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A Day Care Facility For Montana State University

Cynthia L. Rice

A professional paper submitted in partial fulfillment
of the requirements for the degree

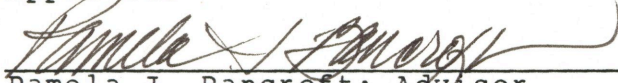
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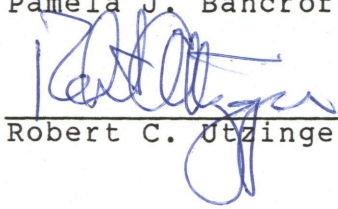
Bachelor of Architecture

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Cynthia L. Rice 28 March 1988
Cynthia L. Rice

In appreciation and thanks for the love
and support of family and friends,
especially my grandmother,
Esther M. Flynn

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INTRODUCTION

Introduction

The need for quality day care opportunities has become a matter of utmost importance for parents in the workplace. Parents in the 1970's and 1980's are finding greater necessity for both to work. The number of single parents is continually rising. These two factors alone create the need for child care outside the home.

The preschool child has specific needs. It is the area of child care, particularly outside of the home, where these needs are most easily recognizable, that is, recognized by an impartial viewer.

Identifying and meeting the architectural needs of children in a day care setting is the purpose of this thesis. The preschool children of parents attending Montana State University will be the focus, resulting in the design of a new ASMSU day care center. Meeting the architectural needs of these children is dependent upon the achievement of a series of goals, both educational and design oriented, which provide stepping stones to a successful design solution.

It is necessary to understand the variety of options in day care services. Day care centers, group day care homes and family day care homes are the basic choices in day care.

A day care center is a place in which supplemental parental care is provided to 13 or more children on a regular basis, including the provider's own children who are less than six (6) years of age.¹ This facility type is located outside of a residential structure, although it is often convenient to a residential district. Day care centers are licensed and adhere to state policies and laws governing usage, capacity, and program.

A group day care home is that facility which provides supplemental parental care for less than thirteen (13) children.² This facility is often located within a residential structure, is registered by the State, and must state policies or laws.

A family day care home is that facility which provides supplemental parental care for less than six (6) children.³ A family day care home is also registered by the State and must follow those policies applicable to its practice.

From the above choices come the variations in schools of thought which characterize day care facilities throughout the world. For examples, traditional preschool and Montessori programs focus on individual development, although their intents are different. Preschool programs are designed to emphasize social development through group (rather than individual) activities which are scheduled and supervised by an instructor. Montessori offers an alternative to structured teaching by adults. Montessori programs are designed to offer the child the opportunity for self-instruction, progression, and discipline through adult direction and observation.

The reasons for variety in day care programs go beyond the various types of programs. The differences in people which administer programs creates a unique atmosphere for each, as do state and local regulations which dictate requirements for each type of day care, among which are capacity and instructor qualifications. Examining the multitude of requirements has been an inclusion herein as a portion of documentation in the understanding of the day care phenomenon.

Examination of day care facilities through case studies provides evidence of those criteria which are successful and those facilities and methods which are less successful. Making those findings site specific to Bozeman, Montana is fundamental in analyzing the possibilities of design solutions for this project.

It is the purpose of this document to identify, from an architectural point of view, the needs of the users of a day care facility with special emphasis on the needs of the children in that setting. Understanding the separation a child experiences between home/parent and day care/caregiver situations encourages the link of day care to a home atmosphere, promoting security and comfort in the child. This, in turn, encourages the stimulation of the child's educative mind thought enabling a caregiver to provide maximum opportunity for the growth of each child. Intent is, thereby, to produce a facility which will stimulate the educative processes in children through secure, safe and comfortable surroundings.

The solutions for design in this problem are contingent on the analysis of spaces within a given range of needs and proposed usages for the primary day care inhabitants, that is, the children and caregivers. The design of the spaces of a day care facility are crucial to its success no matter what type or which educative process has been adopted.

Those spaces are dependent upon the needs of the users, thus an in depth study of those users is fundamental to the entire design approach of this facility.

Introduction Reference Notes

1. Licensing Requirements for Child Day Care Centers, State of Montana, Department of Social and Rehabilitation Services, Community Services Division. January 1, 1986.
2. *ibid.*
3. *ibid.*

DESIGN & EDUCATIONAL GOALS

Design and Educational Goals

The design and educational goals listed herein are those of this author and reflect ideas and thoughts which induced or were products of the decision process of this thesis.

To become thoroughly knowledgeable of the operation, function, and maintenance of day care facilities.

To become more aware of the needs of preschool children.

To design a functional, usable, and maintainable building and site for the potential users.

To create a structure which addresses the scale of its primary user: the child.

To create a facility which provides the warmth of a residential atmosphere, which will act as a comfortable transition for young children between home and the educational environment.

To create interior spaces which encourage individuality

To provide a safe and creative exterior play environment.

To create exterior spaces which encourage imaginative activity.

To maintain a sensitive approach to existing site amenities (esp. vegetation).

To maximize the flexibility of the facility by utilizing a variety of activity areas.

To allow for expansion or extension of the facility in order to increase the capacity of child care.

To provide a facility requiring minimal maintenance on the part of day care or university staff.

To create a linkage between academic and residential structures.

To maximize the potential for solar applications by maintaining correct orientations.

The Users

Understanding the users of any facility can only enhance the designer's ability to create usable space. The children which participate in the day care experience are by all means the primary users and must be accommodated. It is equally important to acknowledge the needs of the caregiver so that they may successfully provide care and comfort for the child. Parents, our third user, require attention to the extent of satisfaction in knowing their child is in a safe and secure environment. This section addresses the needs and concerns of these individuals.

Children

Childhood is the means by which an infant becomes an adult. For most of us the years we refer to as childhood are the least encumbered with social tensions and difficulties, providing us with a carefree, openness not to be regained in such magnitude again in our lives. The greatest challenge in providing a quality day care facility comes with a thorough understanding of the growth and development of the child. Day care addresses the needs of children of preschool age, that is, from two and one-half to five years of age. In order to focus on the needs of children, it is imperative to have a basic understanding of the principles and theories which present a comprehensive explanation for the physical and emotional growth and development of children.

The entire picture must be viewed in order to recognize and understand all of the pieces. For this reason, much reference is made to developmental stages from infant to six year old.

Let us consider the infant, whose head accounts for one-fourth of his/her total body length, as do the legs.¹ The rapid growth of that infant in the next few years will occur primarily within the legs and body, changing the overall body proportions.

Although children of the same age vary in size, their body proportions are similar, thus suggesting a 'built-in' plan for development.² Children will develop at approximately the same rate as their peers of similar age.

"The sequence by which control of the body is developed is called the cephalocaudal trend. ('Cephalo' comes from the Greek word meaning 'head' and 'caudal' from the Latin word meaning 'tail'.)"³

Within the cephalocaudal sequence are two other trends which focus on specific development of skills in localized areas.

Motor development - the growth of skills for handling the body.

Proximodistal trend - the development from the center to the edge of the body.

As often the observer distinguishes, it is desirable to evaluate each mode of development on its own merit; however, to again see the entire picture, all of the pieces must be in place. It is necessary in understanding children's needs to have a clear definition of each piece of the picture.

Understanding the development of children's thought patterns was the work of Jean Piaget, a Swiss genetic epistemologist (the formation and meaning of knowledge from a lower to higher level).⁴ Piaget offered a theory for the development of children which suggests that the child's level of experience influences the child's ability to move from one stage to another. These stages are periods of development which increase a child's ability to perceive and understand his/her environment.

The sensorimotor period covers the first eighteen to twenty four months of life, and can be called the period of practical intelligence that precedes language. Two important milestones of the sensorimotor period are the development of object and person permanence and the ability to form hypotheses. (Object permanence is the understanding that an object exists even though the infant cannot see it; person permanence is the awareness that people exist when out of sight. Hypothesis forming is the ability to think of solutions to a problem instead of arbitrarily trying one solution and then another until the problem is solved.)⁵

The next period of a child's development is called the preoperational period. This occurs from around two to seven years of age, and includes those children which constitute the primary user of the day care facility.

During the peroperational period, children become so skillful at communicating with adults that we might assume, incorrectly, that they think as adults do.⁶

This assumption can create disharmony in a child/adult relationship. It is important that adults realize that the child lacks reversibility in thinking and is very egocentric during these years.⁷ Reversibility in thinking involves observing situations with a conservative eye. Conservation, here, is best exemplified with an experiment as follows:

Ask a child to make two balls of the same size with clay or playdough. Then, as the child watches you, flatten one ball to make it look like a pancake. Ask the child whether the amount of clay in the ball and the pancake are the same.⁸

Most preschoolers observed will answer negatively. They could not recall the pancake as having been a ball of the same size. When they respond affirmatively and can explain their answer, they show the ability to conserve and evidence of reversibility is present in their thinking mode.

The second obstacle in this period is that of egocentrism. "This is the inability to see a situation from another's point of view."⁹ This is a problem which day care can help to alleviate with interaction of children of similar age groups. A child is concerned with his/her ability to be a part of an activity. The child next to him is of little consequence. This can create antagonisms if not carefully handled and supervised. Children who demonstrate reversibility in their thought, and less egocentrism in their actions suggest movement to the next period, concrete operation, which falls beyond the scope of this study.

Now with a basis of how the child gets to where he/she is in life, we can undertake the study of the preschooler as a type. Major landmarks in body control are characteristic of the preschooler. Development of basic motor skills, those of muscle coordination and control, are visualized in a child's ability to hop on one foot, skip, and run with ease. There is less development during this time of fine motor skills.¹⁰ This can be evidenced in the age at which a child can effectively tie a bow or his/her own shoe, at approximately five years. "Adults at home and in the center frequently overestimate children's ability to use their hands."¹¹

The most effective way to enhance a child's fine motor skills is to present selections of materials to him/her which have one correct way of use, like puzzles.¹² A selection of materials that promote freedom of thought and movement will also encourage the child's use of these skills.

Large motor skills are best encouraged with room and freedom to move about. Playgrounds are an invaluable source of growth for the preschooler.

A child's ability to ride a tricycle, climb a jungle-gym, etc., give the child a sense of capability - a positive self concept.¹³

The following chart breaks down the major developments of preschool children's growth processes.¹⁴ These are the children who will be cared for in a day care center of the type this thesis is directed toward.

Landmarks of Development

PHYSICAL, MOTOR, AND LANGUAGE DEVELOPMENT	SOCIAL DEVELOPMENT
2 1/2 - 3 years	
Runs smoothly	Possessive about toys
Uses short sentences	Plays with others
Size at 3 years: 32-33 pounds, 37-38 inches	Gives orders
	Insists on rigid sameness of routine
3 - 4 years	
Stands on one leg, draws circle and cross (4 yrs)	Displays intense curiosity, asks questions
Complete sentences of 6-8 words (4 yrs)	Plays cooperatively with other children
Has become self-sufficient in many routines of home life.	Shows interest in other children's bodies (3-5 yrs)
Size at 4 years: 38-40 pounds, 40-41 inches	
4 - 6 years	
Skips, broad jumps, dresses self	Generally prefers play with other children
Copies a square and a tri- angle (5 yrs)	Becomes competitive
Talks clearly, has mastered basic grammar, relates a story	Shows evidence of responsibility and guilt
Size at 5 years: 42-43 pounds, 43-44 inches	

Once the thought process and motor skill development are understood, we can focus on the child's ability to learn and provide activities and materials which promote the greatest amount of growth. Various areas of interest for children should be addressed in their activity spaces. An area for playing with blocks or other small pieces promotes small motor skills, while housekeeping play areas promote understanding of different roles and lessens the egocentric mindthought through sharing with other children. Areas which promote creative play are water or sand pits. An area designated for movement provides tension release and an indoor area for active play during inclement weather conditions. Items which encourage stability, locomotion, and manual manipulation are necessary in the day care environment in order to obtain the maximum growth potential possible. The spaces suggested can provide for maximum sensorial perception stimulation as well. Colors, textures, and geometric shapes are important in development of eye and hand contact.

Children need spaces of each type mentioned above to stimulate and satisfy their physical needs. Children ages two and three are just becoming capable of handling physical tasks which require basic motor skills. Children through ages four and five have developed the basic motor skills and are now perfecting and modifying those skills (e.g. running becomes something to practice doing faster).

The emotional needs of children in these groupings require special attention as well, especially architectural attention. Those children in the two and four year age group require special feelings of a secure and safe atmosphere, whereas the three and five year olds are more adventurous and are more interested in their activity than in their safety. The atmosphere which most resembles home and the freedom to explore will be most successful for both age groups, provided it supplies the parent with sound justification for its methods and educational processes.

Preschool children are eager, for the most part, to learn and be taught about the environment in which they live. Large colorful objects intrigue the younger children, while more intensively detailed objects will occupy the older children. All materials should provide stimulus in the visual, auditory, olfactory, and gustatory (taste) perceptions. The section of this book which deals with space analysis will define several possible options for successful play spaces and their materials.

Care givers

The care giver is the essential staff member of the day care facility. This person is a trained professional that specializes in child care and child development. The University site provides a unique opportunity for the use of volunteers to work with day care personnel. Montana State University provides students in child development, elementary education, and other related fields of study to work with the professional care giver to establish a working relationship with the child in preparation for the student's individual career.

The number of care givers in the day care setting is mandated by State licensing requirements (see appendix A). There must be one care giver for each eight (8) children ages two (2) through four (4). For children four (4) to six (6), the ratio drops to 10 to 1. This is translated into five or six care givers when there are 50 children, as the design maximum is scheduled for. Care giver education requirements are also outlined in the licensing requirements.

Care givers in the state of Montana have formed a support group, Montana Association for the Education of Young Children, which gives them a common source of current information through newsletters, journals, and meetings. This type of group allows them the opportunity to explore and develop methods and means for bettering their day care communities.

Care givers, as do children, have special needs in the day care world. The tensions and stresses which the care giver is placed under during the work day are tremendous and require special attention. The facility is the day care workers second home. This will be the place they spend numerous hours daily, and addressing their needs architecturally is as important as addressing the needs of the child in the same setting. The difficulty here is primarily one of scale and function. What a child requires, an adult care giver may or may not be able to use as efficiently. This challenge is mainly one of developing a scale which both can work with comfortably and effectively. The child is the major focus of any day care setting; however, the functions which the care giver must provide administratively have little to do with interaction with the child. That is, the child will not be a prime user of several spaces integral to the day care facility. These spaces include the administrative offices, laundry, mechanical, kitchen, and adult restrooms of the facility as outlined in the space analysis which can be found in a following

section. These spaces must accommodate the adult user. The scale, quality and effectiveness of these spaces are directed to the adult and must function as such. There is a duality of need for accommodation in the structure. This is the designer's greatest challenge. Those spaces directed for primary children's usage must also be taken into consideration for use by adults. The adult must be comfortable in those spaces although the children must be the focus as intended user.

The care giver requires a space for administrative duty, but also a quiet space to retire to during lunch or break periods. The intense interaction which occurs between child and adult in the day care setting demands release of tension and frustrations for both child and adult. The adult must be allowed release in a quiet space designated for such, as in a lounge.

The quality of the day care experience for all of the users, whether child, parent or care giver, must satisfy the needs, emotional and physical, of those parties. This is the point at which design becomes the crucial element in the success or failure of three dimensional space.

Parents

Parents are that special group of people which are given the task of raising a newborn baby through childhood and adolescence to adulthood. The unique group of parents which this day care center serves are a widely diverse portion of parents everywhere. The parents who will use this facility are students among many areas of Montana State University's offerings. Many are single parents while other families have a working parent and student parent. In some cases, both parents are students. Whatever the case, these children fall under a unique category. These children tend to live in a more stressful environment that cycles with the quarterly school year. The children are under less stress during break periods when their parents are under less stress from school. This situation is one which the care giver deals with as well as the parent. ASMSU has arranged a schedule which enables the parent and child to have great flexibility during the school day for interacting in time spent together. This is an attempt to help reduce the tension and stress between parent and child so as to produce more harmonious relations between them. This schedule also provides for a greater amount of children to be cared for during any one day. Another aspect of this schedule encourages more parent interaction with the day care unit. This was found to be an exception to the rule.

Many centers have no parent participation whatsoever. Parents are regarded as 'consumers' of a product. In some cases, the child and his parents are thought to be the product itself! Often center schedules make it impossible for parents to take part if the latter have full-time jobs. This is due to a director and staff who frankly see no reason or benefit in parents 'rocking the boat'.¹⁵

Fortunately for MSU, this is not the approach to parent interaction which the day care director, Jeanne Eggert, takes. Parent interaction is encouraged and invited; however, parents themselves often do not become involved with expectation that someone else will. That is part of every human's nature.

The parents of children attending the ASMSU Day Care have special needs, too. Many student/parents are holding a job, as well, and require a competent day care service which can best meet their needs. The student's ability to choose and schedule classes creates a difficult scheduling problem for the center. In order to provide flexibility for the parents currently using the existing facility, a two hour time frame was used (this is described in the Existing Facility section). The convenience this allows for the parents shadows the quality of educational benefit the child may receive. With only two hours a day, many children will have little or no opportunity for meaningful educational experiences. This designer has chosen to capitalize on that ability and schedule this day care based on a half-day experience. Children are welcome for a half day of educational enjoyment at this day care. They will be served a lunch upon request, either as an end to the morning shift or the beginning of the afternoon shift. Each shift will be four hours, that is, from 8:00 am to 12:00 noon, and from 1:00 pm to 5:00 pm. This, although less flexible than the current system for parents, will derive greater benefit for children in attendance, from an educational point of view.

The day care staff will encourage parental interaction with their child at the day care facility. Parents visiting the day care for brief periods will be accommodated as necessary, and will be encouraged to attend on special days (i.e. their child's birthday, etc.).

Parents will be assured of their child's safety while the child is enrolled at the facility. Any person taking a child from the facility will be required to sign a register and notify the staff of the child's dismissal. The staff will be required to carefully watch for strangers lingering near outdoor play areas or apparently watching the facility for arrival or departure of children. This is especially important given the setting of the facility, so near the university campus. These are requirements which are suggested by local law enforcement agencies, as well as day care licensing agencies.

Users Reference Notes

1. Ruth Highburger and Carol Schramm, Child Development for Day Care Workers, Boston: Houghton Mifflin Co., 1976. p.2.
2. ibid. p.3.
3. ibid. p.3.
4. ibid. p.7.
5. ibid. p.7-8.
6. ibid. p.8.
7. ibid. p.8.
8. ibid. p.9.
9. ibid. p.9.
10. ibid. p.114.
11. ibid. p.115.
12. ibid. p.115-116.
13. ibid. p.112.
14. Ruth Highburger and Carol Schramm, Child Development for Day Care Workers, Boston: Houghton Mifflin Co., 1976. p.2.
15. Resources for Community Change, Demand for Day Care, (Washington, D.C.: Resources for Community Change, 1974), pp.9,10.

THE EXISTING FACILITY

The Existing Facility

The existing ASMSU day care facility, located at 10 Yellowstone Court, serves the children of the community of Montana State University students.

The current facility is a made-over duplex, a part of the 1930's construction of married student housing accommodations. State law in Montana (see appendix A) sets day care area requirements at a minimum of 35 square feet per child. This restriction has resulted in a maximum number of 26 children, per two hour block (see the following paragraph) at the existing facility (approx. 900 square feet). Due to its current size restrictions, the day care is able to serve only a small portion of MSU students desiring use of the service.

Children may attend the day care for as little as a two hour block or as long as an entire day. The scheduling is such that a student may pick up his/her child during the day to maximize time spent with their child. This affords meals together, etc., and allows the student the flexibility of quality child care without restrictive hours.

The facility provides a small playground to the west of the building. This is partially shaded with mature trees, and is furnished with swings, merry-go-round, teeter-totter, and several furnishings which have been constructed by parents over the years. Grass does not cover the entire playground and children are allowed to dig and play in the unseeded dirt areas. There is an exterior storage unit, for play equipment, which the children are allowed to play in and bring things out of. There are tricycles and other movable play equipment for the children to explore.

A hot lunch of meat, vegetable, fruit, bread, and milk is served daily to those who stay over the lunch hour. This is catered by MSU Food Services and brought to the center by day care personnel.

The center is advised by a 5 member Board of Directors made up of parents, faculty, and day care professionals.

LOCATION AND SETTING

Bozeman, Montana

In the heart of the Gallatin Valley, Bozeman is a city of approximately 30,000 people who form a diverse economic base. Bozeman's main industries are tourism and Montana State University. The academic setting of the university draws a wide range of technical and research oriented activities and persons to the city. Despite its remote location, Bozeman provides a host of cultural events throughout the year.

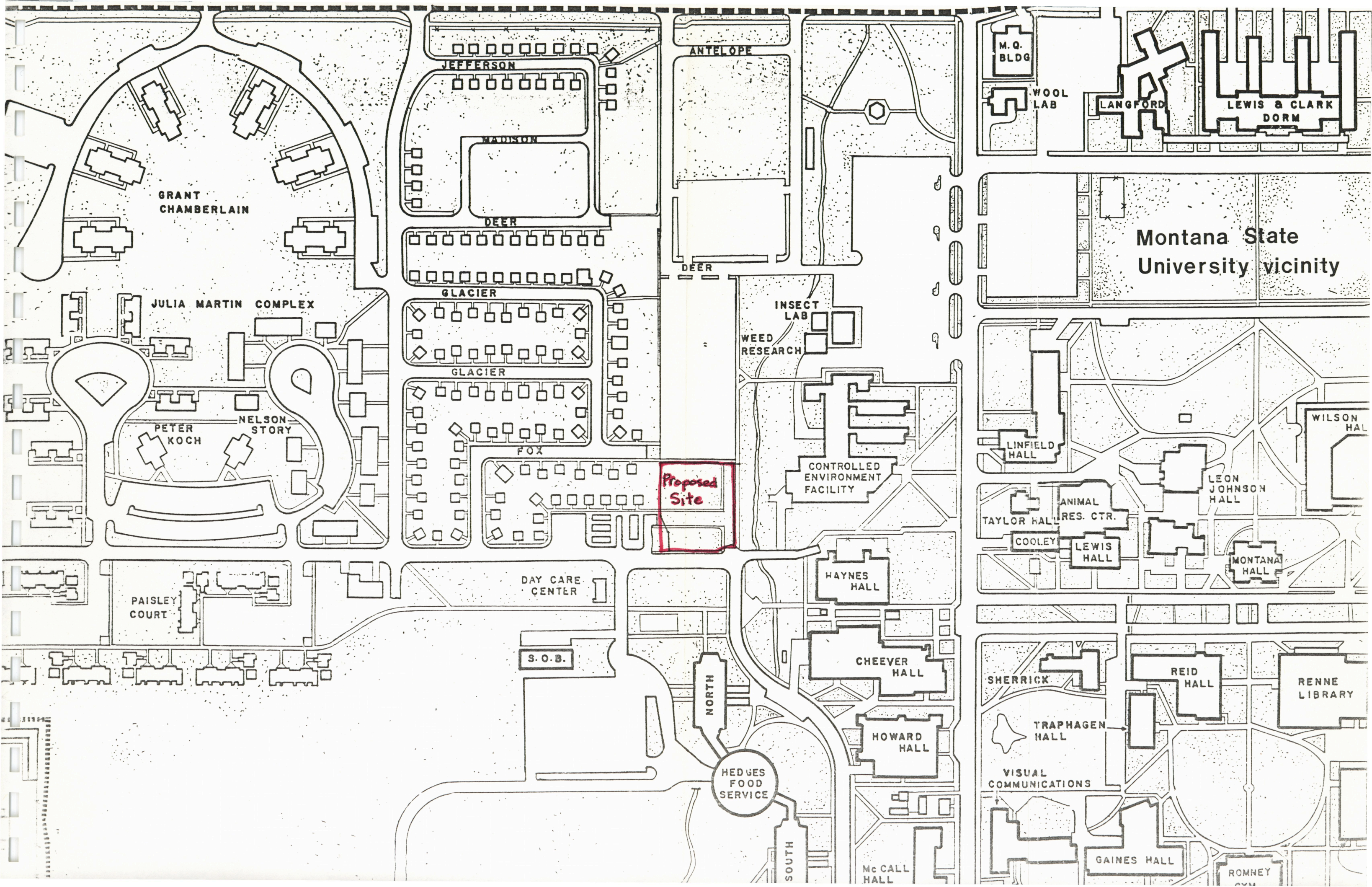
The climate of the area allows year round sporting activities. Winter skiing and snowmobiling are followed with spring rafting and fishing. With an elevation of 4800 feet, Bozeman enjoys fairly cool summers, with moderately harsh winters.

The qualifications and attractions which the city boasts draw a diverse population to the valley. Much of the population is student oriented. Many of Bozeman's events and activities prosper and grow with the student population's input. The diversity of the college's population makes Bozeman a dynamic and growing city which looks to its people to keep it alive. Enjoying its location amidst the mountains which create the Gallatin Valley is an added benefit to those who come here for academia. The wealth of the great outdoors provides immense opportunity not only for the single person, but also the family. The knowledge that this geographic area is a clean and healthy place in the world comforts and encourages those who do choose to live here (see the following map).



Montana State University

Montana State University's location and qualifications bring a wide variety of people to Bozeman, Montana. Due to the nature of courses offered through the land grant institution, the majority of students arrive from all parts of Montana as well as Minnesota and Wyoming. The university offers baccalaureate degrees in 47 fields for 123 majors. 38 masters and 16 doctorate fields bring many older students to MSU. Of the approximate 10,000 persons in attendance, nearly 25 percent are students with families. University family housing provides 720 units of one, two or three bedrooms for those single parents or families requiring accommodations. The diversity of backgrounds which compile the population naturally require different educational requirements for their children. The current day care services serve a very small portion of the population in need of child care for university affiliated persons (see the following map).



GRANT
CHAMBERLAIN

JULIA MARTIN COMPLEX

PETER
KOCH

NELSON
STORY

PAISLEY
COURT

DAY CARE
CENTER

S.O.B.

NORTH

HEDGES
FOOD
SERVICE

SOUTH

JEFFERSON

MADISON

DEER

DEER

GLACIER

GLACIER

FOX

Proposed
Site

INSECT
LAB
WEED
RESEARCH

CONTROLLED
ENVIRONMENT
FACILITY

HAYNES
HALL

CHEEVER
HALL

HOWARD
HALL

Mc CALL
HALL

M.Q.
BLDG

WOOL
LAB

LANGFORD

LEWIS & CLARK
DORM

Montana State
University vicinity

LINFIELD
HALL

TAYLOR HALL

COOLEY

ANIMAL
RES. CTR.

LEWIS
HALL

LEON
JOHNSON
HALL

MONTANA
HALL

WILSON
HALL

SHERRICK

TRAPHAGEN
HALL

VISUAL
COMMUNICATIONS

GAINES HALL

REID HALL

RENNE
LIBRARY

ROMNEY

Project Site

The site chosen for this project is on the north side of Garfield Street at the corner of South 12th Avenue. The site is approximately 200 feet square. The variety of elements surrounding the site require explanation due to their unique characteristics (see following map).

The north boundary of the site is open to a large asphalt parking lot. The vast openness provides no winter protection for the site. The parking lot is quite full during the hours of 8am to 5pm, creating a visual unpleasantness. This is also accompanied by a noise factor, as there is a regular movement of traffic through the parking lot.

Garfield Street to the south is a junction street between South 11th and South 19th Avenues. College students living in the high rise dormitory commonly traverse the portion of the street in front of the proposed day care site, as their parking lot is adjacent to this avenue. There currently is parking on the south side of the street in front of the site. The amount of traffic is quite high creating an increased risk to pedestrians, especially children, who may be in the area.

A portion of Montana State University's arboretum is across the street, adjacent to a basketball court and the high rise dormitory. The dormitory's twelve stories are located far enough from the site to avoid impediment of any solar access. As Garfield Street is the only opportunity for entrance into traffic, any on-site vehicular access should occur here.

The immediate eastern boundary is a sidewalk which carries pedestrians from the afore mentioned northern parking lot to a primary access to the university campus proper. Across the sidewalk is MSU arboretum land including a small stream. This area serves as transition to the backside of the university's greenhouses, and the art and architecture buildings. These are brick structures with minimal glass on the latter two. They are two story buildings at slightly higher elevations than the project site.

The site's western boundary is University Family Housing. Residents are single parents or married couples with or without children. The current housing immediately adjacent to the site is single family, one-story dwellings with gable roofs and masonite siding.

A long term plan for the university housing district calls for multiple family dwellings to replace these small homes. A foreseen character of brick with wood or masonite siding would be acceptable. Newer housing structures in the general vicinity are of such materials.

The highly residential character of the area is an ideal location for a day care facility. For parent/students living in Family Housing, the site is convenient for dropping off or picking up their children when going to or from classes.

