

Child Care Center Environment Study

by

Olga Kahn

B.A., Barnard College

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Certified by. . . . . Thesis Supervisor

Accepted by. . . . . Chairman, Departmental Committee on Graduate Students

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## ABSTRACT

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For the purpose of developing child care facilities that work to the advantage of children, this thesis studies the effects of the physical environment on a child's activities in day care. The question of whether there are relationships between the physical facilities of a child's environment and the activities he/she engages in in a day care setting, is explored in detail.

Observations of an existing day care center are presented, interpreted and adapted into a set of performance specifications used to aid in the design of a new center. Plans of the new design are shown indicating the specific aims and possible modifications of the design.

Thesis Supervisor: Tunney Lee

Title: Associate Professor of Urban Design

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## PREFACE

The demand for adequate child care has become a major issue of the struggle for women's rights in this country. If women are to gain equal rights with men, it follows that they must no longer be identified primarily as mothers, nor bear the sole responsibility of child-rearing. For women to be able to pursue their own careers and develop themselves at least to the extent that men are able to today, adequate child care programs for all types of working mothers must be developed.

Since the child's well-being is, of course, at least as important as the mother's, many critics of child care argue that the institution does not serve the young child's need to develop a strong, intimate relationship with his (or her) mother and thus condemn the notion of child care centers altogether. These critics seem to forget that children need to develop good relationships with their fathers as well (especially if the child is male<sup>1</sup>), yet the situation of fathers being absent from, or unavailable to, their families has hardly been criticized. Another reason why this criticism of child care (i.e., denying children their mother's love and attention) is untenable, is the fact that in many poor families, women (being sole-supporters of their family or not) are forced to work, regardless of the mother's unwillingness to relinquish her role as child-rearer. Thus her children must be left with caretakers whether she likes the idea or not. Not to provide child care programs for such people is to discriminate against the poor.

It seems only fair to agree with the critics of child care, that child care may not be the best way to raise children. Men and women sharing the responsibility of child-rearing equally is probably the best solution for all concerned. However, until such time that men are free of a full-time commitment to work and profession, and that women have opportunities for gainful employment, good child care programs may be our only immediate solution.

For the purpose of this thesis, the existence of child care should be considered a fact of life (and an important one at that). Given that child care is a basic requirement in the struggle for women's liberation, it would be hypocritical to provide child care that limits a child's full growth and development as a human being. Hence comes the motivation for this thesis: if child care is to exist in this country, how can we make child care facilities work to the advantage of children?

## INTRODUCTION

Given the current practice of begrudgingly allocating leftover or under-used parts of existing buildings to severely needed child care programs, the purpose of this thesis was to explore ways of making these spaces work to the advantage of children in child care programs. Of course, there are, and should be many different kinds of child care. Some centers have highly structured curriculum, while others allow the child freedom to choose the activities he engages in. Highly structured programs may be aiming towards preparation for grade school and emphasize the development of cognitive skills, while a less regimented program may merely serve as a play group.

The size of the center also has an effect on the type of child care provided. If the center is large enough (perhaps more than 25 children), it may be possible to divide the children into groups of similar ages. A large population also implies a large center space (given the minimum requirement of 35 sq. ft./child), and thus the potential of a more variable use of space.

My concern for the child's development in child care center environments has been restricted to the effects of the physical environment on a child's activities, paying very little attention to the child care program, ethnic background of the children and staff, staff attitudes on education, etc., except where such factors seemed relevant to the use or structure of the physical facilities. The other limitation in my focus on child care facilities was to confine observations to unregimented and play-oriented day care

programs, in the belief that the physical facilities of such programs might be used more creatively and versatily than in highly structured and school-oriented day care.

Besides the exploration of environmental issues related to child care, this thesis presents plans for the new site of an existing day care program. My aim was to develop design specifications that would enhance the nature of the child's relationship to the physical environment. These specifications are by no means to be considered the solution for such "enhancement" of the child's relationship to the environment, rather, they are treated as working hypotheses. This design attempted to build into the plans, ways of changing the physical environment or experimenting with it, in the case that the original hypotheses are proven invalid, or just to allow experimentation with the environment.

Although these specifications were designed for a particular center, it is assumed that their built-in flexibility will make them useful to other child care programs, as well. Of course, there is always the danger that an environment is designed with so much flexibility that it is not especially useful in any one of a number of arrangements. However, given the heavy emphasis on developmental needs and requirements in the physical environment, the specificity of the task at hand will hopefully preclude the design of flexibility without purpose.

## STUDYING THE PHYSICAL FACILITIES DAY CARE

Children in day care spend a large portion of their hours awake confined to the day care setting. This concentration of a child's time and living experiences in one place, provides anyone interested in collecting and analyzing child behavior and development data, with a rich supply of information. The real problem in investigating the physical facilities of child care centers, is knowing what to look for.

Originally the thesis concerned a handful of different issues about child care center environments. Observations of a number of centers around the Cambridge-Boston area had led me to realize that day care centers were housed in a wide variety of architectural spaces. Many centers were located in very large warehouse-type spaces, others were spread throughout several rooms, either part of a larger complex or a single apartment. Being concerned about the effects of the physical environment, it seemed important to ask what were the effects on children of a large, open space, as opposed to several smaller rooms for day care. This question led to others concerning the amount of enclosure necessary for certain activities, and the possible ways of creating such enclosures.

Given the wide open space of some centers, and the consequently limited separation between activities, it became obvious that relationships developed, sometimes supportive and sometimes inhibiting, between neighboring activities. Such vastly different activities as crayoning and playing house were observed to support one another while occurring in adjacent areas, while the mere visibility of an



activity such as water play might be enough to inhibit a child from working on a puzzle. Was there any clear pattern relating certain activities to others? How did the physical environment reinforce or work against such relationships?

The issues just raised about the amount of enclosure and the relationships between activities, concern a child's association with the physical environment only indirectly. The problem of how a child responds directly to the environment might be approached by observing the way he manipulates the environment to suit his own needs or preferences; how he responds to such changes that others make. Often a child's fantasy play also bears a direct relation to environmental factors: a rug on the floor may suddenly become an ocean, or a tight little area between storage cabinets might be used as a house. Sometimes the child manipulates the environment such as draping a rug over two chairs to make a little hut, before it gains any imaginary qualities.

This kind of fantasy is not merely child's play. According to the child psychologist, Piaget, these imaginary dramas are imitations of real life experiences, which he necessarily replays, in order to assimilate these experiences to a pre-logical level of reasoning.<sup>2</sup> How the environment can serve to develop or accelerate this level of thinking is a whole other study in itself. For the present, however, it would be important to discover what particular elements of the physical environment are relevant to fantasy play.

Children's level of gross motor skill varied tremendously from one center to another. Children in one center would quickly climb to

the top of a 10-foot structure and nonchalantly slide down a steep slide attached to the structure, while children in another center would regard a four-foot ladder to the top of a climbing structure with great trepidation. Although the level of development seemed to correlate with socio-economic factors related to the center population, it was clear that environmental factors inside or outside the center might be responsible for large differences in motor skill. Could a highly protective environment have the effect of discouraging the child to challenge his motor skill abilities? Or the other side of the same token, the element of risk in the physical environment, seemed to be another important question in the issue of motor development.

One could continue to conjecture about children and their environment ad infinitum. In fact, unfortunately, most of the literature on the subject of planning day care environments, is basically conjecture. Statements such as "independence in children is promoted by such things as low shelves where material is available, low hooks for wraps, low toilets and washbasins,<sup>3</sup>" are difficult to accept as fact. For example, a low shelf may be so full of materials and so carelessly arranged that the child is overwhelmed by it all and is unable to make any kind of independent choice about what he or she will do.

Another equally unacceptable statement is the following:  
"To create a child oriented environment there should be a maximum of open space without walls. This would allow the teachers, if evenly spread throughout the room, a maximum amount of surrounding space with no vertical elements to give them scale or presence."<sup>4</sup>

It is clear that a child oriented environment is more than an environment where adults are not obviously present. However, since the author-architect does not venture to define what he meant by "child oriented", it is impossible to verify his statement.

There is nothing wrong with conjectures per se, the problem is that they tend to become accepted as established facts. Most centers visited in the course of the thesis were probably planned on the basis of such conjectures, like the ones just cited. Unfortunately few attempts to effect environmental changes are made once the original plan is established. When questioned about their attitude toward space, the staff in most day care centers were quick to point out the many deficiencies in their facilities, yet they were at a loss of just what to do to improve their situation.

