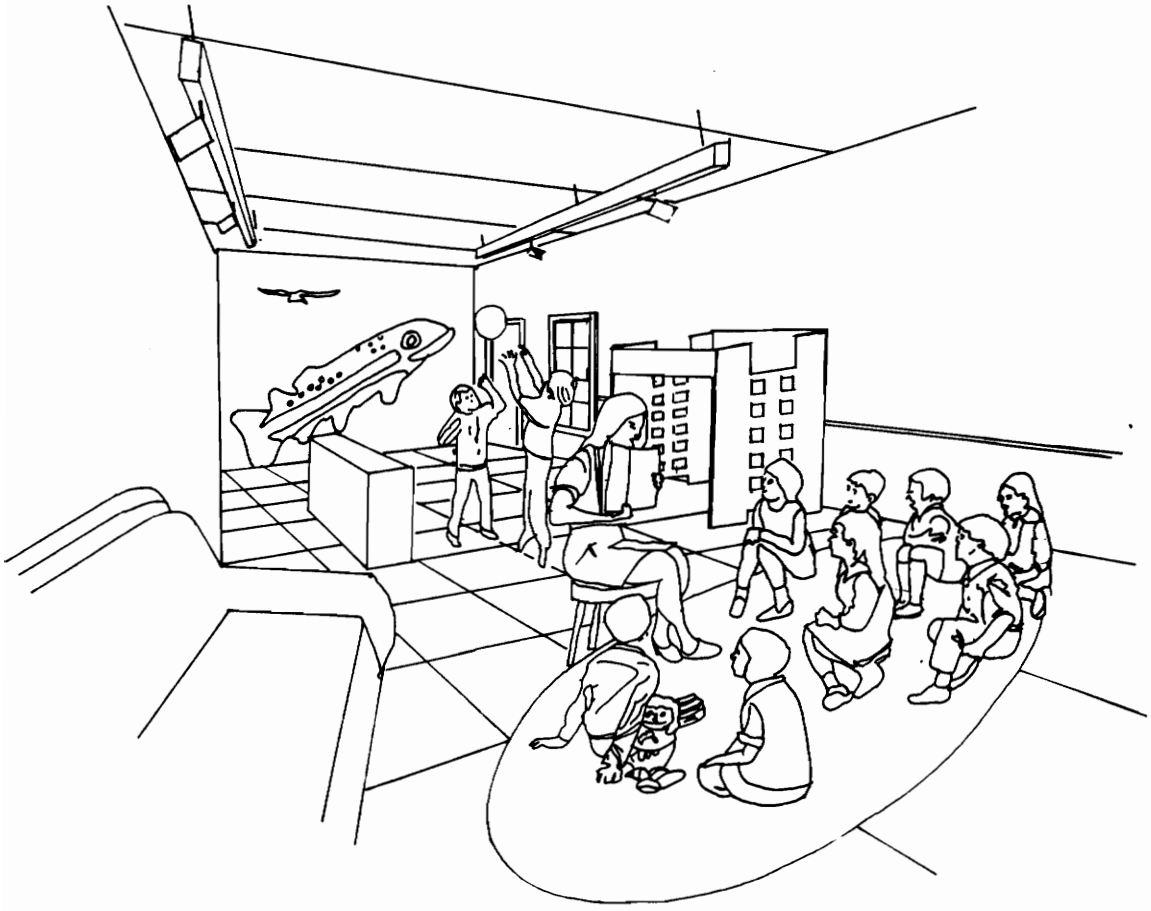


Figure 29. Perspective View of Three Year Olds Classroom

Summary and Conclusions

The objective of this study was to design the "ideal" daycare center for a client. The initial gathering of research into this topic and preprogramming phase involved a bringing together of the related information available from studies which have been performed in many fields. The interdisciplinary nature of this study required the involvement of many of the social sciences, including sociology, psychology, and environmental psychology. This research was necessary in that it provided insight into the concepts which would prove to be significant in the identification of the interrelationship between the development and education of a child and the environment in which this activity takes place.

Support based on information gathered through objective observation and the administration of qualitative questionnaires aided in analyzing existing daycare settings and their operation. This period of design analysis allowed a synthesis to occur and led to a conceptualization of what revised form an actual daycare center might take.

The design of a daycare center, whether it be located in an existing or newly constructed facility, as discussed in Chapter II, is not often based on hard and fast rules. Throughout the course of this study problems have been

identified and solved in a setting which advocates and deals with the unique needs of a unique user group in a daycare situation. The final design solution detailed in this document is a result of refinements brought about by committee evaluation, which was an integral part of the feedback process.

Hopefully, a consciousness and commitment to social responsibility will lead to more involvement by design practitioners and studies by those in the academic arena into good daycare center design. That is, design that respects the physical and psychological needs of adults and children. This can only be beneficial to the education and well being of the adults of tomorrow and help to ensure the success of a strong curriculum being taught in today's daycare.

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APPENDIX A - Childcare Center Administration and Staff Interview Questionnaire.

Page 1
Person interviewed:
Date:

Does the layout of the center have an effect on the time it takes or your ability to accomplish a task efficiently ?

Yes ___ No ___ Please explain.

___ Location of classrooms?
___ Location of bathrooms?
___ Location of storage?
___ Location of kitchen?
___ Other locations?

Is the size and scale of the classroom space and other spaces within the center adequate for your needs and the activities of the children?

Yes ___ No ___ Please explain.

What furniture pieces are the most useful? Are there any other furnishings that you are now lacking that would be of use within the classroom?

Is your present storage space sufficient to allow toys and learning tools to be arranged in an organized and efficient manner?

How would you classify the noise level within the center?

___ Very noisy

___ Moderately noisy

___ Quiet

Childcare Center Administration and Staff Interview Questionnaire.

