

1996

Recommendations for Child Care Centers

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**with
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Heidi Marie Hollenbeck
Lisa Lindberg Work**

**Center for Architecture and Urban Planning Research
University of Wisconsin-Milwaukee**

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RECOMMENDATIONS FOR CHILD CARE CENTERS

Gary T. Moore, Carol Gee Lane, Ann B. Hill, Uriel Cohen, & Tim McGinty

ABSTRACT

This monograph is a design guide for the planning, programming, design, and evaluation of early childhood education facilities. The design guide includes 115 patterns for large, medium, and small child care centers in neighborhood and work-place settings. Many of the patterns are appropriate also for family day-care homes, parent-child drop-in centres, nursery schools, kindergartens, and other types of early childhood development facilities.

The patterns are based on a three-year, federally-funded national research project conducted in the late 1970s. The research evaluated 52 child care centers and outdoor play yards around the US and Canada. Included were observations of child-environment interactions, interviews with key staff members, and open-ended interviews with the children. National experts in early childhood development and design were interviewed, and some 2,000 items of environment-behavior, early childhood education, and design literature were collected from around the world and analyzed. The results were translated into 115 patterns for policy planning, project planning, architectural program development, site design and development, overall building organization, individual spaces, and building subsystems.

The patterns have been checked, reinforced, and modified by subsequent empirical research as well as by design and consulting experience over the intervening years.

The monograph is part of the seven-volume *Children's Environments* series available from the UW-Milwaukee Center for Architecture and Urban Planning Research.

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OTHER MONOGRAPHS IN THE CHILDREN'S ENVIRONMENTS SERIES

Case Studies of Child Play Areas and Child Support Facilities, by U. Cohen, G.T. Moore, & T. McGinty. Report R78-2 (pp. vi + 405; 254 illus.). Also available through ERIC Document Reproduction Center, No. ED 184-697, and NTIS National Technical Information Service, No. ADA 088-371.

Case Studies of Child Play Areas and Child Support Facilities: Research Forms, by U. Cohen, G.T. Moore, & T. McGinty (pp. iii + 25). Available through ERIC Document Reproduction Center, No. ED 184-694.

Recommendations for Child Play Areas, by U. Cohen, A.B. Hill, C.G. Lane, T. McGinty, and G.T. Moore. Report R79-1, 1979 (pp. vi + 380; illus.).

Abstracts on Child Play Areas and Child Support Facilities, by A.B. Hill, C.G. Lane, U. Cohen, T. McGinty, & G.T. Moore (pp. iv + 102; illus.). Available through ERIC Document Reproduction Center, No. ED 184-695, and NTIS National Technical Information Service, No. ADA 088-590.

Bibliography on Children and the Physical Environment: Child Care Centers, Outdoor Play Environments, and Other Children's Settings, by G.T. Moore, C.G. Lane & L. Lindberg (pp. v + 143). Available through ERIC Documentation Reproduction Center, No. ED 184-696, and NTIS National Technical Information Service, No. ADA 088-589.

Planning and Design Guidelines: Child Care Centers and Outdoor Play Environments (Synopsis), by G.T. Moore, U. Cohen & T. McGinty (pp. 7). Available through ERIC Document Reproduction Center, No. ED 186-100.

OTHER RELATED CHILD-ENVIRONMENT RESEARCH AND DESIGN PUBLICATIONS

Since the first publication of this monograph, the first author has been involved in a wide range of research and design on child care centers, elementary schools, and other early childhood educational settings. Below are a few references. Please contact the authors for other references, including to videos and other media.

Designed environments for early childhood development: Three articles from the Children's Environments Project (G.T. Moore, U. Cohen, & T. McGinty). *Day Care Journal*, Fall 1982, 1(2), 29-38.

Effects of the spatial definition of behavior settings on children's behavior: A quasi-experimental field study. *Journal of Environmental Psychology*, September 1986, 6(3), 205-231.

The physical environment and cognitive development in child care centers. In C.S. Weinstein & T.G. David (Eds.), *Spaces for Children: The Built Environment and Child Development*. New York: Plenum, 1987. Pp. 41-72.

Child Care Environments: Policy, Research, and Design (G.T. Moore & R. Hart, Eds.). Special issue of *Children's Environments Quarterly*, 1990, 6, Whole No. 4.

School design: Crisis, educational performance, and design patterns (G.T. Moore & J.A. Lackney). *School Design*. Special issue of *Children's Environments*, 1993, 9(4), 99-112.

Ready to learn: Toward design standards for child care facilities. *Educational Facility Planner*, 1994, 32(1), 4-10.

Quality assessment and planning for children: Description and measurement of the physical environment of child care centres. *Architecture et Comportement/Architecture and Behaviour*, 1995, 10(4), 407-415.

Child care facility design. Series of articles in *Child Care Information Exchange*, No. 110-continuing, July/August 1996-present.

PREFACE

In the years since we wrote the first edition of this design guide, child care has become a national issue and a national priority in the U.S., in Canada, and in much of Europe.

Until the mid-1970s, child care in North America was seen as simply caring for children while parents were involved in other pursuits, mostly work. Child care was considered little more than "baby-sitting," and was differentiated sharply from developmentally oriented nursery schools or other early childhood development programs. As my colleague Martha Friendly at the University of Toronto Childcare Resource and Research Unit recently observed, until the 1980s child care was also perceived to be a welfare issue. Full-day child care was viewed primarily as a support service for low-income or high-risk children.

But since the first edition of this monograph was written and published, child care has come to be perceived more and more as a part of life-long education, starting with developmentally oriented child care and progressing through the school system. The previous distinctions between nursery schools and developmentally oriented child care have blurred. Child care is now seen as both a family support service and an educational right--the need and the right to early childhood preschool education.

This monograph is a design guide for policy, planning, programming, design, and evaluation of a range of early childhood facilities. As a design guide, it is centered around 115 patterns for large, medium, and small child care centers in neighborhood and work-place settings. Many of the patterns are suitable also for family day-care homes, parent-child drop-in centres, nursery schools, kindergartens, Head Start Centers, and other early childhood

development facilities, including for the new concept of preschool-K-1 early childhood centers.

The patterns are based on a three-year national research project funded in the late 1970s by the U.S. Army Corps of Engineers. That research evaluated 52 child care centers and outdoor play yards around the U.S. and Canada. The research consisted of observations of child-environment interactions, interviews with key staff members, and open-ended interviews including trade-off games with the children. National experts in early childhood development and design were interviewed, and some 2,000 pieces of environment-behavior research and design literature were collected from around the world and analyzed.

The results of the research were translated into 115 design ideas--called *patterns*--that are applicable for policy planning, project planning, architectural program development, site design and development, overall building organization, individual spaces, and building subsystems.

The design criteria were originally developed by Gary Moore, Uriel Cohen, Tim McGinty, and our staff of Carol Gee Lane and Ann Blocker Hill. Illustrations by Tim McGinty and Rick Jules. Photographs by Gary Moore, Uriel Cohen, and Tim McGinty. Editing by Gary Moore, Ann Hill, Heidi Hollenbeck, Lisa Lindberg Work, and Uriel Cohen. Layout and production by Carol Lane, Ann Hill, Uriel Cohen, and Lisa Work. Overall task management by Gary Moore. All of the above were at the time at the Center for Architecture and Urban Planning Research, University of Wisconsin-Milwaukee. Coordination was provided by Mr. William E. Johnson of the Special Projects Section, Structures and Building Systems Branch, Office of the Chief of Engineers.

This guide was first issued--in a severely pared-down version of this monograph--as *Planning and*

Design of Child Support Service Facilities (DG 1110-3-143), which--through various machinations--led later to the 1986 guide, *Standard Child Development Centers*. As the Corps of Engineers guide differed greatly from this monograph, and is no longer in print, we have continued to have requests to reprint this original "final draft" version of the design guide.

Since its first printing, the patterns have been checked and validated in several different ways. Some have been corroborated by formal empirical research conducted with the assistance of a grant from the Canada Council for the Arts and Humanities, others have been confirmed by less formal sabbatical research conducted in Scandinavia and northern continental Europe under grants from the Graham Foundation for Advanced Studies and the U.S. National Endowment for the Arts. Many have been further substantiated through design and consulting experience.

Over the 15 years since the first edition of this monograph, we have been very happy to learn that the work has been put to use by a wide variety of people in the child care and architectural communities--child care policy makers, early childhood educators, environment-behavior researchers, child care directors and staff, and architects from around the continent. We have also been pleased to learn that the guide continues to be in considerable demand. Since the first publication in 1979, there have been sufficient requests for copies that it is now in its ninth printing. We were delighted to learn recently of a request from the Child Care Branch of the British Columbia Ministry of Women's Equality for one of our largest single requests--for 100 copies to be distributed province-wide as part of the BC Child Care Expansion Initiative.

Over the intervening years, this monograph has received a number of awards, including an Award for Applied Research from *Progressive Architecture*

and the UWM Foundation Research Award in 1980, and was a large part of the research basis of a Winning Entry in the AIA/ACSA Council on Architectural Research at the AIA/UIA World Congress of Architects in 1993. The work on which it is based has been featured recently in *Architecture* (April 1993), *Progressive Architecture* (August 1993), and the *AIA Educational Facilities Newsletter* of the Educational Facilities Professional Interest Area (Fall 1993).

Parts of this guide have been reprinted--with copyright permission--as the basis for several other design guides. We are pleased to have had parts of this work incorporated or reprinted in the following: the Commonwealth of Massachusetts *Architectural Prototype Document for Day Care Centers in State Facilities* (DCP85-6[R], 1987), American Association for the Care of Children's Health *Child Health Care Facilities Design Guidelines* (1987), City of Vancouver Planning Department *Childcare Design Guidelines* (1993), and the recent *GSA Child Care Center Design Guide* (PBS-PQ140, 1993) which will be used for all child care centers in federal and other buildings managed by the U.S. General Services Administration.

Although there are a total of 115 patterns presented here, the first author has come to believe--based on accumulated research and professional experience over the intervening 15 years--that 18 of the major design principles are absolutely critical for the success of any child care centre. These 18 design principles are the basis of a companion video, *Child Care by Design*. It is based on this work but is illustrated largely by case study examples collected more recently from Scandinavia and Northern Europe. The video, first suggested by Jane Beach, now the Director of Child Care for the Province of British Columbia, currently is being completed with Martha Friendly and Mark Rubin Productions under funding from the Child Care Initiatives Fund of Health and Welfare Canada.

With a little luck, and a little free time for writing, the core of this work--centering around those 18 key design principles--will be available in the near future as a book from a major publisher.