These people are victims of what might be called the "designer's trap". Although the "trap" is unintentionally set, it has the power to make one accept conjecture, in the form of designers' plans, as the only solution to environmental problems. Claims are made of achieving some particular behavioral purpose through the design, without a clear notion of the cause and effect relation between the design and the behavior. Everyone is naturally prey to the "designer's trap", but once the design is built the victims are those who make no attempt to look for (not to mention ameliorate) the problems that arise with its use. Thus a day care staff that is sensitive to the problems children are having in relation to their space can eventually work out a solution by a series of environmental changes.

Alternatively one might avoid the trap altogether by actually establishing the existence, and defining the nature of, the relationship between the design and its behavioral purpose. Originally it was the author's intent to explore the environmental issues mentioned at the beginning of this section in this manner, i.e., studying the relationship between children's behavior and the architecture of their day care setting. Although these issues were not given full attention by this thesis, they are worth discussing here, if only for the purpose of putting the actual research done into perspective for future studies.

Research was to cover five basic areas:

1. Breaking up of large space into smaller places and the effects of large vs. small spaces.
2. Effects of certain activities on neighboring activities.
3. Manipulation of the physical environment (including furniture, small objects, toys, books, etc.)
4. Environmental support of fantasy
5. Facilities to develop gross motor skill (exercise).

These issues were broken down into the behavioral and architectural variables, and the hypotheses related to each specific issue (see Appendix I).

Since the hypotheses were mainly about the behavior of individual children, the proposed method of testing was to observe individual children throughout a day's activities in a day care center, recording their interaction with the physical environment. Obviously it would have been a tedious and probably unproductive job to keep a running

account of what a single child did over the period of a whole day, so a systematic sampling of short observation periods at specific times during the day would have been sufficient. A part of such a system of behavior observation would also have to include details of the physical environment in which the child was observed.

Since the variables being sought were, to a greater or lesser degree, known beforehand, it would not have been necessary to record everything that the child did, but only those variables that related to the hypotheses being tested. Therefore, to simplify the task of making observations, a checklist was developed of kinds of behavior and aspects of the physical environment of interest to the questions raised. Unfortunately it became all too obvious that a staff of observers, coders, videotapers, etc., would be necessary to make sense out of all the data, not to mention just doing data collection. The checklist (see Appendix II) illustrates the kinds of things one might look at in day care, were the resources available for doing so. However, for the purposes of this thesis a different research method had to be developed.

## GENERATING DESIGN REQUIREMENTS FOR DAY CARE FACILITIES

The main problem with the research protocol first proposed was that it was much too broad in scope. Furthermore, most of the hypotheses were not specifically relevant to the design of day care facilities. Therefore, to return to the aim of this thesis, i.e., how the physical facilities of day care can be made to work to the advantage of children, it was necessary to reconsider the purpose of the research.

Requiring that the research be instrumental in generating architectural design requirements, rather than confirming a wide range of hypotheses, seemed the most logical way of limiting the focus of research and aiding in the design of new facilities. To this end, building code requirements and day care licensing guidelines were inspected for useful day care design goals, but to no avail. The Department of Public Safety's regulations<sup>5</sup> for day care services were concerned primarily with egress, fire protection and sanitation. Only the 35 sq. ft./child minimum might be considered an important design requirement, since the density of the day care group is bound to have an effect on the program.

The Department of Public Health required "materials for both rigorous and quiet activity", also "materials that can be manipulated and experimented with,"<sup>6</sup> besides the same 35 sq. ft./child minimum and a 75 sq. ft./child minimum useable outdoor play space. The design or choice of these materials and facilities is left to the discretion of the specific day care center, provided it meets the minimal requirement of providing such materials (See Day Care Guidelines,

Appendix III).

Perhaps there are no valid design requirements for day care facilities, because the effects of the physical environment are negligible. Then the reason for the myriad of research questions on various environmental issues mentioned earlier, may have been that one very basic question was ignored, namely, is/are there (a) relationship(s) between the physical facilities of a child's environment and the activities in which he engages in, in a day care setting? The answer to this question is crucial to all the questions raised thus far, for if the physical facilities bear no relationship to the activities a child engages in, many other questions become meaningless.

On the other hand, if one can prove that there is a relationship between the physical environment and the child's activities, the verification of this relationship will itself suggest other issues for research on a much stronger foundation. Furthermore, the beauty of this basic question is that it requires using the language of architecture to clarify the notion of "physical facilities". Thus, answers to the question need not be translated into design specifications for the answers will already have some architectural dimension.

The term "physical facilities" is likely to become a source of confusion, however, unless one is careful to describe the environment in terms totally independent of behavior. Calling a particular place in a day care center "the quiet area" describes the place in terms of the activities (or behavior) there and not in terms of the

environment. In order to avoid this tautological problem, the term "spatial definition" was used to refer to qualities of space, without reference to the activities involved in them. Similarly, an activity was not described in terms that necessarily associated it with the physical environment.

From my observations of various centers and notions about architecture, a list of ways of defining space was developed for the purpose of observing how spatial definition related to the activities in a day care center. Not an exhaustive or specially ordered list, it went as follows:

1. a group in an activity
2. a verbally designated boundary (usually a prohibited space)
3. a differentiated floor texture/color/level change
4. a differentiated wall texture/color/level change
5. a differentiated ceiling texture/color/level change
6. a physical barrier, above or below child's eyelevel.
7. a corner
8. special lighting
9. furniture
10. a continuous source of sound.

Having established this set of environmental variables, some specific hypotheses were developed, relating to the main problem stated above, now changed slightly to read: is/are these (a) relationships between the spatial definitions of a child's environment and the activities he engages in, in a day care setting? Although the following hypotheses are similar to those of the first research



protocol, they are stated here again because their verification supplies answers to the question at hand:

1. The relationship (support, benign, conflict) between different activities is strengthened by the spatial definition of the respective activities.
2. Small, well-defined (i.e., using a number of space-defining categories) places, allow for more concentration and duration of a single activity, by an individual or a group of children.
3. A child playing alone tends to situate him/her/self in a corner definition.
4. A child is more likely to initiate an activity in a well defined area, than in a relatively amorphous space.

There were, of course, many possible intervening variables in this list of hypotheses, e.g., the teacher's influence and the availability of toys and materials. These factors were taken into account where they seemed to make a difference, otherwise they were virtually ignored.

The behavior observed for verification of hypotheses 1-4 included:

1. the activity engaged in
2. whether in group or by an individual
3. the concentration and duration of the activity
4. the support/conflict relationship with other activities
5. whether a child initiates the activity
6. the group' or individual's physical location and posture in the day care setting.

To obtain useful data, I chose to look at specific areas and their spatial definitions (as the independent variables) in the day care environment, and record the behavior (dependent variable) associated with these spatial definitions. Alternatively, one could have observed individual children (independent variables), recording what use they made of the spatial definitions (dependent variables) around them. In this latter case, one might learn more about how the flow of behavior relates to the space in which it occurs, and less about the way specific spatial definitions relate to behavior.

Although the latter type of study would be worthwhile doing, it is much more difficult and time-consuming than the former method, and it does not directly answer the specific question posed. However, one must realize that by focusing attention on particular spatial definitions, and watching the activities engaged in in them, we are perhaps missing the essence of an individual child's experience in day care.

## THE DAY CARE CENTER UNDER OBSERVATION

Due to the exigencies of time, only one day care center was thoroughly observed, although the method could be used for any center. To begin to be able to say anything meaningful about child care environments in general would require much more extensive research than even a handful of centers could provide; so limiting observations to the one center for which I planned to design a new facility, seemed appropriate. Not only would the design implications be especially pertinent, but they would also supply the means of interpreting the new design and measuring the validity of the hypotheses on which they were based.

The day care center observed was the Houghton-King Day Care Center located in the Cambridge Community Center in the Riverside section of Cambridge. It is a community service project sponsored by the Cambridge Community Schools, an executive commission of the City of Cambridge. The day care center is open from about 8:30 am to 4:30 pm, every weekday, with two full-time teachers and usually two volunteers. There are 20 children enrolled, about half of whom are on welfare. Most of the children come from the surrounding neighborhood.

The day care center has a staff sensitive to environmental problems, to the extent that they made a number of significant physical changes since the center began in July 1970. After several months of operations, a wide open space was transformed into definite interest areas with noisy activities moved to a back room. This seemed to minimize the amount of chaos and help towards the goal of an unstructured day.

They were however, not satisfied with the way things had worked out, mainly because the design had to be flexible enough to allow use of the room at night for other community center purposes. This flexibility limited the number of changes they could possibly make (such as not being able to provide a permanent climbing structure) to the point where they expressed real frustration with the facilities. They were quite optimistic about their new site in the new Martin Luther King, Jr. School, because the room would just be used by the day care program.