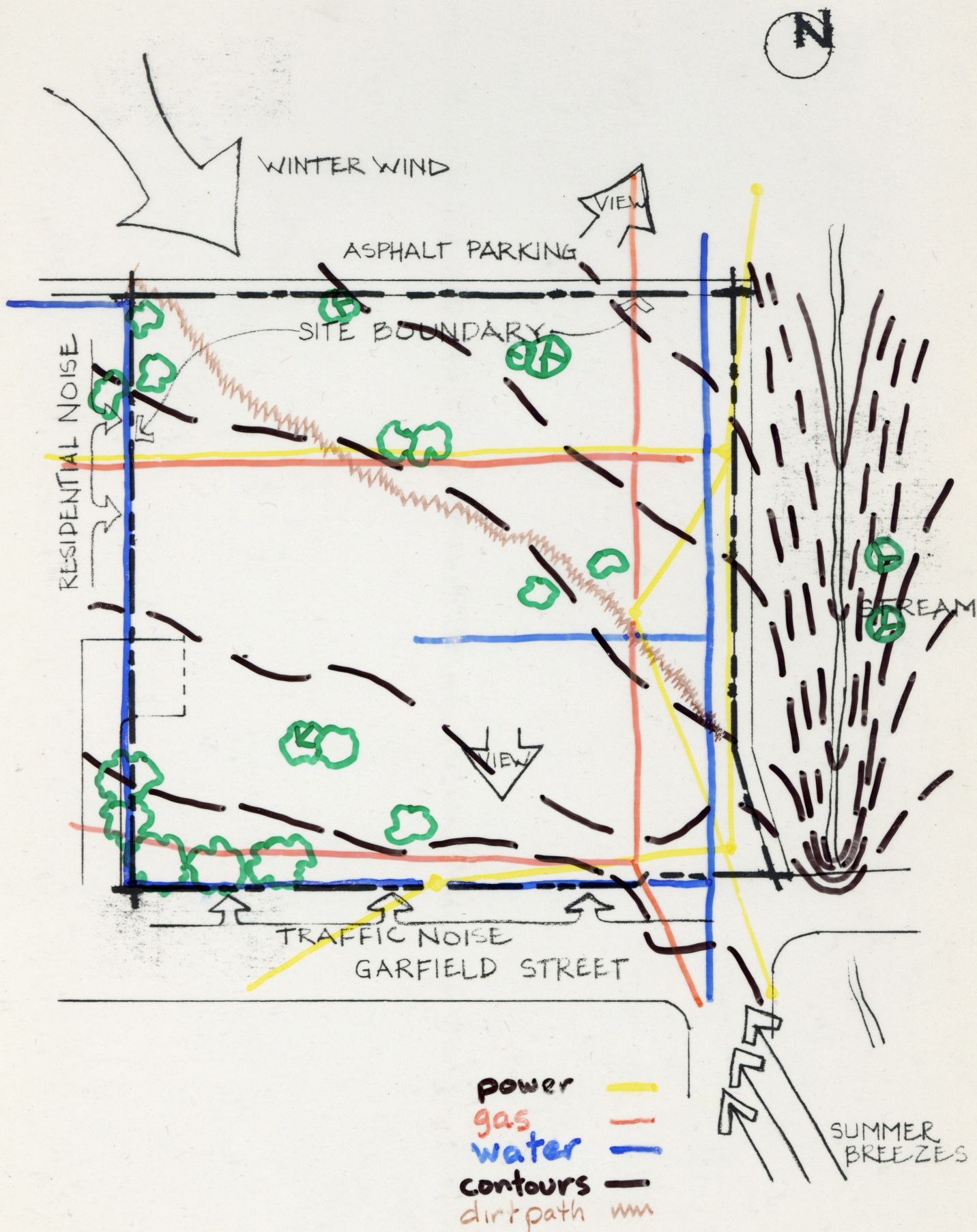
The importance of residentially located child care must remain upper most in the mind of groups who want to establish programs on their campuses . . .¹

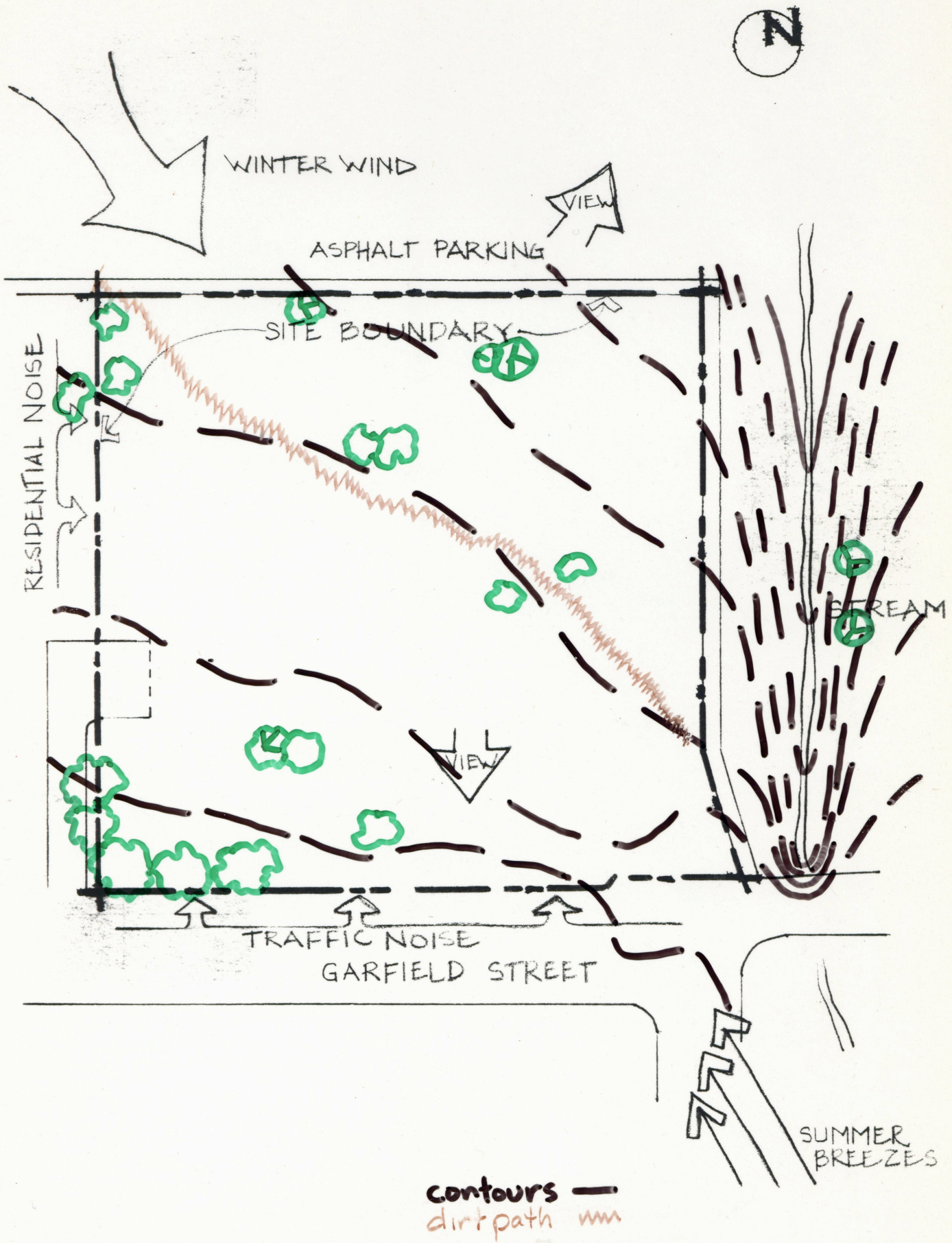
The site itself is nearly flat with slope toward the northeast corner. Mature cottonwoods in the southwest corner offer substantial shade in the afternoon, and could pose solar accessibility problems. Several small pine and deciduous trees dot the site, as do several shrubs. There are longrange views from the site to the northeast (Bridger Range) and the southwest (Spanish Peaks).

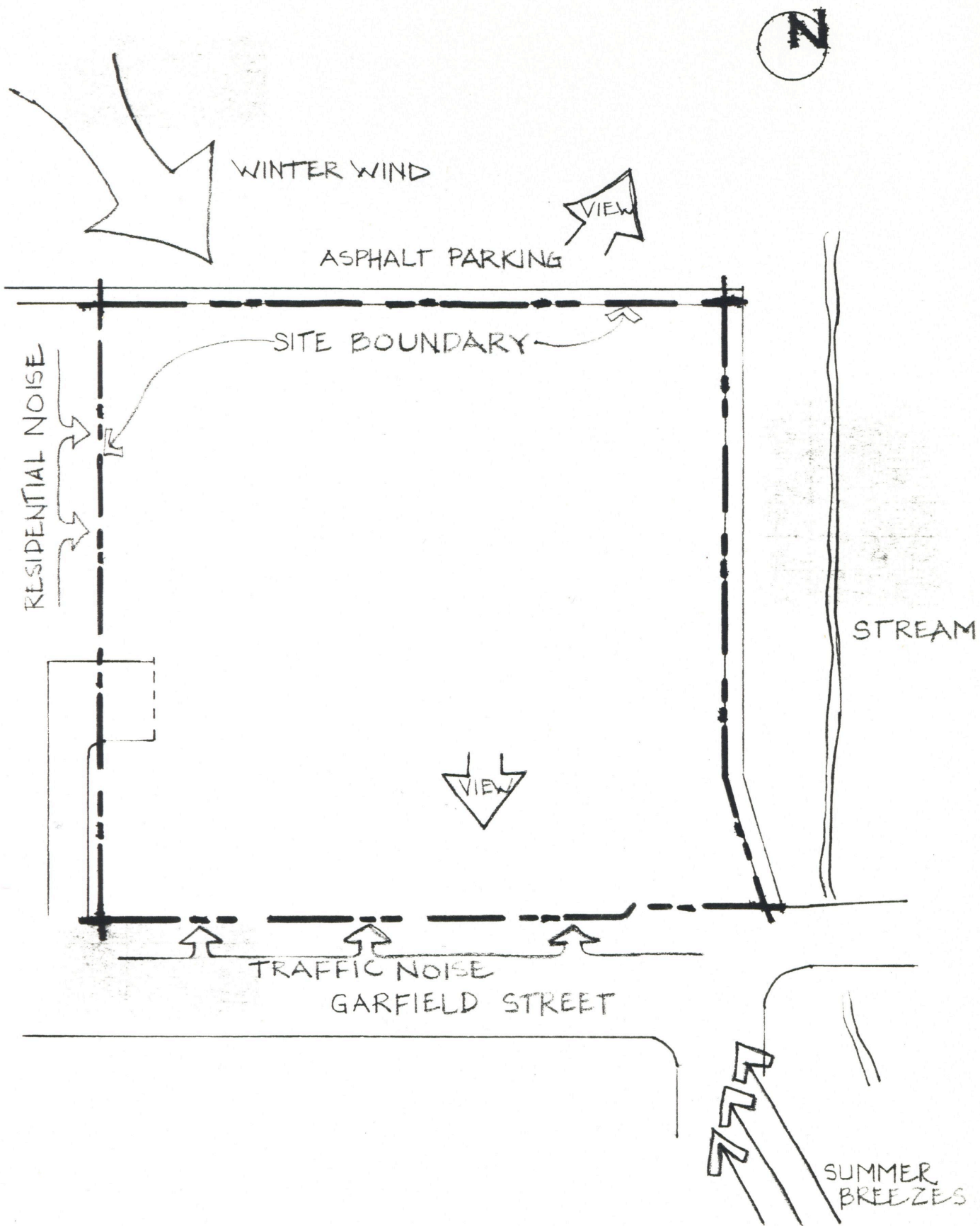
Due to the fact that the site was once a portion of University Family Housing, there are several sidewalks which interrupt the site. They are, for the most part, unused. A path, however, which intersects the site diagonally, from northwest to southeast, is quite heavily traversed by students from family housing to campus.

Hooking up utilities will be relatively easy. There are several gas, water, sewer and power lines through the site due to its former use as a residential housing area.

All of the previously mentioned site elements are visually described on the next few overlays.







ACTIVITY STUDY

Activity Study

This section is to acknowledge the activities which occur in the day care setting. With that knowledge, the designer is better enabled to create spaces which will successfully contain those activities.

Common activities for each age group which this designer has considered for this facility are listed.¹

Two year olds

- feed dolls and pretend other adult roles
- draws with pencil
- colors with crayons
- imitates other children
- pretends to sleep
- make-believe play
- builds with blocks

Three year olds

- rides a tricycle
- engages in domestic play
- plays with imaginary playmates
- plays house, store, etc., with other children
- builds diverse structures with blocks
- draws simple figures
- colors with crayons and paints
- plays in mud and sand

Four year olds

- combines real and imaginative in domestic play
- prefers to play with other children
- draws, paints, colors
- rides tricycle
- climbs and does tricks
- constructs with clay, paint, paper, blocks

Five year olds

- engages in more independent play
- plays house frequently
- runs, climbs, swings, skips, jumps, dances
- paints, draws, colors, cuts, pastes, does puzzles
- copies letters and numbers
- matches pictures and forms

Possible Indoor Play Areas

With the knowledge of these children's activities, we can examine the possibilities for play areas within the building envelope.²

Block Area - the block area requires plenty of space and should be carpeted, if possible, to reduce the noise factor.

Housekeeping - this interest center should be equipped with a toy sing, stove, refrigerator, table and chairs. Dolls, doll beds, and dress-up clothing are also found in this area. The housekeeping area provides for considerable dramatization and role playing.

Book Area - to be effective, this should be in a quiet part of the room. Books may be kept on shelves and/or a table. If possible, the area should be carpeted in order that children may sit comfortably on the floor if desired.

Creativity Area - easels with paint and paper should be available for those children who want to paint.

Science Area - this should be where materials can be easily displayed and seen by the children. Room to spread out leaves, stones, shells, and other "collector's" items should be provided in this area. Magnets, magnifying glasses, terrarium, and aquarium might also be added.

Water and Sand Area - ideally, a table with built-in sections for sand and water is the best kind of equipment for this activity. Also included should be shovels, small buckets, things that float, things than sink, funnels, straws, and soap.

Music Area - the music area is a must in any program. A record player, records, cassette tape recorder, a variety of musical instruments, and a piano will make this an ideal area.

Carpentry Area - the carpentry area should include a workbench with an attached vise. An assortment of tools, nails, and wood should be available.

Nesting Area - in this area the children should have an opportunity to "escape" from the hustle-bustle of the classroom. Nesting cubes, an old refrigerator carton, or collapsible tunnel make an ideal nesting area.

Movement Center - A movement center is an essential part of the indoor play space for preschool children. This area provides equipment which will encourage practice in a variety of stability, locomotor, and manipulative activities (balance beam, climbing equipment, beanbags, and hoops).

Activity Study Reference Notes

1. David L. Gallahue, Motor Development and Movement Experiences for Young Children, New York: John Wiley & Sons, Inc., 1976. p.371-372.
2. Joe L. Frost and Joan B. Kissenger, The Young Child and the Educative Process, New York: Holt, Rinehart, and Winston, 1976. p.332-339.

Case Studies

The following pages contain examples of facilities for the purpose of day care, with an outline of the major features of each. Those features with particular relevance to this project are designated under the heading of "Implications for . . .". Climatic implications are also addressed, as such data is important in addressing the solar implications to this facility.

Case Study: Pilgrim Preschool
Bozeman, Montana¹

Pilgrim preschool is a variant on day care centers. The preschool setting encourages individual developmental growth at a more personal level than daycare. The number of children enrolled is lower than typical day care and the children receive more developmental attention from care givers.

The main goal of this preschool is to prepare a child for his/her experience in the academic setting. School-like activities are introduced and maintained to prepare the academic and emotional levels of the child, for ease of adjustment into a larger public education system.

This preschool is operated in church property with an advisory board consisting of members of the Pilgrim church, members of the community specializing in early childhood education, and parents of preschool children.

The school is operated on a Monday/Wednesday/Friday schedule for older children (ages 4 and 5 years). Classes are morning or afternoon for a duration of two and one half hours. Tuesday/Thursday morning classes accommodate younger children (ages 3 and 4 years).

The school occupies three adjoining rooms, each connected internally as well as via a common corridor. Other church rooms are occasionally used for special events. A playground accompanies the site.

A well-rounded schedule of events is plotted for each day's activities and three qualified instructors are available in each time slot.

Case Study: Pilgrim Preschool

Analysis

Advantages: Location . . . generous parking
(drop-off/pick-up)
generous playground
Maximum usage of space . . . corridor
as circulation and
play space
Use of three rooms for varied
activities
-one space for mental
activities
-one space for
physical activities
-one space for quiet
activities
Abundant variety of play materials
'library' facilities
Ordered schedule of events. . . the
children know what to
do next.

Disadvantages:

Restricted growth potential
Portion of facility shared with
church's nursery
school on Sundays
No area for snack preparation

Implications for Day Care Facility for Montana State University:

- Space should be allotted for sufficient book storage
- Variety of activities may take place in any one location - need for individualized spaces unnecessary.
- One larger space works well for movement activities
- Generous drop-off/pick-up area, as parents often converge on the center at common times



Providing a library from which children choose.



Adults relating to a child's scale



Play in the corridor space



A quiet moment alone



Wooden blocks in imaginative built form



Idea provoking bulletin board



Swings and wheeled toys for preschool children.



Sand is child's play.



Outdoor storage becomes a climbing adventure.



Small group interaction with a caregiver.



Fireman Fred and demonstration of oxygen mask.



Dress-up and dolls are
favorite playtime activities.



Sharing implements during craft time.



Making a pussywillow picture.



Corridor space used for playing and special activity.



Motor skills activity in the corridor.



Large group dexterity exercises

Case Study: Dulwichwood Nursery School
London, England²

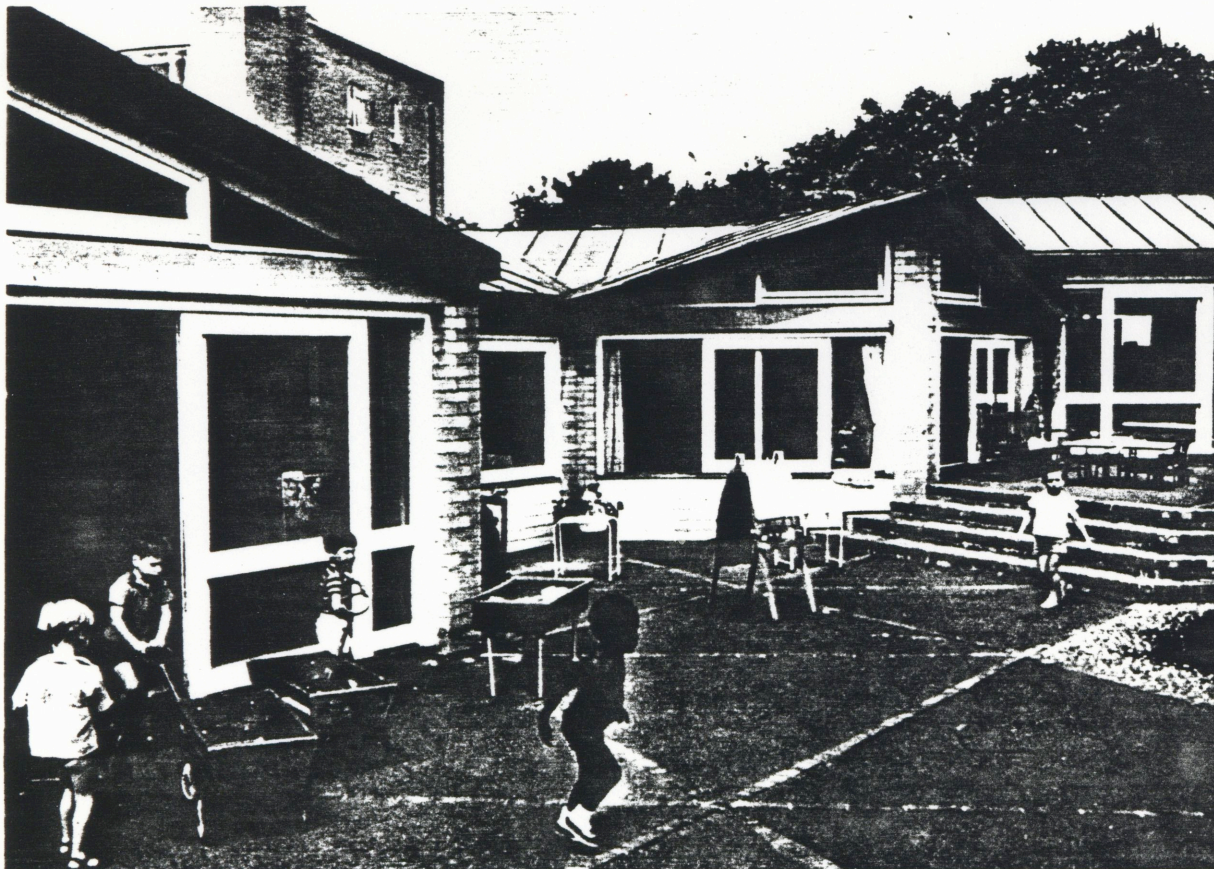
The Dulwichwood Nursery School in London, England is similar in operation to the proposed day care center for Montana State University. The school operates on two-two and one half hour sessions with 60 children in each, ages three to five. The school is in a residential area. This particular school emphasizes the use of natural play settings and focuses on the environment in which the children live. The building form creates a play court which opens into the large site. The modular building form also allows a greater degree of flexibility for indoor play and administrative spaces.

Climatic Implications:

- more mild climate in England than Montana
- similar geographic positioning (latitude)

Implications for the Day Care facility for Montana State University:

- modular building units
- masonry and concrete construction
- low window sills
- underfloor heating
- exterior spaces . . .
 - flower garden
 - sand box
 - grassy mound
 - natural weeds and rough ground
 - tree house
- courtyard area in plan
- provisions for maximum natural light



During nice weather the paved area adjoining the building is not only a place for wheeled toys and other outdoor activities; it is also used for activities that usually take place indoors. There is easy access from indoors to outdoors.

Dulwichwood Nursery School, London

This nursery school occupies a fairly large site adjoining a high-density low-rise residential area in London. The irregular one-acre site is nicely landscaped and completely surrounded by a 5-foot wire fence.

There are two separate 2½-hour sessions, one in the morning and one in the afternoon, with 60 children in each. The children, 3 to 5 years old, come from the immediate housing area and are able to walk to school from their homes. The staff comprises 6 adults and a headmistress working 9-to-4 five days a week.

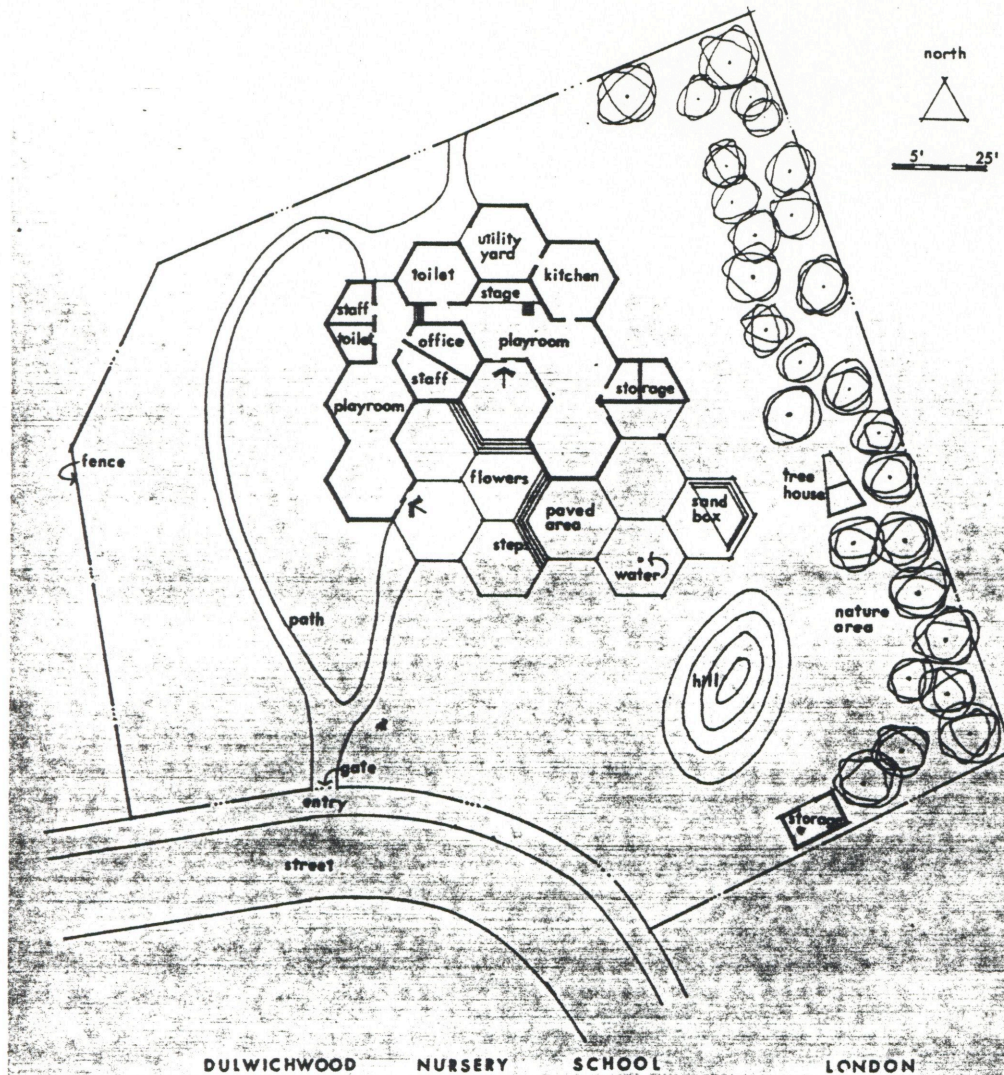
The building is set back from the road and consists of ten hexagonal units approximately 350 square feet each. Five of these hexagonal units are linked to form playrooms, two are circulation spaces and toilet rooms for children and staff, one is a kitchen, one is divided into an office and a staff/medical room, and one is divided into a storage room and covered outdoor play area.

The linked playrooms are divided into interest areas such as music, housekeeping, book browsing, art, and the like. There are no play groups of a set number of children since each child is allowed to move throughout the playrooms to any area of interest. Each child is responsible to an adult but is free to choose his own activities and playmates.

The masonry and concrete construction has a wood

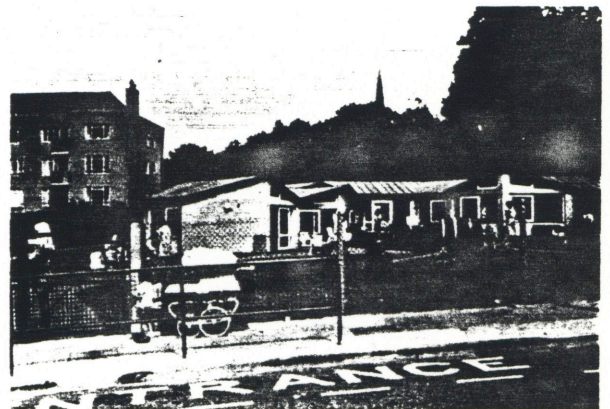
plank ceiling and resilient tile flooring running throughout. The playrooms are well lighted with windows that extend to a low level, enabling the children to see the outdoors. Much of the equipment is movable. All shelving is within each child's reach. Large sliding doors in the playrooms enable the child to move easily from indoors to outdoors. Underfloor electric heating is used since the children spend a good deal of their time playing on the floor. There are two toilet rooms for the children but each toilet has a partition around it and no distinction by sex is made in its use. The kitchen is fully equipped because the original intention was to serve hot lunches to at least 40 children attending the full day; however, it is now being used to serve snacks and as additional instructional space since no children attend a full-day session. Adjoining it is a utility yard for trash and outdoor storage.

The children can play completely around the entire building within its fenced enclosure. Adjoining the playrooms is a hard-surfaced play area of approximately 3000 square feet. Within this area there is provision for water play, a large sand box, a flower garden and steps to take care of a level change. Next to this hard-surfaced area is a large grassed area used for outdoor equipment and games. Two heavily used features in this area are a large grass-covered mound

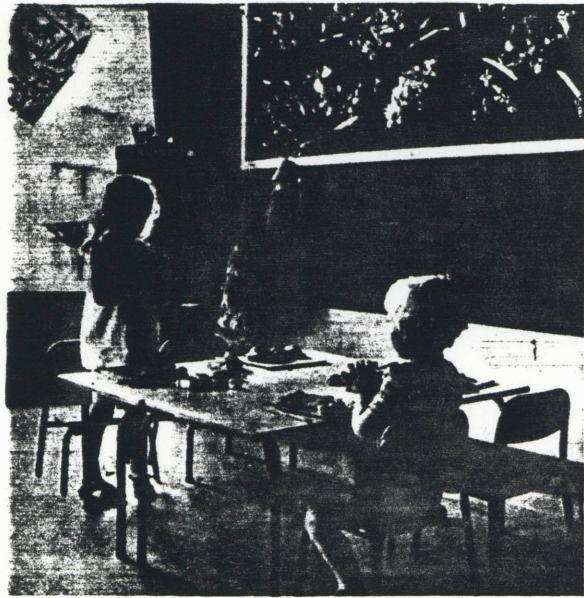


made from earth left over from the building excavation, and a sprinkler that waters the grass. The east border of the site has a nature area consisting of trees, weeds and rough ground. Within this area a tree house has been built.