ACKNOWLEDGMENTS

Our thanks to the many, many people and organizations who have helped in this work over the years. To the U.S. Army Corps of Engineers who commissioned the original work. To the Canada Council, the Graham Foundation, and the U.S. National Endowment for the Arts who supported the follow-up research. To Henningson, Durham, and Richardson and the U.S. General Services Administration who supported the first author's work on a later design guide that has greatly informed our thinking. To the St. Joseph Health Care Center and Shaughnessy Fickel and Scott, Architects, both in Kansas City, who offered a wonderful opportunity to apply the patterns to a major demonstration project, from which we have learned tremendously. To other clients who have constantly challenged us, and taught us much. To the Child Care Branch, British Columbia Ministry of Women's Equality, the National Coalition on Campus Child Care, and the *Child Care Information Exchange*, and other groups for sponsoring lecturing tours and inviting series of articles so we can disseminate many of the ideas contained herein directly to child care providers and architects. To the Child Care Initiatives Fund of Health and Welfare Canada and to the University of Toronto Childcare Resource and Research Unit who supported the production of a video based on this work. To the administration of the Center for Architecture and Urban Planning Research and the School of Architecture and Urban Planning at UW-Milwaukee for their continued support of our work on child-environment relations over the years. To the entire Children's Environments Project team who assisted on all aspects of the initial project from conceptu-

alization through administration and layout. To the children, staff, and directors of child care centres across North America, Scandinavia, Great Britain, and northern Europe who have given so freely of their time while we fumbled around trying to identify and understand the most critical features of the physical environment of child care. To the many people who have commented on the work over the years, and provided stories about which parts were useful or were not. To my two principal colleagues on the original work--Professors Uriel Cohen and Tim McGinty--we couldn't have done it alone. And to our children, especially Mindan, Sharon, Miko, Rita and Molly, who were little child care urchins when we began this work (can you find their photos in the guide? they are all there) and who were very much the inspiration for our work. They have all grown up and are in college now. At least one of us has felt the urge to start over with a new child, Kelton, who is in the same child care center that "big sis" attended 15 years ago, and who is already providing new insights about child care environments.

Gary Moore
Milwaukee
January 21, 1994

Post-Script: Sadly, the original manuscript with camera-ready illustrations for this design guide has been misplaced. Since the tenth printing, therefore, copies are being made from a copy of the ninth printing, with revisions. You'll note the revisions--deletions of irrelevant sections that pertained to the original client only and new additions wherever there is a change in type face from the former Helvetica to the current Times Roman. I am very sorry for this-- the content will be the same, as revised, but the photographs are not as sharp and clear.

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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

INTRODUCTION AND METHODS

The Environments for Play and Child Care Project is a two-year project under contract to the Office of the Chief of Engineers (OCE), U.S. Army. The aims are the following:

- To develop behaviorally-based planning and design criteria for child care centers and outdoor play environments.
- To prepare illustrative conceptual designs for a number of different types of child care centers and play environments.
- To develop a new Design Guide on Child Care Facilities (DG 1110-3-143) and a new Technical Manual on Children's Outdoor Play Environments (TM 5-803-11) incorporating both of the above.

As part of this effort, the project team conducted case studies at 8 military and 15 civilian child-care facilities, and 7 military and 13 civilian play environments across the U.S. and in Canada. The project team also reviewed over 175 books and nearly 1000 articles from the research and professional literatures on child development, architecture, and child-environment relations. This research was supplemented by the project team's previous research and professional experience with a range of different child-care facilities, play environments, and other children's architecture.

OCE selected the Community Design Center, Inc. (CDC) and its subcontractor, the Center for Architecture and Urban Planning Research, University of Wisconsin-Milwaukee (UWM) to conduct the project. Prime responsibility for researching the design guidelines, preparing planning and design criteria, and coordinating the final preparation of the Design Guide and Technical Manual lie with UWM. Prime responsibility for the concept designs, for all graphics, and overall administrative responsibility for the contract rests with CDC, Inc.

The results of the Project, though general to child care and play across the entire country, are tailored to the needs of applications to U.S. military bases. It is hoped that both the Design Guide and the Technical Manual will be used by all services. It is also hoped that they may have positive value in other, non-military contexts.

Documents from the Project have been prepared for all involved with children's environments on military bases--base commanders, administrators, housing planners, facility engineers, community service officers and personnel, child support services personnel, child care directors and staff, architects, landscape architects, consultants, parent groups, and all others involved in creating good child care facilities.

The Project has been conducted to reflect and incorporate the latest thinking on children, child development, and the role of space in child care and play. At the same time, an innovative but previously judged successful format has been expanded upon and used for the presentation of recommendations and the rationale behind them. Each planning or design criterion--herein called patterns and recommendations--has been based on the best and latest available empirical data on child-environment relations.

The current volume is both the criteria document for child care facilities and (with the forthcoming illustrative conceptual design) a draft of the final Design Guide. The volume is one of five interim documents from the Project. In order of appearance, they are:

- *Case Studies of Child Play Areas and Child Support Facilities* (Travel Report, 1978)
- *Technical Research Methods Appendix for Case Studies of Child Play Areas and Child Support Facilities* (Appendix, 1978)
- *Abstracts on Child Play Areas and Child Support Facilities* (Abstracts, 1978)
- *Recommendations on Child Play Areas* (Criteria Document, 1979)
- *Recommendations on Child Care Centers* (Draft Design Guide, 1979)

The recommendations in this document are presented as a series of "patterns," each suggesting a different design idea in response to children's needs and the research information collected, and each further specifying detailed design criteria. Highlights of the most crucial recommendations follow.

SUMMARY OF POLICY RECOMMENDATIONS

In order to implement the following planning and design guidelines for child care facilities, the consultants recommend amendments to several key provisions of current military child care regulations. These are the highlights--the complete set of policy recommendations and rationale is given in Part 1, Chapter 4 (Items 401-411):

- The role of family child care and family child care homes should be given more prominence in military regulations (e.g., Army Regulation AR 608-1, Army Community Services Program, Chapter 8, Child Support Services).
- Mixed-age groupings should be permitted and encouraged in order to stimulate cross-age learning.
- Outdoor play yards should be given more prominence as an important part of quality child care, and all references to stereotypical, old-fashioned "play equipment" should be updated.
- Children should be allowed and encouraged to become involved in the entire cycle of plant growth, food preparation, cooking, eating, and clean-up, including being permitted in satellite kitchens.
- Space allowances for military child care centers should be modified in Department of Defense Manual DOD 4270.1-M, Construction Criteria Manual).
- New policies should be established to limit the size of child-care centers to 60-75 children, or where larger facilities cannot be avoided, to develop them in semi-autonomous administrative and architectural modules of 60-75 children each.

- New policies should be established to encourage the development of a network of child-care facilities on military installations, to be comprised--in the example of a large installation--of a central child-care center, a few neighborhood-based centers, and several family child care homes.

SUMMARY OF
PLANNING
RECOMMENDATIONS

Planning criteria and guidelines for the establishment and location of child care facilities and for the development of architectural programs are collected into 19 planning patterns, with their constituent recommendations in Part 2, Chapters 5 and 6 below (Items 501-513 and 601-609). Some of the highlights are the following:

- Child care facilities should be integrated with the total community; they should not just be separate places for children away from the mainstream of life. As part of this, they may be integrated into a community services center (for detailed recommendations, see Planning Pattern 510).
- Networks of child care facilities should be established on each military installation, and should be under the direction of the Child Care Coordinator. On large installations, a network would be comprised of one central facility, a few neighborhood-based facilities (one for each identifiable housing area), and several family child care homes. On small installations, a network might only be comprised of one neighborhood center and a few family child care homes (see Patterns 502-505).
- It is especially important that family child care homes for 6 or less children should be made an important part of any network (see Pattern 503).
- Neighborhood-based centers should accommodate a maximum of 60 to 75 children. The total number of children served in one facility is one of the better predictors of the quality of child care services offered (see Patterns 504 and 901).

- Where absolutely necessary to have facilities for more than 75 children, they should be divided into administrative and architectural modules of 60 to 75 children each. Each module should have its own program director, staff, and architectural identity. They could be arranged in a campus or village plan or could be separate wings of one building (see Patterns 501-505 and 902).
- For the overall success of any children's program and children's environment, it is crucial that there be as broad a participation as possible of all interested parties in the planning and design process. This includes parents, child care staff, and even some representative children, as well as facility engineers, architects, child care and child-environment consultants, community service personnel, and child care coordinators or directors (see Pattern 106).
- A critical part of the development of an architectural program for a particular facility is the selection of patterns from the below Design Guide which will promote and facilitate the most important developmental goals and activities of the program. A matrix relating developmental goals to their architectural implications in the form of numbered patterns is provided for this purpose (see detailed Recommendations in Patterns 601-606).

SUMMARY OF DESIGN RECOMMENDATIONS

Architectural and landscape architectural design guidelines for child care facilities comprise Part 3 of this draft Design Guide. They are given in six parts which taken together constitute the entire design process:

- General Design Criteria--Chapter 7
- Site Design and Development--Chapter 8
- Building Organizing Principles--Chapter 9
- Individual Space Criteria--Chapter 10
- Design Considerations for all Areas--Chapter 11
- Building Subsystems Criteria--Chapter 12

Highlights of some of the most important design patterns follow:

- The basic design goal for any children's environment is to serve developmental needs and thus to have all major design decisions based first and foremost on the needs of children. This does need to be balanced, nevertheless, with demands of energy-conscious design and life-cycle economies (see detailed recommendations in Patterns 701-704).
- Child care buildings and the entire site should be non-institutional in design character (see Patterns 803, 915-920).
- How a child care facility presents itself visually is important to its success. It should be child-scaled, friendly, and even from the exterior should obviously have a rich array of activities going on (see Patterns 914-916, 918-919, 1001-1003).
- Small groups work best. The size of the group in which the preschool child spends more hours makes the most difference in quality of child care (see Patterns 906-908, 1027).
- The needs and demands of different types of users often compete with each other and with staff resources, and should be partially separated, e.g., drop-in care, full-day care, and after-school care (see Patterns 909-910, 1019).
- Children learn from contacts both with children their own age and with children younger and older. Although some protection needs to be given to infants, a strict age separation is not appropriate. Spaces indoors and outdoors should be planned to have partial separation with strong links for visual contact and circulation (see Patterns 905, 910-912, 914-916, 1102).
- Outdoor play yards are just as important to quality child care as indoor play spaces, and should be designed with the same developmental and design principles in mind (see Pattern 806).