For purposes of observation the day care center was divided into eight areas, covering practically the entire two rooms of the program. These areas were chosen (1) because there was an activity associated with each one and (2) because there were some physical definitions separating them from one another. The fact that an activity was associated with each area should not be considered significant, but rather as a means of providing almost equal-sized units for observation.

The areas were numbered one through eight going around the room clockwise, with the final area being the entire back room (See Figure 1). Since children were allowed to use the gym only during specific times, observations were restricted to the two main rooms. Observations were also limited to the mornings, from the time children arrived to the time they went outside or to the gym, just before lunch. During this time most of the "free play" occurred. Afternoons included some structured activity such as writing, then nap, and more "free play".

The day care center was systematically observed on five different mornings. Each area was observed for a ten-minute period, during which the behavior of each child or group of children was recorded in regard to the variables mentioned previously, and the relevant spatial definitions were noted. The ten-minute periods for each area covered a full range of the morning hours, so that the time of day would not be a variable in the results. (See Figures 2-11., and Typical Data Sheet, Appendix IV.)

## SOME FINDINGS

The observation record of behavioral and spatial variables associated with each hypothesis is found in Appendix V. Only the general implications of this data will be discussed here, hypothesis by hypothesis. Since the findings do not stem from very precise data, the words used to describe them have a way of adding more meaning than one wants. Thus it is worth noting in advance that the words "work", "activity" and "play" are used synonymously to describe almost any ongoing behavior of a child; and words like "identity", "independence" and "security" are used to express a feeling rather than a precise concept.

Hypothesis 1. The relationship (support, benign, conflict) between different activities is strengthened by the spatial definition of the respective activities:

Visibility between areas, dependent on the kinds of physical separation between areas, seems to be the key issue. Where there was lots of noise from an activity and the activity was physically separated from another area, there was never any interference. Unless activities were of a similar type, e.g. construction with blocks and construction with sand, they were likely to conflict with other activities that could see them, whether adjacent to them or not. Most activities needed more physical separation between them than was given in the existing center. Notice in Figure 11, the visibility to most parts of the center from Area 4, which may explain why that area was generally under-used.

Children wanting to leave an area they are in without necessarily leaving the activity, must be able to do so without disturbing other activities. One solution particularly useful to the housekeeping area (Area 1) would be to develop a "street" running through the day care room, but not interfering with other activity areas. An extreme of such a solution would be to build a series of small classrooms with hallways between them, a typical school design. Obviously, some visibility between areas might be important in order to encourage the child to try new activities, although teacher supervision is probably the more accepted reason for keeping these areas open and all in one space.

Hypothesis 2. Small, well-defined places (using a number of the space-defining categories) allow for more concentration and duration of a single activity, by an individual child or a group of children:

The physical orientation of a child seems to be the most important factor in the concentration of the individual child or group, involved in a single activity. (Concentration was in general measured by the duration of the activity.) Although small, well-defined places may be a necessary part of the solution, they may not be sufficient, for it seems that the location of the child in that definition is most crucial. If the child has limited visibility from where he works, he is more likely to maintain that activity longer. If he sees other activities, he is more likely to be distracted and leave what he is doing.

Small and well-defined space is also related to the uniqueness of the space. It seems that if each child in a group relates to an area in more or less the same way, e.g. sitting on the same-sized boxes around a rectangular table, a child may feel less attached to that space, than if the space had certain non-uniform aspects to it. The child might establish a special relationship to the space if he is uniquely identified with it. This relationship might then help maintain the activity the child is engaged in.

The use of major walls (the walls of the room itself) also seems to be related to sustained activity. Perhaps there is a certain sense of security in being against a solid wall. A certain amount of enclosure seems useful, too, and would also add a sense of security, if that is what the child really needs. A child being in a relatively enclosed space with a group of children was also shown to sustain certain activities such as housekeeping, puzzle-solving and climbing.

Music often captures the attention of children and might be used to support any activity, unless it is thought to be distracting. The opportunity to change one's environment also seems to aid concentration, perhaps by allowing a child to make his mark on the physical environment.

Being up high (and visible to the rest of the room) is a position children will stay in for relatively long periods of time, perhaps only to watch others and to shout to them. Any activity, though, might be enhanced (and, therefore, persevered longer), given some height. Of course, if more than a few areas are raised, the effect would be lost.



Hypothesis 3. A child playing alone tends to situate him/her/self in a corner definition:

Children were rarely seen engaged in an activity by themselves, where group activities usually occurred. These areas could be described as having a certain amount of uniformity within them, but the fact that a large portion of the morning's activities were spent in group art activities in these areas is probably the main reason why children were not observed there alone. However, the lack of spatial definition or the sameness of the objects in these areas (3 and 4), relative to other areas, could be an important factor.

Most of the places where children are observed alone are the same kinds of places where children concentrate best. In such places the child is oriented away from other activities. Often the child is facing a corner or a wall, so it may be impossible to tell whether it is the child's orientation or the spatial qualities that support his activity alone. Physical separation from other activities and low visibility are also common to playing alone.

Materials that could be used by just one or two children, such as a toy stove or the small wet-sand box seem to be conducive to playing alone. Viewing an activity or being observed by others, alone, is also supported by spatial definitions that afford a private view to the child. Impeded access to materials may force children out of an activity and thus be alone. Situating storage units for these materials where they can be reached by newcomers without inconveniencing those already using them, may be a way of encouraging those children

who wander around by themselves, to get involved in something.

Since day care centers are one of the few places where young children have the opportunity to learn to socialize with their peers, providing places for children to be by themselves may be contrary to the interests of a good day care experience.

Hypothesis 4. A child is more likely to initiate an activity in a well-defined area than a relatively amorphous space:

Observations do suggest that an enclosing, protective spatial definition is supportive of initiated activities, but, again, other conditions may also suffice. The presence of special equipment, such as housekeeping furniture (stove, refrigerator, sink) or animal cages with pets, may be necessary to get the children started on some activity on their own. The availability of materials that can be manipulated, such as blocks or trucks may also encourage a child to use his initiative.

Whether children need the protective shelter of an enclosed space is unclear, since some activities were initiated in the open area (Area 3). However, since it seems that concentration at an activity requires the same amount of enclosure or at least a limited amount of distraction, an environment that supports initiative without supporting the continuance of the activity is perhaps self-defeating.

No child-initiated activities took place in the areas where group activities were underway, because these activities were usually teacher-initiated and-controlled. Within these art activities there was room

for spontaneous and original i.e., self initiated, accomplishments. However, since the preconditions for these initiated events were ultimately controlled by the teacher, they bear little relation to the issue of where child-initiated activities occur.

## WORKING HYPOTHESES

These rather tentative findings do indicate that there is a relationship between spatial definition and a child's activity in day care, although it is unclear at times which specific spatial definition if any is most related to an activity. For example, it is difficult to say where "separation between areas" ends and "enclosure" begins, although it seems the absence of both such definitions does affect behavior. In a similar way, the child's orientation, which is related to spatial definition, is, in turn, related to the child's activity, yet it is difficult to describe the relationship precisely.

Despite the problem of clearly defining the nature of the relationship between spatial definition and activity, it was possible to develop a set of performance specifications based on the findings. These specifications are the working hypotheses of the new design, and as such should be subject to revision and experimentation. In most cases the specifications refer to spatial definitions, but there are some "performance" requirements that require a teacher's cooperation as well. These are noted, too.

The following is the list of performance specifications, based on the findings from the four hypotheses:

1. Relationship between activities
  - a. low visibility for children from one activity to another
  - b. visibility from one activity to another for teacher supervision
  - c. "streets" between activities

## 2. Concentration

- a. orientation of children inhibiting visibility (might require teacher's help)
- b. non-uniform experience permitting unique relationship to environment for each child
- c. making use of major walls
- d. ability to change one's environment (must not be discouraged by teacher)
- e. giving special height to certain activities
- f. teacher keeping group of children in one place

## 3. Child alone

- a. situating storage units where they can be easily reached by newcomers without inconveniencing those already using them.
- b. look out points for single children
- c. places for just one or two children

## 4. Child-initiated activity

- a. enclosing, protective definition with special equipment clearly visible (sometimes requires teacher's changing what is "special")
- b. (related to concentration specifications or else self-defeating)

To put these performance specifications to work one also needs a day care program, which in this case was supplied by the staff of the Houghton-King Day Care Center. Since the space they were given in the new site could be divided into two rooms (approximately 800 sp. ft. each), they had decided to make one a noisy room and the other a quiet room.