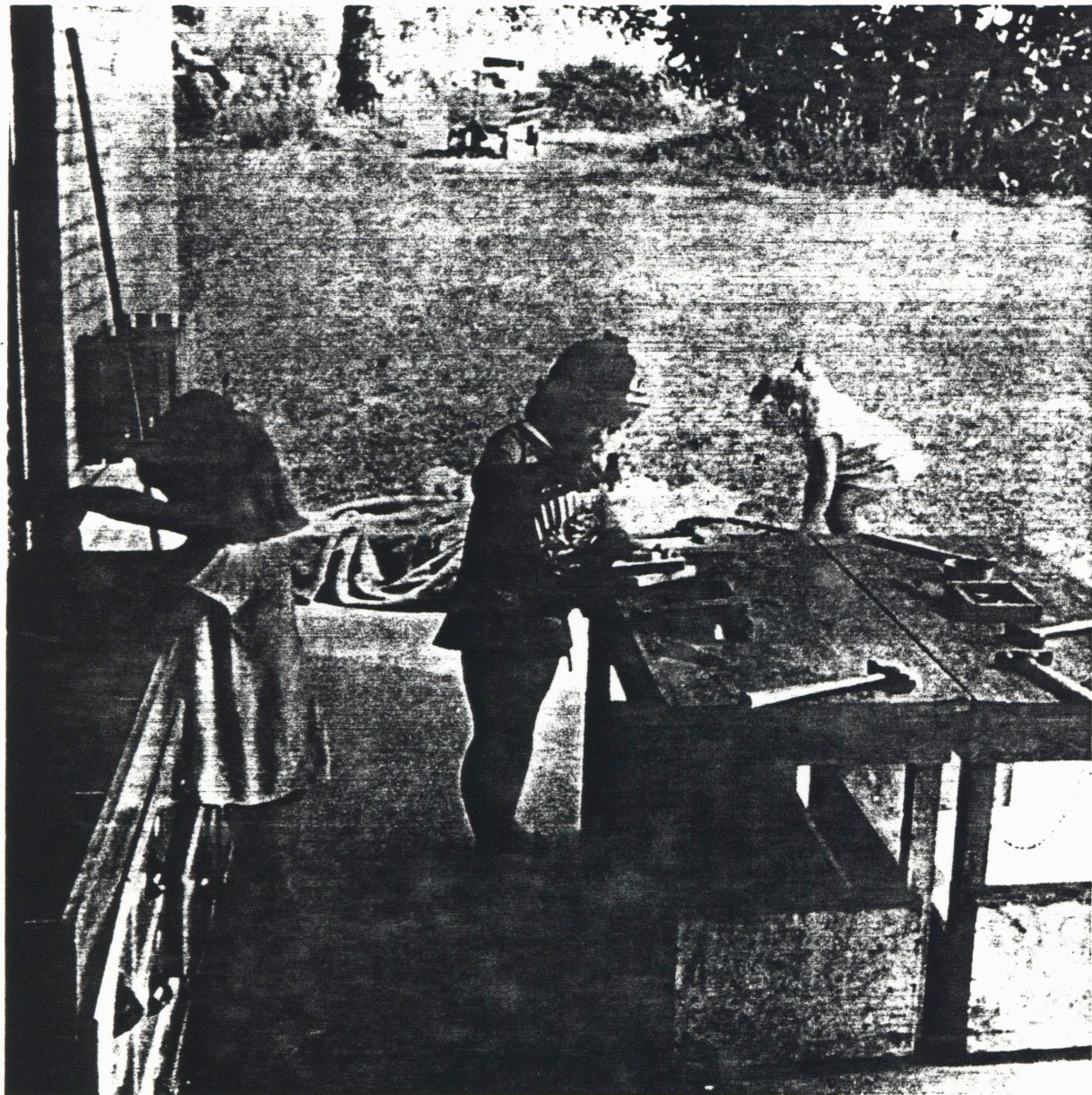
The cost of this school, built in 1966, was approximately \$68,720, a price that makes this excellent facility too expensive to be considered typical of English nursery schools. The architects were Stillman and Eastwich-Field, FRIBA. Staff members like it and feel it has served their instructional purposes very well, with two exceptions: there is not enough storage space and there should be more small places where a child can go to be by himself.

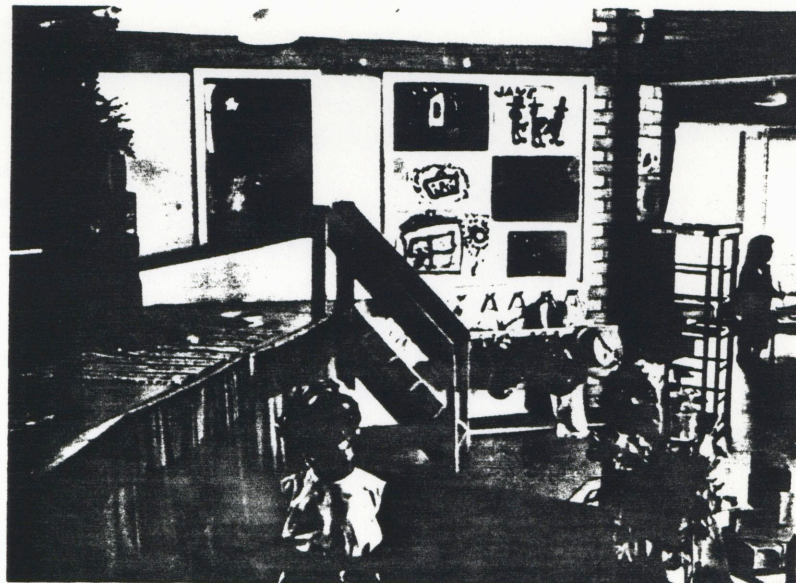


Although the nursery is on a quiet street, the entry is protected by an adult gate and the grounds are surrounded by a wire fence.



Girls also like to use tools. This covered outdoor play area directly adjoins the playroom.





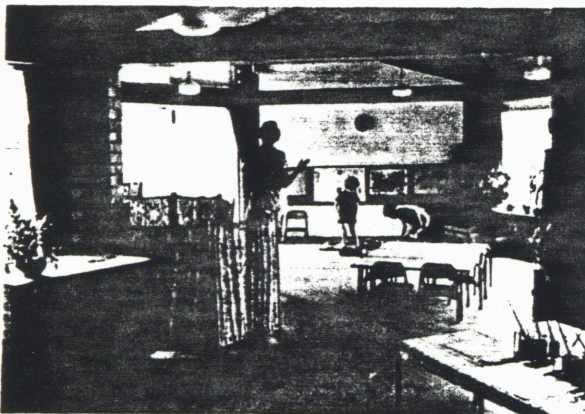
This platform was built to provide a stage and music room. There is space for storage underneath. The small cage-like structure is a play telephone booth.



The small portable screens define a housekeeping area within the larger room and form small intimate spaces for play.



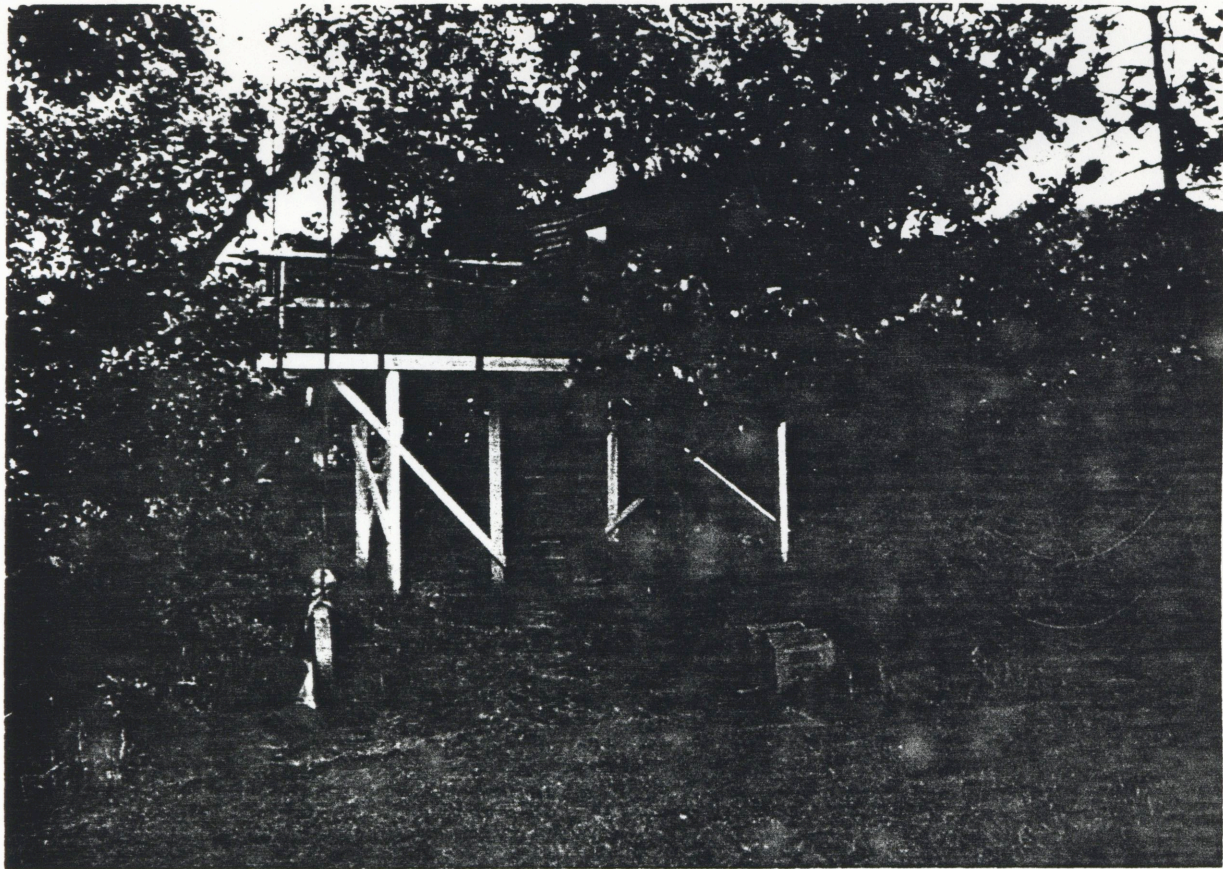
All shelving, furniture and display is scaled to the child. Materials and toys are easily within his reach. However, a chair for the big girls might be handy. There are flowers in every room as well as in the landscape.



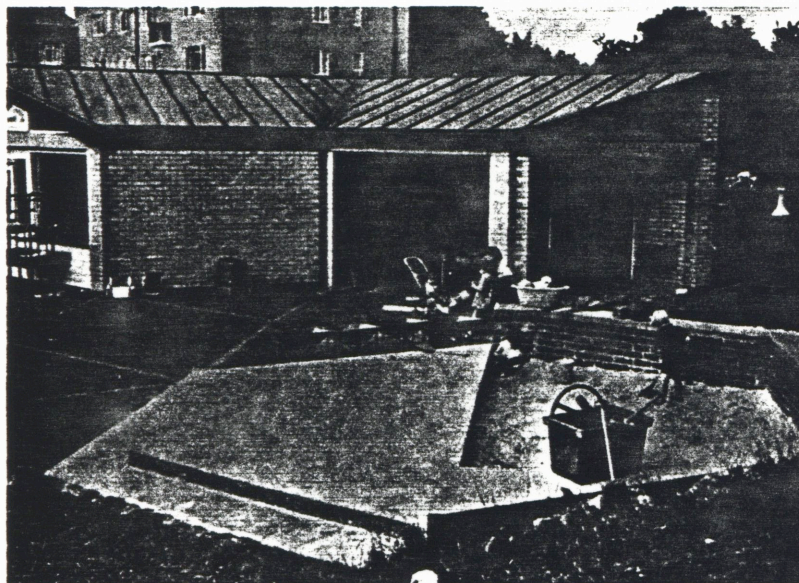
The heated floor is a well-used play surface. The windows allow the children to see out and the daylight can be controlled with colorful curtains.



The front yard: a wonderful place to run up and down a hill made from earth excavated for the building, and through a water sprinkler, without any clothes on.



This "Tree House For Children Only" is in the nature area. It was built by adults.



The sandpit is open to the purifying rays of the sun, with water only a few steps and a bucketful away.

Case Study: Notting Hill Adventure Playground
London, England³

The Notting Hill Adventure Playground is a place for children of all ages to play, a place to play off of the street. There is a structure on the site which provides indoor play space during inclement weather.

Special Features:

Playground for school-age children containing an adventure area, a ball game area, and a garden.

Under-Fives area containing a sand-pit and pool, a paved area for wheeled toys.

Roof top play area for older children only. This creates a variety of levels. Escape is via a slide.

Indoor Playroom

Indoor Activities Room

The importance of building access to playground, both through physical entrance and exit and visual access predominated the design of this facility. The day care situation would provide greater supervision of play than does this facility, but this playground successfully serves a neighborhood of children. This is a dimension which may be feasible in this thesis.

The special features which control this site create a child-specific area.

Climatic Implications:

- partially covered play area desirable
- pavement and vegetative areas that withstand weather/temperature changes

Implications for the Day Care facility for Montana State University:

- Incorporation of a neighborhood play facility.
- Make use of those special site features available: mature trees, MSU arboretum adjacency, creek.
- Access from indoor play spaces to exterior play space necessary.



NOTTING HILL ADVENTURE PLAYGROUND, LONDON

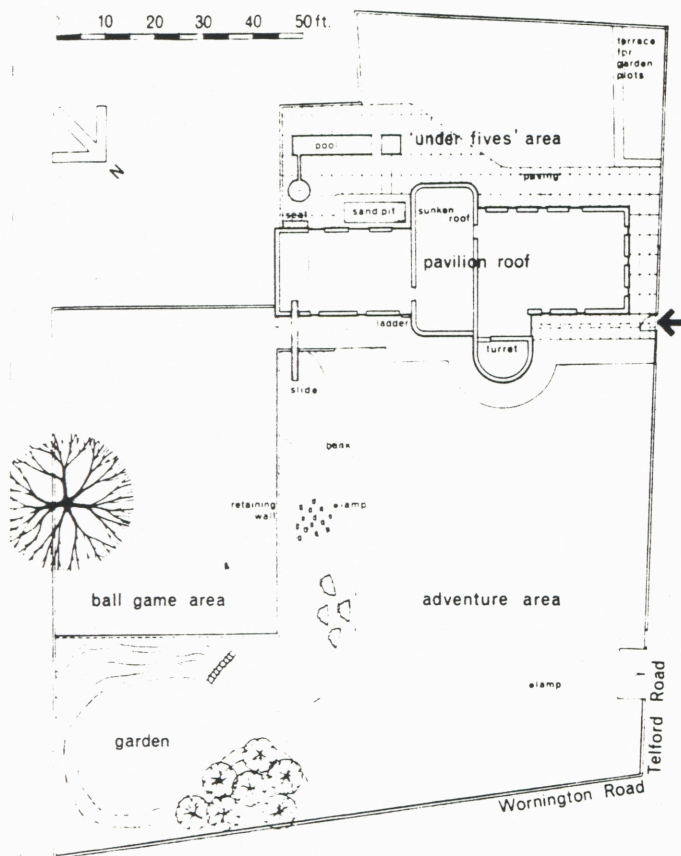
This playground is in a densely populated and under-privileged area on a site of just over a third of an acre, which was given and fenced by the Borough. The scheme consists of a playground for school-age children, separated from an area for under-fives by the playground building. The building itself has two large recreation rooms which are used by both groups of children.

THE SCHOOL-AGE PLAYGROUND

The main playground is divided into three sections: the adventure area, the ball game area, and the garden. The largest and most important of these is the adventure area, which is the starting-point and the heart of the whole scheme. The existing ground surface here was old asphalt and earth, and nothing was done except to install two 25-foot street lamps.

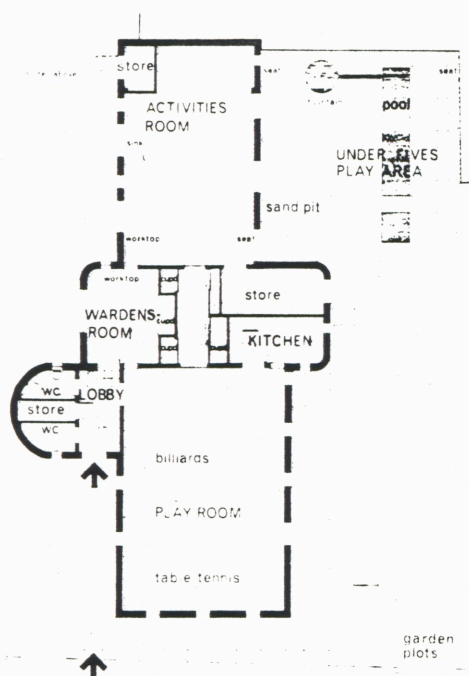
The ball game area (65 × 45 feet) is divided from the rest of the playground by a 4-foot retaining wall of concrete blocks, with the excavated material from the building piled against it, shaped and graded. This bank was then surfaced with sprayed concrete on steel mesh, and granite setts were embedded in it to form steps, climbing-stones and platforms. It is constantly used for climbing, running, sitting and watching. An unsurfaced or grassed bank would have been completely impractical.

In the most secluded corner, an ambitious garden was originally planned but then dropped, partly because of its cost and partly to offer the children the opportunity to make the garden themselves. The garden site was left with banks surrounding it, and a grove of sycamores was planted on a small mound. This free growth of activities depending on the children themselves is an essential feature of the playground.



Opposite: the adventure area and building from the north, showing, on the left, the slide from the roof. A photograph taken before the children had created their own playground

Left: plan of the site



Plan of pavilion

Entrance to playground





The way on to the roof

THE UNDER-FIVES AREA

Being on the south-west side of the building, this area is the sunniest and most sheltered part of the playground; it has a sand-pit and paddling-pool with a paved surround. The central area has a smooth asphalt surface and is used by toddlers with their wheeled toys and for their games.

The area is intended for use by the older children as well, but for quieter activities than those carried on in the adventure area. Table tennis and other similar games could be brought out here on summer evenings. Along one side a terrace has been built of a suitable height for sitting on; this was intended to be filled with a good topsoil so that the children could grow their own seeds and plants.

THE ROOF

This is part of the playground and has been planned with areas for play on different levels, one of which is a turret. The roof is intended for the older children and can be

reached only by climbing a steep ladder, whose bottom rungs have been cut off in order to deter the younger children. The slide down from the roof not only provides fun but also satisfies the authorities as a quick means of escape. The sunken area in the middle is used by groups of older children as a kind of outdoor room for playing records and gossip.

THE PLAYROOM

This is the largest room (20 x 30 feet); it is just inside the entrance to the building, and also has a door to the paved area on the other side. It is for games, meetings, dancing, table tennis and billiards. The tall narrow windows are designed to allow children of all ages to see out and at the same time to reduce the glass area (and thus the breakages) to the minimum. Ventilation is by louvres which do not project beyond the face of the wall inside or outside. The ceiling tiles provide heat insulation and sound absorption. Partly inset fluorescent ceiling lighting is used in continuous runs and with plastic diffusers. The walls are lined with pin-up or chalk board, and the curtains are provided by the children.

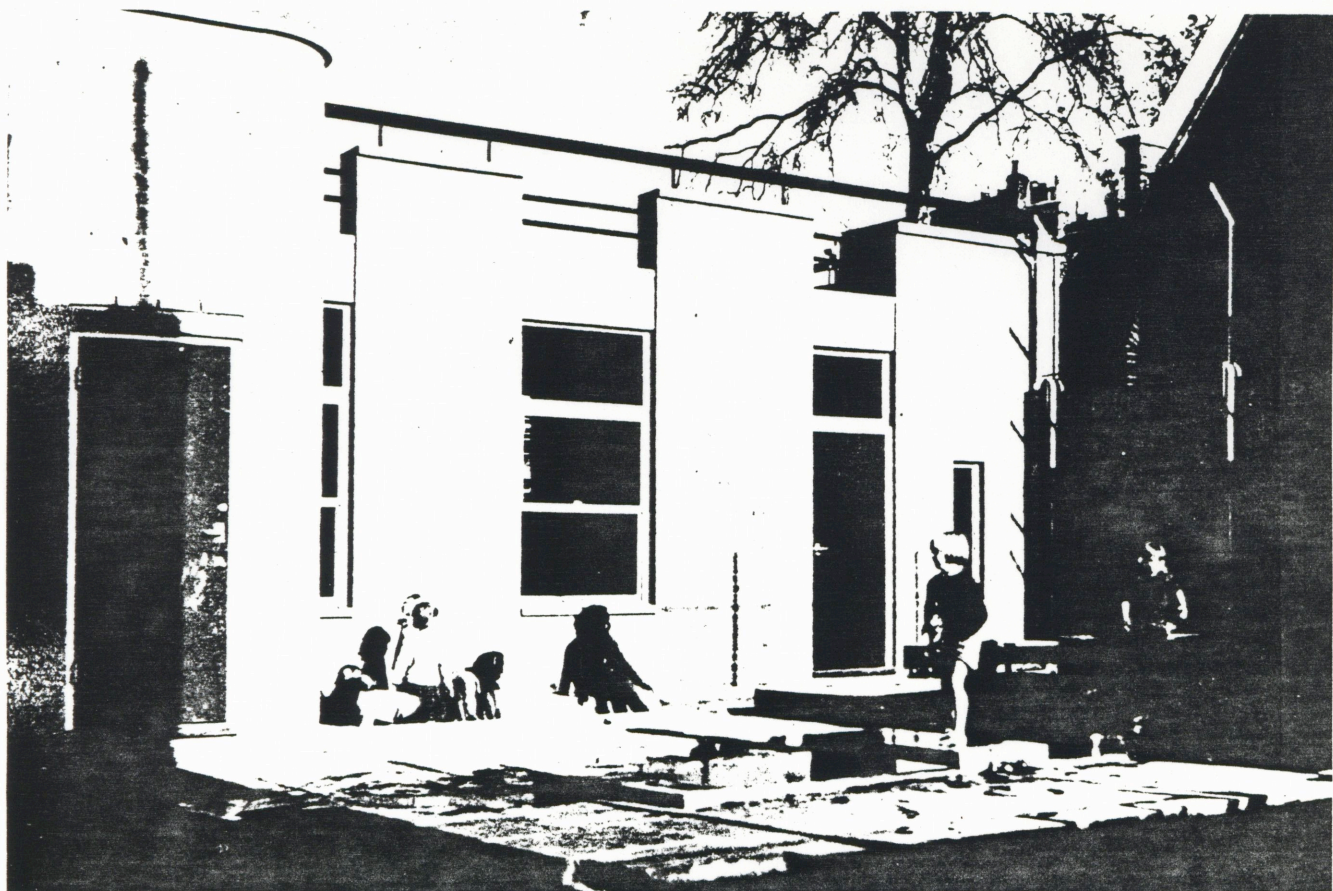
The well-equipped small kitchen enables the girls to do some cooking, and snacks can be served through the hatch. This is so heavily used that more space and a wider serving hatch would be fully justified.

THE ACTIVITIES ROOM

This room is linked to the playroom by a lobby lined with cupboards. It is designed for quieter and more sedentary activities, such as painting, clay-modelling and crafts. A strong work-top, surfaced with formica, runs the full length of the room and has a sink let into it. This work-top is lit almost continuously by windows which look into the adventure area and again give the maximum light with the minimum glass area.

On the other side of the room, the windows are rather larger, since they look on to the sunny and sheltered part of the playground for the under-fives. These large windows slide vertically to avoid projections, and the lower sections are glazed with toughened glass. A continuous window-seat is low enough for the smallest children to sit on or to use for arranging their toys.

This room is particularly suitable for the day-time play groups of children under five; it has a large store-room opening to both the room and the outdoor under-fives area.



The under-fives playground

THE LEADER'S ROOM

When he is in his room the leader occupies a key position on the plan. His door is immediately opposite the main entrance door, and when both doors are open there is a direct view of the playground entrance gate. The room has a wide window commanding the adventure play area, and a side window from which the slide, the roof ladder and the ball game area can all be seen. There are two work-tops, each with a hatch communicating with the two main rooms. The leader's room also contains a full-height locking cupboard and the telephone.

CLOAKROOMS AND STORES

There are two cloakrooms, each with a WC and wash-basin, with access from the main entrance lobby, where there is a drinking fountain. A small ablution room, with a foot-bath and, if possible, a shower or handspray, would be a useful addition. The two WCs were provided with a maximum of seventy children in mind. Actually

250 children often use the playground at one time, and two WCs for each sex would be much better. Coat-hooks are provided in the lobby as well as in the playroom.

In addition to the storage already mentioned, there is a locked store off the entrance hall for cleaners' materials, electrical equipment, and access to the water tanks and small storage loft.

These two cloakrooms and the store with the tank and loft above form the basis of the roof turret.

HEATING

High-level fan heaters warm the two main rooms, with the addition of a radiant convector at the end of the activities room. The cloakrooms have miniature electric radiators, and the leader's room has a radiant convector. The system is flexible but expensive, and economy demands a very high degree of supervision, which is not always possible. Ideally the heating should be controlled from the leader's room.

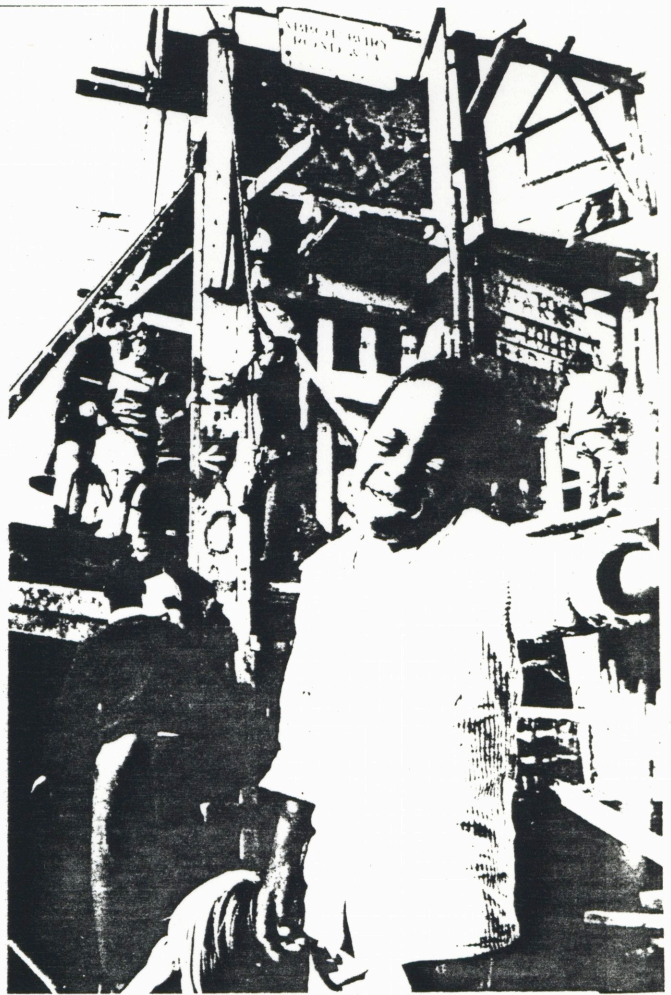
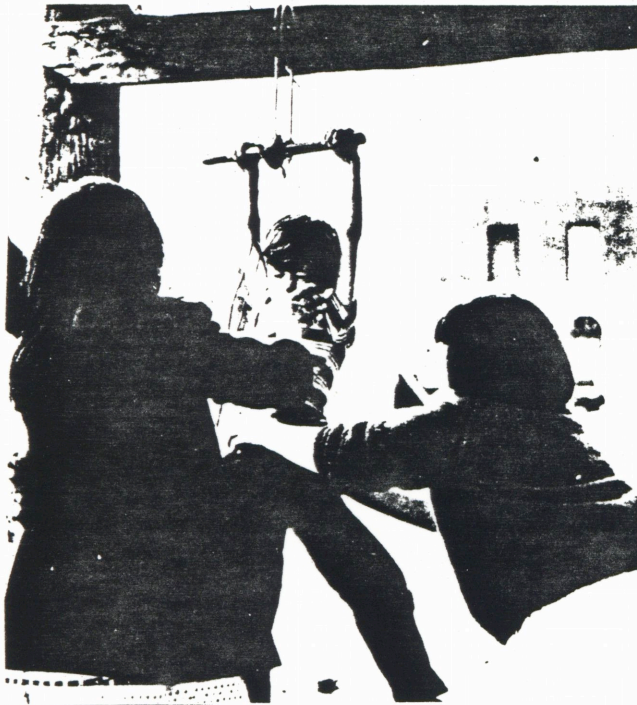
MATERIALS

The permanent structure is of bricks, blocks and concrete, all as strong as possible and with good paint finishes. There is no plaster to be chipped, and many vulnerable corners have been rounded. The changing decorative elements are provided by the children; these take the form of hand-printed curtains, and material on the pin-up and chalk boards which line the walls.

Everything must be as strong as money will allow if maintenance costs are to be avoided. Strength is important in door-frames and fixings, door-hinges and stays, all internal and external wall surfaces, parapet and handrail fixings – everything, in fact, that can be shaken, scratched, swung on, climbed on, bashed or idly 'picked at'.

The absence of plaster seems to have been justified, for the robust surface of the walls is wearing well. The rough surface inhibits drawing. The finish was achieved with large quantities of a 'block filling' type of paint and a top quality gloss specification in all vulnerable areas.

Very good quality cement glaze finish, on cement and sand rendering, in the cloakrooms has so far proved to be as good as glazed tiles. The floor tiles in the main rooms, although 'two-tone' and mottled, are too pale. The problem of black rubber heel marks and dirt brought in from the playground is more acute than in schools and other buildings for children. It is clearly necessary to forgo a fair amount of light reflection in order to ensure a reasonable everyday appearance.



The glazing is the most vulnerable part of the building, but the narrow windows with no projecting casements have so far been successful in keeping breakage to a minimum.

FENCING THE SITE

The site had a bad history of vandalism and dumping. The fencing was therefore carried out before the playground work and quite independently of the playground plan. A 12-foot fence was provided, consisting of 8 feet of concrete planks and 4 feet of chain link. This has proved to be a surprisingly good solution. It is high enough to keep balls inside, and it is solid enough to make the playground a world of its own. This is important since the inevitable untidiness of the adventure area does not contribute to the beauty of the neighbourhood. Besides, the children do not want to be watched by people outside. It is impractical to have no views into the site at all; hesitant children like to look in as they pass before deciding to

come and play. Also it is necessary to be able to keep an eye on the playground when it is closed. For these reasons two small gaps were made and filled with vertical steel railings.

COSTS

The total final cost (excluding fees, fencing and gifts in kind) was £11,635 in 1966. Of this, £9,370 was for the building with its fixtures and drainage, and the rest was spent on the features of the playground itself, including ground surfacing to all but the adventure area and the garden.

The area of the building within the walls is 1,509 square feet, and this gives a cost per square foot, including drainage and services, of £6. 4s. 7d.