- Indoor-outdoor connections, including the creation of favorable microclimates and extending the building into the community, are important to the free flow of children from indoors to out, to maximum use of outdoor fresh air space, and to community image (see Patterns 801, 806-807, 914-916, 1001-1003).
- Providing variety of activities, challenges, and spaces is important to the provision of quality child care services. It is crucial that children have lots of different things to mess around in, and that these activities be orderly and clearly accessible to them without having to have adult standards of neatness (see Patterns 904-905, 908, 910-912, 1008-1027).
- So-called "ancillary" or "secondary" activity spaces are important for development, e.g., kitchens and bathrooms are for learning (see Patterns 1025-1026).
- The amount of usable activity space per child is a reliable predictor of the quality of a child care program. Under 35 sq. ft. per child can lead to aggressive behavior; over 50 sq. ft. to aimless or hyperactive behavior. Recommended usable activity space is 42 sq. ft. per child (see Pattern 901).
- In designing child care facilities, as any quality architectural space, it is important to vary the third dimension actively, i.e., to vary the shape and quality of children's space by changes in floor levels, ceiling levels, skylights, planned natural light, colors, etc. (see Patterns 915, 919, 1104, 1201, 1206).
- Even building subsystems and other details often thought to be only technical details or standard architectural operating procedure can be designed with the child in mind (see Patterns 1201-1212).

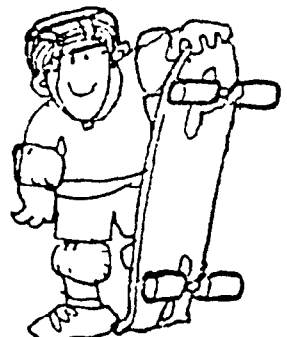
PART 1

INTRODUCTION



This chapter describes the purpose of the Design Guide, the methods used to develop the Guide, the roles different key actors--including users--should play in the planning, programming, and design development process, and how to use the Design Guide in the ACS Child Care Project Development Process.

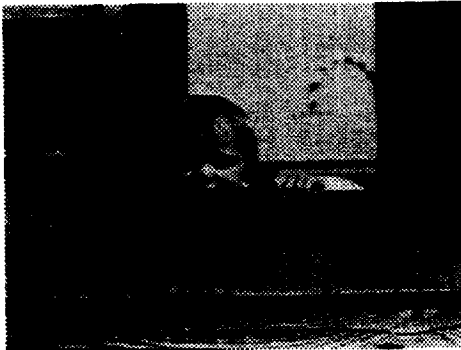
101	Purpose
102	Scope
103	Methods Used to Develop the Criteria
104	Organization and Format
105	Responsibilities and Use of the Guide
106	User Participation in the Planning and Design Process
107	Design Emphasis
108	Definitions
109	References and Additional Information
110	Proponent and User Comments



101 PURPOSE

DESIGN

This guide provides criteria to govern the programming and design of military Child Care Centers, and to aid in the evaluation of such designs. This guide is directed towards improving early design decisions and towards the development of realistic, cost-effective buildings and outdoor spaces in conjunction with the relevant service's regulations and DOD criteria referenced herein.



It is intended to assist child care directors and staff, Community Service Officers and personnel, and parents to understand and provide input into the architectural programming and design process. It is also intended to aid architects in basic conceptual design and in the development of their designs from initial schematics through detailed design development. Finally, it is intended to assist facility engineers, base master planners, and the Corps of Engineers field offices in evaluating such designs.

PLANNING

This guide is also intended to provide general guidance for using service personnel and Corps of Engineers field offices in developing base-wide master plans for networks of Child Care Centers, and in programming project-specific requirements for Child Care Centers, and in planning facilities for inclusion in military construction programs.

IMPROVEMENTS

It is expected that Child Care Directors and staff, Community Service Officers and personnel, and other using service personnel will find additional use for this guide in developing improvements or in better utilizing existing facilities.

APPLICATION

This document is applicable to all construction projects for Army and other military service's Child Care Centers, whether for new construction, for adaptively reusing other facilities, or for renovating or altering existing centers. This guide also provides procedures for the project planning and programming of specific facilities.

While this is the basic criteria document for Child Care Centers, it is not intended to provide all of the information required for successful preparation of project designs. Additional information must be obtained from the unique requirements at the installation level which are associated with the general description of activities contained herein and the locational constraints and opportunities of the site. The guide outlines procedures for each of these local efforts. Additional information is also available in a variety of useful books and guides on child development, child care, staff development, and facility design. Selected references are included below, and are abstracted in an interim report, *Abstracts on Child Play Areas and Child Support Facilities* (1978).

CASE STUDIES

The final design guide will present four illustrative concept designs as case studies exemplifying the procedures established herein for determining project requirements, locating facilities, developing architectural programs, selecting patterns from the guide, and for developing design solutions.

These case studies will be for different sizes and types of Child Care Centers. The design will be based on realistic but hypothetical programs, and will represent applications of the patterns and criteria contained in this guide. The case studies are not intended to be used as definitive designs. Each local installation will engage in individual development of program requirements and designs responsive to the local conditions, child-care needs, and the preferences of parents, Child Care Directors and staff, and Community Service Officers and personnel, utilizing the procedures, patterns and criteria specified herein.

103 METHODS USED TO DEVELOP THE CRITERIA

The planning and design criteria contained in this report are derived from a process of applied research, programming, and design based on our earlier work in this field (see Moore, 1975; Cohen and Moore, 1977; Cohen 1978; Moore, Cohen, and Team 699, 1977; Moore and Cohen, 1978; and Moore, Cohen, Oertel, and van Ryzin, 1979).

RESEARCH PROCESS

The process had six basic stages:

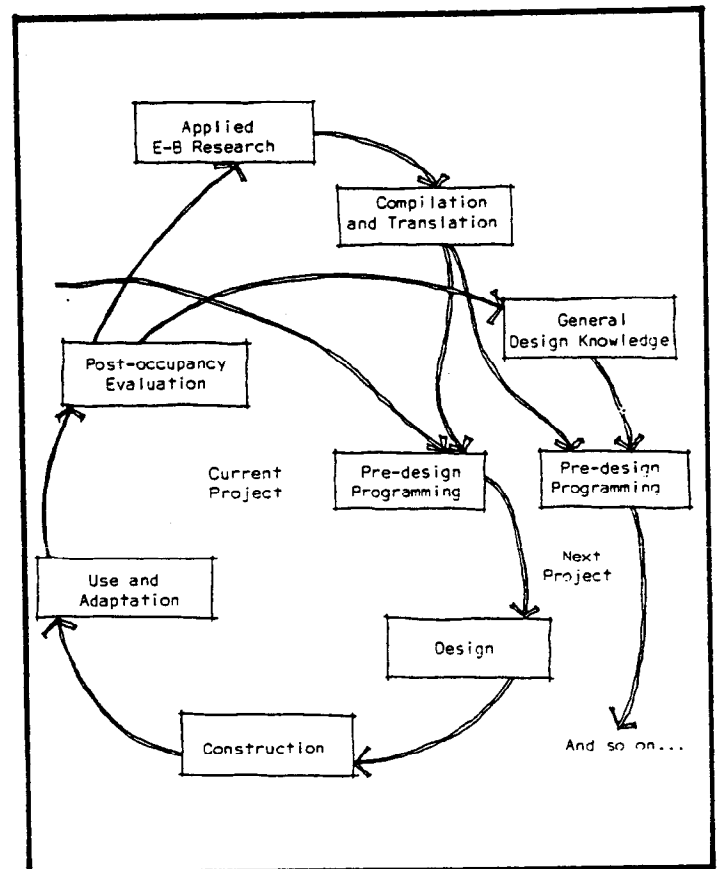
- Evaluative case studies at 23 child-care centers (indoor facilities and outdoor play yards) plus an additional 27 outdoor play environments at a total of 1 Air Force base, 1 Naval base, and 17 civilian sites around the country. Facility inventories, behavioral observations of children and staff, focused interviews with staff, program directors, and in a few cases children and parents were conducted at each site. The results are reported in Cohen, Moore and McGinty, *Case Studies of Child Play Areas and Child Support Facilities*, 1978. The methods used for these case studies are reported in a technical appendix, University of Wisconsin-Milwaukee (1978).
- Systematic review of existing scientific and professional literature together with our own previous research on child-environment relations, for all relevant findings about the relationship of children's behavior to space and to child-care centers in particular. Included in this review were articles and books in child development, early childhood education, architecture, environment-behavior studies, publicity brochures from manufacturers, and military, national, and state child-care building codes and licensing regulations. Over 800 books and papers were identified which had relevant information. All of this information, together with over 5000 slides and hundreds of black and white photographs of children's behavior and children's environments, is catalogued and stored in the Children's Environments Project Office at the University of Wisconsin-Milwaukee.



The 40 most important works are abstracted in Hill, Lane, Cohen, Moore, and McGinty, *Abstracts on Child Play Areas and Child Support Facilities*, 1978.

- Identification of significant design issues based on information from these two sources, plus our own professional experience and the advice of colleagues and consultants around the country including those interviewed as part of the site visits and case studies (e.g., the child's need simultaneously for exploration and security).
- Collecting and sorting all the scientific and applied information relevant to each issue into specific packets

THE CYCLE OF RESEARCH AND DESIGN IN ARCHITECTURE



- Development of a central design idea--called a "pattern"--in response to each packet of information, together with the development of more specific criteria and recommendations.
- Organization of the patterns into a sequence relevant for planning and design, and preparation of this draft design guide.

The output from this process is a set of 112 patterns for the planning, programming, and design of child-care centers, each with supporting research-based arguments and detailed criteria.

104 ORGANIZATION AND FORMAT

ORGANIZATION

The Design Guide is organized around two major parts--PLANNING and DESIGN guidelines--preceded by this INTRODUCTION and followed by ILLUSTRATIVE CONCEPT DESIGNS (forthcoming). This organization reflects the two major sets of considerations essential to the development of a new or renovated child-care center.

ORGANIZATION OF THE DESIGN GUIDE

PART 1 INTRODUCTION

100	200	300	400
PURPOSE, METHODS, USE	THE NATURE OF CHILD CARE, PROGRAMS, AND FACILITIES	THE ARMY COMMUNITY SERVICES CHILD CARE PROGRAM	RECOMMENDED CHANGES IN EXISTING POLICY

PART 2 PLANNING

500	600
PROJECT PLANNING CRITERIA	ARCHITECTURAL PROGRAM DEVELOPMENT PROCESS

PART 3 DESIGN

700	800	900	1000	1100	1200	1300
GENERAL DESIGN CRITERIA	SITE DESIGN AND DEVELOPMENT	BUILDING ORGANIZING PRINCIPLES	INDIVIDUAL SPACE CRITERIA	DESIGN CONSIDERATIONS AFFECTING ALL ACTIVITY AREAS	BUILDING SUBSYSTEMS CRITERIA	SUMMARY

PART 4 CONCEPT DESIGN

1400	1500
DESIGN PROCESS	ILLUSTRATIVE CONCEPT DESIGNS

Part 1, INTRODUCTION, will give the reader a brief introduction to children, child care, the role of space in children's behavior and development, and Army Community Services (ACS) Child Care Program.