Quiet areas were to be for art, books, math-science, music, and a special area divided in three parts for alphabet work, puzzles and lotto, and very young children respectively. The noisy room would have a construction area with a truck "garage", a sandbox, wood-working, housekeeping and climbing activities, plus a place for lunch and snacks. The staff expected to keep most equipment and materials in storage, only displaying a few things each day on a system of open shelving. They also wanted space for a large group of children to gather in a circle.

Besides the obvious features of the new "site", i.e., sinks, bathrooms, doors, and windows, the room had a number of built-in cabinets and some moveable ones, leaving only the folding door wall entirely free of furniture. Figure 12 shows one design solution based on the day care center's program and the performance specifications listed above. Figure 13 indicates what the aims of the design are and how it might be changed by the users, should other results be desired.

The idea of flexibility has obviously been employed in a rather limited sense since few really gross changes are indicated. However, this was done for a purpose. Any day care program moving into new

facilities is going to have problems merely adjusting to their new quarters. If the design only permits gross changes, the children may never have a chance to adapt to their environment, and the staff may never know when they have a successful environment. Thus the changes indicated are for the purposes of fine adjustment to a rather specific environmental design.

It is possible to rearrange the elements of the design in a radically different way, but it is unclear just how useful it would be to change the plan too greatly. However, after the day care program has had time to adjust to its new surroundings, it might be in order to change the environment more severely. Hopefully, such a change would not be arbitrary, but the result of careful conclusions about existing problems. One possible alternative plan is shown in Figure 14.

The flexibility discussed is really of two varieties:

(1) physical change and (2) social change. While both fine and gross adjustments can be made in any environment, people are also flexible. Thus, how an environment gets used can be as conscious a process as how it is designed. It is hoped that the careful programming of performance specifications in this thesis will serve as an aid for the successful use of all day care programs in general, and the Houghton-King Day Care Center, in particular.

## APPENDIX I

A. BREAKING UP LARGE SPACE INTO SMALLER PLACES AND THE EFFECTS  
OF LARGE SPACES VS. SMALL SPACES

## Behavior:

1. self-initiated or teacher-initiated
2. self-perpetuated (whether with another child or not) or guided
3. activity a) alone, b) with another child(ren), c) with teacher
4. number of others in same area
5. if others in area, is activity of child parallel, associative, or individual
6. activities of others in area, if different
7. physical proximity to others in the area
8. verbalizations

## Architecture:

1. nature of space definition:
  - a) complete (enclosed & marked entr.)
  - b) enclosed on three sides
  - c) corner definition (two sides)
  - d) just a wall
2. size of space definition:
  - a) within child's arm span
  - b) within adult's arm span
  - c) large, but only a portion of room



2. size of space definition: d) whole room
3. furniture and objects in the area: tables, chairs, toys, books, etc.

Hypotheses:

1. Small well-defined places allow for more concentration and duration of a single activity.
2. A child is more likely to initiate an activity himself if he enters a well-defined small area.
3. A child tends to work alone in small, well-defined places.
4. The size of an area affects the kind of social interaction.

## B. EFFECTS OF CERTAIN ACTIVITIES ON NEIGHBORING ACTIVITIES

### Behavior:

1. duration of activity without and with interruption
2. responses to an activity outside of immediate area:
  - a) looking up, b) responding verbally, c) going over to it, ...
3. type of activity engaged in: a) motor, b) manipulative  
c) fantasy, d) directed
4. type of neighboring activities: (same as 3)
5. references to and use of child's very own place  
(i.e., his cubby)

### Architecture:

1. visibility between areas
2. type of entrance into specific area
3. an individual's own place (his cubby)
4. acoustic separation

### Hypotheses:

1. Certain activities encourage others adjacent to them.
2. Certain activities inhibit others adjacent to them.
3. The more clearly defined the entrance to an area, the less interference other activities outside the area will have on activities in the area.

C. MANIPULATION OF THE PHYSICAL ENVIRONMENT (INCLUDING FURNITURE, SMALL OBJECTS, TOYS, BOOKS, ETC.)

Behavior:

1. changes made by teacher: furniture layout scale or smaller (e.g. bringing supplies to a table)
2. changes made by child: furn. layout scale or smaller
3. child's response to changes in physical environment:  
a) participation, b) anger, c) no response, d) begins a new activity

Architecture:

1. particular place or order of moveable objects in child care setting, if one exists
2. how much manipulation is possible: a) (few, avg., many) moveable, small objects, b) (few, avg., many) moveable, large objects
3. is order (or lack of it) on a gross furniture layout scale or a small scale (e.g., toys thrown arbitrarily into one corner)

Hypotheses:

1. Lack of opportunities to manipulate the environment affect behavior.
2. Too much opportunity to manipulate the environment also affects behavior.

## D. ENVIRONMENTAL SUPPORT OF FANTASY

## Behavior:

1. child involved in fantasy (imaginative) play
2. type of fantasy:
  - a) role-playing (type)
  - b) being other than human
  - c) using objects (dolls, cars, blocks, etc) as actors of fantasy
  - d) being oneself in an imaginary environment
3. others involved in fantasy play
4. communication of fantasy
  - a) verbally
  - b) through movement
  - c) through use of objects

## Architecture:

1. objects that support fantasy:
  - a) small
  - b) large, furn. scale
  - c) all imaginary
2. definition of place of fantasy:
  - a) whole room
  - b) section of room
  - c) immediate area around child

## Hypotheses:

1. Fantasy play incorporates parts of the physical environment rather than transcending it.

**E. FACILITIES TO DEVELOP GROSS MOTOR SKILL (EXERCISE)****Behavior:**

1. gross motor activity: running, skipping, jumping, etc.
2. risk involved in physical activity:
  - a) child very cautious
  - b) child has difficulty mastering equipment
  - c) child adept at handling environment
  - d) child doesn't exert himself
3. others involved in gross motor activity

**Architecture:**

1. danger in environment: (sharp corners, hot surfaces, instability)
2. places to: swing from, hang from, climb up, stand on, etc.

**Hypotheses:**

1. An environment with built-in risk encourages the development of gross motor skill.



2. activities of others in same area: (no.) \_directed  
\_manipulative  
\_fantasy  
\_gross motor activity
3. activities in neighboring areas: (no.) \_directed  
\_manipulative  
\_fantasy  
\_gross motor activity
4. child is in activity: \_by (him)(her) self  
\_with       (no.) other children  
\_with teacher
5. relationship of child's activity to others': \_parallel  
\_associative  
\_individual
6. activity initiated by: \_teacher (specify sex)  
\_child under observation  
\_another child
7. activity perpetuated by: \_child alone  
\_child with (an)other child(ren)  
\_teacher (specify sex)
8. changes made by child: \_large scale (furniture layout scale)  
\_medium scale (decorative)  
\_small scale (moving bookds, puzzles, etc)

9. changes made by teacher (specify sex):  large scale  
 medium scale  
 small scale
10. verbalizations of individual child:  none  
 monologue  
 conversation  
 argumentative  
 yelling
11. verbalizations directed at child  none  
 monologue  
 conversation  
 argumentative  
 yelling
12. non-verbal communication of child:  physical contact with  
another person  
 friendly gesticulations  
 aggressive actions
13. "staging" an activity:  staking a claim to part of environment  
 special value put on certain objects  
 rearranging environment for particular effects  
 no particular physical requirements
14. non-verbal communication directed at child:  physical contact  
 friendly  
 aggressive



15. responses to activity outside immediate area:
- \_visual
  - \_aural
  - \_verbal
  - \_moving to activity (specify)
  - \_moving further away from activity (specify)
16. reference to or use of child's own place (cubby)
- \_for change of clothing
  - \_for storage of personal possession(s)
17. child's response to changes in physical environment:
- \_participation
  - \_no response
  - \_anger
  - \_begins a new activity
  - \_delight
18. duration of activity without interruption: \_\_\_\_\_minutes
19. duration of same activity with minor interruption(s):  
\_\_\_\_\_minutes.
20. physical proximity to others in immediate area:
- \_same activity: \_\_\_\_\_feet
  - \_different activity: \_\_\_\_\_feet
21. proximity to nearest wall or partition: \_\_\_\_\_feet
22. size of "turf": \_\_\_\_\_sq. ft.