Architects: Michell and Partners

After visiting Notting Hill Adventure Playground, Arvid Bengtsson of Sweden, himself a distinguished maker of playgrounds illustrated in this book, made the following comment:

'I do not think I have met anything since my first visit to Emdrup in 1946 that has made me so thrilled. It has just the spirit and atmosphere I have always been looking for in my own playgrounds but I did not find out how it was achieved. What is it that makes Notting Hill

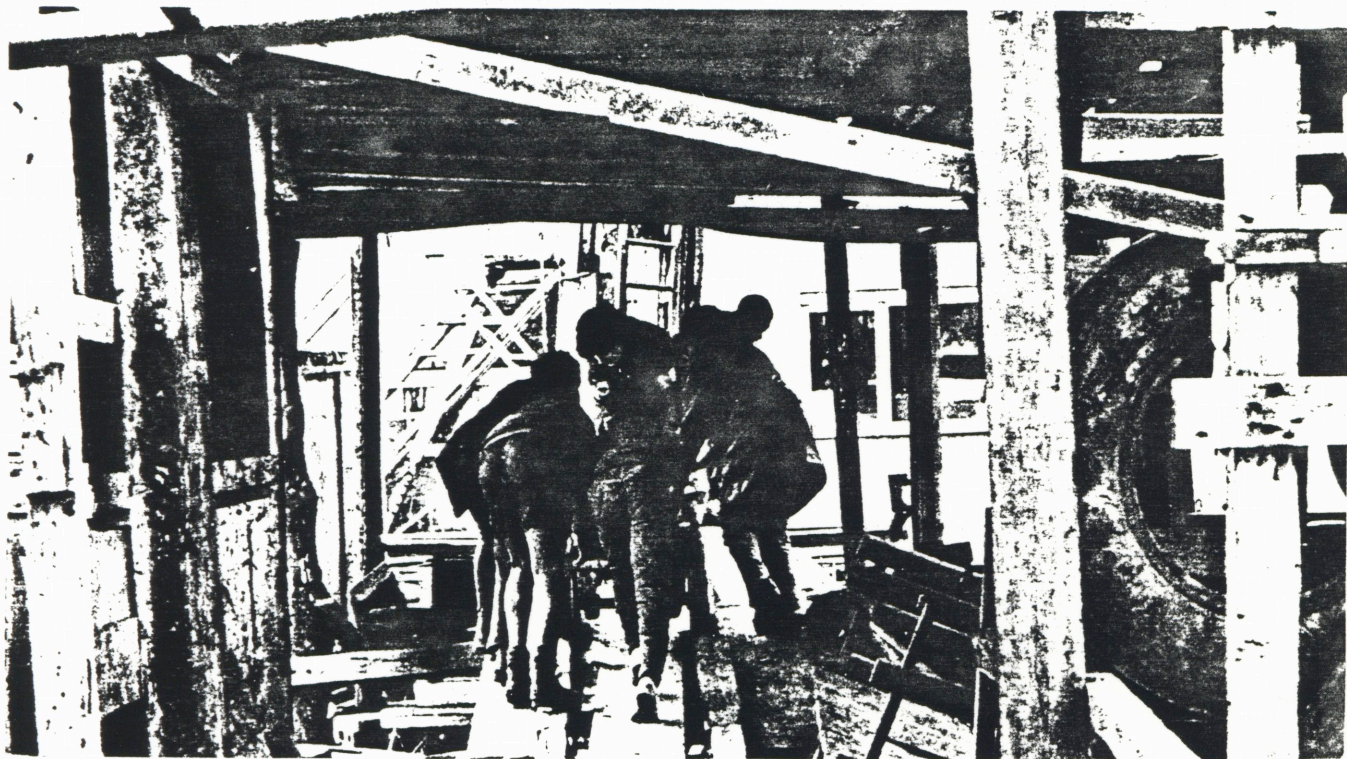
so extraordinary? Could it be the intimacy, the warm feeling of shelter? Perhaps playgrounds are often too open. Notting Hill has an excellent pavilion with an extremely good relation to the out-of-doors and this is a very rare thing indeed.'

The Leader of the Notting Hill Playground, Pat Smythe, makes his comment:

'The atmosphere here is homely. Homely to the boy returning from a spell in Borstal, to the old age pensioners coming to their own Club, to the unmarried mother bringing her baby to the nursery group that she herself attended not so long ago and homely to the West Indian youth fresh off the boat. Homely, too, to the thousands of children that come in from the troubled streets.

'Educationalists come to look, to listen and to learn. They come to watch children doing natural things such as creating dream-houses out of old timber, splashing about in water, digging in the soil, enjoying the flowers from plants grown by themselves, or making music with their home-made steel band.

'The sociologists ask how a self-made community can be created in an area that has not yet learnt the science of community life for they know that life is a pretty raw business between the railway and the canal, despite the superficial refinements of television and washing machines.'



Case Study: Joslyn Multi-Service Center
Providence, Rhode Island⁴

The Joslyn Multi-Service Center in Providence, Rhode Island was financed with HEW funds. It's architects approached the project as a prototype adventure. A teaching module was the basis for the project. In conjunction with the module, a cube and jungle-gym of foam shapes permit variability in the space. These elements define a working and child pleasing environment centered on early education.

Special Features:

- the 4'x4'x6' modular teaching unit
- the jungle-gym with foam shapes-used for play and seating
- children's lockers which can be used in conjunction with the modular units.

These features allow flexibility in creating specific zones within the space.

This facility serves 40 three-to-five year old children.

Climatic Implications:

This facility is located in similar climatic conditions.

- play and educational areas concentrated in interior spaces
- need for sheltered outdoor areas

Implications for the Day Care facility for Montana State University:

- use of modular units provides opportunity for individual development of each child's personality
- provision of soft surfaces for play . . . indoor as well as outdoor

Learning through play

A day care facility, based on a modular, movable, and highly flexible series of components, permits active use and almost constant change in a learning situation.

The Joslyn Multi-Service Center in Providence, R.I. was organized three years ago by a professional social worker who made the stable but low-income neighborhood aware of the state's HEW funds for lacking community services. As the name implies, the center provides a range of social services in an old, wood-frame school building with the first floor used primarily as a day care center for 40 three- to five-year-old children.

The design project for the day care facility was given to architects Stanley Thomasson and Raymond Abraham. Rather than design a one-off solution for the specific space, both felt that day care, as early education, should be approached as a prototypical situation, based on specific educational objectives. Their approach was to design a system that would accommodate all of these educational goals, then apply that system to the given space. The single prototypical teaching module—evolved through a process of physically defining educational ideas—is a 4'x4'x6' unit. The upper (orange) portion on overhead tracks is the teachers' storage, positioned at a height inaccessible to children. Four vertical, hinged storage and work components under the orange unit are for the children's use.

In addition to the teaching module, another separate component was designed for use in conjunction with the module; basically a hinged cube, it can be easily modified to form a table or chair. Also separate from the basic module, but an integral part of the educational program, is a Junglegym filled with colored vinyl-coated foam shapes that can be used for play and seating. The last separate element is a series of in-

dividual children's lockers on casters that roll on tracks to permit their use in conjunction with the teaching module. The locker backs include tack spaces.

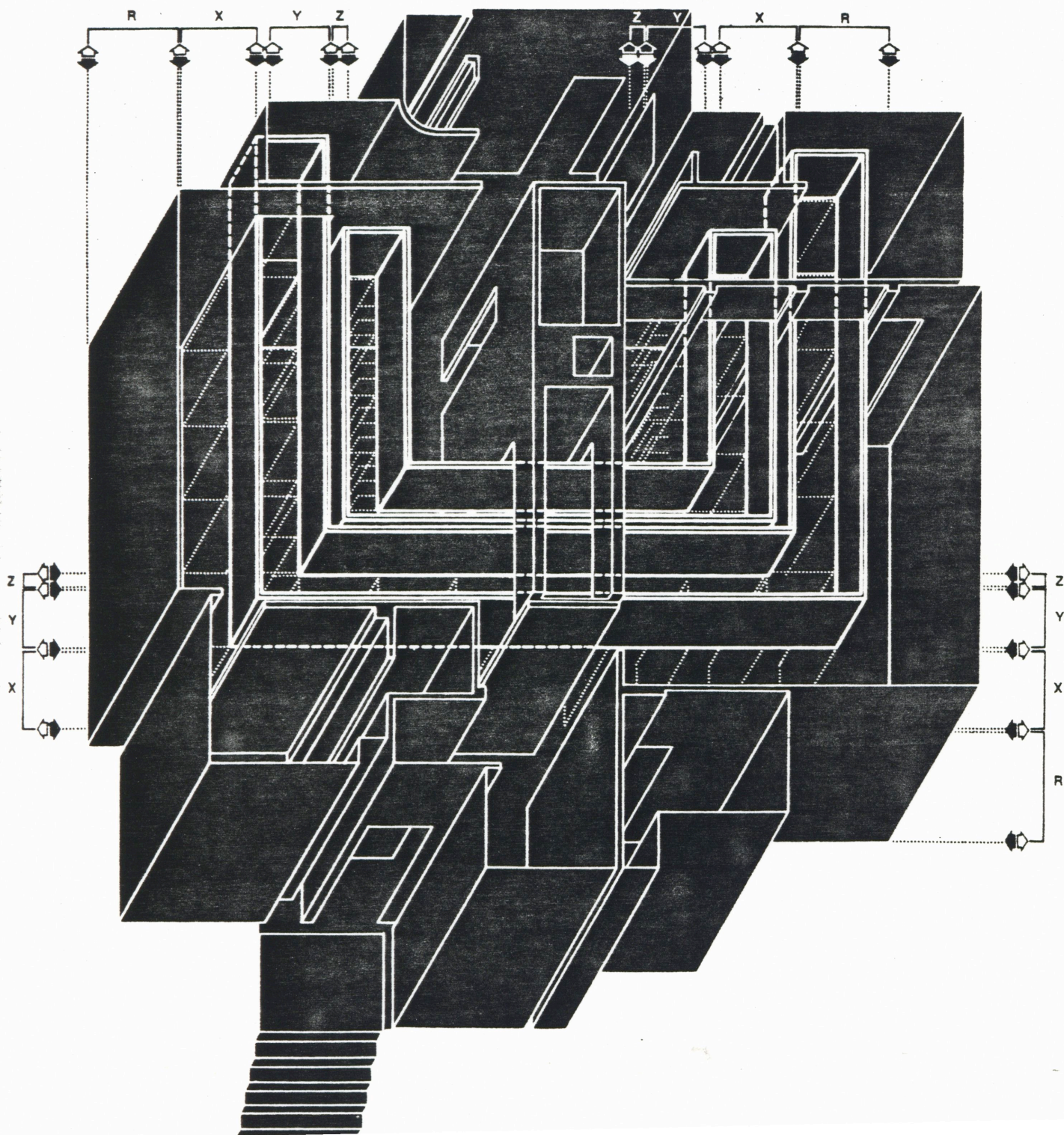
In the application of the system to the Joslyn Center space, the ground floor was zoned to accommodate the various parts of the system and their relation to each other. The central part of the space is a "wet" area and the adjacent zone accommodates the entrance and lockers. The teaching module and the play module (Junglegym) form the next two zones with the table/chair component stored along the periphery.

While in the closed (neutral) position, the four teaching modules are located, one at each of the four corners of their zone. These modules are free to move to any point in the zone and, as the lower portion of the module unfolds, it begins to define areas of teaching either within its own zone or extended into the play zone. One or more of the modules can be used simultaneously in conjunction with the table/chair components, the vinyl-coated foam cubes, and the movable locker system. [Sharon Lee Ryder]

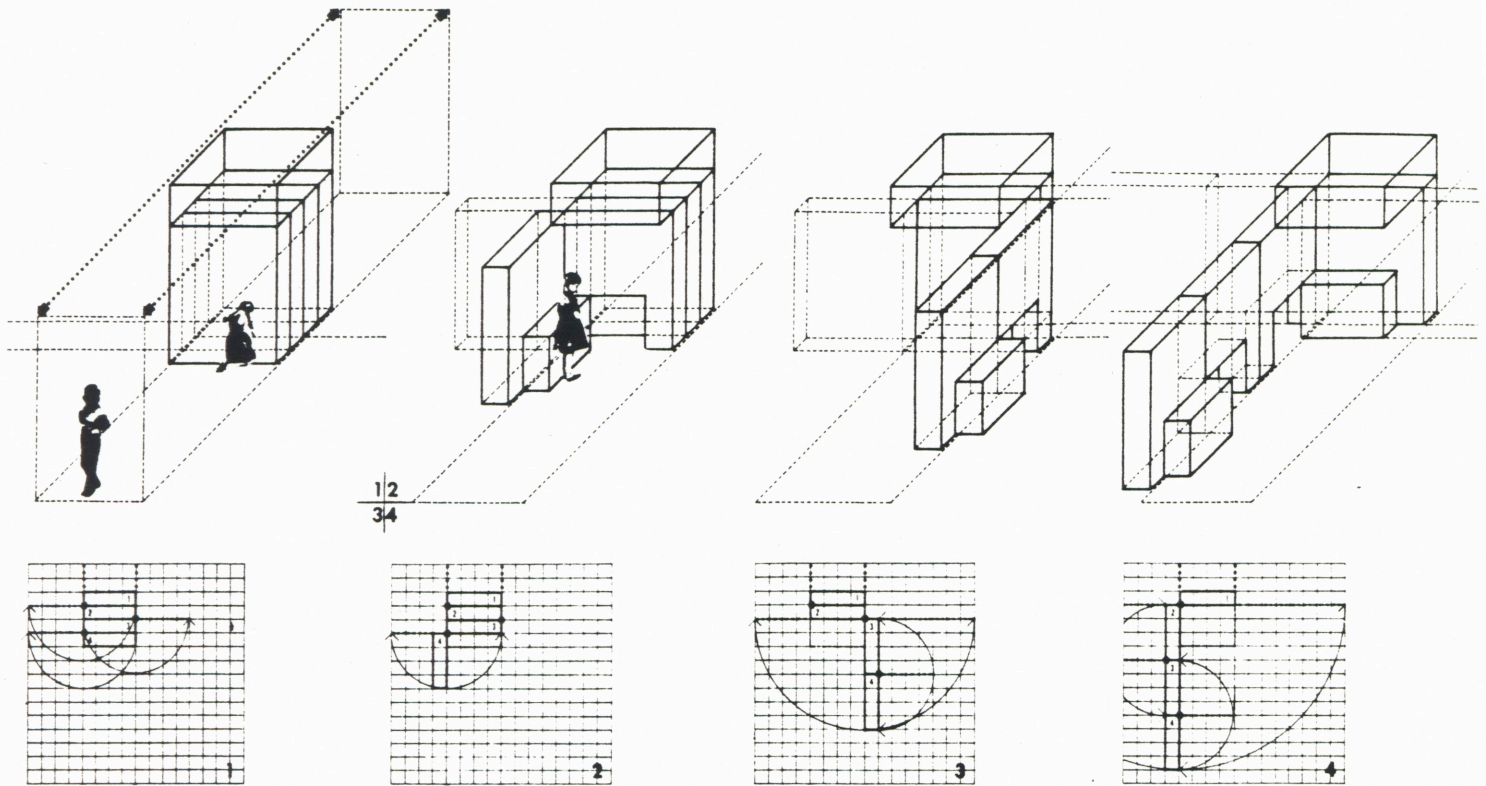


Criteria:

- 1** System must permit an educational environment that is responsive to the individual behavioral characteristics of both the teacher and the child.
- 2** System must be adaptable to a wide range of programmatic and physical facilities, leaving options for program planning decisions.
- 3** System must encourage spontaneity in the learning process by acting as a catalyst for a continuous creative reinterpretation of the learning process



Learning through play



Basic teaching module unfolding sequence



Table/chair transformation

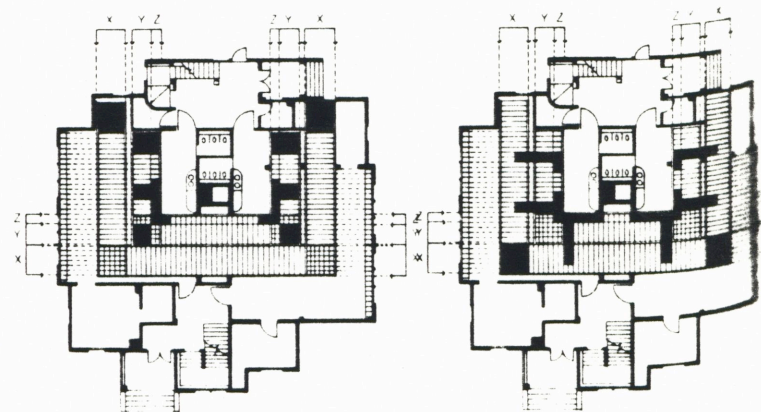
Prototype I has been conceived of as a spatial toy consisting of a series of mobile activity modules which generate overlapping spatial zones which are structured by a range of physical scales and transitional territories. It has been developed as a test model in response to the complexity of the early childhood learning processes.

The apparent capability of the child to experience and perceive spatial entities without fragmentation of the elements leads to the assumption that the child perceives the environment as a set of inter-related information. The rigidity or permissiveness of an environment controls the degree of separation or integration of the child's aural, visual, and tactile aspects.

Multi-Activity-Zones for Education (M.A.Z.E.) has transformed the fixed feature space, as manifested in the traditional classroom, into a non-programmed informal space which permits the child not only to structure space through control of his own activities, but to develop his own identity in the process.

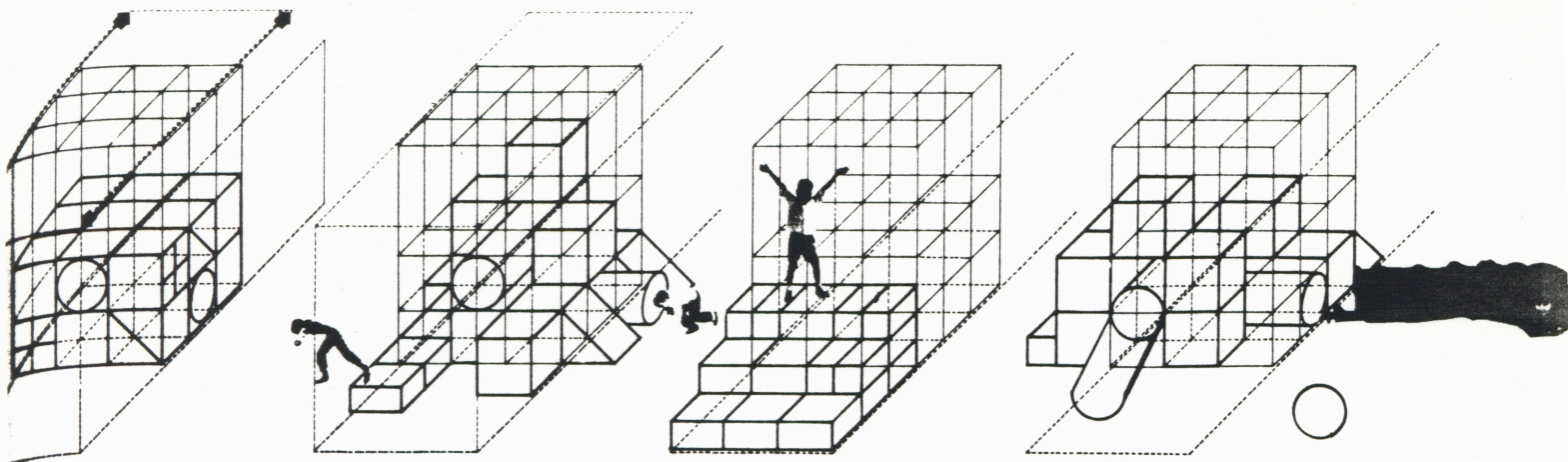
An interchangeable set of components function primarily as environmental control elements and as containers for a wide range of teaching-learning media and stimuli for tactile interaction. The application of this system of dynamic activity modules results in a higher degree of flexibility and adaptability in terms of scale, the range and interaction of activities, the quantity of teaching-learning units and the range of educational programs it can serve.

A more economical approach in spatial organization will derive from a maximum continuous use of territories, consolidation of fragmentary media and equipment into multifunctional activity modules

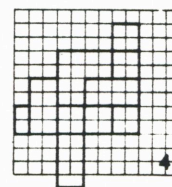
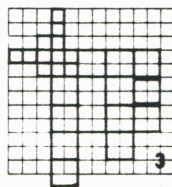
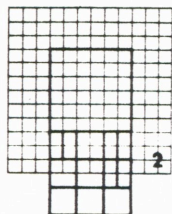
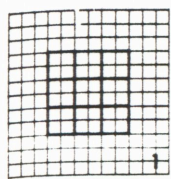


and its adaptability to existing structures as well as new construction.

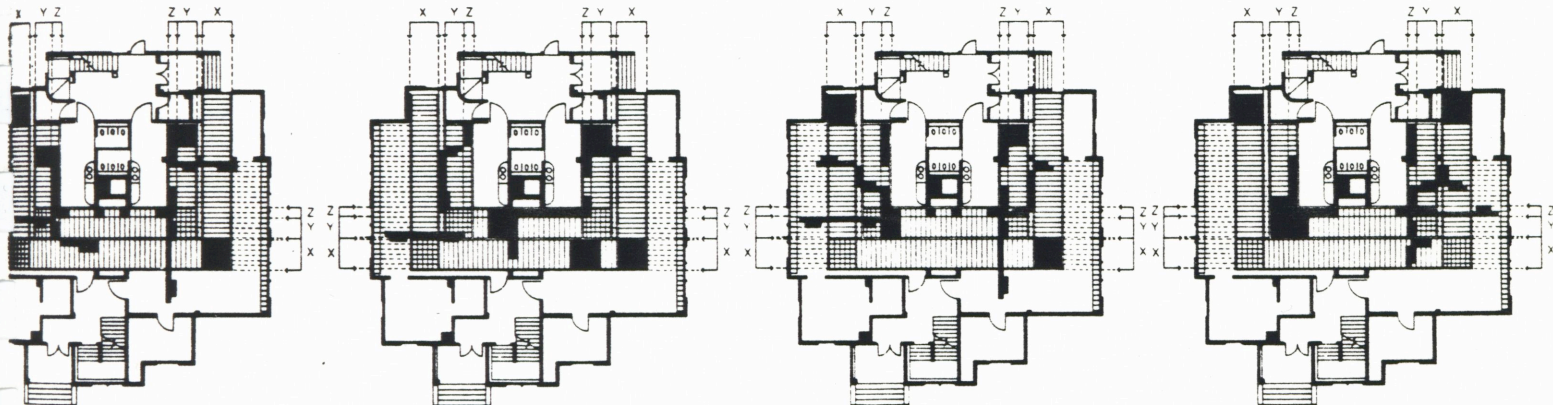
Space is structured by time rather than physical properties. Feedback from operational outputs of test models will provide a means for continuous re-evaluation of its ability to respond to the continuously changing and expanding needs of the child in a dynamic learning process."



13
24



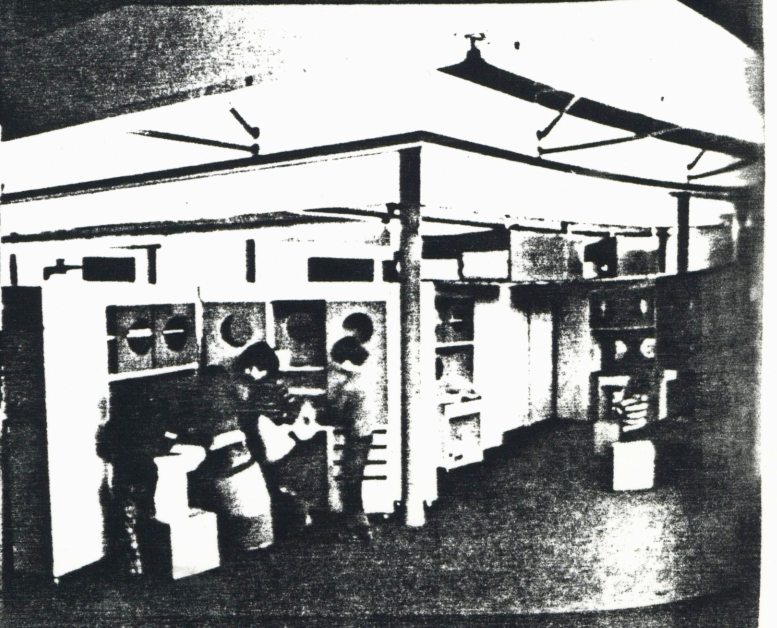
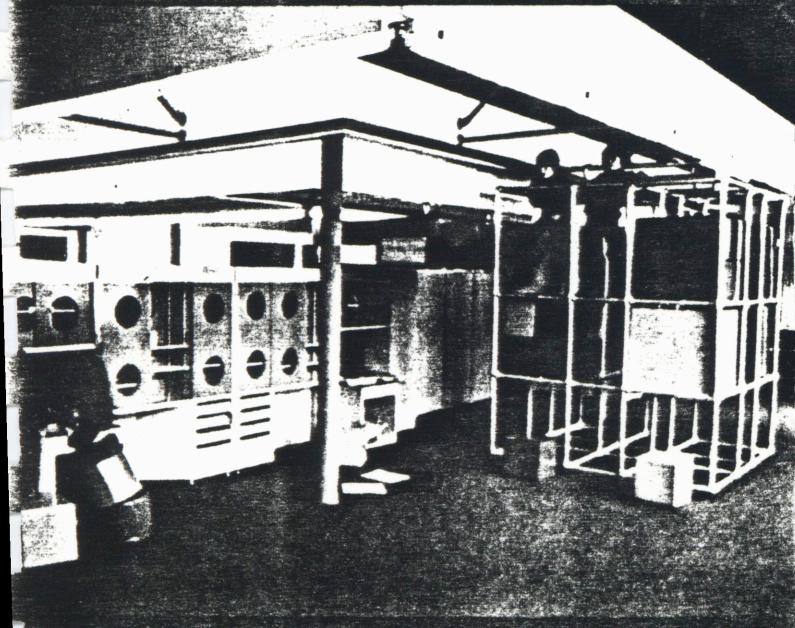
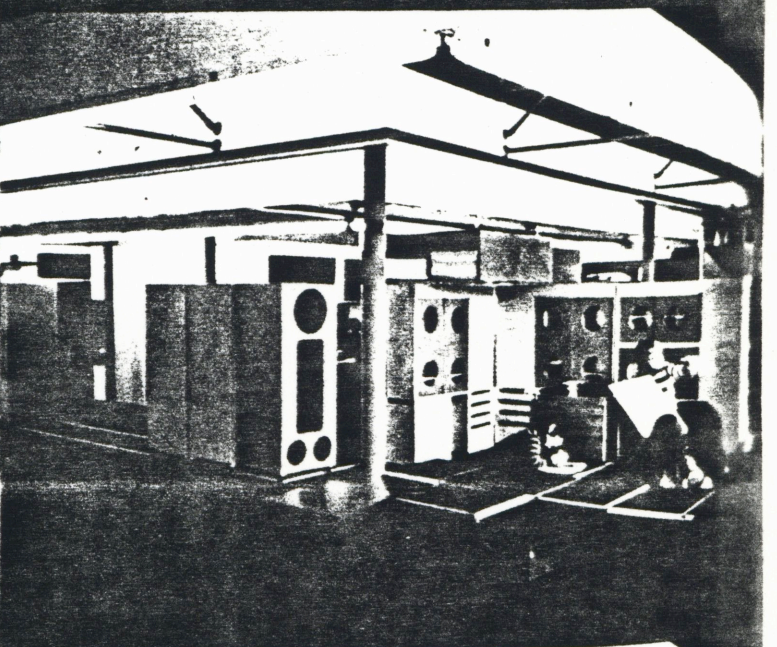
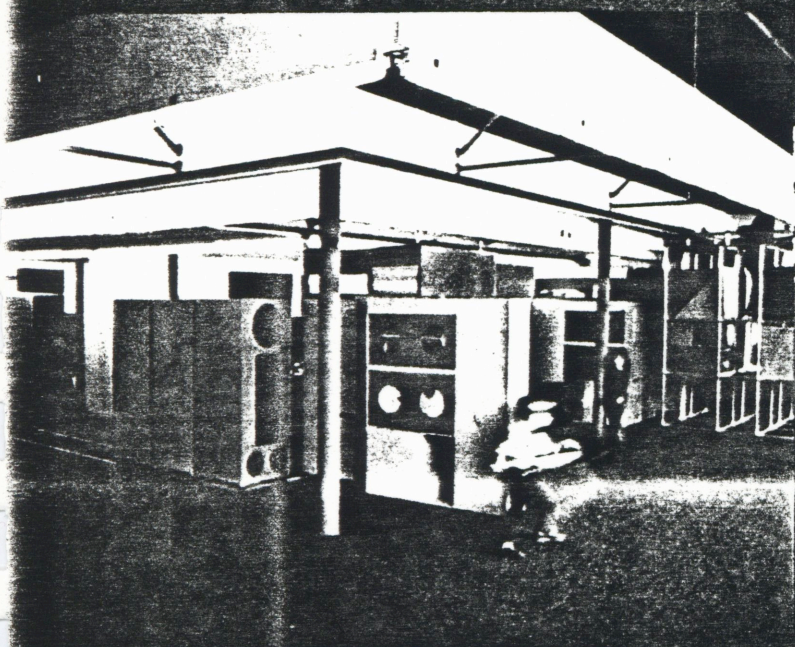
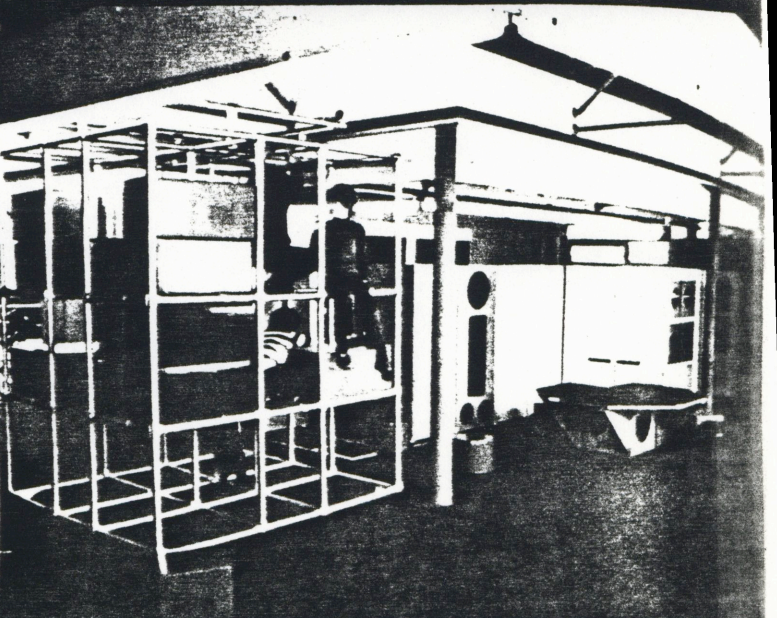
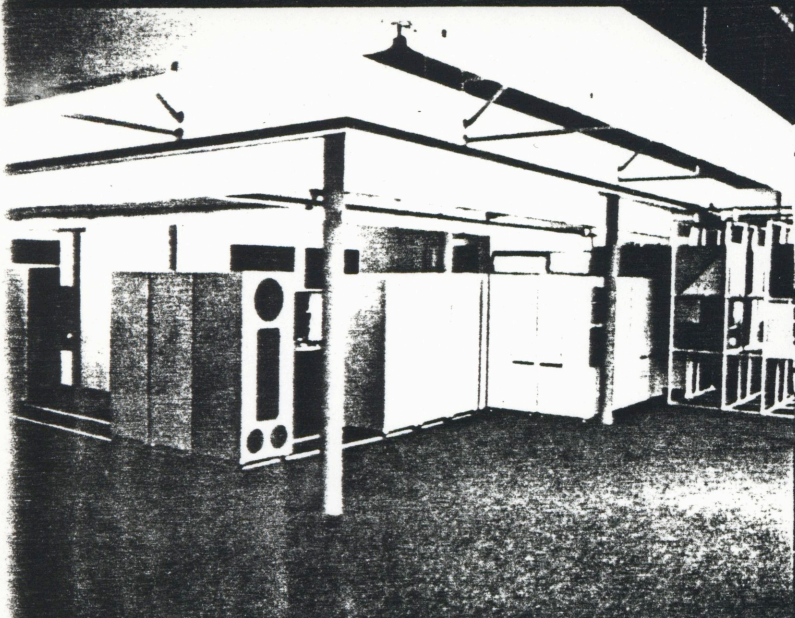
Play module change sequence