Part 1 includes:

100 Purpose, Methods, Use

200 The Nature of Child Care, Programs, and Facilities

An introduction to theories of child development, types of child-care programs, and facilities, existing regulations, and emerging trends.

300 The ACS Child Care Program

A brief summary of the goals of the child care program and program components.

400 Recommended Policies and Changes in Existing Policy

Recommendations about networks, sizes of child-care centers, and family child-care homes, including the alternative of a central, main center and a dispersed system of neighborhood centers.

Part 2, PLANNING CRITERIA AND RECOMMENDATIONS, will provide architects, engineers, base master planners, as well as Child Care Directors and Community Service personnel, with the process description for the planning and program development.

Part 2 includes:

500 Project Planning Criteria

This section presents criteria and standards for estimating need, establishing networks, choosing particular facilities, and determining the size of the site.

600 Architectural Program Development Process

This section explains how to develop a specific architectural program for an installation based on this design guide and local information. It discusses how to choose patterns by considering who the users are, what developmental goals are to be emphasized, and what activities are to be included in the child-care "educational" program.

Part 3, DESIGN PATTERNS AND RECOMMENDATIONS is the central section for architects and other design professionals. It presents them with detailed design considerations embedded in a context of larger architectural issues. Programming personnel will find detailed information to tailor a building program to installation needs; evaluation personnel will find the standards by which project proposals and design stages can be assessed.

Part 3 includes:

700 General Design Criteria

This section presents an overview of general design objectives which affect the entire design process, including behaviorally-oriented architectural design, user participation in the design process, barrier-free design, energy-conscious design, and timeliness.

800 Site Design and Development Organizing Principles

This section describes the considerations involved in siting the child-care center and developing the site in accordance with the needs of children, staff, and parents (e.g., developmentally-appropriate play yards).

900 Building Organizing Principles

This section presents the most important patterns and criteria for the conceptual design of the building as a whole, i.e., the overall principles and design concepts which organize the building and give it image and character as architecture (e.g., child-scaled environments).

1000 Individual Space Criteria

This section describes the patterns and detailed criteria for designing each individual space of a child-care center (e.g., an arts and crafts area).

1100 Design Considerations Affecting All Activity Areas

This section presents other important design considerations which, though they are not organizing concepts, will affect the character of many or all of the individual spaces in the building (e.g., places to observe children).

1200 Building Subsystem Criteria

This section describes all the behaviorally-oriented technical criteria for the design of building subsystems (e.g., climate control based on children's comfort needs).

1300 Summary

This section summarizes the criteria presented, and includes both a summary check list of patterns and a set of fold-out matrices relating the key developmental issues for children and the activities most likely to be chosen by Child Care Directors for inclusion in the facility with the corresponding planning and design implications (patterns). These matrices are thus necessary for the selection of patterns to include in the architectural program, to be accountable to the design process, and by which to evaluate design proposals and steps in the design process.

Part 4, ILLUSTRATIVE CONCEPT DESIGNS (to be developed) will show case studies using the planning and design criteria to develop particular, though imaginary, projects. Four centers will be included, ranging in size, type of program emphasis, climatic region, and particular site configuration. The case studies are not definitive designs. They are, however, illustrations of possible applications of the patterns and criteria contained herein in the form of example programs and designs for different facilities involving hypothetical local needs and situations.

This section will help design personnel use the design guide in developing concept plans. It will help programming personnel demonstrate possible design alternatives. It will help families, child-care staff, and community service personnel to compare alternative images of child-care centers and layouts as a part of their participation in the programming and design process. Finally, it will demonstrate to Child Care Directors and Community Service Officers how they might use this Design Guide to rearrange or modify their own centers more effectively.

FORMAT

The two central sections of the guide are comprised of a series of planning or design patterns together with detailed criteria for their implementation. Each pattern describes a problem which occurs over and over again in the environment of childhood or a critical issue about the relation of children to the physical environment, and then describes the core of the solution to that problem, together with detailed technical criteria for its implementation (see Alexander, Ishikawa, and Silverstein, 1977). Each pattern is stated in general terms, so that it can be applied in varying ways depending on local conditions, climate, budget, and local child-care program objectives.

For ease of reading and using this design guide, each pattern is comprised of six parts and follows the same format:

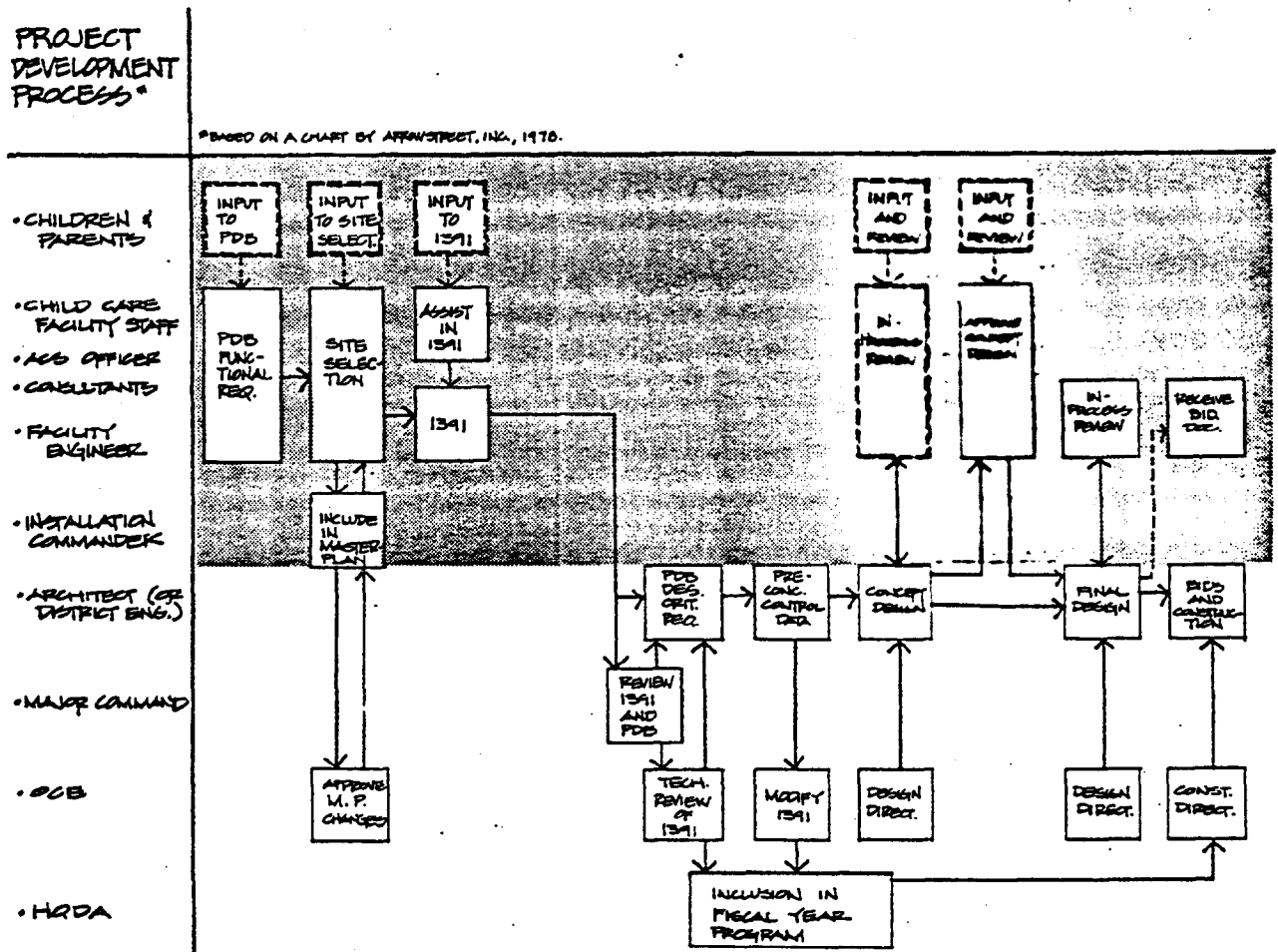
- First there is the title of the pattern stated in general terms, but always specifying some quality or relationship which the environment should have.
- Second there is a brief statement of the issue or problem to which the pattern responds--the behavioral problem--to which the pattern is the solution.

- Third is the body of the problem and the empirical basis for the derivation of the pattern, including a summary of all of the scientific information able to be found regarding the issue in question; this section analyzes the issue, compares and contrasts different approaches to it, and leads to a justification of the pattern.
- Fourth is the pattern itself, stated in terms of an evocative title and including a summary description and one or more diagrams of the physical characteristics or relationships the environment should have in order to solve the stated issue.
- Fifth is a set of detailed criteria recommendations which elaborate on the pattern and give it specific shape and form, stated in verbal and graphic terms.
- Sixth is a list of related patterns which define the larger context into which this pattern fits and which help to give it shape by defining specific detailed parts of it, embellishing it, filling it out.

To best utilize this guide, it is important to understand the Project Development Process for Child Care Centers, the responsibilities of the many actors within that process, and how the sections of this Design Guide relate to the steps of the process.

CHILD CARE CENTER DEVELOPMENT PROCESS

The Project Development Process for construction of Child Care Centers, funded by Military Construction-Army (MCA) appropriation, is represented diagrammatically in the following figure. The sequence of bold-outlined boxes traces the primary series of actions required of the principal responsible actors. The solid-outlined boxes represent other required or mandated actions; the dotted boxes and arrows show optional actions or roles. The shaded area at the top of the diagram indicates the actors within the installation; the bottom half, those outside.



Many designed environments fail or are rejected by users because they do not respond to all real needs or seem not to belong to the community.

Recent trends in planning highly recommend resident and user participation in the planning process, especially in urban areas (Gold, 1968). Other critics of typical planning processes which exclude the prospective users of the planned space have even suggested that the popularity of settings is affected by user participation in planning as well as building. Frost and Strickland (1978) found that, given a choice between three school-yard play areas, two prebuilt and one kid- and parent-built, the latter was favored over the two former.



There are several problems which arise if children are excluded from the planning process. One, adults have forgotten what children actually like and end up superimposing their distant memory of their own childhood onto their children's active and involved imagination. Clay (1972) argued that "to over-design with inflexible materials is to steal away from children (and adults) the right and delight and developmental value of creating for themselves" (p. 39).