## B. EXISTING ARCHITECTURAL DETAILS

1. label immediate activity area: \_\_\_\_\_  
and what might be considered neighboring activity areas:  
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, etc.
2. spatial definition of immediate area:
  - completely enclosed,
  - with conspicuous entrance(s)
  - enclosed on three sides
  - corner definition (2 sides)
  - a wall
3. floor area of defined space:
  - within child's arm span (3 ft diam)
  - within adult's arm span (6 ft. diam)
  - large, delineated portion of whole rm.
  - large, amorphous portion of whole rm.
  - whole room
4. ceiling height of immediate area: \_\_\_\_\_ feet
5. moveable furniture and objects in immediate area: (nos.)
  - tables
  - chairs, stools
  - large play equipment (e.g., rocking boat)
  - small objects (e.g., books, play things)
  - others (specify)

6. visibility (at child's eye level) of adjacent or other areas within same room:

\_no visibility

\_visibility of (no.) other area(s)

\_complete visibility of whole room

7. entrance to area:

\_real door or gate

\_delineated, narrow entrance(s)

\_delineated, wide entrance(s); clear differentiation between inside and outside

\_delineated, wide entrance(s); amorphous boundary between inside and outside

\_unclear entrance point

8. acoustic separation from other areas within same room:

\_no separation from any other area

\_no separation from (no.) other areas

\_complete acoustic separation from other areas

9. order of moveable objects in area -- gross furniture-layout scale:

\_clearly marked places for things, things in their place

\_clearly marked places for things, things out of place

\_no consistent order, but orderly

\_no order, messy

10. order of moveable objects in area -- small-objects scale:

\_clearly marked places for things, things in their place

\_clearly marked places for things, things out of place

\_no consistent order, but orderly

\_no order, messy

## 11. objects that support fantasy:

- \_gross furniture-layout scale

- \_small-objects scale

- \_imaginary

## 12. definition of place of fantasy:

- \_larger than whole room

- \_whole room

- \_section of room

- \_immediate area around child

- \_amorphous

## 13. danger in immediate area:

- \_sharp corners

- \_hot surfaces

- \_unstable structures

- \_clutter under foot

- \_machinery

- \_moving play equipment (e.g. swings)

- \_heights

- \_steps or ramp

## 14. places in immediate area to:

- \_swing from

- \_slide down

- \_hang from

- \_run, skip, etc.

- \_climb up

- \_stand on

- \_jump off

- \_leap to

15. child's cubby or own private place: \_\_\_\_\_cu. ft.

  \_shared

  \_private

  \_marked with child's name

  \_nonexistent

## APPENDIX III

(Taken from "Day Care: Development and Guidelines," p. 20)

PHYSICAL ENVIRONMENTYESNO

- 1) Are the rooms neat and clean?
- 2) Do they reflect good ownership care? (Paint, lighting, floors, etc?)
- 3) Are there adequate children's sized tables and chairs?
- 4) Are all the pieces of equipment in good condition?
- 5) Are there enough cots, mats, blankets for sleeping?
- 6) Is the room adequately ventilated?
- 7) Is the room adequately lighted?
- 8) Does the room arrangement provide a good learning situation?
- 9) Is the space adequate for the number of children being cared for?
- 10) Are toilets/wash areas in good condition?
- 11) Are they clean, with proper toilet supplies?
- 12) Are there any safety or health hazards apparent?
- 13) Is it a pleasant physical environment for the children?

CLASSROOM ENVIRONMENT:YESNO

- 1) Is there adequate and well maintained play equipment for the children?
- 2) Is the equipment age appropriate and stimulating?
- 3) Is there manipulative equipment available?

Describe briefly: \_\_\_\_\_

\_\_\_\_\_

- 4) Is there motor-development equipment available?

Describe briefly: \_\_\_\_\_

\_\_\_\_\_

- 5) Are there blocks, dolls, trucks, cars, etc.?

Describe briefly: \_\_\_\_\_

\_\_\_\_\_

- 6) Is more space needed for materials for painting, drawing, constructing, etc?

Describe briefly: \_\_\_\_\_

\_\_\_\_\_

## APPENDIX IV

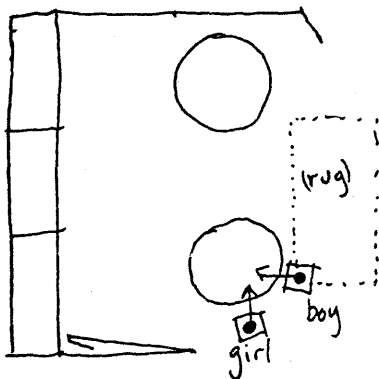
DAY CARE CTR: HOUGHTON-KINGAREA: 4 DATE: 4/12/72 TIME: 9:45-9:55SPATIAL DEFINITIONSCOMMENTS: SUNNY WEATHER

\_sound  
\_grp in activity  
\_verb designated  
\_flr texture/color - RUG  
\_wall text/color  
\_barrier  
\_above eye level  
\_impermeable  
3#corners  
\_clg texture/color  
\_spec lighting  
\_sq. ft. ~ 70  $\phi$   
\_flr level change  
\_furniture - table + chair-boxes



SUBGROUPINGSBEHAVIOR

indiv/group	boy + girl
activity	playing cards
concentration (duration)	boy pays attention to what he's doing girl watches waterplay area from time to time
conflict/ support	(children in waterplay) girl shouts to them across the room " watches kids in waterplay as teacher scolds them
initiation	-
posture	sitting, or going to shelf for materials girl is sitting so she can face waterplay easily, perhaps why she watches them. Boy has back to waterplay.
phys. location (sketch)	



## APPENDIX V

Hypothesis 1

## AREA 1. Relationship with other activities:

- a) running to a group already in an activity somewhere else, leaving original activity
- b) using paths through center (starting and ending in Area 1) in a disruptive manner, e.g., in noisy high heel shoes
- c) taking oats from neighboring "water" play table, when not supposed to.

## Spatial Definition:

- a) not sufficient to separate visibility between area and other group activities that might be distracting (when partition was put up, it contained area better)
- b) Proximity of water table with its similar play things such as pots and cups, is conducive to sharing of utensils between activities (but since the play material itself/should not be shared between areas (i.e., oats and water) needs to be more limiting definition, or complete separation)

## Implications:

- a) more barriers between area and rest of center with paths to other parts for "parading by" but not easily getting into another activity.

AREA 2. Relationship with other activities:

- a) viewing what is happening elsewhere
- b) moving one's box to another area (usually Area 3)

Spatial Definition:

- a) group activity seems to be strongest cohesive force, although when child is sitting down in the area, the three sides of partitions are above eyelevel, and might therefore be more important than activity; but since one child rarely works there alone, the activity might be most important spatial definition

Implications:

- a) sunken work space might make low partitions more effective without having to give them more height.

AREA 3. Relationship with other activities:

- a) visual and vocal communication with other areas, distracting when few are in activity at that area

Spatial Definition:

- a) much like Area 2, since both have large table for art activities, except Area 3 has no spatial definition besides furniture (and sometimes partition at Area 6)

Implications:

- a) It seems activity is most important spatial definition but for less distraction, there might be added spatial definition to create visual barrier
- b) perhaps places to hang art work for display, or to dry.

AREA 4. Relationship with other activities:

- a) communication with water play area, looking at what's going on there, when back is not turned on water play area.
- b) generally under-used area, therefore little relation with other activities can exist.

Spatial Definition:

- a) direct visibility to water play
- b) wide open

Implications:

- a) not a definite enough place to go to that child feels sense of place(?)
- b) enclosure does not ever surround child, therefore assuming interest in the activity, must create more enclosure

AREA 5. Relationship with other activities:

- a) groups that play together often enter area together, some using it as a place to hide or get away from others, or as a place to huddle.

Spatial Definition:

- a) only corner in room that is not broken up by passage-ways through it.
- b) two child-sized nooks
- c) one above-eyelevel bookcase

Implications:

- a) Space seems to offer protection and security because it has only one entrance, low visibility, places to get into that just fit.

AREA 6. Relationship with other activities:

- a) last child left at snack time sits facing water play, where there are already 4-6 children.

Spatial Definition:

- a) directly adjacent and visible to water play

Implications :

- a) chairs that can be sat on equally well facing four different directions are more flexible for child (if that's what is desired ) than regular straight-backed chair

AREA 7. Relationship with other activities:

- a) water play area seems more distracting to other activities than vice versa.
- b) climbing is very distracting to others, too, because it is usually accompanied by yelling to other parts of room

Spatial Definition :

- a) children are standing at water play table and therefore are higher than below-eyelevel partitions.
- b) only one corner defines area (plus table itself)
- c) it is on circulation route and in that way quite visible

d) visibility to all activities

Implications:

a) lines of visibility to other areas or total visibility to other areas seems to increase communication/interference/distraction between this area and others

AREA 8. Relationship with other activities:

- a) use of bathroom for carrying water to sandbox or vicinity
- b) problem with circulation route to gym being in the way of some building activities, if not just distracting
- c) relatively independent activity area
- d) different activities in room are similar enough not to interfere with one another

Spatial Definition:

a) Completely enclosed area, separate from most other activities, but not without direct access to main day care room.