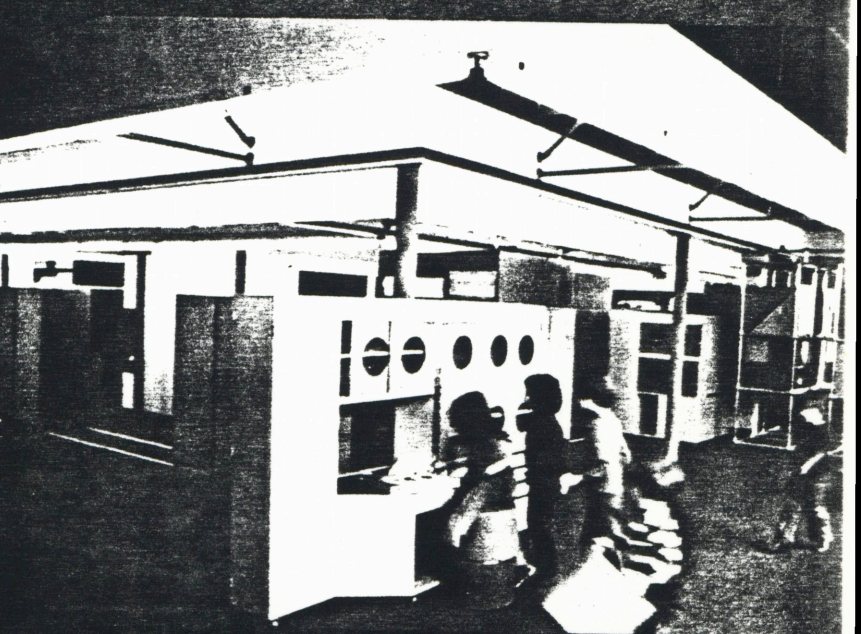
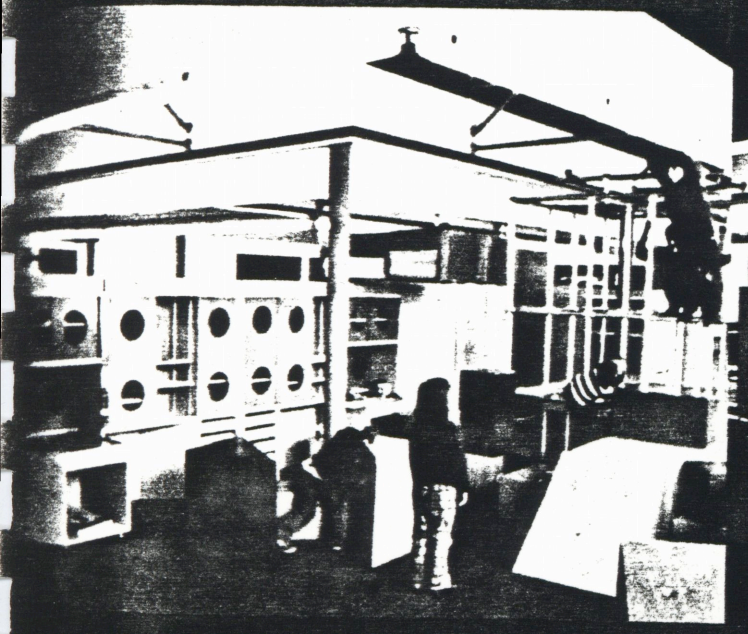
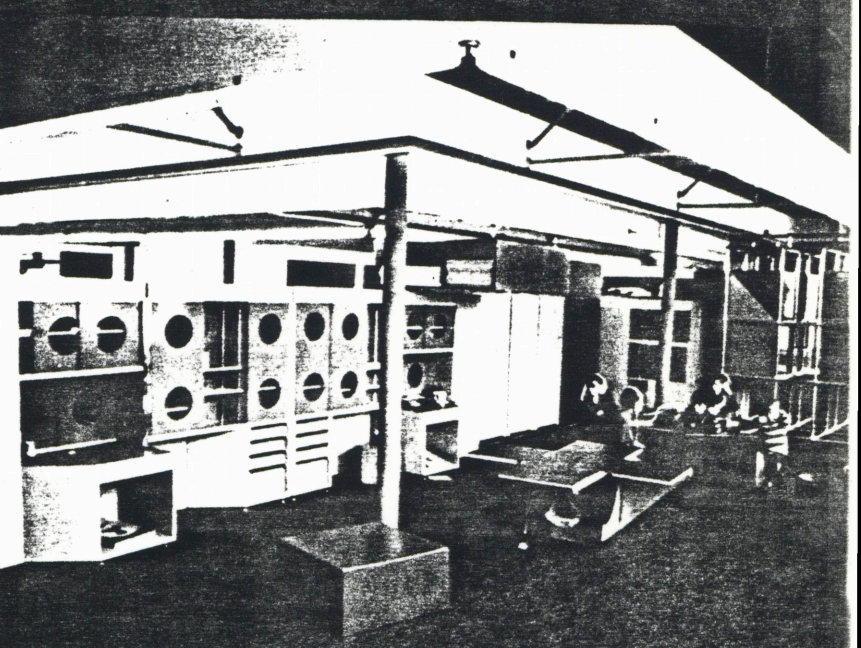
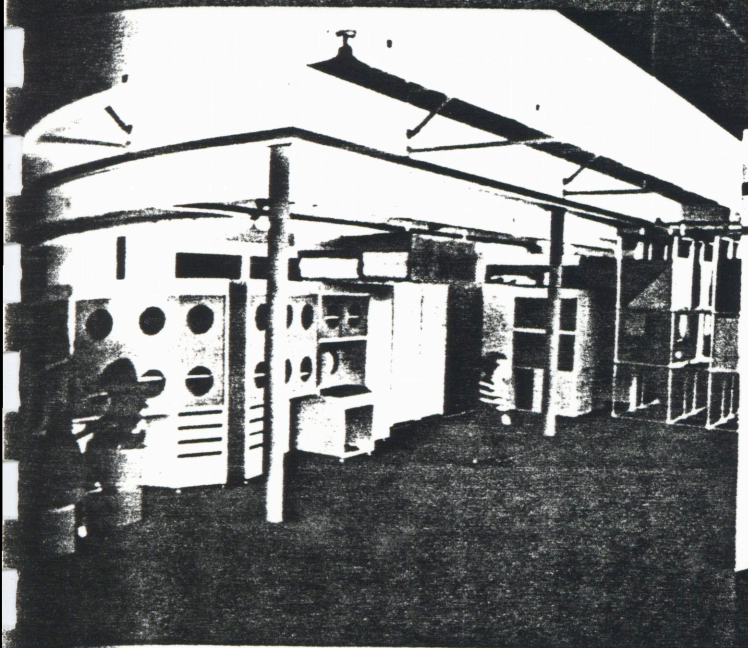
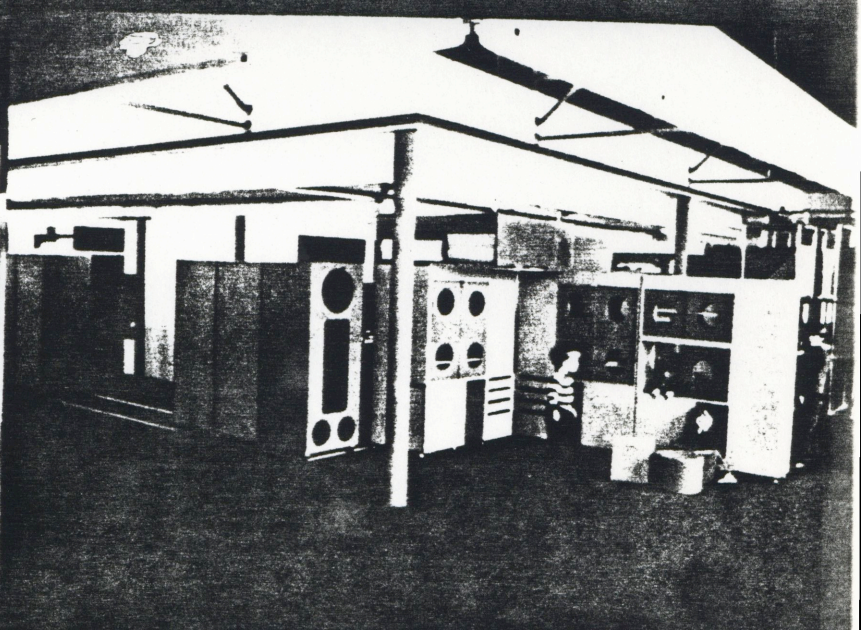
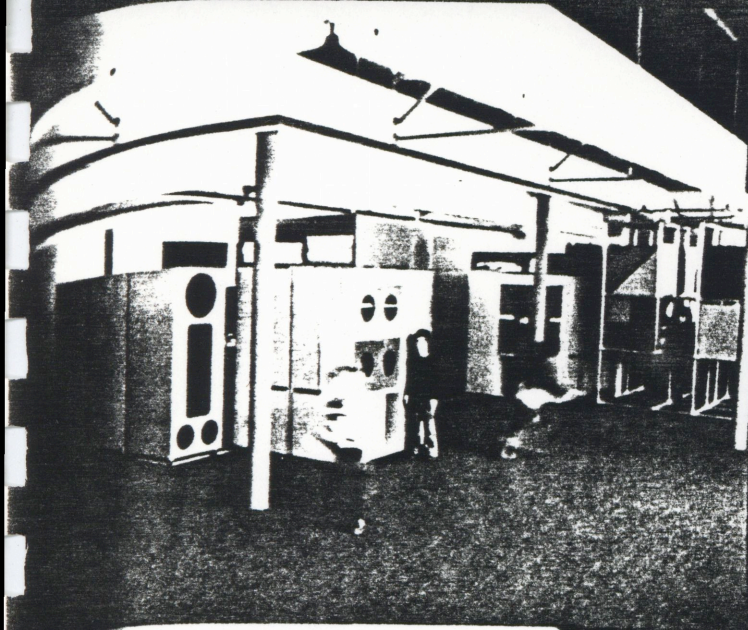
Change of spatial pattern generated by the continuous modules and zones

Activity zones

- Zone R:** Random play/informal groups
- Zone X:** Pattern play
- Zone Y:** Specialized learning/equipment storage
- Zone Z:** Entrance/individual storage



Sequence of change as modules



Case Study: Catherine McCauley Child Care Center
Ann Arbor, Michigan⁵

This center serves 104 children, infant to kindergarten. There are 10,000 usable square feet in eight adjacent buildings. Each building has its own character (colors, spatial configuration, etc.) which identifies each with a specific age grouping.

The center maintains a very residential quality* in its gable roof forms and small scale pieces. The extensive play area around the facility also encourages the idea of residence versus commercial structure.

Climatic Implications:

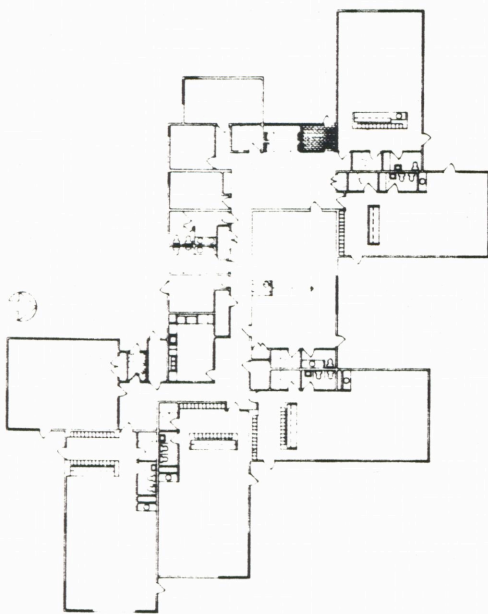
- similar climatic zone
- use of gable roofs for maximum snow removal
- indoor pedestrian street as connector of modular buildings

Implications for the Day Care facility for Montana State University:

- use of modular building units for expansion potential
- homelike quality vs. commercial
- low window heights, glass doors
- extensive use of color

Child Care Center Scaled for The Comfort of Its Young Users

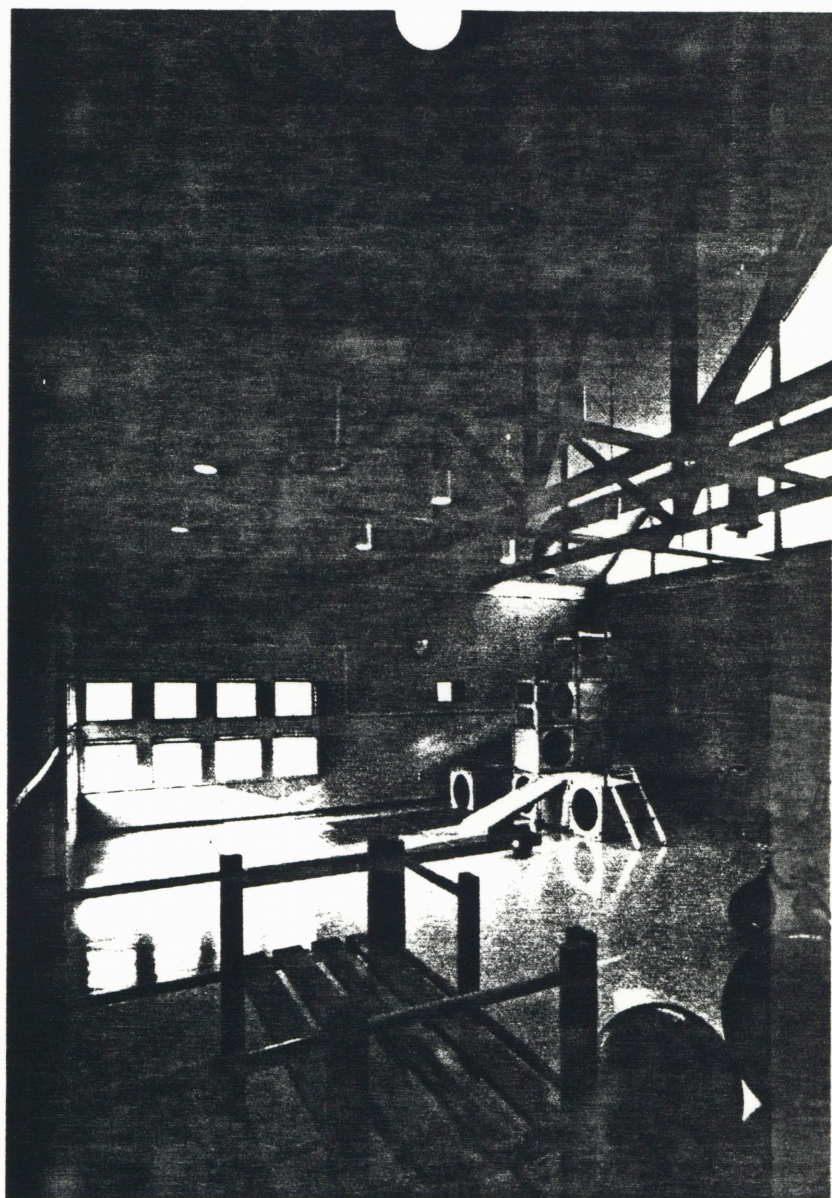
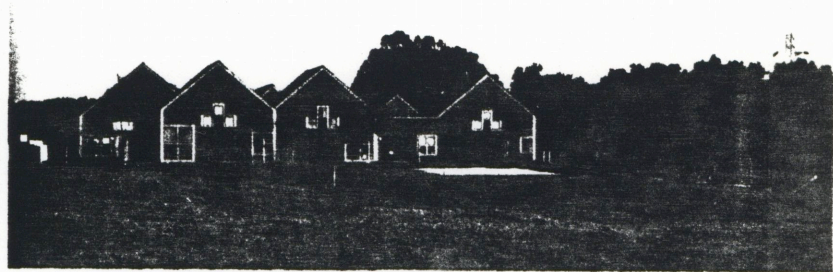
Photographs © R. Greg Hurley



Central to the design of the Cathrine McCauley Child Care Center in Ann Arbor, Mich., was the welfare of the future occupants—104 children ranging from infants to kindergartners. The architect's approach was to "look at the building through the children's eyes" and to design a structure that "would not overwhelm them." As explained by Jim Menghini of Herrmann-Holman-Menghini-Overhiser, of Ann Arbor, "There was a strong concern that the building reflect childlike qualities and be very homelike in feeling."

To create a domestic esthetic—rather than an institutional one—the 10,000-square-foot facility is divided into eight buildings that are clustered together and connected by an enclosed pedestrian street. (Located on this hallway are a kitchen, director's office, and lobby.) To further heighten this homey feeling each segment has its own character: Window treatment, interior layout, colors are unique for each structure. For example, the infants' room has an eight-foot-high, flat ceiling; in contrast, the kindergarten has a cathedral ceiling. The general playroom is also full height, but this time the attic guts—air-conditioning and heating pipes and ducts, lights and wiring, and wooden structural supports—are left exposed. Each room can be entered from the exterior of the interior hallways, through the color-coded doors. The doors are mostly glass to allow views into rooms, as well as outdoors. The windows are placed lower than usual on the walls, and openings are small so that the scale is more congenial to children than adults. Views out the windows are deliberately varied as much as possible to relieve potential boredom. Menghini describes the design of the redwood-sided facility as "midway between traditional and contemporary." **NORA RICHTER GREER**

Above right, from a distance the child care center looks like a cluster of single family homes. Above, the center as seen from the multilevel playground. The scale and the design of each room is deliberately different, as seen in the general playroom, far right, and the kindergarten, right.



Case Study: New Life Child Development Center
Brooklyn, New York⁶

Designed by Paul Heyer this child care center serves 108 preschool and school-age children. It is a brick structure of 15,500 square feet.

Special Features:

- 3 story structure
- special window shapes increase sense of adventure and increase usable wall display space
- outdoor garden/playground on ground level
- roof-top play area
- use of variety of floor textures to define space and circulation
- open plan no doors

Climatic Implications:

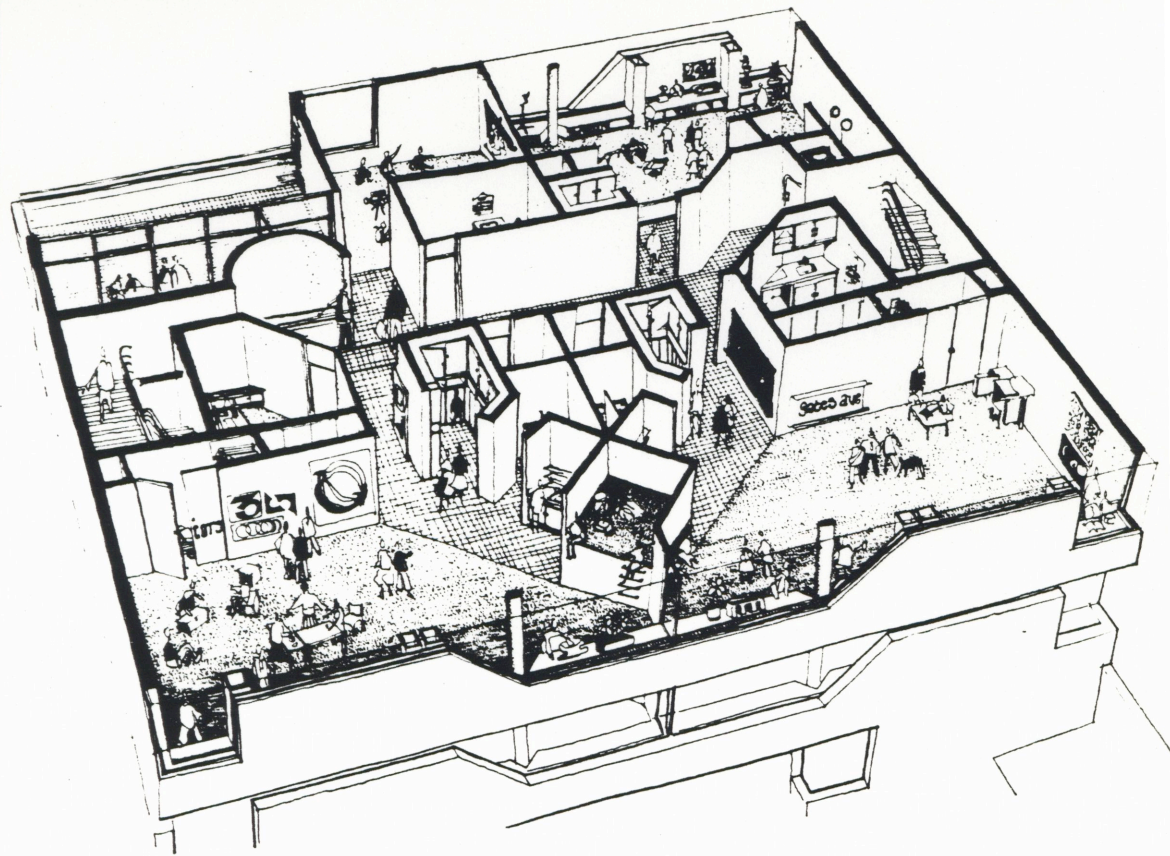
- similar climatic zone
- southern exposure and play area for maximum solar potential
- semi-covered play spaces
- recessed entry

Implications for the Day Care facility for Montana State University:

- special window shapes
- use of materials and textures to define spaces

FOR KIDS IN BROOKLYN

Paul Heyer's kindergarten (what Americans prefer to call an early learning day-care facility) in Brooklyn, New York, was financed by government but was initiated, developed and is now administered by the local community. The structure is a steel frame wrapped in brown brick and rising through three storeys, only two of which are visible on the street side, 28. Entry is through an area recessed under the building, into a hall and up a ramp, 29, to a central foyer which overlooks the entrance below. The ground and first floor, 27, constitute the kindergarten proper, while the lower ground floor, which gives on to a paved playground at the back, 30, accommodates children aged 6-12 after school. Four kindergarten playrooms, each for 23 children, overlook this playground from the two upper floors, and a fifth on the top floor overlooks the street (three of these are seen in 27). The angled window, 31, gives a

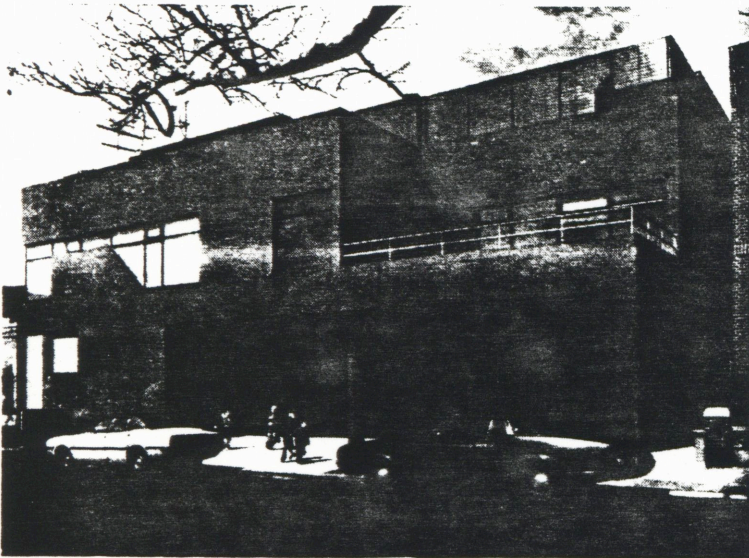


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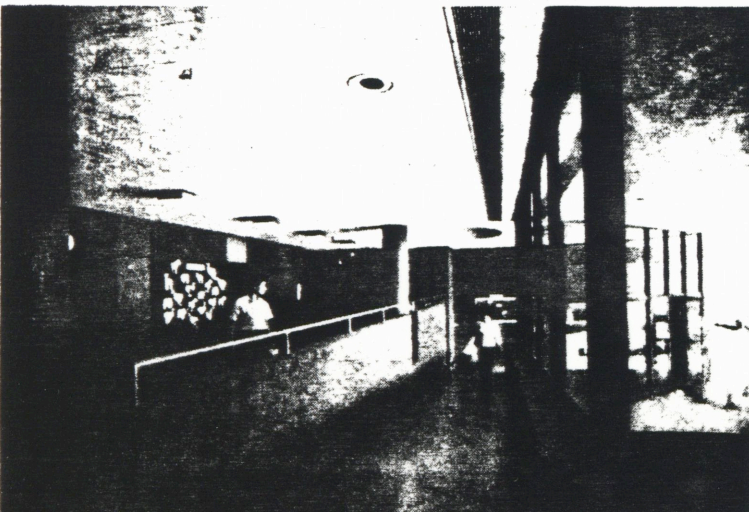
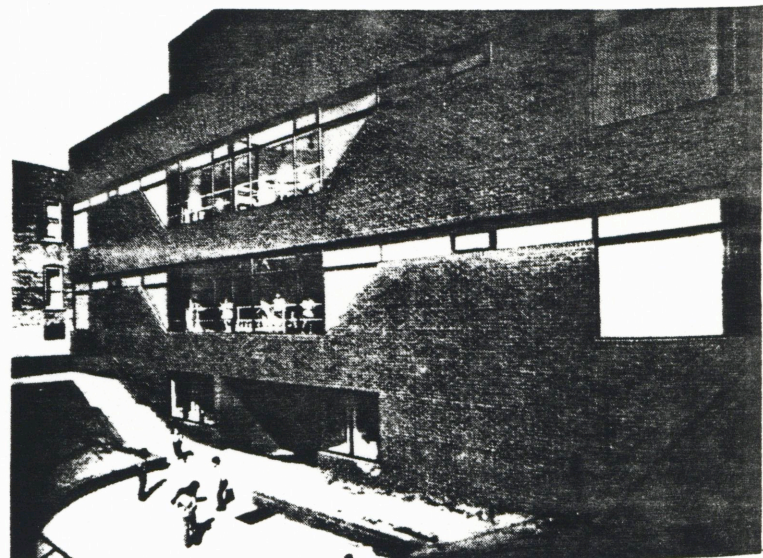
sense of space opening outwards, limits glare and increases pin-up space. Exposed concrete block

painted off-white is used throughout to encourage children to participate in decorating their own environ-

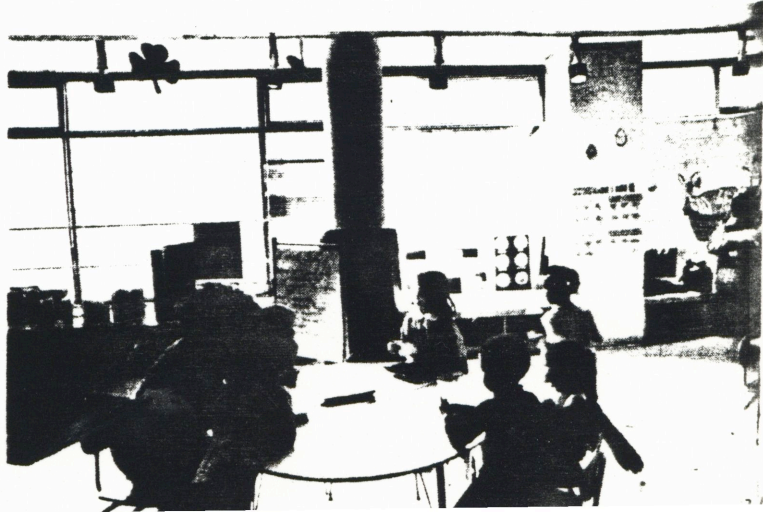
ment. The roof is enclosed with steel grating (seen in 28) and provides an additional outdoor play area.