Clay went on to argue that the consequence of not allowing for the type of activity children like eventually depresses the spirit of the child:

As kids are more and more excluded from adult work, imprisoned in apartment towers, fenced in by dangerous traffic, forced to live where digging and building are outlawed, a small person must feel he or she is a perpetual underdog in uncontrollable surroundings. To roam safely, to fantasize, build with tools and materials, care for pets, and share (perhaps with his parents, too) creative work-play, would bring the child, as Kari Linn says, "a sense of mastery over the place he inhabits." (p. 39)

DESIGN QUALITY

Throughout the planning, programming, and design process, emphasis shall be placed on user-oriented design as specific in the patterns and criteria of this guide since it vitally affects the quality of the child-care program and thus the experiences of children, staff, and parents, the people most affected by the facility. Emphasis shall also be placed on the longevity, economics, site appropriateness, energy-efficiency, usefulness, efficiency, and general attractiveness of the building design, including its interior and exterior spaces.

USER INFORMATION

Provisions related to needs of the various users of the facility will be paramount. Provisions related to the efficient operation and maintenance of the facility shall also be emphasized during design. Information to supplement project completion records should be prepared to instruct the using service on how to gain the most benefit from such provisions.

Criteria-Related Definitions

- Pattern: The core of the solution to a problem which occurs over and over again in the environment or of the resolution of a critical issue about the relation of children to the physical environment; stated in environmental terms such that there are many ways to apply it in different contexts.
- Issue: A statement of a problem which occurs over and over again in the environment of childhood, or an important concern about the role of the environment in child development.
- Justification or Discussion: An analysis of empirical evidence relation to an issue and justifying the pattern in response to the issue.
- Criterion: A standard of judgement; an established rule against which particulars may be evaluated.
- Recommendation: A planning or design suggestion which shall have the status of a criterion.
- Related Items: A list of patterns related to one particular pattern, some of which define the larger context into which this pattern fits, and some of which give the pattern more specific, detailed definition.

Facility-Related Definitions

- Army Community Services (ACS) Program: A community-oriented, social service program designed to assist the commander by identifying emerging social problems and to assist service members and their families through the development and provision of programs and services designed to meet individual and community needs.
- Child Support Services (CSS) Program: An organized effort within the ACS Program to coordinate and manage all activities (on property controlled by the US Army worldwide) which provide services for children.

- Child Care Services: All services necessary to maintain the physical well-being and safety of a child.
- Child Development Services: All services aimed at developing the child's physical, mental, and social capabilities.

Unless otherwise differentiated, further use in this Design Guide of the single term "Child Care Services" will be taken to imply both Child Care and Child Development Services.

- Child Care Activity: An activity primarily offering Child Care Services on an hourly, periodic, non-daily basis, or on a daily, continual, and regular basis.
- Full-Day Child Care: Child Care Services offered scheduled daily, for a full day each day (i.e., from somewhere between 7:30 and 9:00 until 3:00 to 5:30).
- Part-Day or Half-Day Child Care: Child Care Services offered scheduled daily, for a half day or some other regular part of a day, on a regular basis.
- Drop-In Child Care: Child Care Services offered on a period, non-scheduled, non-daily, hourly basis.
- After-School Care: Child Care Services offered to school-age children on a scheduled or non-scheduled, periodic or regular schedule after regular elementary school hours (e.g., 3:00 or 3:30 until 5:00 or 5:30).
- Family Child Care: Child Care Services (not part of foster care) provided in a family housing unit.
- Preschool: An activity (not part of the formal education system) that primarily provides organized learning experiences to an established enrollment of children (usually only between the ages of 3 and 5) for a specific part of the day (usually 2 to 3 hours).

- Child Care Facility: A building or part of a building used to house Child Care Services.
- Child Care Center (formerly called nursery, drop-in center, co-op, day care center, etc.) etc.): A building or portion thereof (other than a portion of a family-housing unit which portion is still used as housing) which is used exclusively or part-time (such as a chapel) for providing Child Care Services.
- Family Child Care Home: A family housing unit in which the occupant provides Child Care Services.
- Child Care Network; or Network of Child Care Services or Facilities: A comprehensive system of Child Support Services including Child Care Services provided at one or more Child Care Centers and Family Child Care Homes.

Other definitions are covered in Section 200 and in the relevant sections of this Design Guide as needed.

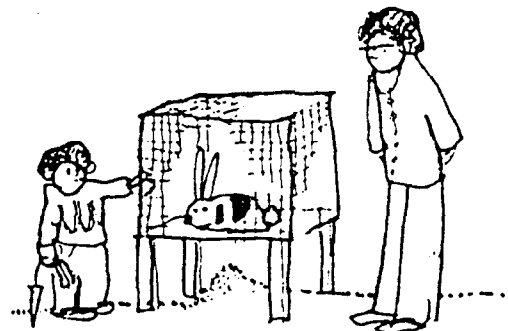
THE NATURE OF CHILD CARE, PROGRAMS, AND FACILITIES

200

This chapter introduces the concepts of child care, child development, and developmentally-oriented child care, and describes the range of program options, types of child care facilities, and their locations. Finally, it compares existing regulations with newly emerging trends.

A must reading for the uninitiated, and a refresher for those who are more familiar with children and their needs relative to the environment, this chapter describes the basic philosophies of child care and reviews relevant literature as an introduction to the remainder of the Design Guide.

- 201 Importance of Child Care
- 202 Introduction to Child Development and Care
- 203 Range of Child Care Programs
- 204 Types and Locations of Child Care Facilities
- 205 Existing Standards and Regulations



201 IMPORTANCE OF CHILD CARE

QUANTITATIVE NEED

In 1976, there were approximately 18,000,000 children under the age of 6 years in the United States, and another 28,000,000 between 6 and 13 years of age. Of the children under 6, over 35% were children whose mothers were in the labor force; almost 50% of those between 6 and 13 had mothers in the work force (Committee on Finance, United States Senate, 1977, Table 1).



Children with parents in the work force require care during the day, either part of the day, all day, or after school for the older children. Yet in 1977, almost 10% of these children were taking care of themselves, of whom over 20,000 were under the age of 6. Meanwhile, only 3.7% of children 3-6 years of age with mothers in the work force were cared for in child care centers, with another 14.4% in family child care homes (no data is available for children under 3 years of age). Thus less than 20% of preschool children with mothers in the work force were making use of some form of organized child care in 1977. Less than 4% of school age children with mothers in the work force were making use of organized care services after school (Committee on Finance, U.S. Senate, 1977, Table 25).

What about the other 80% of preschool children, and the 96% of elementary-school age children? And what is happening to the 10% taking care of themselves?

DEVELOPMENTAL IMPORTANCE

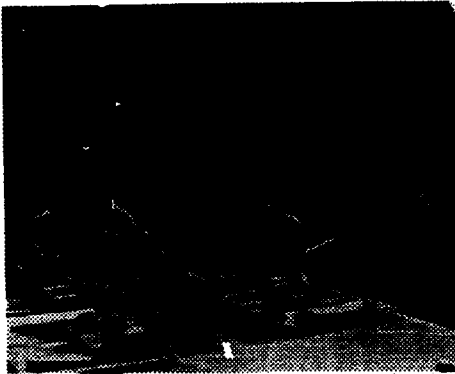


This is the quantitative need. But what of the qualitative need?

Many children benefit greatly from care given by a relative or by a babysitter coming into the home. But research has shown rather conclusively that the first five years of a child's life is the time of most active development, not only of intellectual growth, but also of the development of personality, social skills, and stable emotions. The critical importance of adequate and appropriate stimulation and emotional security during these early years has been demonstrated by Head Start Programs. The nation's consciousness has been raised. And a growing lobby continues to push for universal early childhood education and development programs.

Quality early childhood development programs go beyond what most families, relatives, or babysitters can provide. Even families where one parent does not work are choosing to have their preschool children attend a developmentally-oriented child care program for a few hours or a few days a week. The advantages of at least a few hours a week in an early childhood development center (ECDC) can be tremendous for all children.

With the recognition of the importance of early development during the preschool years, we can begin to recognize the responsibility a child care center has in the community. Its role is to offer an educationally sound program as well as to provide all of the caretaking services of a good babysitter. The educationally appropriate objectives for any early childhood development program are to expose children to the widest possible variety of experiences in order to arouse their curiosity, to challenge their physical and intellectual abilities, to encourage self-expression, to assist in the development of both individuality and ability to cooperate in groups, and to be creative and at the same time understanding of the roles of society. In effect, as stated by Evans, Shub, and Weinstein (1971):

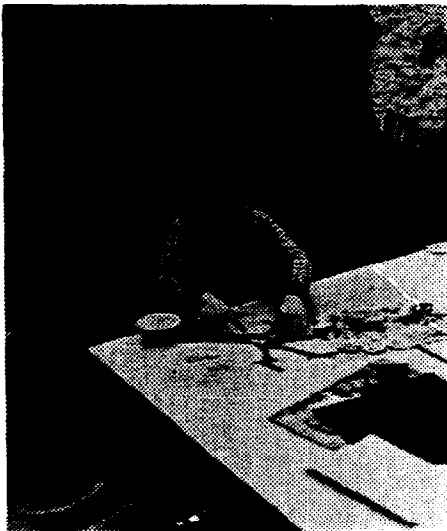


The first "school" experience should be one which develops a sense of joy, wonder, and curiosity in the world around us. Children should feel confident that they can and should ask questions, try new ideas, and, most importantly, feel good about themselves. Indeed, one of the most important objectives of a good preschool program is to begin to develop a positive self-concept among all the children. When children feel good about what they can do, when they understand their role as son, daughter, friend, brother or sister, when they recognize the love and friendship of teachers and children, and when they have confidence in themselves, they will be far more receptive to the learning opportunities and experience than if they are feeling angry, hurt, alone, confused, shamed, or rejected. Thus when someone asks

what do preschool teachers teach, the answer is they teach mathematics and science, music and reading, dexterity and cooperation in the context of productive exploration and experience, and in an atmosphere of warm support for each child rather than through arbitrary schedules, group tasks, and synthetic assignments and evaluations. (pp. 120-121)

CHILD CARE AND THE MILITARY

The composition of the military is changing. and reflects the cross section of the country as a whole. As stated in a brochure from the Military Child Care Project, there are more single parents, women and families in which both parents work. As a result, the demands upon military child care services are changing. The military community includes over 1,000,000 children from infancy to adolescence who live with their families on military installations. In the single parent family, as well as the two-parent family, often it is financially necessary for those doing the parenting to also work. Child care by someone other than the parents becomes a necessity.



Military wives, 76% of whom are under 30 years old, must temporarily, repeatedly and singly make numerous parenting decisions without the support of their extended families and, frequently, in the temporary absence of the children's father. Child support services for this family also become a necessity.