Implications:

- a) separation from most other activities lowers incidence of conflict from other areas.
- b) related activities won't necessarily conflict

Hypothesis 2.

## AREA 1. Concentration:

- a) sustained concentration when no one else in large room, except those in area (1) -- a group sitting at table all facing away from main access.
- b) sustained concentration when above-eyelevel partition blocked off area from center of room -- sitting on bench in corner or area

## Spatial Definition:

- a) Small table in corner
- b) bench against major wall, between two corners  
(one a corner of two major walls)

## Implications:

- a) size of table and fact that it is used facing into corner implies close proximity to others in activity helps sustain activity, and child not facing other activities also helps
- b) use of major wall may add support to activity, especially where few such walls are available

## AREA 2. Concentration:

- a) lots of moving around, although engaged in specific art activity or snack

## Spatial Definition:

- a) uniformity to area such that position in one place may be like any other -- supplies available from two shelf units

Implications:

- a) some children might demand more individuality to their place in space.

AREA 3. Concentration:

- a) although children stay working for good length of time without leaving area, they tend to watch what's happening in other parts of the center

Spatial Definition:

- a) only table and what's on it.
- b) uniformity similar to Area 2

Implications:

- a) more individuality to sense of place
- b) more enclosure, visual separation

AREA 4. Concentration:

- a) child with back to rest of room, i.e., facing corner, much more involved in activity than child sitting next to him who is distracted by other activities

Spatial Definition:

- a) small table in corner

Implications:

- a) same as in Area 1



**AREA 5. Concentration:**

- a) activities other than running into area are maintained for at least 5-10 minute periods; such activities include sitting at the table, facing bookrack.; sitting at the desk, using corner of room as "house"

**Spatial Definition:**

- a) table in corner, with one especially high partition
- b) unique desk in corner
- c) corner of area (and room) given added definition by sides of cabinets and low "ceiling"
- d) access visible to other areas through relatively small opening

**Implications:**

- a) child's position at table or desk or in corner, limits visibility to other activities aids concentration
- b) once inside such an area, removed from activities in other parts of room, a child can sustain an activity he chooses

**AREA 6. Concentration:**

- a) reading and listening to music are maintained for long periods of time

**Spatial Definition:**

- a) sound from record player
- b) seats closest to book rack at table, face partition and and relatively barren wall beyond

## Implications:

- a) properties of sound may be more seductive than any hard physical definition
- b) child's position relative to other activities may be most important

## AREA 7. Concentration:

- a) climbing on boxes is sustained for relatively long periods of time.
- b) water play is sustained for relatively long periods of time

## Spatial Definition:

- a) (boxes) corner of two major walls
- b) (boxes) height -- level change
- c) (water play) clearly defined space for water play activity, i.e., within table enclosure

## Implications:

- a) use of two unimpeded major walls may be important to establishing a real place at top of piled boxes, but the height may be most important to sustaining the activity
- b) a clear separation between inside and outside immediate activity area may strengthen activity -- how this (water play) special activity relates to other activities is unclear; perhaps keeping supplies and materials at center of table rather than on shelves along periphery is important

**AREA 8. Concentration:**

- a) very long periods of activity, approximately 20 minutes, including playing with trucks, toy motorcycles, building with construction blocks, housekeeping play

**Spatial Definition:**

- a) same as hypothesis 1, Area 8
- b) use of stove and table from Area 1, for housekeeping play
- c) use of adult size folding chairs, stored in the area of,
- d) places to get inside/made from large construction blocks
- e) places for cars to drive on, made from boards in the area
- f) high table that children can get under or climb on top of
- g) sandbox

**Implications:**

- a) once inside an area separated from most other activities, children more easily sustain the activity they're engaged in.
- b) the opportunity to change their environment, either through molding and shaping of sand; construction with blocks, or using existing furniture in different ways, may help to support and sustain activities

Hypothesis 3.

## AREA 1. Child Alone (in Activity other than Wandering)

- a) standing by stove -- viewing rest of room
- b) sitting at table facing into corner

## Spatial Definition:

- a) piece of equipment (stove)
- b) small table in corner

## Implications:

- a) viewing and being observed alone, are need of child by him/her/self
- b) facing away from others, being close to wall or corner are supportive of activities by child alone

## AREA 2. Child Alone:

- a) (did not occur)

## Spatial Definition:

- a) uniformity to area

## Implications:

- a) child will not work alone in area where his place conforms to many others, but the fact that group activities usually take place here may be real reason he was not observed there alone

## AREA 3. Child Alone:

- a) occurred infrequently, usually group art activity
- b) any child left there alone, after others have gone, easily becomes distracted

**Spatial Definition:**

- a) only table and what's on it
- b) uniformity similar to Area 2
- c) dependent on group activity

**Implications:**

- a) because lacking in spatial definition and therefore vulnerable to what else is happening in room and dependent on group activity, child will not be using area by him/her/self

**AREA 4. Child Alone:**

- a) kneeling by table, facing into corner, working on puzzle

**Spatial Definition:**

- a) small table in corner

**Implications:**

- a) child needs to block out other activities when working alone

**AREA 5. Child Alone:**

- a) a number of children use area alone to play with animals, play with playdough (when they get away with it)

**Spatial Definition:**

- a) (same as hypothesis 1)
- b) cages

## Implications;

- a) what it does for group it also does for single child:  
space seems to offer protection and security, because  
it has only one entrance, low visibility, places to  
get into that just fit.

## AREA 6. Child Alone:

- a) finishing snack by herself
- b) child reading by herself

## Spatial Definition:

- a) a group activity now dispersed
- b) an object (book) center of attention
- c) number (b) of hypothesis 2 , Area 6

## Implications:

- a) child's orientation may be most important
- b) objects such as books may have defining power in  
of themselves

## AREA 7. Child Alone:

- a) almost always a group activity, except when child  
climbed onto pile of boxes to cry (and be seen) by  
others)

## Spatial Definition:

- a) height

## Implications:

- a) viewing and being observed are need of child alone

AREA 8. Child Alone;

- a) sand and water play
- b) wanderer within room who others don't want in their activity

Spatial Definition:

- a) very small-sized box for mixing sand and water
- b) no easy access to materials, once a group is already active

Implications :

- a) materials for use by only one or two children might support child in activity alone
- b) difficult access to materials may force some children out of activity that others are engaged in

Hypothesis 4

## AREA 1. Initiation:

- a) some children wander into area and wander out without engaging in activity, others join what's going on, or start playing by themselves.

## Spatial Definition:

- a) distinctly designed for housekeeping play
- b) more objects/equipment than in other parts of room (except perhaps for Area 8)
- c) major wall and corner definition

## Implications:

- a) lots of supports in the way of equipment for housekeeping play, may be as important as any other definitions
- b) the corner with major wall(s) and relatively small entrance to area from other areas, give it more definition than other areas -- giving activity the kind of protection needed for initiating it.

## AREA 2. Initiation:

- a) (did not occur)

## Spatial Definition:

- a) uniformity to area

## Implications:

- a) no unique or special aspects to area to especially recommend it
- b) group activity is major definition, implying no initiation possible



AREA 3. Initiation:

- a) materials left out on table get used by children on their own, if not for the purpose teacher meant

Spatial Definitions:

- a) hypothesis 3, Area 3

Implications:

- a) special or unique materials seem to challenge and draw children to them; these materials might be especially appealing in an area that is relatively sterile.
- b) Special projects might draw more children to them in a relatively barren set-up

AREA 4. Initiation:

- a) wanderer might enter area for awhile and start something but usually doesn't stay long

Spatial Definition:

- a) usually few, if any chairs at all, in area

Implications:

- a) enough attractive materials are there, but no spatial elements (be it group activity or enclosures) to keep child there

AREA 5. Initiation:

- a) going to see animals
- b) taking playdough to desk

Spatial Definition:

- a) cages
- b) desk in corner

Implications:

- a) special item encourages initiation by child
- b) doing something on your own, sometimes requires privacy, such as desk provides

AREA 6. Initiation:

- a) one child reading suggests the activity to others

Spatial Definition:

- a) visibility to others

Implications:

- a) visibility of materials as well as actors, encourages participation (which is often to be avoided)

AREA 7. Initiation:

- a) dabbling in water play

Spatial Definition:

- a) on main circulation route

Implications:

- a) really getting into an activity requires spatial elements keeping one there

AREA 8. Initiation:

- a) lots of talk about things to do, e.g. "let's go for a picnic", "let's be motorcycle men", "let's cook on the oven" (the toy oven in Area 1)