28



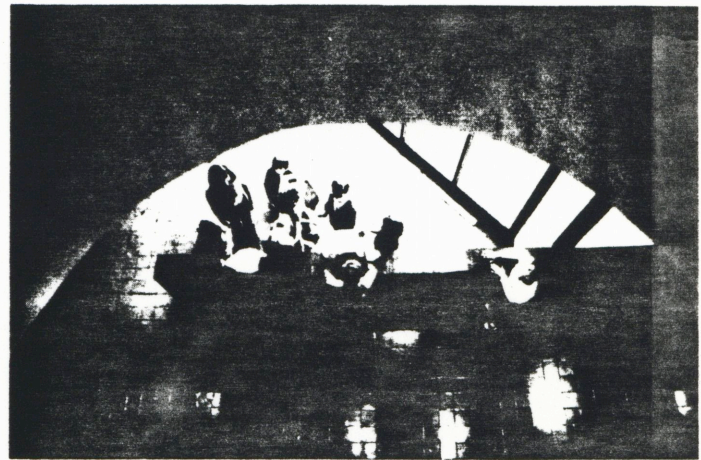
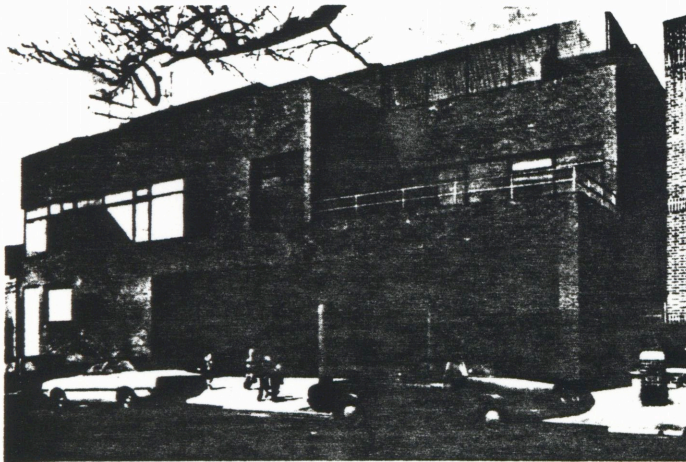
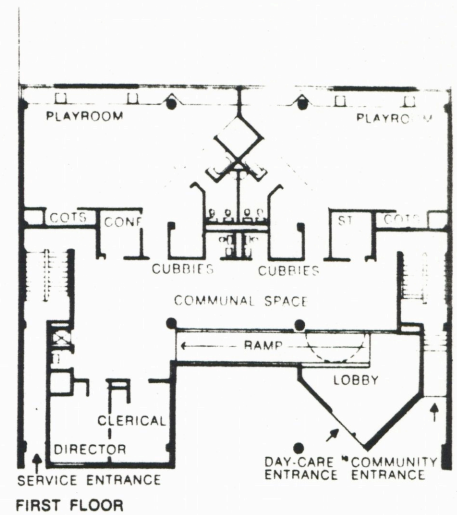
29



first and second floors of the 15,500-sq-ft brown brick and steel-frame structure are devoted to preschoolers; while the lower floor is turned over to the school age group. The second level overlooks the recessed entrance in mezzanine fashion with a ramp connecting the two, so that easy visual and physical contact may be made between the building's users. A roof play area and a rear garden provide outdoor play space.

Interiors are simple with brown quarry tile in public areas, off-white concrete block walls, round free-standing columns and spots on tracks.

The New Life Child Development Center in Bushwick was designed by Paul Heyer to accommodate 108 pre-school- and school-age children. The



Paul Heyer's New Life Child Development Center (above) showing the street elevation and the lobby.

Case Study Reference Notes

1. Cynthia L. Rice, Visit to Pilgrim Preschool, (Journal entry: Appendix C), April 1987.
2. Robert C. Utzinger, Some European Nursery Schools and Playgrounds, (Ann Arbor: University of Michigan Press, 1970), pp.14-19.
3. Lady Allen of Hurtwood, Planning for Play, (Cambridge: MIT Press, 1968), pp. 64-69.
4. Sharon Lee Ryder, "Learning Through Play", Progressive Architecture, May 1974, pp. 70-75.
5. Nora Richter Greer, "Child Care Center Scaled for the Comfort of Its Users", Architecture, February 1985, pp. 86-87.
6. "For Kids in Brooklyn", Architectural Review, June 1976, pp. 384-386.

Space Analysis

The following section consists of programmatic analysis of the major spaces of a day care facility for children ages two (2) through five (5).

The program is assuming a maximum capacity of fifty (50) children which according to Montana Licensing Requirements calls for thirty-five (35) square feet per child, resulting in a minimum square footage of 1750 for the activity spaces of the facility which children will habitate. Square footages for spaces not occupied or designed for children are outlined at the conclusion of this section resulting in an estimated total building square footage.

The program analysis is categorized according to space type. Common characteristics of all spaces within the building envelope are described here.

HVAC requirements must allow for adjustable heating and cooling control. Natural ventilation is preferred in all major spaces.

Safety requirements must provide for handicap accessibility in all areas of the facility. Local fire code requirements must be satisfied.

Square footages as shown on the following pages are a minimal value unless otherwise noted.

Activity Space:**Entry****Primary Activities:**

pick-up and drop-off of
children, sign-in, coat
removal

Supportive Activities:

cleaning

Users:

children, parents, staff

Schedule:

intermittent daytime

Adjacency:

lobby, pick-up/drop-off,
restrooms

Furnishings:

none

Ambience:

light and open

Visual:

outdoor activity space,
lobby, administration
office, pick-up/drop-off

Acoustical:

moderate to high noise
levels

Remarks:

scale to satisfy child and
adult users

Square Footage:

54 square footage

Activity Space:**Lobby****Primary Activities:**

greeting, obtaining information, talking, waiting, cloak disposal

Supportive Activities:

cleaning

Users:

visitors, parents, children staff

Schedule:

intermittent to constant daytime

Adjacency:

office, coat storage, rest rooms, pick-up/drop-off

Furnishings:

seating (benches with storage), public telephone, drinking fountain

Ambience:

warm, sunny, visually interesting

Visual:

day lighting with view to exterior

Acoustical:

will accept high noise levels

Remarks:

Possible dual use as a recreation area when children are arriving. Important adjacency is coat storage particularly during inclement weather. Scale of the space must accommodate both adult and child users.

Square Footage:

100 square feet

Activity Space:**Coat Storage****Primary Activities:**

removal and storage of coats
and outer garments

Supportive Activities:

cleaning, entering and
exiting the facility

Users:

children, visitors, and staff

Schedule:

intermittent daytime

Adjacency:

entry, lobby, restrooms,
offices, main corridor

Furnishing:

shelving, coat hooks,
benches

Ambience:

welcoming, inviting

Visual:

well lit, no exterior views
required

Acoustical:

high noise level acceptable

Remarks:

scale for primary user:
child

Square Footage:

120 square feet

Activity Space:

Administration Office

Primary Activities:

paper work, meetings,
conferences, telephoning,
accounting, general
administrative duties

Supportive Activities:

cleaning, all functional
activities of the facility

Users:

staff

Schedule:

intermittent daytime

Adjacency:

entry, lobby, major activity
spaces

Furnishing:

desk, chairs, filing
cabinets, storage, emergency
care equipment

Ambience:

professional, business-like,
warmth of humanism

Visual:

adjustable ambient task
lighting, view of critical
areas

Acoustical:

quiet and soundproof

Remarks:

needs to have view of entry
to monitor access to and
from the facility

Square Footage:

150 square feet

Activity Space:	Small Activity Room
Primary Activities:	reading groups, small motor skills activities
Supportive Activities:	larger group activities in multi-purpose room, dining area, other play spaces
Users:	children and staff
Schedule:	constant daytime
Adjacency:	main corridor, other activity spaces, restrooms
Furnishings:	shelving, storage, sink, counters
Ambience:	cool colors, daylight accessible
Visual:	day lighting, views
Acoustical:	separate from corridor and other rooms, will need to accept high noise levels
Remarks:	to be used by small groups only for individual activities. Scaled for children
Square Footage:	200 square feet

Activity Space:

Medium Activity Room

Primary Activities:

fine and gross motor skills,
reading, play activities

Supportive Activities:

other play activities in
other activity spaces,
dining, outdoor activities

Users:

children and staff

Schedule:

constant daytime

Adjacency:

playground, restrooms, main
corridor

Furnishing:

storage, counter, shelving

Ambience:

bright and cheery

Visual:

exterior views, daylight

Acoustical:

isolation from larger
activity spaces, high noise
levels tolerable

Remarks:

primarily for small group
activities, can be
additional play space
adjacent to multi-purpose
room

Square Footage:

300 square feet

Activity Space:**Multi-purpose Room****Primary Activities:**

large group activities,
indoor play space

Supportive Activities:

cleaning, eating,

Users:

children and staff

Schedule:

constant daytime

Adjacency:

exterior playground,
restrooms, kitchen, dining
area, main corridor

Furnishings:

individual shelving,
storage, chairs and tables,
sink, counter tops, bulletin
and chalk boards

Ambience:

bright colors and well lit

Visual:

exterior views, daylight

Acoustical:

isolation from quiet
spaces, high noise levels
acceptable

Remarks:

this room will serve a
variety of purposes
throughout the day. Scale
of this space geared to
freedom of movement

Square Footage:

500 square feet

Activity Space:	Dining
Primary Activities:	eating
Supportive Activities:	cleaning, playing, cooking, decorating
Users:	children and staff
Schedule:	meal and snack times only
Adjacency:	kitchen, multi-purpose room, restroom, main corridor
Furnishing:	moveable furniture
Ambience:	relaxing, comfortable
Visual:	exterior views, exterior play area, daylight
Acoustical:	moderate noise level
Remarks:	
Square Footage:	415 square feet when serving all 50 children

Activity Space:	Kitchen
Primary Activities:	preparation and serving of meals
Supportive Activities:	cleaning, eating, storage of raw cooking materials, storage of cooking utensils
Users:	staff
Schedule:	before, during and after meal preparation
Adjacency:	dining, restroom, storage, laundry, secondary exit, trash disposal area
Furnishing:	counter tops, sink, stove, refrigerator, freezer, dishwasher, pantry
Ambience:	sanitary
Visual:	no exterior view required
Acoustical:	sound isolation from children's activity spaces
Remarks:	
Square Footage:	144 square feet

Activity Space:	Restrooms, children's
Primary Activities:	personal sanitary adjustment, cleansing
Supportive Activities:	cleaning
Users:	children
Schedule:	intermittent daytime
Adjacency:	main corridor, entry or lobby, major play spaces
Furnishing:	properly scaled fixtures for use by children
Ambience:	well lit, clean
Visual:	no exterior view required, daylight recommended
Acoustical:	isolation from other areas of the facility
Remarks:	shelving for accommodating towels or personal hygiene objects one restroom for children under 6 years of age when only two fixtures are required.
Square Footage:	135 square feet

Activity Space:	Restrooms, adult
Primary Activity:	personal sanitary adjustment, cleansing
Supportive Activities:	cleaning
Users:	staff
Schedule:	intermittent daytime
Adjacency:	main corridor, entry or lobby, administration offices
Furnishing:	adult scaled fixtures, shelving, private locker space
Ambience:	clean and airy
Visual:	daylight recommended, no exterior view required
Acoustical:	isolation from remainder of facility
Remarks:	
Square Footage:	54 square feet

Activity Space:

Health Isolation Room

Primary Activities:

caring for children who become ill while in attendance at the facility

Supportive Activities:

cleaning, eating, special caregiver attention

Users:

ill children and support staff

Schedule:

irregular

Adjacency:

administration offices, restrooms

Furnishing:

medicine cabinet (locking), bed, counter with sink

Ambience:

sanitary, soft and cozy

Visual:

daylight, no exterior view required

Acoustical:

isolation from all group activity spaces

Remarks:

Scale for children primarily

Square Footage:

60 square feet

Activity Space:	Storage, interior
Primary Activities:	storage of miscellany
Supportive Activities:	
Users:	staff
Schedule:	irregular
Adjacency:	major activity spaces, kitchen, offices
Furnishing:	shelving
Ambience:	clutter
Visual:	no exterior view, no daylight
Acoustical:	not a noise generating space
Remarks:	storage of play materials, and any difficult-to-store items should be accommodated in this space. need not be one space
Square Footage:	100 square feet

Activity Space:	Mechanical Room
Primary Activity:	operation of mechanical equipment, i.e. heating, ventilation and air conditioning equipment
Supportive Activities:	maintenance
Users:	campus and facility maintenance personnel
Schedule:	as required
Adjacency:	kitchen, laundry facility, main corridor
Furnishing:	mechanical equipment
Ambience:	mechanical, technical
Visual:	no exterior views, no daylight required
Acoustical:	complete sound isolation from all spaces within the facility
Remarks:	must be accessible from the exterior of the building
Square Footage:	100 square feet

Activity Space:	Laundry
Primary Activities:	laundering of soiled clothing, kitchen cloths
Supportive Activities:	cleaning
Users:	staff and facility maintenance personnel
Schedule:	irregular
Adjacency:	kitchen, main corridor, secondary exit
Furnishing:	washing machine, dryer, counter, shelving
Ambience:	subdued, mechanical in nature
Visual:	no exterior view or daylight required
Acoustical:	isolation from activity spaces of children
Remarks:	
Square Footage:	40 square feet

Activity Space:**Primary Activities:****Supportive Activities:****Users:****Schedule:****Adjacency:****Furnishing:****Ambience:****Visual:****Acoustical:****Remarks:****Corridors**

circulation and moderate playing

cleaning

children, visitors, staff

constant daytime

all major spaces

adequate lighting fixtures

cool and airy, spacious

daylight required, no exterior views required

must accept high noise levels, isolate from intended quiet spaces

Activity Space:	Playground
Primary Activities:	running, chasing, throwing, catching, climbing, jumping, walking, yelling, digging, crawling, etc.
Supportive Activities:	outdoor maintenance
Users:	children and staff
Schedule:	during fair weather
Adjacency:	indoor play areas, bathrooms, coat storage, exterior storage area
Furnishing:	play equipment of all types, trees, grass, asphalt, sand, water, fences
Ambience:	active, fun
Visual:	maximum daylight
Remarks:	play equipment should be of a type which allows children to explore a variety of options in play. There should be a hard surface for wheeled toys and playing with balls
Square Footage:	75 square feet per child

Activity Space:	Parking
Primary Activities:	Parking vehicles
Supportive Activities:	Maintenance (snow removal)
Users:	Staff and visitors
Schedule:	primarily at opening and closing of facility
Adjacency:	entrance to facility
Furnishing:	adequate lighting for evening departures
Remarks:	
Square Footage:	As required for five vehicles

Activity Space:

Trash Area

Primary Activities:

disposal and collection
of trash

Supportive Activities:

maintenance

Users:

staff and trash
collection agency

Schedule:

variable

Adjacency:

rear entrance of
facility and parking or
drive up area

Furnishing:

garbage bins

Visual:

fencing or other visual
barrier appropriate for
screening trash area

Remarks:

Square Footage:

as dictated by local
ordinance

Activity Space:

Primary Activities:

Supportive Activities:

Users:

Schedule:

Adjacency:

Furnishing:

Remarks:

Square Footage:

Exterior Storage

storage of toys and
maintenance equipment

staff

variable

playground, proximity
to entrance of facility

lighting, shelving

as needed

Interior Space Summary

Lobby	100 square feet
Administration	150
Entry	54
Small Activity	200
Medium Activity	300
Large Activity	500
Dining	415
Kitchen	144
Child's Restroom	135
Adult Restroom	54
Health	60
Storage	100
Mechanical	100
Laundry	40
Coat Storage	<u>120</u>
Total Interior Space	2757
+ 15% corridor and structure	<u>400</u>
Total Gross Building	3157 square feet

Exterior Space Summary

Exterior Storage minimum of 50 square feet

Trash Area 4 x 6 bin + 250 square feet for
garbage truck = 274 square feet

Parking 5 vehicles x 250 square feet per
vehicle = 1250 square feet

Playground 75 square feet per child x 50
children = 3750 square feet

Total Required Area = 5327 square feet

Total site available less gross building area is
approximately 36,800 square feet.

ORGANIZATIONAL DIAGRAMS

The following pages are an exercise in organization of the spaces suggested for this building envelope.

Step one identifies each space and those adjacency of spaces which are essential, desirable and not desirable. Each representational circle in this step is not proportional to a desired or suggested size.

Step two uses the same spaces from step one and clarifies the adjacency essential or recommended by clustering those representational circles nearer or further apart. Adjacency which are not desirable have been omitted from this diagram to improve clarity.

Step three is the first attempt at organizing those spaces into a physical relationship which require adjacency.

Step four is a refinement of the organization of step three.

Steps five and six assign proportional relationships to the spaces and suggest definitive adjacency. Other aspects which affect the building design are included here.

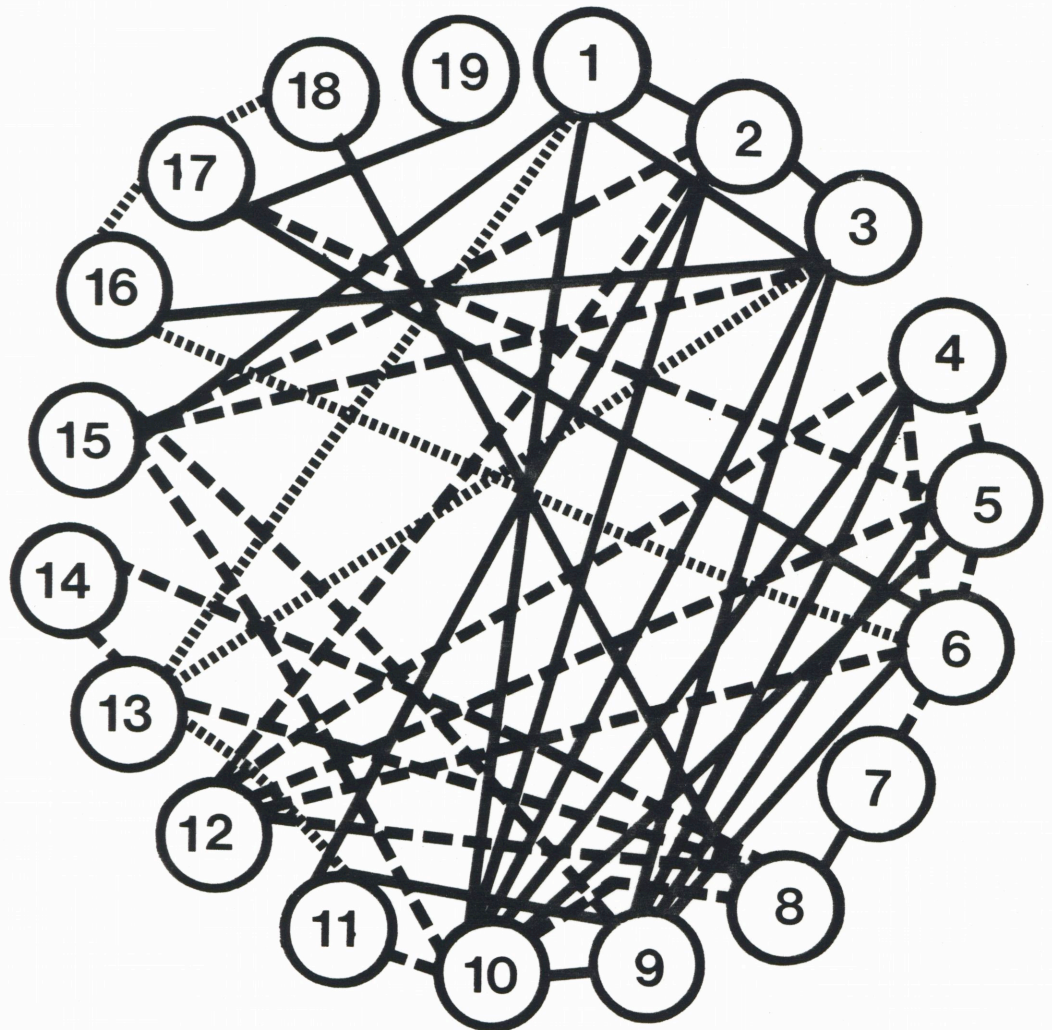
Directory of Spaces

- ① Lobby
- ② Administration office
- ③ Entry
- ④ Small activity room
- ⑤ Medium activity room
- ⑥ Large activity room
- ⑦ Dining area
- ⑧ Kitchen
- ⑨ Children's restrooms
- ⑩ Adult restrooms
- ⑪ Health isolation room
- ⑫ Storage
- ⑬ Mechanical room
- ⑭ Laundry
- ⑮ Coat Storage
- ⑯ Parking
- ⑰ Playground
- ⑱ Trash area
- ⑲ Exterior storage

A DAY CARE FACILITY

Overall adjacency of spaces

Step 1



Essential —

Desirable - - - - -

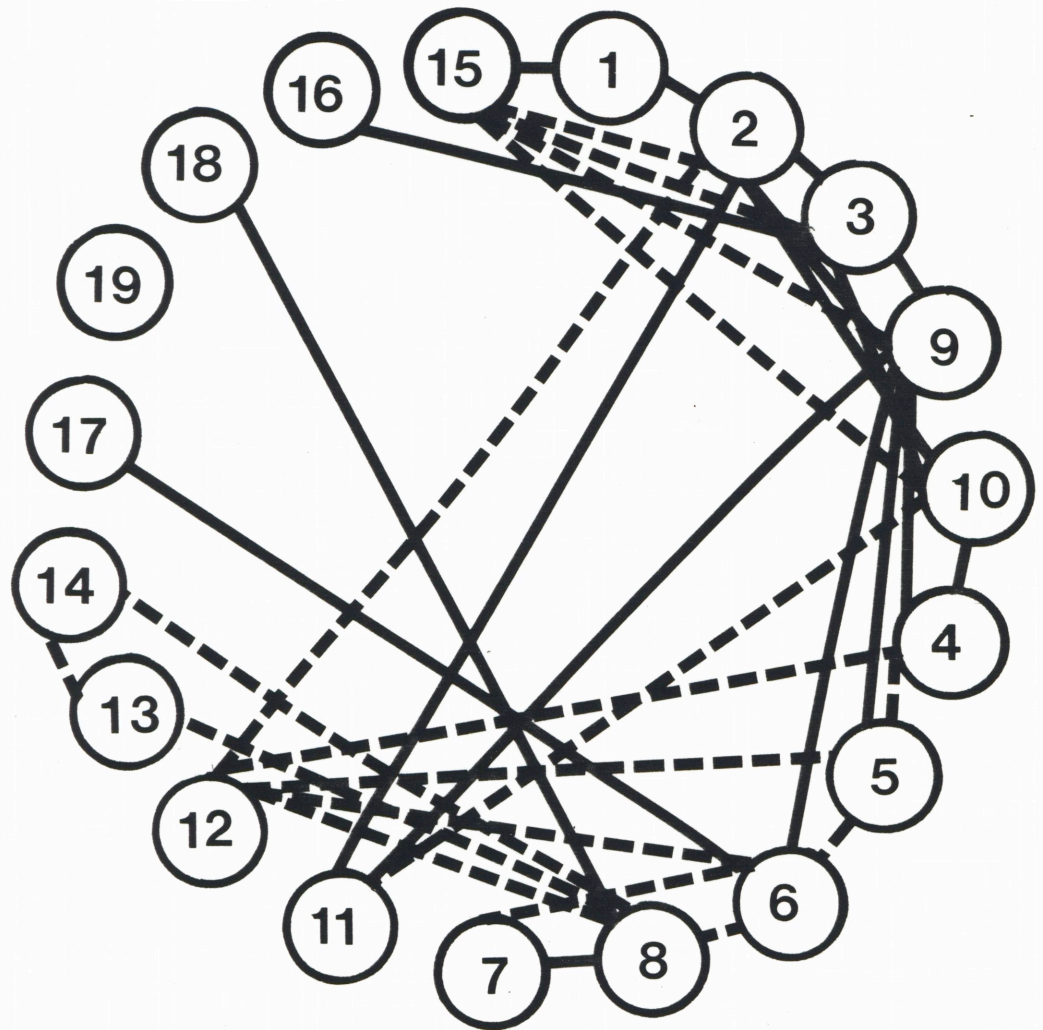
Non-Desirable

Spaces are arranged around the circle with no emphasis on actual size or proportion.

A DAY CARE FACILITY

Clustered adjacency of spaces

Step 2



Essential —

Desirable - - - -

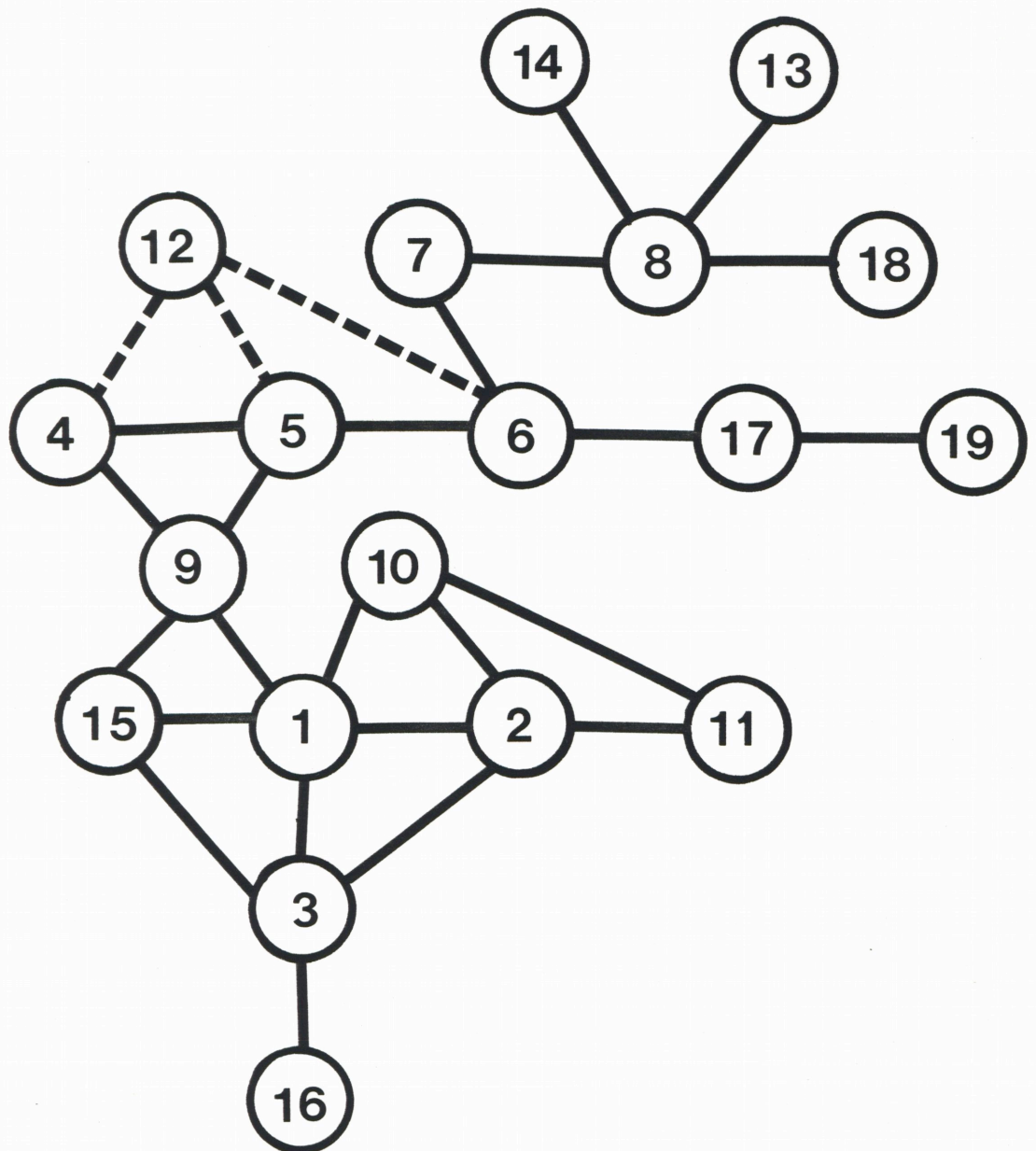
Spaces are still the same size, but have been rearranged so adjacencies are closer or further apart, accordingly. Shown only are essential or desirable adjacencies. Other adjacencies may be inferred as non-desirable or unnecessary.

Spaces are still the same size, but now are placed physically closer, with further prioritizing underway.