Child care centers and programs on military installations can, and should, provide high quality services to support the special stresses of military life on children. Of necessity, the "nursery" has become as common to a military installation as its Exchange and Commissary. Some "nurseries" operate as private associations, most operate as non-appropriated fund instrumentalities. All have evolved from local needs rather than under a common set of guidelines and standards. As a result of this evolutionary beginning, each "nursery" has developed its own structure and program based upon its source of funding, the building it was given, and the qualifications of its staff. The predominant

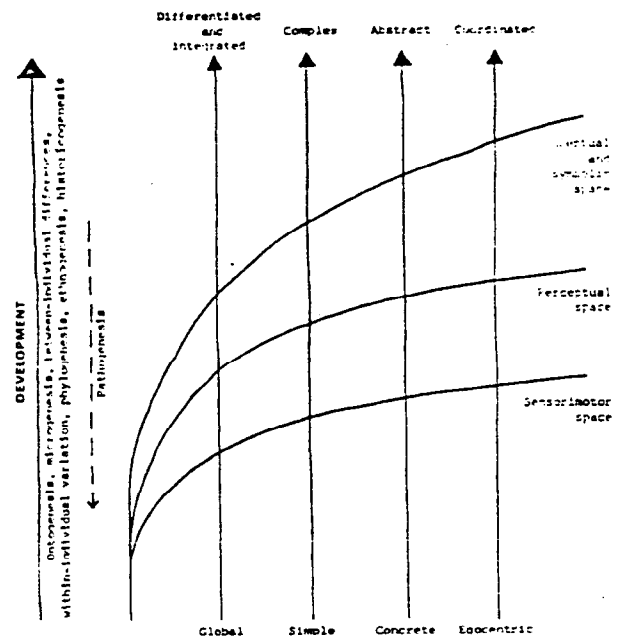
kind of program which has evolved is a "baby-sitting" service. A 1976 U.S. Air Force study indicated that nearly 50 percent of the children enrolled in Air Force child care centers attend for 50 or more hours a week. This certainly is more than "babysitting" and requires serious attention to the developmental needs of the children in care. (Military Child Care Project)

202 INTRODUCTION TO CHILD DEVELOPMENT AND CARE

WHAT IS DEVELOPMENT?



In common usage, development refers to changes in the child's abilities over time. A more precise--and more useful definition--is that development refers to increasing differentiation and integration of functions (Werner, 1949; cf. Hart and Moore, 1973). Furthermore, development refers to qualitative changes in the structural organization of behavior, not just to any changes like the quantitative accretion of specific knowledge (Piaget, 1963). That is, development refers to changes in any organism where parts, functions, or abilities become more refined, more numerous, more articulated, and more integrated with each other to allow the accomplishment of complex tasks. Thus development also includes increasing complexity, an increasing orientation to the "reality" of the situation, broader social horizons, and of course, greater intelligence and other specialized abilities.



The charts in this section are used by permission from Hart and Moore (1973), and Moore, Cohen, Oertel, and van Ryzin (1979).

AREAS OF DEVELOPMENT



Preschool children are developing in a number of fascinating ways. The most rapid developments between the ages of 6 weeks and 6 years are in the following areas (Huntington, Provence, and Parker, 1971; Cohen, 1974; Scavo, Liddell, Diffendal, and Lake, 1979; Scavo, Diffendal, Briscoe-Kleven, Lake, and Yarrow, 1979):

- development of individuality
- language development
- security, trust, and emotional development
- cognitive-intellectual development
- sensory acuity and perceptual development
- development of self-image, competence, and self-confidence
- social functioning including morals and cooperation
- large motor and fine motor development
- the development of personal style

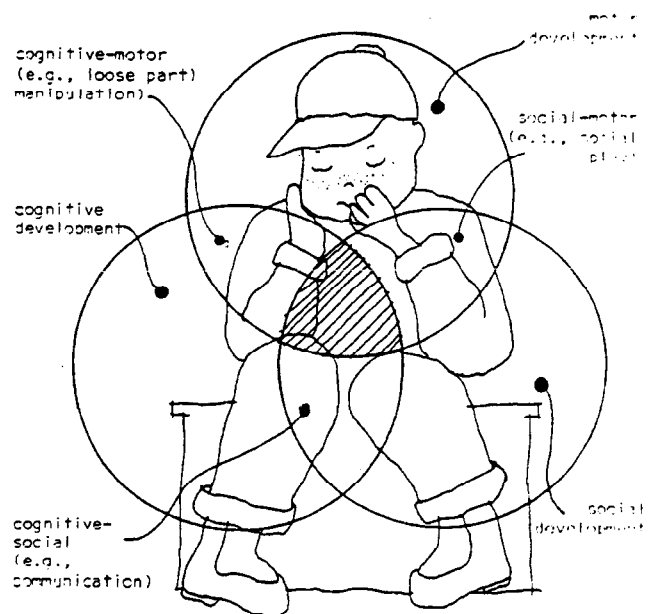
human development	motor development	gross motor development	large muscles locomotion
		fine motor development	fine muscles manipulation, dexterity
		general coordination	balance (general coordination)
		perceptual-motor coordination	eye-hand, eye-foot coordination manipulation, motor coordination
		exploration and discovery	awareness of natural environment manipulation, manipulation and control exploration and discovery
		spatial awareness	direction and orientation
	cognitive development	imagination and creativity	imagination, creativity, problem solving
		perceptual development	perception form recognition
		representation	imitation and role playing (representation)
		other cognitive development	mathematical concepts spatial concepts classification and seriation attention span
	social-emotional development	social interaction, communication, cooperation	communication cooperation and social play
		self-concept	body image (self-concept) self-initiative ego development
		emotional development	emotional expression and control handling environmental changes
		language, speech, hearing	language, speech, and hearing



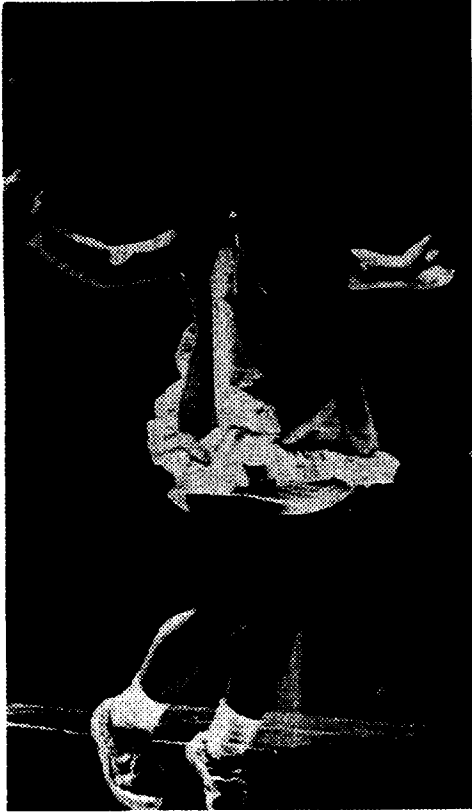
These various developments may be conceptualized into three major areas of child development and overlaps between them:

- physical development
- cognitive-intellectual-perceptual development
- social-emotional development

All other particular areas of developments may be seen in this framework.



Play and plenty of opportunities for unstructured exploration are absolutely crucial to the development of the young child.



The term "play" has long been a linguistic wastebasket for behaviour which looks voluntary, but seems to have no obvious biological or social use. . . . Common-sense questions about any human behaviour do need answering. But they have to be "unpacked" before the behaviour can be studied in a way that precludes mere speculation. (Millar, 1968, p. 11)

Awareness of the importance of play in the life of the child has grown in recent years to the point where many new programs and environments are being created for children's play.

Research has shown incontrovertably that the playful behavior of children is critical for their development. The world's most respected child psychologist, Jean Piaget, has pointed out two complementary aspects of development which he termed "assimilation" and "accommodation" (Piaget, 1963; cf. Hart and Moore, 1973). These are technical terms for what teachers and parents refer to as unstructured play and structured learning.

Much of the child's development occurs spontaneously from unstructured activities--play where the child is learning and growing from his or her own initiative, exploration, and discovery. Learning also occurs, of course, from structured and semi-structured situations as when parents are reading with their child, when child-care workers are showing a child a new set of colors or shapes, and in all school situations. Piaget's point, however, is that optimal early childhood development is arrived at by a complementary balance of unstructured play experiences interspersed with times of structured learning.

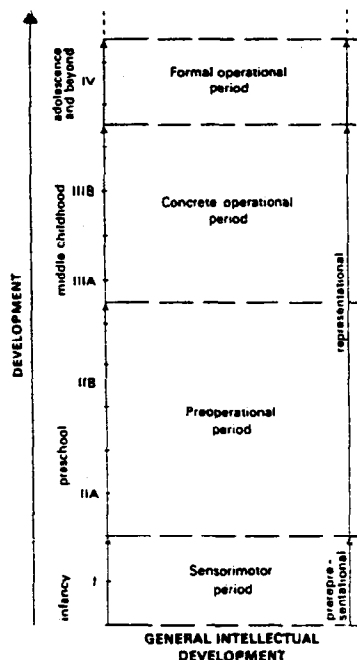


For the child, on the other hand, there is no sharp line between play and learning, between play and work, dreams and facts. The preschool child needs space to explore roles, rules, and social situations and opportunities to develop self-identity and confidence, and to fulfill creative and explorative needs.

THREE STAGES OF DEVELOPMENT

As development is not just quantitative accretion but rather structural changes in the organization of behavior, the child does not develop just by adding on more knowledge, but by passing through a series of stages or major periods of development. Stages evolve in the child in a fixed order of succession, that is, they follow an invariant sequence for all children, and each stage is characterized by behavior that is qualitatively different from that of the preceeding stage. Each stage also integrates all behaviors possible at previous stages, consolidates them, and prepares for development toward the next stage (for more information on the nature of development, see Hart and Moore, 1973).

There are three major periods of development before adolescence that concern us with regard to preschool and after-school children. They are not strict divisions, but approximate categories for considering program offerings.



The Sensorimotor Period of Infancy

From birth to 1-1½ or 2 years is the period of infancy, the end point of which is normally defined for child-care purposes when the child is toilet trained, reasonably stable on his or her feet, and beginning to use language. This period is also known as the sensorimotor period of development, and is further characterized by the child changing from an organism capable only of reflex activity to an individual capable of coordinated actions and internalized thoughts. The child's intelligence is tied to actions and the beginnings of his or her ability to internalize these actions into symbolic thoughts marks the emergence of the next period.