- b) using materials and furniture around as props for  
play

**Spatial Definition:**

- a) hypothesis 3, Area 8

**Implications:**

- a) lots of things available for manipulation encourage  
imagination to use what's available in various ways

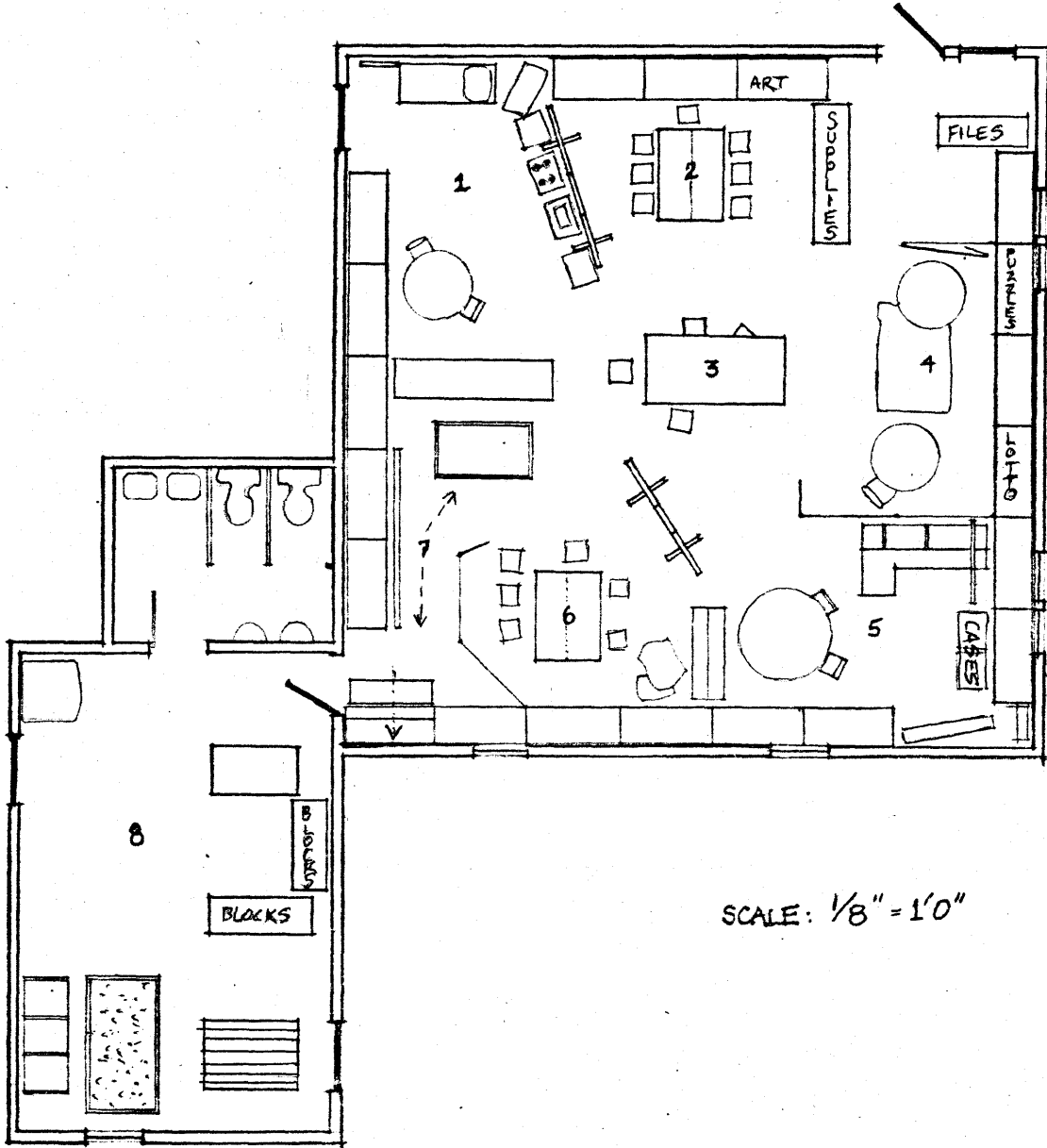


FIGURE 1: HOUGHTON-KING DAY CARE CENTER FLOOR PLAN



FIGURE 2: AREA 1, HOUSEKEEPING



FIGURE 3: AREA 2, ART





FIGURE 4: AREA 3, ART



FIGURE 5: AREA 4, PUZZLES & GAMES



FIGURE 6: AREA 5, MATH-SCIENCE



FIGURE 7: AREA 6, MUSIC





FIGURE 8: AREA 7,  
CLIMBING



FIGURE 9: AREA 7, WATERPLAY





FIGURE 10: AREA 8, CONSTRUCTION



FIGURE 11: VIEW FROM AREA 4

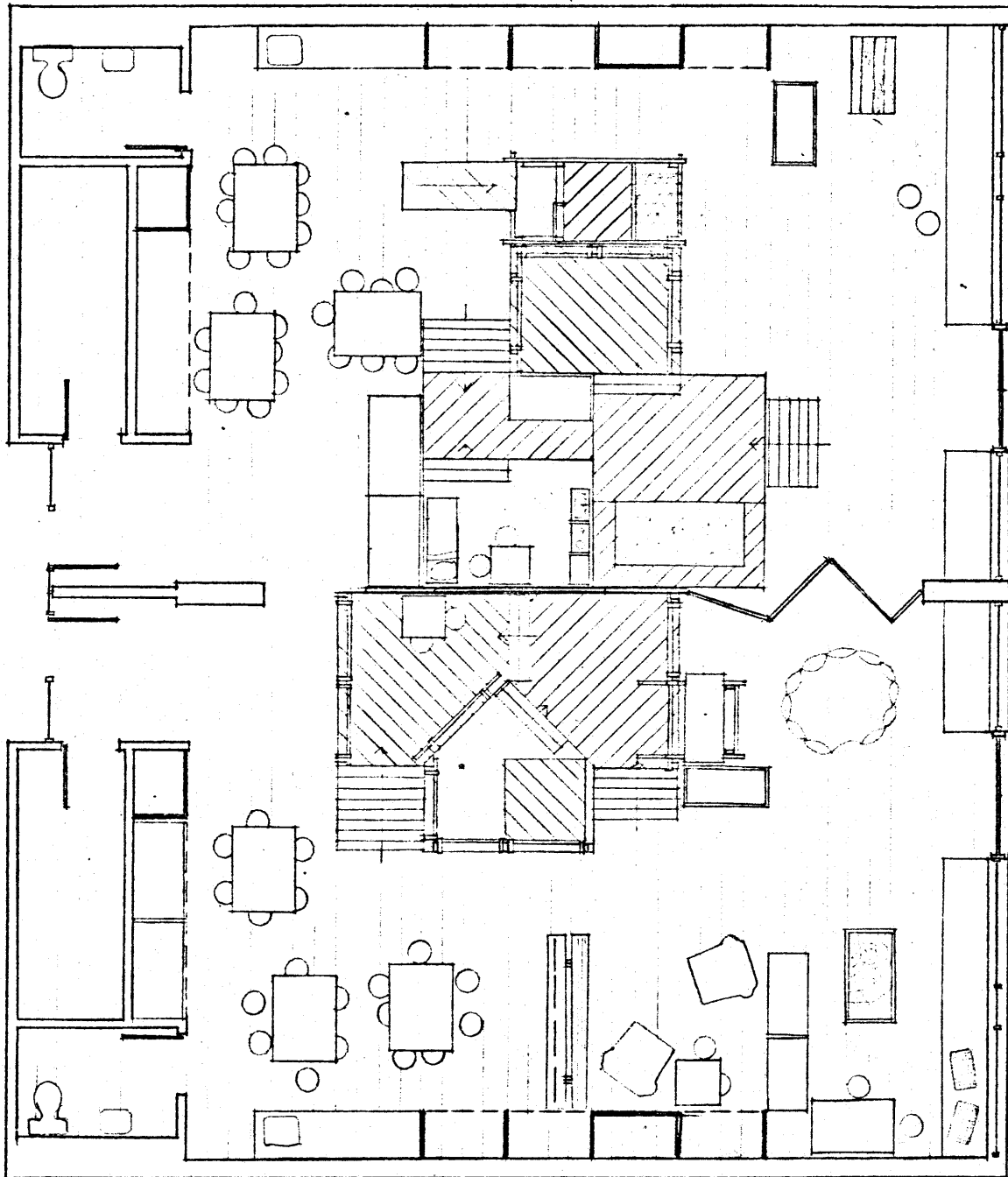
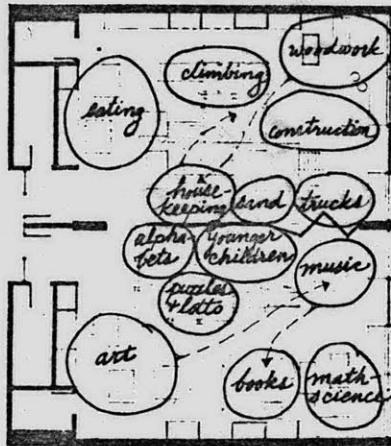
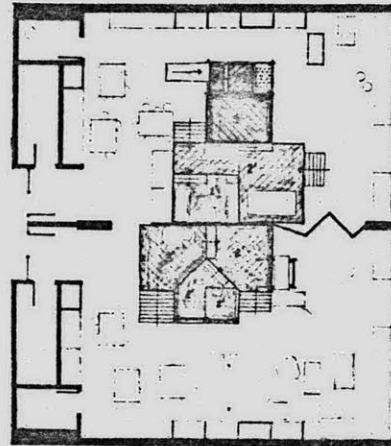