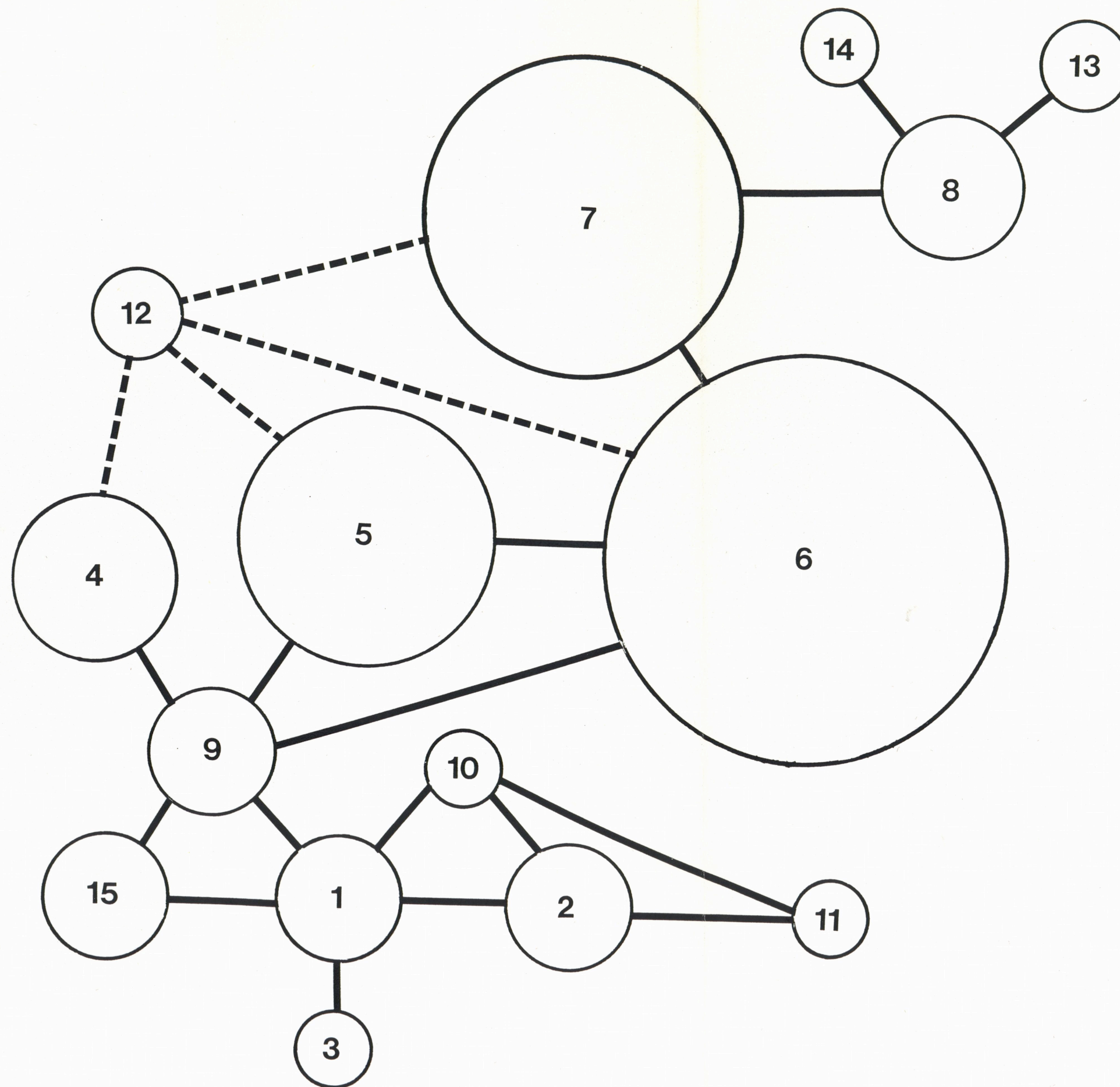
A DAY CARE FACILITY

Organization of Free Form Diagram

Step 4

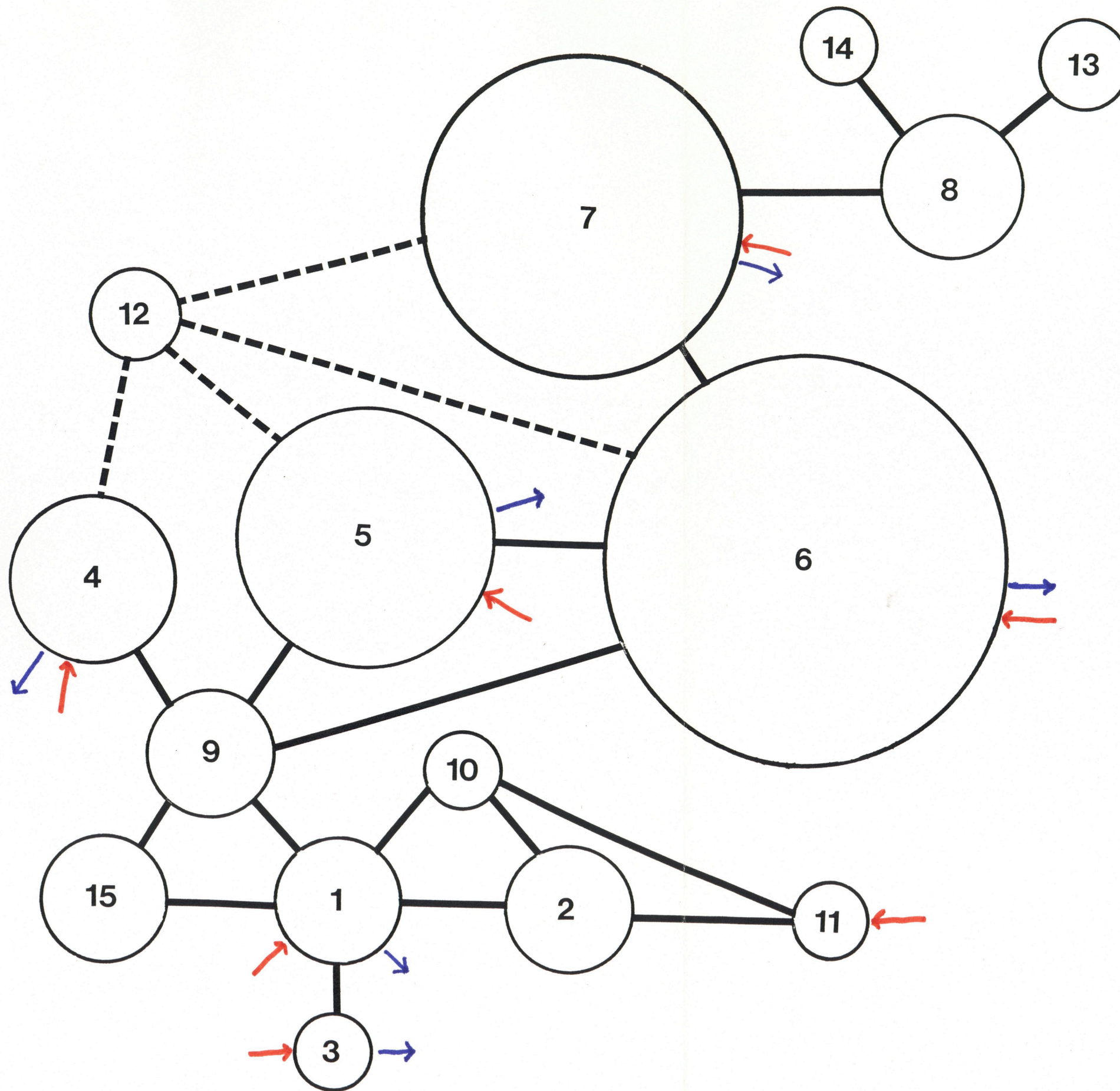


Spaces are still the same size, but are better organized with priorities set.



A DAY CARE FACILITY
Organized Free Form
Diagram with spatial
Relationships in
Proportional sizes
Step 5

*Exterior spaces are
excluded.*



A DAY CARE FACILITY

Organized Free Form
Diagram with spatial
Relationships in
Proportional sizes
Daylighting & View
Requirements
Step 6

Require Natural Light ———
Require Exterior View ———

Exterior spaces are
excluded.

LICENSING

Licensing of Day Care Facilities

Every day care facility which accepts and cares for more than thirteen (13) children on a regular basis is required to be licensed in the State of Montana. Licensing is accomplished through the Department of Social and Rehabilitative Services in each county office throughout the state. Licensing is an annual process, at which time the county SRS agent will visit the day care center and review the compliance of the center's policies and activities with those of the state.

Minimum spatial requirements are set by the Department of Social Rehabilitative Services. The minimum interior space is 35 square feet per child. The minimum exterior space required is 75 square feet per child. Other requirements such as materials and equipment used by care givers is less regulated, but appropriateness is ensured through the annual visitation of a SRS agent.

Staffing requirements are based on child/care giver ratios. Eight (8) children to one (1) attendant is maximum for children ages two (2) through four (4). Children ages four (4) through six (6) are in ratio of ten (10) children to one (1) care giver. Qualifications of staff are also dictated by the State regulations.

Additional information on the State Licensing requirements for Day Care Centers is in Appendix A of this document.

Architectural implications of day care design and function are regulated more strictly by the Department of Health and Environmental Sciences. Such issues as laundry, housekeeping, food preparation, nutrition, health supervision, sanitary systems, etc., are recorded in Appendix B of this document.

CODE REQUIREMENTS

Code Requirements

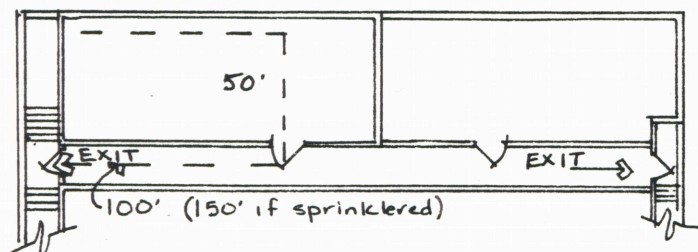
The proposed day care facility for Montana State University shall be designed and constructed in accordance with standards set forth in the 1982 United Building Code (UBC) and the 1981 National Fire Protection Association (NFPA) manuals. The descriptions are followed by the respective manual source in parenthesis. The basic code requirements are described herein; detailed descriptions are available in the code manuals.

Under UBC specifications, a day care facility for more than six children is a Group E, Division 3 occupancy. The UBC and NFPA depart on the allowable height of construction. The UBC does not allow more than one story above grade for Group E construction, whereas the NFPA would allow such a variance.

A minimum one hour fire resistivity is required of exterior walls, interior partitions, floors, and exit and stair towers. (UBC)

The occupant load factor is one person in 35 square feet where the allowable floor area is 20,200 square feet. A minimum of two exits are required. Those exits must be at least 36 inches wide and the distance to them must be at less than 100 feet from any point in the building, unless a sprinkling system is used. (NFPA)

The door assemblies in exit corridors shall have a fire protection rating of at least 20 minutes and shall be equipped with a self-closing device, a latch, and an automatic hold open device activated by a smoke detector. (NFPA) Doors in means of egress shall swing in the direction of exit. (UBC)



Manual fire extinguishers are required, as are smoke detectors at a minimum of 30 feet in corridors and within lounges and recreation areas.

UBC chapters 5, 8, and 33. NFPA chapter 10.
tables 5 A,B,C, and D.

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APPENDICES

Appendix A

**State of Montana Licensing Requirements for Day Care
Facilities**

STATE OF MONTANA
DEPARTMENT OF SOCIAL & REHABILITATION SERVICES
COMMUNITY SERVICES DIVISION

LICENSING REQUIREMENTS
FOR
CHILD DAY CARE CENTERS

January 1, 1986

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GENERAL REQUIREMENTS

46.5.902 DEFINITIONS (1) "Day care facility" means a person, association or place, incorporated or unincorporated, that provides supplemental parental care on a regular basis. It includes a family day care home, a day care center, or a group day care home. It does not include a person who limits care to children who are related to him by blood or marriage or under his legal guardianship, or any group facility established chiefly for educational purposes.

Section (2) not applicable to day care centers.

(3) "Day care center" means a place in which supplemental parental care is provided to 13 or more children on a regular basis including the provider's own children who are less than 6 years of age.

Section (4) not applicable to day care centers.

(5) "Supplemental parental care" means the provision of child care outside of the child's home by an adult other than a parent, guardian, person in loco parentis, or relative on a regular basis for daily periods of less than 24 hours.

(6) "Regular basis" means providing supplemental parental care to children of separate families for 3 or more consecutive weeks.

Sections (7) through (9) not applicable to day care centers.

(10) "License" means a written document issued by the department to show that the license holder has complied with the applicable licensing rules for day care centers.

Section (11) not applicable to day care centers.

(12) "Licensee" means the holder of a license issued by the department in accordance with the provisions of this part.

(13) "Department" means the department of social and rehabilitation services.

Sections (14) through (16) not applicable to day care centers.

(17) "Night care" means care provided for a child between the hours of 7 p.m. and 7 a.m. in which the parent(s) desires a child to sleep.

(18) "Infant" means a child under the age of 24 months of age.

(19) "Preschooler" means a child between 24 months of age and the age the child will be when he or she initially enters the first grade of a public or private school system.

(20) "School-age child" means a child who attends school and who is between 5 and 12 years of age.

(21) "Caregiver" means a licensee, registrant, employee, aid or volunteer who is responsible for the direct care and supervision of children in a day care facility.

46.5.908 DAY CARE FACILITIES, REGISTRATION OR LICENSING APPLICATION (1) Any individual may apply for a registration certificate to operate a family day care home or group day care home. Any individual, agency or group may apply for

a license to operate a day care center. However, an applicant who has had a previous day care application denied or who has had a day care license or registration certificate revoked may not reapply for licensure or registration within six months of the denial or revocation. Applications may be obtained from any district office of the department.

(2) Refer to 53-4-507, MCA for applications for a license or registration certificate by Indians residing on Indian reservations.

(3) Before a license may be granted, the following shall be submitted by the applicant at the time of application and annually thereafter:

(a) a certificate of approval from the state fire marshal or his official designee indicating the fire safety rules have been met;

(b) a certificate from public health authorities certifying the satisfactory completion of training or a certificate of approval following inspection by local health authorities;

(c) proof of current fire and liability insurance coverage for the day care center;

(d) a schedule of daily activities;

(e) a sample weekly menu;

(f) a CSD 33 personal statement of health for licensure form for each caregiver, aide or volunteer who has direct contact with the children in care;

(g) list of current staff with ages, addresses and telephone numbers;

(h) names, addresses, and telephone numbers of three personal references not related to the applicant who have knowledge of the applicant's character, experience and ability; and

(i) Such other information which may be requested by the department to determine compliance with the licensing requirements.

~~(4) Before a registration certificate may be granted, the following shall be submitted by the applicant at the time of application and annually thereafter:~~

~~(a) A CSD 33 personal statement of health form for each caregiver;~~

~~(b) Names, addresses and telephone numbers of three personal references not related to the applicant(s) who have knowledge of the applicant's character, experience and ability;~~

~~(c) Proof of current fire and liability insurance coverage for the provision of day care in the home;~~

~~(d) Such other information which may be requested by the department to determine compliance with registration requirements.~~

(5) Applications for renewal shall be made by the provider at least thirty (30) days prior to expiration of the license or registration certificate.

(6) Any individual, group or other agency may request that the department determine whether a facility should be

licensed or registered according to law. Referral may be either in writing or by telephone.

46.5.909 DAY CARE FACILITIES, REGISTRATION AND LICENSING PROCEDURES

(1) A family day care home or group day care home must be registered. A day care center must be licensed.

(2) No registrant or licensee shall discriminate in child admissions or employment of staff on the basis of race, sex, religion, creed, color or national origin.

(3) Within thirty (30) days of receipt of the signed and completed application forms, the department will evaluate the application for registration or licensure based upon the requirements found in these rules.

(a) A prospective family day care home or group day care home that meets these requirements as evidenced by the application shall be issued a registration certificate. The registration certificate may be either provisional or regular.

(b) A prospective day care center will be visited and the program and facility inspected by a licensing worker within 30 days of receipt of the completed application. If the applicant meets the requirements for licensure the department will issue a license to the applicant. The license may be either provisional or regular.

(4) A provisional registration certificate or license may be issued for a period of up to three months when the day care facility does not meet all of the requirements if the facility is attempting to comply. A second three month provisional certificate or license may be issued in special circumstances, at the discretion of the social worker supervisor III, the total not to exceed six months.

(a) A plan for full compliance with requirements for registration or licensure must be submitted by the day care facility to the department before issuance of a provisional certificate or license.

(b) Written notification of the granting of a provisional certificate or license by the department must be made to the licensee, registrant or applicant specifying the reason, duration and conditions for continuing or terminating the provisional certificate or license.

(c) The department may not issue a provisional license to any day care center which has not been approved by the state fire marshal and the department of health and environmental sciences.

(d) The department may not issue a provisional certificate or license to any day care facility which does not have current public liability insurance and fire insurance.

(5) Regular registration certificates and licenses are issued from an SRS district office for periods not to exceed one year.

(6) The department, after written notice to the applicant, licensee or registrant, may deny, suspend, restrict, revoke or reduce to a provisional status a registration certificate or license upon finding that:

(a) The applicant has not met the requirements for licensure or registration set forth in these rules, and

(b) the licensee or registrant has received 3 warnings of non-compliance with the registration or licensing requirements. However, should any one non-compliance place a child in danger of harm, suspension or revocation will be immediate; or

(c) the provider has made any misrepresentations to the department, either negligent or intentional, regarding any information requested on the application form or necessary for registration or licensing purposes; or

(d) the provider, a member of the provider's household or staff has been named as the perpetrator in a substantiated report of child abuse or neglect as defined in APM 46.5.116.

(7) The provider shall maintain all policies, records, and reports that are required by the department. These policies, records and reports must be reviewed and updated annually.

(8) The registration certificate or license is not transferable to another operator or site.

(9) The department must be notified of any changes that would affect the terms of the registration or licensure.

(10) Separate registration certificates and licenses shall be required for programs maintained on separate premises even when operated under the same auspices.

46.5.911A DAY CARE FACILITIES, JOINT PROGRAMS (1) Any day care facility which operates a day care program in connection with another program on the same premises must have separate staff and separate space for each program. However, staff and space may be shared for janitorial, maintenance, cooking, or other support services.

(2) Children attending the facility for day care shall not come in contact with other persons who are receiving care in the facility unless the provider can prove to the department's satisfaction that those persons will not pose any threat to the health, safety and well-being of the children in day care.

46.5.913 DAY CARE CENTERS, LICENSING SERVICES PROVIDED

(1) The department will provide the following:

(a) assistance to the applicant to meet licensing requirements;

(b) counseling services concerning child problems;

(c) consultation to the day care center in providing enrichment experiences for the children, proper environment and nutrition; and

(d) technical assistance to day care centers for staff training;

(2) The department or its authorized representative shall make periodic visits to all licensed day care centers to ensure continued compliance with licensing requirements.

(3) The department may investigate and inspect the conditions and qualifications of any day care center and/or any person seeking or holding a license.

SPECIFIC REQUIREMENTS

46.5.914 DAY CARE CENTERS, PROGRAM REQUIREMENTS (1) The program conducted in a day care center shall be written and shall provide experiences which are responsive to the individual child's pattern of chronological, physical, emotional, social and intellectual growth and well-being. Both active and passive learning experiences shall be conducted in consultation with parents.

(a) This requirement shall be deemed to have been satisfied if the licensing representative has been able to observe the daily program in operation and approves the program based upon the criteria below:

(i) the center maintains an on-going process of parent-staff cooperation in development and modification of program goals;

(ii) the center provides a diversity of experiences during the day for each child with opportunity for quiet and active experiences, group and individual activities, the exercise of choice and experience with different types of equipment and materials;

(iii) the center provides opportunities during the day when the child can take responsibility, such as getting ready for snacks or meals, getting out or putting away materials, taking care of his own clothing;

(iv) the center provides experiences for children to learn about the world in which they live including opportunities for field trips to places of interest in the community and/or presentations by family and other community people to further expand the exposure and experiences of the children. Caregivers are required to secure a release from parents before children are taken on field trips;

(v) the center provides learning experiences for the children regarding the value of food in relation to growth and development;

(vi) the center provides opportunities for children to develop language skills and to improve readiness for reading and writing by regularly exposing the children to books, drama, poetry, music and other forms of expression.

46.5.914A DAY CARE CENTERS, RECORDS (1) The center shall keep a daily attendance record of the children for whom care is provided.

(2) The center shall have a master list of the name, address and phone number of all children in care and their parents.

(3) All records of the center shall be made available to the department upon request.

46.5.915 DAY CARE CENTERS, DISCIPLINE (1) Caregivers shall use appropriate forms of discipline but must not use spanking or other forms of corporal punishment or any other

technique which is humiliating, shaming, frightening, or otherwise damaging to children.

(2) The provider shall require each caregiver to participate in an in-service training session regarding discipline and guidance techniques appropriate for children.

46.5.916 DAY CARE CENTERS, SCHEDULING (1) A daily schedule must be established for children in care which will provide regularity in program activities and physical care with sufficient flexibility to respond to individual differences in children's needs and interests. The schedule shall provide a balance of quiet and active, small and large group and individual activities.

(2) This requirement shall be deemed to have been satisfied if the licensing representative has been able to observe the program in operation and approves the program based on the criteria below:

(a) each caregiver in charge of a group of children follows a written schedule of daily activities which includes time for meals, snacks, sleep, toileting, and indoor and outdoor play;

(b) the schedule is followed without rigidity in order to respond to individual needs of children. Children not participating in group activities have adult supervision; and

(c) a nap period is provided for children who need it. Time, space and appropriate activities for rest and quiet play are provided for children who are unable to sleep.

46.5.917 DAY CARE CENTERS, SPACE (1) A day care center must have sufficient indoor and outdoor space for the number and ages of children in care.

(2) This requirement shall be deemed to have been satisfied if:

(a) the facility has a minimum of 35 square feet per child of indoor space, exclusive of floor area devoted to fixed equipment or support functions such as kitchens, offices, etc. as well as 75 square feet per child of outdoor play space; and

(b) the equipment and furniture arrangement permits unobstructed floor area sufficient to allow vigorous play appropriate for each group of children in care, as well as arrangements of sleeping equipment which permit easy access to every child and unobstructed exits.

(3) The center can obtain a variance from the above for the following reasons:

(a) limited outdoor space is offset by a greater amount of indoor space, such as a gym, permitting an equivalent activity program;

(b) limited indoor space is offset by sheltered outdoor space where climate permits reliance on outdoor space for activities normally conducted indoors; or

(c) scheduling for the use of an adjacent school playground, nearby parks, cleared vacant safe lots, and/or a street blocked off by local authorities.

46.5.918 DAY CARE CENTERS, SUPPORT SERVICES SPACE AND EQUIPMENT

(1) A day care center must have sufficient space and appropriate furniture and equipment to provide for support functions and to provide for the reasonable comfort and convenience of staff and parents.

(a) This requirement shall be deemed to have been satisfied if:

(i) The center has appropriate storage and work areas adjacent to the area of use, to accommodate the following functions if these are conducted on the premises:

(A) administrative office functions, record storage, meeting arrangements for staff or for parent conference offering privacy of conversation;

(B) food preparation and serving;

(C) custodial services;

(D) laundry;

(E) rest area for staff relief periods; and

(F) storage of program materials and manipulative toys to be used and rotated at different times during the year.

46.5.918A DAY CARE CENTERS, TRANSPORTATION (1) The provider shall obtain written consent from the parent(s) for any transportation provided.

(2) The operator of the vehicle shall be at least 18 years of age and possess a valid driver's license.

(3) All passenger doors on vehicles must be locked whenever the vehicle is in motion.

(4) With the exception of public transportation or rented or leased buses which are not required by law to be equipped with safety restraints, no vehicle shall begin moving until all children are seated and secured in age appropriate safety restraints, which must remain fastened at all times the vehicle is in motion.

(5) Children shall never be left unattended in a vehicle.

(6) The back of pickup trucks must not be used to transport children.

46.5.919 DAY CARE CENTERS, MATERIALS AND EQUIPMENT

(1) The amount and variety of materials and equipment available, and their arrangement and use, must be appropriate to the developmental needs of the children in care.

(a) This requirement shall be deemed to have been satisfied if the licensing representative has been able to observe the program in operation and approves the selection, arrangement and use of materials and equipment, based on the criteria below:

(i) Centers shall maintain a housekeeping area, table activities (manipulative toys) area, block building area, library or other quiet area, and a creative arts area. Arrangement of these areas shall be such that quiet and active zones are separated and not conflicting;

(ii) the quantity and quality of materials and equipment shall be sufficient to permit multiple use of the same item by

several children so excessive competition and long waits are avoided;

(iii) materials and equipment shall be of sufficient quantity and quality to provide for a variety of experiences and appeal to the individual interests of the children in care;

(iv) furniture shall be durable, safe, and clean and be child size or appropriately adapted for children's use;

(v) storage shelves shall be provided to children at their level.

(2) Toys, play equipment, and any other equipment used by the children must be of substantial construction and free from rough edges, sharp corners, splinters, unguarded ladders on slides, and must be kept in good repair and well maintained.

(3) Toys and objects with a diameter of less than 1 inch (2.5 centimeters), objects with removable parts that have a diameter of less than 1 inch (2.5 centimeters), plastic bags, and styrofoam objects must not be accessible to children under 3 years of age and those children who are still placing objects in their mouths.

(4) Outdoor equipment, such as climbing apparatus, slides, and swings, must be anchored firmly, and placed in a safe location according to manufacturer's instructions.

(5) Play equipment and materials must include items from each of the following six categories: dramatic role playing, cognitive development, visual development, auditory development, tactile development and large-muscle development.

(6) High chairs, when used, must have a wide base and a safety strap.

(7) Each child, except school-age children who do not take naps, shall have clean, age-appropriate rest equipment, such as a crib, cot, bed or mat. Seasonably appropriate covering, such as sheets or blankets, must be provided.

(8) Each facility must have a telephone.

(9) Telephone numbers of the parents, the hospital, police department, fire department, ambulance, and poison control center must be posted by each telephone.

46.5.920 DAY CARE CENTERS, AFTER SCHOOL CARE (1) A day care center serving school-age children shall supplement and augment the child's activities at school and at home.

(2) This requirement shall be deemed to have been satisfied if the licensing representative has observed the program in operation and approved the program based on the criteria below:

(a) adult supervision is provided for individual and group pursuit in crafts, sewing, cooking, art, music, or other activities.

(b) provision is made for children to participate in activities outside the center with appropriate adult supervision.

(c) children have the opportunity appropriate to the child's age to participate in making rules and have opportuni-

ties to express objections to them;

(d) parents have participated in planning and approving the after-school activities and have participated in approving rules and agree on the handling of infractions of the rules.

46.5.921 DAY CARE CENTERS, NIGHT CARE (1) A day care center offering night care must develop plans for program, staff, equipment and space which will provide appropriately for the personal safety and emotional and physical care of children away from their families at night.

(2) This requirement shall be deemed to have been met if:

(a) special attention is given by the caregiver and the parents to provide for a transition into this type of care appropriate to the child's emotional needs;

(b) a selection of toys for quiet activities which can be used with minimal adult supervision is provided for children prior to bedtime;

(c) bathing facilities, comfortable beds or cots, and complete bedding, are provided;

(d) staff are available to assist children during eating and pre-bedtime hours and during the morning period when dressing;

(e) during sleeping hours, staff are awake and in the immediate vicinity of sleeping children in order to provide for the needs of children and respond to any emergency;

(f) a nutritious meal is served to children and a bedtime snack is offered.

46.5.922 DAY CARE CENTERS, STAFFING REQUIREMENTS

(1) Child/staff ratio.

(a) 4:1 for infants 0 to 24 months;

(b) 8:1 for children 2 to 4 years;

(c) 10:1 for children 4 to 6 years;

(d) 14:1 for children over 6 years

(e) only the provider, primary caregiver(s) and aides may be counted as staff in determining the staff ratio.

(2) Qualifications of staff.

(a) The director shall have an associate degree in a related field plus one year experience in child care or child development associate certification (CDA) or three years experience in child care. If the director also acts as a caregiver, he must meet the qualifications of a primary caregiver.

(b) A primary caregiver must be at least 18 years of age and shall meet all of the qualifications of an aide plus the following:

(i) two years experience as a licensed or registered group or family day care home provider or day care center staff person or a bachelor of arts in education or a related field.

(ii) trained in cardio-pulmonary resuscitation or multi-media first aid.

(3) An aide is directly supervised by a primary care giver and shall be at least 16 years of age and meet the following qualifications:

- (a) sufficient language skills;
- (b) good mental and physical health;
- (c) one day of on-the-job orientation;

(d) eight hours of training, within the first year, in at least two separate sessions provided either by the department or center or other trainer in the following areas:

(i) 4 hours - to include emotional, cognitive, physical and social development of children and creative activities for children;

(ii) 1 hour - appropriate discipline;

(iii) 1 hour - first aid;

(iv) 1.5 hours - nutrition and sanitation;

(v) .5 hours - fire safety.

(4) The provider must assure that members of the staff are physically, mentally and emotionally competent to care for children and free from communicable disease.

(a) The provider shall maintain written records regarding each employee which includes:

(i) a record of training and experience,

(ii) three references from persons unrelated to the employee attesting to the employee's character and suitability for the job.

(b) Each employee must meet the requirements set forth in ARM 46.5.924 (3) and (4) (a) through (d). The provider is responsible for assuring that the employees have met these requirements before being hired.

(5) No staff member, aide, volunteer or other person having direct contact with the children in the center shall conduct themselves in a manner which poses any potential threat to the health, safety and well-being of the children in care.

(6) The licensee shall submit a report to the appropriate district office of the department within 24 hours after the occurrence of an accident causing injury to a child which resulted in the child being hospitalized or any fire in the facility when the services of the fire department were required.

(7) The provider and all staff members of the day care center shall report immediately any child suspected of being abused or neglected to the county welfare department or the child abuse hotline, 1-800-332-6100.

(8) The provider shall keep personal information about the child and his family confidential.

46.5.923 DAY CARE CENTERS, PARENT INFORMATION (1) The following written information shall be available to all parents: a typical daily schedule of activities, admission requirements, enrollment procedures, hours of operation, meals and snacks served, fees and payment plan, regulations concerning sick children, transportation and trip arrangements,

discipline policies and department day care licensing requirements.

46.5.923A DAY CARE CENTERS, SAFETY REQUIREMENTS

(1) Cleaning materials, flammable liquids, detergents, aerosol cans, and other poisonous and toxic materials must be kept in their original containers and in a place inaccessible to children. They must be used in a way that will not contaminate play surfaces, food, food preparation areas, or constitute a hazard to the children.

(2) All medication must be kept in a place inaccessible to children, in their original containers, and labeled with the original prescription label.

(3) No extension cord shall be used as permanent wiring and all appliance and lamp cords must be suitably protected to prevent pulling or chewing by children.

46.5.924 GROUP DAY CARE HOMES, PROVIDER RESPONSIBILITIES AND QUALIFICATIONS

Sections (1) through (2) not applicable to day care centers.