The Preoperational Period of the Preschool Years

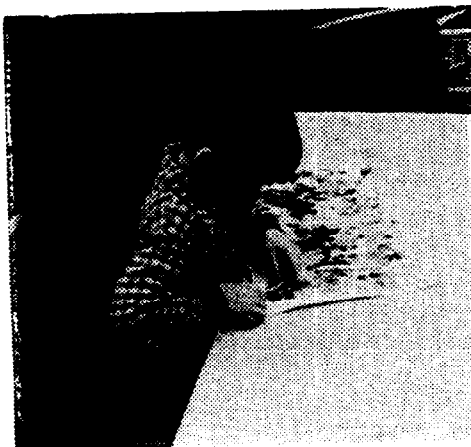
From approximately 2 to 5 or 6 years of age marks the preoperational, preschool period of development, during which the child is able to use language quite well, and is capable of internalized thoughts, i.e., representing the external world in terms of symbols and images and operating on these representations mentally; these internal thoughts, however, are far from systematic or coordinated, a charac-



teristic still to be developed at the next stage. For example, the child is able to manipulate spatial objects mentally without having to simultaneously manipulate them in his or her hands (and therefore is beyond the sensorimotor period), but is not able to accomplish what is known as reversibility, the ability to repeat a mental operation in the opposite order from the order in which it was first done (and therefore has not yet achieved the next developmental level).. Most child-care programs divide the preoperational period into two sub-stages: toddlers (1-1½ or 2 to about 3) and older preschoolers (3 to 5 year olds).

The Concrete Operational Period of the Elementary School Years

From about 5 or 6 until 10 to 12 years of age, the child is passing through many intellectual, social, and emotional changes. Intellectually this period marks a decisive turning point. Forms of mental organization develop which allow logical thought in a systematic and coordinated way. The child's ability to perform what Piaget calls "concrete mental operations" is crucial.



Psychologically, an operation is, above all, some kind of action . . . rooted in the sensorimotor schemata. . . . Before becoming operational, they constitute the substance of sensorimotor intelligence, then of intuition (preoperational intelligence). . . . Intuitions become transferred into operations . . . which are both composable and reversible, when two actions of the same kind can be composed into a third action of the same kind, and when these various actions can be compensated or annulled. (Piaget, 1968, pp. 48-49)

As a result of this formation of reversible intellectual operations, the child no longer fuses or confuses his or her own viewpoint with that of others; he or she is able to differentiate and coordinate different points of view. This is a progression from the egocentrism of the infant and young toddler



to the perspectivism of the pre-teenager. In turn, this perspectivism allows the school-aged child to engage in complex social relationships, understand rules of games, understand complex morality, ethics, and so on.

The elementary school years are also a period of rapid emotional development. However, this is a period of relative rest in bodily and psychosocial development between the development of personality and a sense of personal style during the preschool years and the rapid physical, sexual, and emotional changes of adolescence.

Although these are the three overall stages or periods of development from infancy through 11 or 12 years of age, each specific area of development passes through its own particular stages. For example, referring to the above tree diagram, the child's development of awareness and knowledge of the physical environment passes through three primary stages from infancy to about the age of 9 (Moore, 1976).

The development of the child's sense of morality, of his or her understanding of the rules of games, and even perceptual development and the understanding of basic colors and shapes pass through very particular stages (see the accompanying chart for a summary of some of these developments).

Though it is necessary for qualified child-care workers to know about each of these areas of development and their stages and how to stimulate children from one stage to the next, it need not concern us further in this Design Guide. (Basics of child development are covered very thoroughly in other publications, including the recent series of staff development modules produced by the Military Child Care Project--see Scavo et al., 1979a, 1979b, forthcoming; see also Huntington et al., 1971; Cohen, 1974; Cohen, Parker, Host, and Richards, 1972.)



AGE	MOTOR DEVELOPMENT	COGNITIVE DEVELOPMENT	SOCIAL-EMOTIONAL DEVELOPMENT
Birth	creeping reflex, walking reflex --grasping reflex	reflexes, sensory ready for experience	helpless, asocial--general tension
1 mo	head sags--hands fisted	first acquired adaptations	
3 mo	control of eye muscles, head steady --hands open	begins active exploration, perceptual-motor coordination of earlier reflexes, reproductive assimilation	visually fixates a face--smiles at a face--delight, distress
7 mo	control of head and arm movements --grasps purposively with hand and palm	new adaptations through familiar schemes, learns to grasp an object to produce effects; the object becomes an extension of the hands	distinguishes between familiar persons and strangers, no longer smiles indiscriminately--specific emotional attachment to mother
10 mo	control of trunk and hands, sits alone, creeps--inferior forefinger grasps	observational learning, imitates actions of others, explores what an object permits him or her to do	enjoys simple nursery games, responsive to own name--anger, affection
1 yr	control of legs and feet, stands, walks with help--forefinger grasp	discovery of new means by active experimentation, discovers new "means schemes" to use in goal-directed action sequences	waves "bye-bye", gives and takes object--fear of strangers, curiosity, exploration
2	walks, throws a ball--builds 2-3 cube tower, makes lines on paper with crayon	trial and error exploration, invention of new means through mental combination	obeys limited commands, interested in his or her mirror image--dependent behavior, upset when separated from mother, negativism
3	runs, kicks a ball--builds 6 cube tower imitates circular stroke	discover new means through a covert process which amounts to internal experimentation, an inner exploration of ways and means instead of overt trial-and-error exploration, shows increased memory by imitating an act some time after having seen it	does opposite of what he or she is told, starts making friends--temper tantrums to 3 years, resentment to new baby
4	jumps off a step, rides a tricycle--builds a 9-10 cube tower, uses crayons	preoperational phase (2-4 years): child egocentric, unable to take viewpoint of other people, classifies by single salient features: if A is like B in one respect, must be like B in other respects, language "explodes" and through that the way opens for symbolic mental activity, but the symbols used are rather undifferentiated totalities	talks, uses "I, me, and you", dependent, parallel play, gives orders, inability to make decisions--fear of separation, violent emotions, differentiates facial expressions of anger, sorrow, and joy, sense of humor
5	stands on one foot, jumps up and down--draws a circle and cross	intuitive phase (4-7 years): thinks in terms of classes, sees relationships, handles number concepts, but is "intuitive" because he or she is unaware of classification, gradually develops conservation in this order: mass (5 years), weight (6 years), and volume (7 years), uses adult speech sounds, masters basic grammar	likes to share, uses "we", cooperative play with other children, intense curiosity, asks questions--affectionate towards parents, romantic attachment to parent of opposite sex, imaginary fear of dark, injury, etc.
6	refine motor control, skips on alternate feet--copies a square and a triangle		prefers play with other children, becomes competitive--responsibility and guilt, feels pride in accomplishment
7	jumps rope assisted--good precision in use of tools, copies letters	imitation shows that he or she is interested in similarities, but they are mostly dependent upon perceptual cues	independence of parents--basic emotions all established
8	jumps rope alone--copies diamonds		clubs, comic books, TV, friends become more important--emotions continue to develop in subtlety and connotative richness
9-11	constantly busy and active--practices and refines gross motor and fine motor skills	concrete operational phase (7-11 years): less egocentric, is able to go back to the starting point, for example to count from 10 to 1, behavior becomes differentiated in taking consideration of the totality and parts, realizes that there are logical necessities, organizes objects into hierarchies	

PHILOSOPHY OF CHILD CARE



There are many who believe that staying home with their parents would be better for children than days in child care. Others, however, especially those concerned with the early development of children in areas of poverty, accepting a cultural deprivation hypothesis, or realizing the potential which a creatively organized early childhood development program can offer a child, welcome the opportunity to introduce preschool children to group educational settings. There is a built-in logic to this point of view which attributes later development to the quality of early experience.

Most parents provide a child with extraordinary opportunities for learning and development. Through their daily concern and care, they know how to respond to their child: they know when to step in to provide encouragement or protection; when to stay at a distance and allow their child to test capacities and to develop new skills; when to shield their child from something sad or worrisome, and when to give him or her the chance to deal with new anxieties. It's hard to grow up, but most parents know intuitively how to handle many crises of growing up.

Thus one of the major philosophies of child care is an extension to the family, modelling the child-care situation after the family, but recognizing certain limiting conditions, like the numbers of children involved (e.g., see Cohen, 1974).

An alternative philosophy stresses the group care is different in significant ways from the model of a good home (e.g., Prescott, Jones, and Kritchevsky, 1972).^{*} This view holds that a child-care center should offer young children a protected environment scaled to their developmental level and designed to promote experience of mastery through play within a child-sized, manageable world, that is, that

^{*} It may be that Elizabeth Prescott has slightly altered her view since 1971-72, as she stated to the authors that in a 1978 interview that as a model for child-care facilities, designers should "keep in mind how a home works" (see Travel Report, 1978, p. 378).

a child-care center should not try to replicate the adult scale and expectations of a home, but rather try to balance the child's on-going home and community life which takes place in an adult-sized, complex urban environment full of larger problems, emotions, and demands.

These two philosophies, voiced by major figures in the child-care field, are not as contradictory as they at first might seem. As Prescott et al. point out, the longer the day for children in group child care, the more home as well as special school characteristics should be incorporated into the program--and presumably, into the physical environment. It is possible, furthermore, to structure a program and its physical setting so there are aspects which are very child-scaled and simplified from the complex outer environment and so there are other aspects which are adult-scaled, complex, and demanding. This is, in fact, one of our major design recommendations (see the pattern called PACED ALTERNATIVES in TM-5-803-11, forthcoming, and CHILD-SCALED ENVIRONMENTS below in this Design Guide).

FUNCTIONS



There are five major functions of child-care programs:

- **Care:** Both assisting families by caring for children when parents need to be elsewhere, working, shopping, or just having a few hours by themselves, and assisting children by meeting their basic needs of health, physical well being, and safety.
- **Extension of the Family:** A supplement to, not a substitute for, the family as the primary agent in the care and development of the child. Quality child care extends and supplements the parents' care in a way consistent with the values and goals of the child's family and culture. In fact, quality child care can strengthen the child's basic attachment to parents and sustain them as the prime force in his or her personal development (Cohen 1974).



- **Aid to Development:** Developmental services typically reflect knowledge and understanding of the fundamental needs, growth, and development of children, and provide experiences which promote the child's physical, social, and intellectual development. As we have seen, the years from 3 to 6 are an optimal period for mastering certain developments, and the period of infancy through about 3 years of age is an optimal period for helping to initiate early experiences and developments which will greatly influence the child's later overall development as an older child and eventually as an adult.
- **Family Support:** Quality child care can offer many supports to the family as a whole. These typically include not only time for one or both parents to have alone, or to work and bring in additional necessary income, but also includes other forms of family support like prenatal advice, child birth classes, parenting skills and advice, family counseling, well-baby clinics, toy lending libraries, food or clothes cooperatives, financial counseling, and so on.
- **Intervention:** Other child support services which can be provided through a child-care center, or immediately adjacent to it if it is embedded in a community services center, include diagnostic and intervention services. Child care can function as one component of a system of supports to the family, together with such components as social service programs, health programs, and programs to increase employment. The intervention function of child care is particularly important for three groups of children (Cohen, 1974): children who are vulnerable developmentally through special circumstances of birth, physical endowment, or difficult early life experiences; children who are handicapped mentally, physically, or emotionally; and those from families who live in poverty, not all of whom require child care, but many of whom lack the healthy and developmentally sound environment that quality child care can provide. A quality child-care program, supplemented with itinerant professionals, can identify

the children of a community needing extra help, can assess their needs, can make special services available to them, and can involve the parents and help to strengthen the family.