FIGURE 12: PLAN FOR NEW SITE

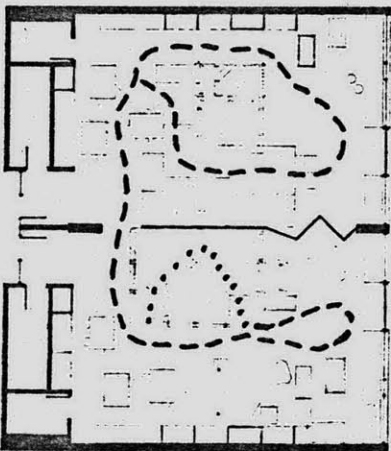
SCALE: 1/8" = 1'0"



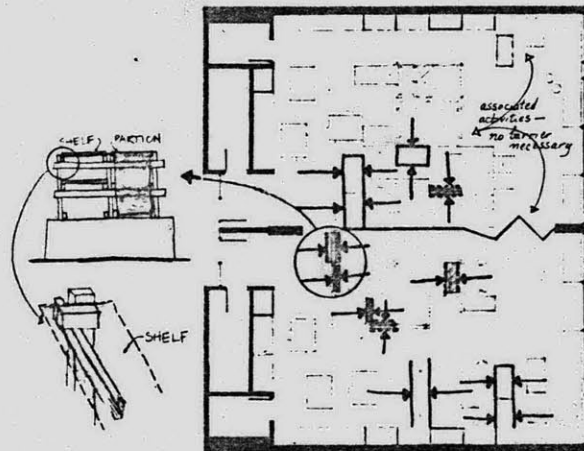
A. ACTIVITIES INTERCHANGEABLE



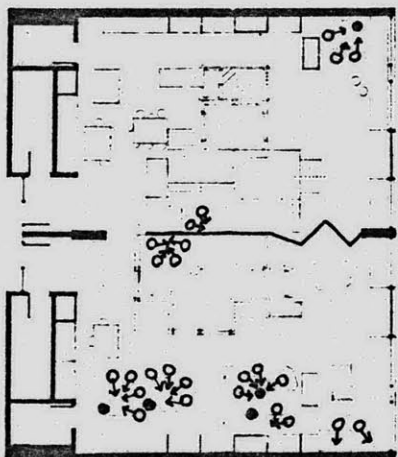
B. HEIGHT: TO EMPHASIS ACTIVITY



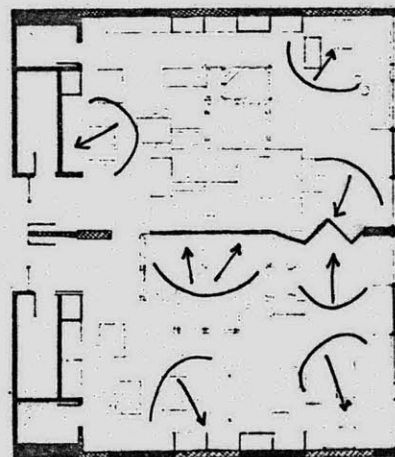
C. "STREETS" TO ENCOURAGE MOVEMENT WITHOUT DISTRACTION



D. LOW VISIBILITY: USE OF PARTIAL AND COMPLETE VISUAL BARRIERS



E. ORIENTATION: TO INHIBIT VISIBILITY



F. MAJOR WALLS: ENCOURAGE USE OF EXISTING WALLS

FIGURE 13: AIMS AND MODIFICATIONS

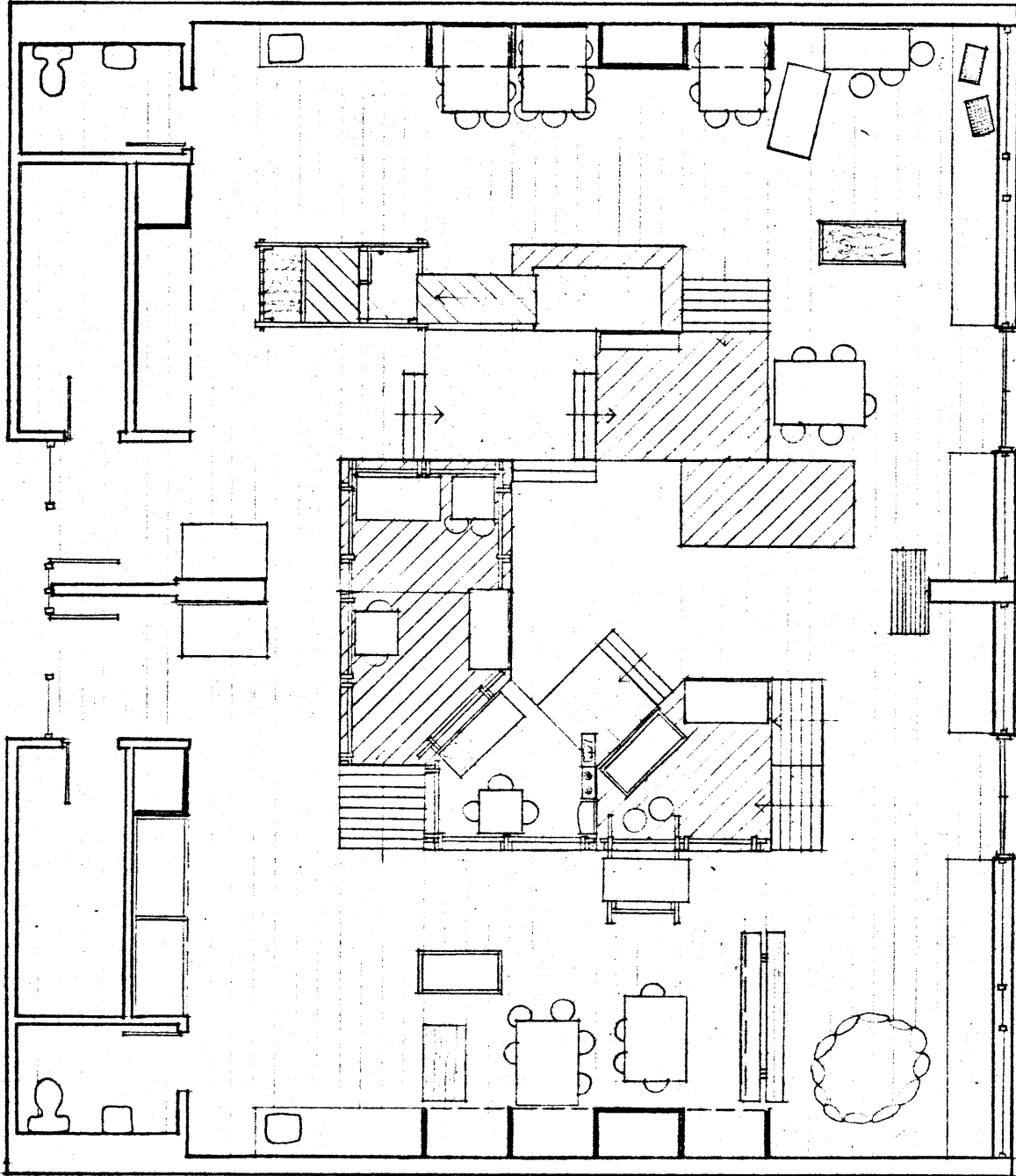


FIGURE 14: ALTERNATIVE PLAN

SCALE: 1/8" = 1'0"

## FOOTNOTES

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4. Osmon, F. L. Patterns for Designing Children's Centers,  
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5. Commonwealth of Massachusetts, Department of Public Safety.  
"Regulations: Day Care Services, Form B-7".
6. Commonwealth of Massachusetts, Department of Public Health.  
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