(3) The providers shall have experience in the care and supervision of children.

(4) The providers and all persons responsible for children in the group day care home shall be physically, mentally and emotionally competent to care for children and free from communicable disease. No provider, caregiver or other person present in the home while the children are in care shall:

(a) have been convicted of a crime involving harm to children or physical or sexual violence. Any provider, caregiver or other person charged with a crime involving children or physical or sexual violence and awaiting trial may not provide care or be present in the home pending the outcome of the trial;

(b) be currently diagnosed or receiving therapy or medication for a serious mental illness which might create a risk to children in care. Serious mental illness which might create a risk to children in care shall be determined by a licensed psychologist or psychiatrist. The department may request a provider, caregiver or other person to obtain a psychological or psychiatric evaluation at his or her own expense if there is reasonable cause to believe a serious mental illness exists;

(c) be chemically dependent upon drugs or alcohol. Chemical dependence on drugs or alcohol shall be determined by a licensed physician or certified chemical dependency counselor. The department may request the provider, caregiver or other person to obtain an evaluation at his or her own expense if there is reasonable cause to believe chemical dependence exists; and

(d) have been named as a perpetrator in a substantiated report of child abuse or neglect.

Sections (5) through (10) not applicable to day care centers.

Appendix B

**Rule for Day Care Centers
Montana Department of Health & Enviromental Sciences**

MONTANA DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES
ENVIRONMENTAL SCIENCES DIVISION
FOOD & CONSUMER SAFETY BUREAU
HELENA, MONTANA 59620

RULE FOR
DAY CARE CENTERS

ADMINISTRATIVE RULES OF MONTANA
TITLE 16, CHAPTER 24, SUBCHAPTER 4

EFFECTIVE 5/28/82

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Sub-Chapter 4
Daycare Centers

16.24.406 DEFINITIONS (1) "Department" means the Montana state department of health and environmental sciences.

(2) "Local health authority" means a local health officer, local department of health, or local board of health.

(3) "Public sewage system" means a system for collection, transportation, treatment or disposal of sewage that is designed to serve or serves 10 or more families or 25 or more persons for a period of at least 60 days out of the calendar year.

(4) "Public water supply system" means a system for the delivery to the public of piped water for human consumption, if such a system serves at least 10 families or regularly serves at least 25 persons daily at least 60 days out of the calendar year. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1116, Eff. 5/28/82.)

16.24.407 SOLID WASTE In order to ensure that solid waste is safely stored and disposed of, a day care center must:

(1) store all solid waste between collections in containers which have lids and are corrosion resistant, fly-tight, watertight, and rodent-proof;

(2) clean all solid waste containers frequently;

(3) utilize exterior collection stands for the containers referred to in (1) above which prevent the containers from being tipped, protect them from deterioration,

and allow easy cleaning below and around them.

(4) transport or utilize a private or municipal hauler to transport the solid waste at least weekly to a landfill site approved by the department in a covered vehicle or covered containers. (History: Sec. 53-4-406 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1116, Eff. 5/28/82.)

16.24.408 LAUNDRY In order to ensure that soiled laundry does not endanger the health of children, a day care center must:

(1) refrain from storing soiled laundry in a dining, food preparation, or food storage room, and ensure that such soiled laundry is not accessible to children.

(2) provide sufficient space for sorting and storing clean and soiled laundry so that clean and soiled laundry do not contact the same surface or each other.

(3) machine wash all laundry at a minimum temperature of 54° C. and a minimum time of 8 minutes, and dry all laundry in a hot air tumble dryer.

(4) in regard to bedding:

(a) launder bedding whenever it is soiled and air it out periodically to prevent mildew; and

(b) assure that bedding assigned to one child is not used by another until it is laundered. (History: Sec. 53-4-506, MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1116, Eff. 5/28/82.)

16.24.409 GENERAL HOUSEKEEPING As general housekeeping measures, a day care center must ensure that:

(1) its building and grounds are free, to the extent possible, of harborage for insects, rodents, and other vermin.

(2) its floors, walls, ceilings, furnishings, and other equipment are easily cleanable and are kept clean.

(3) soap and disposable towels or other hand-drying devices are always available at all handwashing sinks. Common-use cloth towels are prohibited.

(4) toilet tissue is provided next to all toilets.

(5) the temperature is maintained at a minimum of 65° F. in the areas used for day care. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1116, Eff. 5/28/82.)

16.24.410 SPECIAL REQUIREMENTS WHEN CARING FOR CHILD UNDER TWO If a day care center cares for children under two years of age, it must:

(1) ensure that cribs, playpens, and toys are made of washable, nontoxic materials and are kept clean.

(2) either provide separate cribs for each such child, or launder bedding in accordance with ARM 16.24.408(4) above.

(3) handle diapers in the following manner:

(a) provide an adequate and cleanable area for diaper changing separate from food preparation and play areas.

(b) store soiled diapers in easily cleanable or lined receptacles with tight-fitting lids, and empty and clean them at least daily.

(4) request parents to provide a supply of clean clothes adequate to allow at least one change per day and adequate diapers for a day's use.

(5) use only disposable diapers unless parents present medical documentation that non-disposable diapers should be used, in which case they must be subjected, after each use, to a germicidal process approved by the department or local health authority, or returned to the parent for laundering at the end of each day.

(6) have facilities to bathe such children when necessary. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1117, Eff. 5/28/82.)

16.24.411 SWIMMING AREAS (1) The department hereby adopts and incorporates by reference Title 16, Chapter 10, sub-chapter 12 of the Administrative Rules of Montana, setting construction and operation standards for swimming pools. A copy of ARM Title 16, Chapter 10, sub-chapter 12 may be obtained from the Food and Consumer Safety Bureau, Department of Health and Environmental Sciences, Cogswell Building, 1400 Broadway, Helena, Montana, 59620, phone: 449-2408.

(2) In regard to swimming areas, a day care center must:

(a) allow children to use only a swimming pool which is constructed and operated in accordance with Title 16, Chapter 10, sub-chapter 12 of the Administrative Rules of Montana.

(b) in the event that a portable wading pool is used, drain and clean it at least daily, and refill it with fresh water when needed. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1117, Eff. 5/28/82.)

16.24.412 FOOD PREPARATION AND HANDLING (1) The department hereby adopts and incorporates by reference Title 16, Chapter 10, sub-chapter 2 of the Administrative Rules of Montana, with exceptions, which sets sanitation and food handling standards for food service establishments. A copy of ARM Title 16, Chapter 10, sub-chapter 2 may be obtained from the Food and Consumer Safety Bureau, Department of Health and Environmental Sciences, Cogswell Building, 1400 Broadway, Helena, Montana, 59620, phone: 449-2408.

(2) A day care center must comply with all requirements set for food service establishments in Title 16, Chapter 10, sub-chapter 2 of the Administrative Rules of Montana, with the following exceptions from the rules noted:

(3) ARM 16.10.215(17), (18), and (23) do not apply to a day care center. A domestic style dishwasher may be used if equipped with a heating element.

(4) ARM 16.10.220 and 16.10.221 do not apply to a day care center. Instead, a day care center must provide lavatories, water closets, and urinals in the ratio of the number of each to the number of individuals using them noted below, taking into account children, staff, and volunteers:

<u>Water Closets</u>		<u>Urinals</u>	<u>Lavatories</u>
Male	Female	If over 20 males, may substitute for 1/2 the number of toilets required. —	1:60
1:20	1:20		

May combine male and female unless fixture requirement exceeds two.

(5) ARM 16.10.232(2) through (6) do not apply to a day care center. The food preparation area may be used as a family kitchen.

(6) ARM 16.10.238 does not apply to a day care center, i.e., licensure as a food service establishment is not required.

(7) ARM 16.10.239 does not apply to a day care center, since each day care center is already subject to the inspection and training requirements of section 53-4-506, MCA. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1117, Eff. 5/28/82.)

16.24.413 IMMUNIZATION (1) No child may be enrolled or reside in a day care center unless one of the following has been satisfied:

(a) The child is completely immunized as required by subsection (2) below, or immunized appropriately for his age, if less than 15 months old, as required by subsection (3) below, and immunization is documented as required by subsection (4) below.

(b) The child has received at least one dose of vaccine for measles (with the exception noted in (2)(a) below), rubella (unless a girl 12 years of age or older), poliomyelitis, diphtheria, pertussis (unless 7 years of age or older), and tetanus, or the appropriate doses for his age if less than 15 months old; that level of immunization is documented as required by subsection (4) below; and the limits on conditional enrollment set out in subsection (5) below have not been violated.

(c) The parent or guardian provides the day care center with a signed statement claiming a religious exemption from the immunization requirements or a medical exemption signed by a licensed physician.

(2) A child receiving the following number of doses of vaccine for the diseases noted is completely immunized for the purposes of this rule:

(a) one dose of live, attenuated measles (rubeola) vaccine given after the first birthday, with the exception that a person certified by a physician as having had measles disease is not required to receive measles vaccine;

(b) one dose of live rubella vaccine given after the first birthday, with the exception that a female who has reached age 12 is exempted from the rubella vaccine requirements;

(c) 3 doses or more of vaccine for diphtheria, pertussis, and tetanus, plus an additional dose given after the fourth birthday; and

(d) 3 or more doses of live, oral, trivalent poliomyelitis vaccine, at least one dose of which must be given after the fourth birthday.

(3) A child under 15 months of age is immunized appropriately for his age if he has received a minimum of 2 doses of live, oral, trivalent poliomyelitis vaccine and 2 doses of vaccine for diphtheria, pertussis, and tetanus by the time he reaches 15 months of age, ensuring that 2 months elapse between doses, and that administration of the first dose is no earlier than 2 months of age.

(4) Documentation of immunization status for purposes of this rule consists of either a completed Montana Certificate of Immunization form (HES-101), a physician's signed statement, a local health authority's certified record, or a written parental record signed by a physician or physician's designee showing at least the name of each vaccine provided and the month and year the last dose was administered (or, in the case of measles, the month, day and year the vaccination was administered or the disease diagnosed).

(5) A child enrolled conditionally pursuant to subsection (1)(b) above must not be allowed to continue to attend the day care center unless he is completely immunized, or immunized appropriately for his age, and immunization is documented as required by this rule within 90 days after the date enrollment commences or the effective date of this rule, whichever is later.

(6) If a child in attendance at the day care center, a child of a staff member which resides at the day care center, or a staff member or volunteer contracts any of the diseases for which this rule requires immunization, all individuals infected and all children attending the day care center who are not completely immunized against the disease in question or who are exempted from immunization must be excluded from the center until:

(a) no further cases have occurred during a period of 3 weeks after the last case is diagnosed; or

(b) the child is completely immunized against that disease.

(7) The day care center must maintain a written record of immunization status of each enrolled child and each child

of a staff member which resides at the day care center, and must make those records available during normal working hours to representatives of the department or the local health authority. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1117, Eff. 5/28/82.)

16.24.414 HEALTH SUPERVISION AND MAINTENANCE (1) The department hereby adopts and incorporates by reference ARM 16.28.1005, which sets standards for tuberculin testing of those working in day care centers, and treatment and monitoring of positive cases among them. A copy of ARM 16.28.1005 may be obtained from the Health Services Division, Department of Health and Environmental Sciences, Cogswell Building, 1400 Broadway, Helena, Montana, 59620.

(2) A day care center must exclude from enrollment any child whose parent or guardian has not provided the center, within 30 days after admission, with a health record form documenting the results of a current health assessment performed by a physician licensed to practice medicine in Montana.

(3) The director of the day care center must designate a staff member to check daily the health status of each child immediately upon that child's entry into the center, and to exclude any child showing symptoms of illness. A child need not be excluded for a discharge from the nose which is not accompanied by fever.

(4) If a child develops symptoms of illness while at the day care center and after the parent or guardian has left, the day care center must do the following:

(a) Isolate the child immediately from other children in a room or area segregated for that purpose.

(b) Contact and inform the parent or guardian as soon as possible about the illness and request him or her to pick up the child.

(c) Report each case of suspected communicable disease the same day by telephone to the local health authority, or as soon as possible thereafter if no contact can be made the same day.

(5) The day care center may readmit a child excluded for illness whenever, in its discretion, the child either shows no symptoms of illness, or the parent or guardian provides the center with a signed certification of health from a licensed physician, except that the following restrictions must be followed:

(a) If a child is excluded for shigellosis, he may not be readmitted until he has no diarrhea or fever, his parent or guardian produces documentation that 2 stools, taken at least 24 hours apart, are negative for shigellosis, and the local health authority has given written approval to readmission.

(b) If a child is excluded for hepatitis, he may not be

readmitted sooner than 3 days after the appearance of jaundice, nor until he has received written approval from the local health authority to be readmitted.

(c) If a child is excluded for salmonella, he may not be readmitted until he has no diarrhea or fever, his parent or guardian produces documentation that 2 stools, taken at least 24 hours apart, are negative for salmonella, and the local health authority has given written approval to readmission.

(6) Good health habits, such as washing hands, must be taught during everyday activities.

(7) Each employee, volunteer, or resident at a day care center must:

(a) Have an examination for tuberculosis prior to or within 30 days after commencing work at the day care center, in conformity with ARM 16.28.1005.

(b) Be excluded from the day care center if he has a communicable disease, including a sore throat or cold.

(c) Wash his or her hands after every diapering and before feeding of any child.

(8) Smoking must be prohibited in areas used by children. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1118, Eff. 5/28/82.)

16.24.415 NUTRITION (1) The department hereby adopts and incorporates by reference 46 Federal Register 57980 (November 27, 1981), containing meal requirements for day care facilities participating in the child care food program of the U.S. Department of Agriculture, Food and Nutrition Service. A copy of 46 Federal Register 57980 (November 27, 1981) may be obtained from the Nutrition Coordinator, Health Services Division, Department of Health and Environmental Sciences, Cogswell Building, 1400 Broadway, Helena, MT, 59620.

(2) Each day care center must do the following, with the exception noted in subsection (4) below:

(a) Serve meals and snacks which meet the requirements for meals contained in 46 Federal Register 57980 (November 27, 1981) of the rules of the U.S. Department of Agriculture's Food and Nutrition Service.

(b) Serve meals and snacks on, at a minimum, the following schedule to children in attendance:

(i) snacks at mid-morning and mid-afternoon;

(ii) lunch;

(iii) breakfast or supper if a child is being cared for in the center at the normal time for those meals and has not otherwise received them.

(c) Ensure that each bottle-fed infant from newborn to 1 year of age is held during bottle feedings until he or she is able to hold the bottle, and that bottles are not propped.

(d) For each child with nutritional therapeutic needs, request and carefully follow special dietary instructions, in

writing, from either the child's parent or guardian, or a physician or registered dietitian, if the parent/guardian fails to or cannot provide such instructions. Food brought from home for special dietary purposes must be carefully labelled with the child's name.

(e) Plan menus at least 2 weeks in advance, date and post the menus where parents/guardians can see them, and serve meals and snacks in accordance with the posted menus, with the exception that a menu change may be made so long as it is posted before parents arrive to check in children on the date of service.

(f) Provide supervision to children while they eat and assist the children to eat, if necessary.

(g) Offer drinking water at regular intervals to infants and toddlers and ensure that drinking water is freely available to all children.

(h) Keep on file at the day care center written menu records and special dietary instructions for infants and children for 1 year following the date of the meal service.

(3) If a day care center does not participate in the department's child care food program, that center must do the following in addition to meeting the requirements contained in subsection (2) above:

(a) Obtain guidance materials from the department about child care food program meal requirements and adhere to the recommendations therein; and

(b) Within 1 year after it begins operation, or within 1 year after May 28, 1982, the effective date of this rule, whichever is later, and once annually thereafter, ensure that a registered dietitian evaluates the nutritional adequacy of its meals and their compliance with this rule, and that the dietitian makes a written report, to be retained on file at the day care center, containing the following information, with a copy to the department:

(i) findings and recommendations pertaining to the nutritional adequacy of food served to the children;

(ii) an assessment of management of meals, and any infant or therapeutic diets.

(iii) date of the evaluation;

(iv) evaluator's signature and dietitian registration number.

(4) If a parent sends food with a child for consumption at the day care center, the center need not provide meals or snacks for the child to the extent that food is provided by the parent for that meal or snack, but is required to do the following:

(a) Provide the child with a meal or snack meeting the requirements of subsection (2) above whenever the parent has not provided food for that meal or snack;

(b) Post a copy of the meal requirements referred to in

subsection (2)(a) above in an area where it will be readily seen by parents;

(c) At least annually, provide each parent who has ever sent food to the center for consumption by a child a copy of the meal requirements referred to in subsection (2)(a) above. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1119, Eff. 5/28/82.)

16.24.416 WATER SUPPLY SYSTEM (1) The department hereby adopts and incorporates by reference ARM 16.20.207, stating maximum microbiological contaminant levels for public water supplies, and the following department publications setting construction, operation, and maintenance standards for spring, wells, and cisterns, respectively:

(a) Circular #11, "Springs";

(b) Circular #12, "Sanitary Features of Water Wells";

(c) Circular #17, "Cisterns for Water Supplies".

Copies of ARM 16.20.207 and Circulars #11, #12, and #17 may be obtained from the Water Quality Bureau, Department of Health and Environmental Sciences, Cogswell Building, Helena, Montana 59620.

(2) In order to ensure an adequate and potable supply of water, a day care center must either:

(a) connect to a water supply system meeting the requirements of Title 16, Chapter 20, sub-chapters 2, 3, and 4 of the Administrative Rules of Montana; or

(b) if the day care center is not utilized by more than 25 persons daily at least 60 days out of the calendar year, including children, staff, and residents; and an adequate public water supply system is not accessible; utilize a non-public system whose construction and use meet those standards set in one of the following circulars published by the department:

(i) Circular #11 for springs

(ii) Circular #12 for water wells

(iii) Circular #17 for cisterns.

(3) If a non-public water supply system is used in accordance with subsection (2)(b) above, a day care center must:

(a) Submit a water sample at least quarterly to a laboratory licensed by the department to perform microbiological analysis of water supplies in order to determine that the water does not exceed the maximum microbiological contaminant levels stated in ARM 16.20.207, incorporated by reference in subsection (1) above.

(b) Prior to beginning operation, or before November 28, 1982, whichever is later, submit a water sample to a laboratory licensed by the department to perform chemical analysis of water supplies in order to determine that the maximum contaminant level for nitrates of 10 milligrams per liter is not exceeded.

(4) A day care center must replace or repair the water supply system serving it whenever the water supply:

(a) contains microbiological contaminants in excess of the maximum levels contained in ARM 16.20.207, as incorporated by reference in subsection (1) of this rule, or nitrates in excess of the maximum level stated in subsection (3)(b) of this rule; or

(b) does not have the capacity to provide adequate water for drinking, cooking, personal hygiene, laundry, and water-carried waste disposal. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1121, Eff. 5/28/82.)

16.24.417 SEWAGE SYSTEM (1) The department hereby adopts and incorporates by reference Bulletin 332, "Septic Tanks", published by the Montana State University Cooperative Extension Service, which contains standards for construction and operation of adequate individual sewage systems. A copy of Bulletin 332 may be obtained from the Water Quality Bureau, Department of Health and Environmental Sciences, Cogswell Building, Helena, Montana 59620.

(2) In order to ensure sewage is completely and safely disposed of, a day care center must:

(a) connect to a public sewage system meeting the requirements of Title 16, Chapter 20, sub-chapter 4, of the Administrative Rules of Montana; or

(b) if the day care center is not utilized by more than 25 persons daily at least 60 days out of the calendar year, including children, staff, and residents; and an adequate public sewage system is not available; utilize a non-public system whose construction and use meet the construction and operation standards contained in Bulletin 332, "Septic Tanks", published by the Montana State University Cooperative Extension Service, and incorporated by reference in subsection (1) of this rule, with the proviso that the necessary size of the system be determined utilizing the following:

(i) Sewage flow must be determined using a rate of 20 gallons per day per child and per staff member attending the day care center, plus 75 gallons per day per resident.

(ii) A septic tank must have a minimum of 1000 gallons liquid capacity and be sufficient in size to provide for a minimum of 24 hours of retention time;

(iii) The rate of sewage application for standard trenches must be calculated using the formula Q equals 5 divided by the square root of t , where Q equals the rate of sewage application in gallons per square foot per day and t equals the percolation rate in minutes per inch.

(3) A 4-foot vertical separation must exist between the bottom of the drainfield trench and both the highest groundwater level and the bedrock level.

(4) The maximum slope of an area used for subsurface sewage disposal must not exceed 15%.

(5) A sewage system design other than the type described in this rule may be utilized only if it is designed by an engineer registered in Montana and offers equivalent sanitary protection.

(6) A day care center must replace or repair its sewage system whenever:

(i) it fails to accept sewage effluent at the rate of application;

(ii) seepage of effluent from, or ponding of effluent on or around the system occurs;

(iii) contamination of a potable water supply or state waters is traced to effluent from the sewage system; or

(iv) a mechanical failure occurs, including electrical outage, or collapse or breakage of septic tank, lead lines, or drainfield lines. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1121, Eff. 5/28/82.)

16.24.418 TRAINING BY LOCAL HEALTH AUTHORITY Any training provided by a local health authority pursuant to section 53-4-506(2), Montana Code Annotated, must, at a minimum, include instruction concerning each provision of ARM 16.24.406 through 16.24.417 above. (History: Sec. 53-4-506 MCA; IMP, Sec. 53-4-506 MCA; NEW, 1982 MAR p. 1121, Eff. 5/28/82.)

NEXT PAGE IS 16-1171

DAY CARE CENTER CERTIFICATION

Establishment Name _____	Health Dept _____
Address _____	
Date of: Training _____	
Operator _____	Inspection _____

An X in the "INSP" column indicates satisfactory compliance determined on the basis of an inspection of the establishment. An X in the "TRNG" column indicates that the operator has successfully completed a training program relating to the subject area.

SUBJECT	ITEM	INSP	TRNG	SUBJECT	ITEM	INSP	TRNG
WATER	approved source			FOOD	inspection form attached/ satisfactory		
	sampling satisfactory						
	adequate capacity						
SEWER	approved method			IMMUNIZATION	records maintained		
	functioning properly				enrolled children		
SOLID WASTE	approved containers				staff children		
	containers cleaned				number inadequately		
	approved container stands				immunized for:		
	approved transportation/ disposal			DTP or DT			
LAUNDRY	soiled laundry properly stored			poliomyelitis			
	cross contamination minimized			measles			
	approved wash/dry			rubella			
GENERAL HOUSEKEEPING	bedding properly maintained			adequate steps to insure			
	bedding assigned to one child			immunization of above			
	vermin harborage minimized			HEALTH SUPERVISION and MAINTENANCE	current health records		
	floors walls ceilings cleanable/clean				staff member designated for		
approved soaps/hand drying devices			illness check				
toilet tissue provided			sick child segregated				
room temperature adequate			parents notified of illness				
SPECIAL REQMTS.	cribs/toys of approved material				communicable disease reported		
	cribs/toys clean				readmittance controlled		
	cribs assigned to one child				TB records current		
	diapers properly handled			smoking prohibited			
	bathing facilities provided			proper personal hygiene			
SWIMMING AREAS	approved pools used			employee w/communicable			
	wading pools maintained			disease excluded			
Authorization requested for _____ children				NUTRITION	records kept twelve months		
					menus posted 2 wks in advance		
					special dietary instructions		
					on file		
					food for special diets labeled		
				meal requirements posted			
				current SDHES-CCFP agreement			
				number: _____ OR			
				dietitian's report on file			
				registration no. _____			

Based on the results of a ☒ facility inspection and/or ☒ training program for day care center operators, the day care center identified above is ☒ approved ☐ not approved for licensure.

(REMARKS ON REVERSE SIDE)	Signature of Health Authority _____ Title _____
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MONTANA DAY CARE CENTER FIRE SAFETY INSPECTION

13 OR MORE CHILDREN

Name of Center: _____ No. of Occupants: _____

Address: _____ City: _____ County: _____

The following requirements are based on Montana Law and State Fire Marshal regulations adopted per sections 50-3-102, and 50-3-103, MCA.

A. LOCATION ON PROPERTY

1. Day Care Centers shall front directly upon or have access to a public street not less than 20 feet wide.

B. GENERAL AND SPECIAL PROVISIONS

1. Occupant load - 35 sq. ft. per child (state)
2. Day Care Center not allowed above first story.
3. Basements over 1,500 square feet to be sprinkled.
4. Minimum 2 exits from day care center.

C. SPECIAL HAZARDS

1. Flammable liquids stored in approved quantities to be kept in tight containers stored in approved cabinets.

D. FIRE ALARMS/FIRE EXTINGUISHERS

1. Fire alarm systems to be in centers with occupant load of 50 or more.
2. Single station smoke detector(s) installed with occupant load under 50.
3. Portable fire extinguishers shall be installed and maintained in accordance with UFC Standard 10-1 or NFPA 10.
4. Telephone or other means for emergency notifications.

[illegible]

Operator: _____

Inspector: _____

COMMENTS:

APPROVED: _____

DISAPPROVED: _____

Appendix C

Journal of visit to Pilgrim Preschool

Journal of visit to Pilgrim Preschool
2118 South Third Avenue
Bozeman, Montana

23 April 1987

I am in attendance as the guest of 5-year old Adam Bronken, a friend. Unbeknownst to me, today is a special day for the children.

The children's day begins at 9:00 am. The children arrive with their parents who must leave their vehicles to bring their child to the entrance. They are greeted by one of the three teachers in attendance.

As the children arrive, they head for a cloak room to leave coats and backpacks, then return to playrooms or hallway to begin their first session -- free play.

Releasing their energies early in the morning helps them to be more attentive throughout the morning.

At 9:00 the children are gathered together. One of the teachers went over the major activities of the day: making pussywillow pictures and planting barley in styrofoam cups, which the children were to decorate. The children are then divided into three groups - one group starts on their art and craft lesson, the pussy willow picture - group two went to the playroom for active and imaginative play - the third group began planting their cups with barley. As each group finished a project, they would move on to another activity. Within the first hour, everyone had rotated and completed each project.

The children then were responsible for cleaning up the play and craft areas. Following this was circle time. The children were gathered in the Church's fireside room. Today was a special day - there was to be a guest; two fireman from the Bozeman Fire Department. They talked on fire safety and then the children were given a tour of the fire truck and demonstrations of its equipment and features. Following circle time, there was bathroom break time, then snack time. Two children are selected each day as snack helpers. Today, since it was Adam's birthday, he was selected as a snack helper, along with Kim. We also had a special treat, brownies, versus a healthier snack of carrot sticks or fruit, etc. .

Following snack time, was storybook. Today was, of course, a fire engine story. Then the children were released to play outside. This day was particularly nice and the children played vigorously. There were

tricycles, a sand box, swings, climbing bars, and a fort to climb on (underneath which was storage for the outdoor play equipment). The children were taken out and brought in through the kitchen service door. Two children served as door holders.

Departure from the school was a matter of collecting ones belongings from the day, picture, plant, etc, and waiting for the parent to pick them up. The parent would then park and come to the door to greet their child and the teachers. That ended my preschool experience for 23 April 1987.

Judy, Cecelia, and Pat were gracious hosts for my eventful morning.











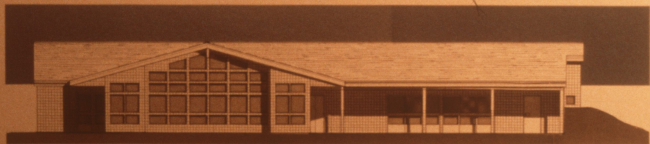




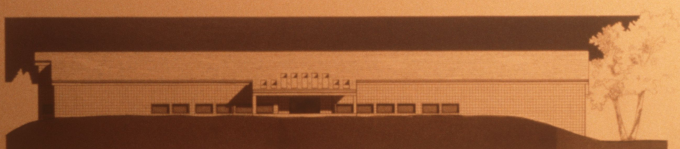




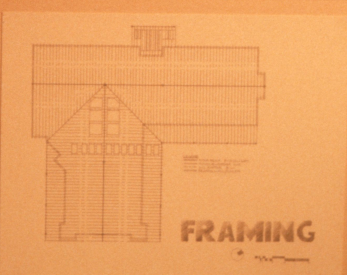
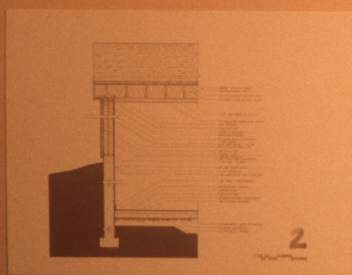
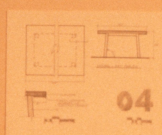
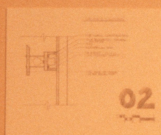
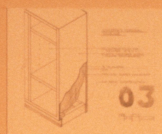
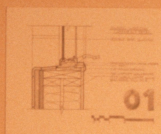
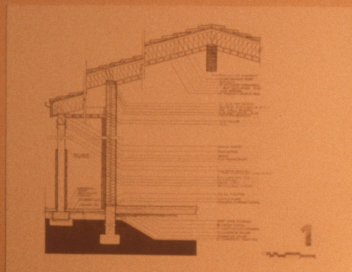
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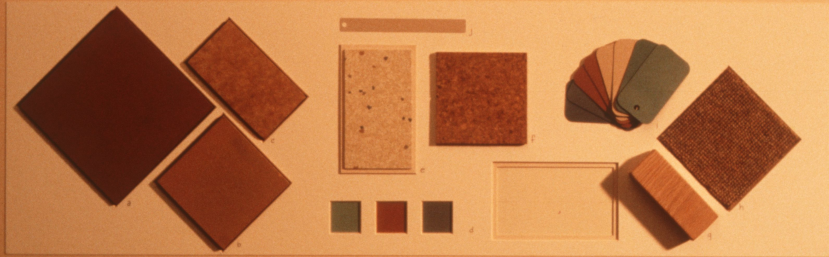


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