Page 2

Does the noise level within the center ever interfere with accomplishing any activities?

Yes ___ No ___ Please explain.

What is your opinion of the flooring materials used in this center?

Appropriate ___ Inappropriate ___ Please explain.

Is the lighting in this center of sufficient quantity and quality?

Yes ___ No ___ Please explain.

In your opinion, are the wall covering treatments in this center appropriate?

Yes ___ No ___ Please explain.

Do the window treatments in this center allow adequate control of light and air?

Yes ___ No ___ Please explain.

If you were to change the window treatments in this center, what would you replace them with and why?

In your opinion, is the amount, accessibility, and location of storage adequate for the childrens' needs (clothing, toys, and supplies) as well as your personal needs?

Yes ___ No ___

Childcare Center Administration and Staff Interview Questionnaire.

Page 3

Are you aware of the interior colors of the center having an effect on the activity level or disposition of the children?

Yes___ No ___ Please explain.

What decorative elements in this center do you enjoy the most and why?

What decorative elements would you say that the children find most appealing and why?

When and where do you develop and plan lessons and activities for the children?

If you were to have an alternative space in which to perform this activity, what form would it take?

Do you currently have or have you had in the past any physical ailment (headache, backache, neck pain, etc.) whose cause you could attribute to your workplace?

Are there any physical aspects of the daycare center which contribute to making your workday fatiguing and stressful?

Are there any physical aspects of the daycare center which you find invigorating during the course of your workday?

Childcare Center Administration and Staff Interview Questionnaire.

Page 4

What aspects of the physical layout of the center increase the feeling of a social support system? How would you rate your morale?

Where do you meet with other adults in the center?
Is there a space where staff may confer with each other or with parents in an advisory capacity with some amount of privacy?

What accommodations have been made to allow for parents and visitors to feel welcome at the center?

___ Comfortable waiting area?
___ Program or other information available?
___ Coat storage?
___ Other

Are there any recommendations you can make concerning the layout of spaces, traffic flow, or furnishings found within this center?

Thank you for your participation.

Request to Interview Child's Parent

Dear Parent,

I am a graduate student majoring in Interior Design in Virginia Tech's Department of Housing, Interior Design, and Resource Management. I am currently collecting data for my thesis topic concerning the design of the interior environment of a daycare center.

As part of my investigation into the design of daycare centers, I would like to interview the parents of children attending Tomorrow's World. These short (15 minute) interviews will be conducted by telephone at a time which is most convenient to you. All information will be treated as confidential.

Please indicate if you are willing to participate in these interviews by filling in the information requested below and returning it to the center's director, Carolyn Jennelle, as soon as possible.

If you have any questions, please feel free to call me at 552-1215. Thank you for your participation.

Sincerely,

Ken Special

Daycare Interview Participation Form

Name:_____

Telephone Number:_____

Best Time to Call:_____

Childcare Center Questionnaire for Parents

Page 1

Does the physical layout of the daycare center effect your ability to smoothly separate from and reunite with your child?

Yes ___ No ___ Please explain.

If no, please explain.

Does the layout allow for some privacy, if needed?

Yes ___ No ___

Is this important to you?

Yes ___ No ___ Please explain.

Is there a space provided where you can meet with other parents and staff to discuss your concerns about your child or other matters?

Yes ___ No ___ Please explain.

What is your impression of the communications material and displays found within the center?

___ Would like to see more displays of materials

___ Displays are fine as is

___ Would like to see fewer displays

___ Never notice displays

Please explain.

Childcare Center Questionnaire for Parents

Page 2

Can you view activities within the classrooms easily?

Yes ___ No ___ Please explain.

Are the center's facilities adequate to comfortably accommodate large numbers of people attending meetings at the center?

Yes ___ No ___ Please explain.

What aspect of the layout/design of the center do you feel could be improved?

___ Waiting area

___ Size of rooms

___ Corridor size

___ Lighting

___ Other

Are there any additional comments you would like to make?

Thank you for your participation.

APPENDIX B - Behavioral Mapping Activity Observation Instrument

Site where observation is taking place: Rainbow Riders Childcare Center

Room where observation is taking place: The Three's Room

Observation time period: From: 11:45 am To: 12:00 pm

Date: July 19,1991

Activity observed	Design implication
Transition period:	
Bringing children back into the classroom from the playground and preparation for eating lunch in the classroom.	
Children are wound up after being outside for some time. Some kids misbehave and are separated from the others by being placed in "time out" positions throughout the room.	
Children are instructed at staggered intervals to go to the bathrooms located off the main corridor to wash their hands and use the toilet if necessary to prepare for eating lunch.	
There are many children from other classrooms also using the centralized bathrooms at the same time. It gets tight in the narrow corridor with so many people there at one time.	(Decentralize location of sinks and toilets)
One of the Room Three childcare workers must stand in the corridor to monitor the children and to know when to send the next set of kids out to use the bathroom. The other childcare worker retrieves the day's lunch from the kitchen down the other end of the corridor after making many trips back and forth.	(Classrooms should have own sinks and toilets) (Amend kitchen/ dining area location)

VITA

Kenneth Special received his Bachelor of Science in Interior Design from the University of Connecticut in 1977. His extensive professional experience in the field of Interior Design includes several years with George Shehadi, Inc. in Syracuse, New York as Senior Designer/Advertising and Business Manager. He also has worked in the capacity of Senior Interior Designer with Healthcare Environment Design, an architectural firm affiliated with Baylor University Medical Center and located in Dallas, Texas.

He was awarded his Master of Science in Interior Design from Virginia Polytechnic Institute and State University in 1992 and is currently teaching in the Housing and Interior Design program at Miami University in Oxford, Ohio.