DANGERS OF CHILD CARE

There are, however, also possible dangers to child care. The most obvious dangers are that the child may be neglected, abused physically or emotionally, be in an unsafe building, or exposed to unhealthy or unsafe conditions. But as Cohen (1974) points out, there are other, more subtle dangers:

- some unusually sensitive children have difficulty separating from their parents
- some have trouble accommodating to group activities
- some with developmental difficulties may find it even harder to progress in the relatively hurried, tense atmosphere of many child-care centers
- exposure to more aggressive children may be stressful for many children
- breaks in continuity which occur when caregivers change
- children may withhold their emotions and become suspicious of adults, or they may learn to make only superficial attachments

Of course, all of these dangers can be turned around into advantages by sensitive staff in a quality program. For example, children may be encouraged to be more cooperative, to begin to understand their differences with other children, and to find ways other than fighting to express their feelings and come to resolutions of conflicts. Or children may begin to learn that some adults are constant, like a head teacher in a home base (see the pattern HOME BASES FOR 8-16 CHILDREN below), while others are friends who come and go.

THE RELATION OF
THE PHYSICAL
ENVIRONMENT TO
QUALITY
CHILD CARE

There is considerable research from the emerging interdisciplinary field of environment-behavior studies, and from the study of child-environment relations in particular, that space plays an important role in education and in early childhood education (e.g., David and Wright, 1974; Coates, 1974; Gump, 1975; Prescott, 1973; Prescott, Jones, and Kritchevsky, 1972; Prescott and David, 1976).

Recently, the first author of this Design Guide has put forth the beginnings of a Piagetian-based theory of the role of space in child development (Moore, forthcoming). Piaget (e.g., 1963 and other works) has shown us that the motivation for development and the motivation to interact with the environment exists in all children. He has also shown us that development is a process whereby the child changes the environment and in turn adapts to changes the environment places on him or her.



Children learn through a series of interactions with the social and physical environment--the staff, the curriculum, and space. The child is not a passive object being bombarded by stimuli. The child is an active agent in his or her own development--exploring, discovering, testing, trying things out, imitating, fantasizing, developing. In all of this, he or she is not only interacting with the social environment of people, staff, and other children, but also with the physical environment of the site, architecture, furniture, and materials available. Development occurs when a child observes the consequences of his or her personal actions upon materials and events. But the quality of these interactions depends upon the possibilities for engagement which the environment provides.

Here is the implication of this theory for design and the rub for architects, landscape architects, interior designers, engineers, and all who make the physical environment of a child-care center--or any other children's environment: to maximize the possibilities for engagement in all its forms between the child and his or her total environment, physical and social.

Expanding on this position occupies the remainder of this Design Guide.

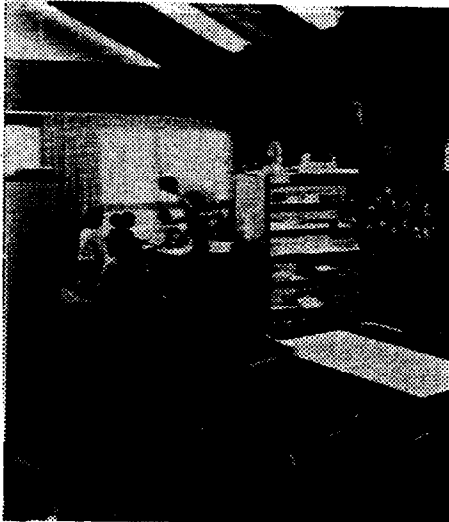
203 RANGE OF CHILD CARE PROGRAMS

The range of program options available to child care directors, staff, and parents can be discussed in terms of types of programs, ages accommodated, variations in scheduling, roles of other people and age separation or mixing, and different program structures.

TYPES OF PROGRAMS

There are basically four types of child care programs:

- Custodial Child Care Programs--such programs emphasize the care of the child, basically amounting to babysitting either for individual children or groups. Only the immediate needs of the child are considered, overall well-being, health, safety, "something to eat, and some sort of activity to pass the time" (Cohen, 1974, p. 1).
- Developmentally-Oriented Child Care Programs--providing a range of developmental opportunities for social, intellectual, and physical development within a context of security, trust, and care. To insure that these opportunities are provided, quality developmentally-oriented programs employ trained caregivers, have appropriate materials, have well-conceptualized "curricula", program structures, goals, and activities, use the services of consultants in health, education, nutrition, exceptional education, and other fields, and recognize the role of their facilities and upgrade them whenever possible.
- Formal Preschools (also called Nursery Schools)--usually only for 4 and 5 year olds, formal preschools or nursery schools are academically-oriented educational programs usually only available part time. They stress intellectual, social, and emotional development, but as the child is only in a formal preschool half days, they usually assume that the parents will be able to provide for health, nutrition, and all other needs. Thus Cohen (1974) concludes that a formal preschool is not as broad as developmentally-oriented child care, but that developmental child care includes the essential elements of a nursery school, though in many cases in a less academic atmosphere.



- Comprehensive Child Support Programs-- providing many varied curricular activities, services, and opportunities to children and their families. The purpose is to support family life in the broadest sense, including quality child care, daily counseling, health and nutritional services, and other community services aimed at meeting the needs of the whole family, children paramount.

AGES ACCOMMODATED Typically child care programs accept children either from 2-1/2 or 3 to school-entering age or from 6 weeks to school-entering age. Many programs also accept after-school latch-key kids, that is, children whose parents are not at home after elementary school, or who wish a semi-structured peer group situation between school and family.

Within this range, the following are the usual breakdowns of ages (based in large part on staffing ratio requirements):

- Infants 6 weeks - 1-1/2 or 2
- Toddlers 1-1/2 or 2 - 3
- Preschoolers 3 - 5 or 6
- After-Schoolers 5 or 6 - 12

Military child care centers will accommodate all of these ages in proportion to their total in the installation population.

SCHEDULING

There are four basic scheduling patterns:

- Full Day: Some or all children attend for a full day, e.g., as many as 11 hours (the parent's 8 hour working day plus commuting time if the principal caretaker is working off base.
- Part Day: Some or all of the children attend for part of a day, typically a half day, morning only or afternoon only, but on a regular, scheduled basis.

- Drop In: Some or all of the children attend on a drop in, non-scheduled basis, perhaps only having to give 30 minutes notice, or perhaps actually being able to drop in without any prior arrangements or notice.
- Flexible Scheduling: Some or all of the children attend on a scheduled basis, but for different total number of hours as suits their needs, e.g., some children attending only Monday and Friday mornings, others only Tuesday and Thursday mornings, still others at particular times, but always on a prescheduled basis.

Most quality child care centers have a combination of these scheduling patterns. In fact, flexible scheduling includes both full-day and part-day scheduling possibilities for some children, while other children come for lesser periods of time. Thus most centers combine some form of pre-scheduled children with some drop in children.

It is expected that quality military child care centers will include both flexible scheduling (including some full- and some part-day children) with extensive drop-in possibilities.

The intricacies of scheduling pros and cons, and their impact on child care and development, on staffing, and on expenses and financing, are too detailed and complicated to be discussed here. They are discussed in detail in the series of staff development modules being produced by the Military Child Care Project (see Scavo et al., 1979a; Scavo et al., 1979b; and forthcoming).

ROLE OF OTHER PEOPLE

Another dimension along which child care programs differ is the role of other people, most notably parents. Here the options range from simply having parents drop their children off and pick them up from a "waiting room" to operating a co-op center where parents and staff work collectively or organize the program and offer services to the children.

It is commonly felt that quality child care programs involved the parents to a large degree (e.g., Cohen, 1974; Prescott and David, 1976). In an official HEW Office of Child Development publication, Cohen says:

For many parents and probably for most programs, parent involvement in day care might better be seen as a right than an obligation. Whatever is expected of parents in the program must be sensibly weighed against the other demands on their time and energy. However, when a day care program is open to parent involvement in a free and easy manner and when parents are invited to participate as much as they are able, even overworked mothers and fathers are often eager to share in the work and responsibility of starting and operating a day care program. When they do, not only their own children but the entire program will benefit. (Cohen, 1974, p. 63)

And again:

Parent involvement is as much a component of quality day care as curriculum, staff, or facilities. And, like the other components, parent involvement should be integrated with the entire program. (Cohen, 1974, p. 63)

This Design Guide builds on this recognition and makes several design recommendations to encourage parents into the center and to facilitate their involvement in the program.

SEPARATION OR MIXING OF CHILDREN

There are three types of separation or mixing to be considered as regards the children:

- Separation or mixing of drop-in children with more regular children, e.g. half- or full-day children
- Age separation or mixing of different ages
- Separation or mixing of formal preschool children with child-care children

In conducting brief case studies at selected military and civilian child care centers (see Travel Report, 1978), it was found that all seven military sites visited had programs for infant care, full-day child care, and drop-in care, and six of the seven had after-school drop-in care, though this was hardly used at several of the sites. The pattern was similar for civilian centers, though the smaller centers tended to concentrate on scheduled half-day or full-day care, not drop-in care.



Only one base, Ft. Meade Child Care Center had separate spaces and staff for full-day versus occasional drop-in care. But where opinions were expressed, the other directors consistently felt that the demands of part-day and drop-in children were vastly different from and took their staff away from working more attentively with full-day children. The best aspect of the program at Ft. Meade in the eyes of its director is the separation of casual users from full-day users. Conversely, at Ft. Hood, the problem of mixing full-day with drop-in care was mentioned vociferously. Thus the research of the authors indicates a very strong preference for separate programs, staffs, spaces, and entries for regular, scheduled care versus drop-in care. This finding is consistent with expressed civilian opinion (see the pattern called SEPARATE SPACES FOR DROP-IN CARE).

The question of separation or mixing of different age groups is a different issue, for there is strong evidence accumulating in the child development literature of the benefits of cross-age learning, i.e., older and younger children learning from each other. But at the same time, there is awareness that certain activities of older children can be dangerous, or at least distracting, to younger children (e.g., chasing games near an infant's crawling area). The common resolution is to provide somewhat separate spaces and program options for older versus younger children, but to also provide plenty of program opportunities and transitional spaces where different age groups can be together under appropriate supervision (see the pattern ZONING: THE INFANT-TODDLER-PRESCHOOLER CONNECTION).

There is common agreement, however, that after-school programs should have a separate space and character from the rest of the child care operations (see Travel Report, 1978, p. 376-377; see also the pattern called A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS).

There are differences of opinion regarding the relative advisability of incorporating formal preschool programs (where they exist) into the same building as less-formal, developmentally-oriented child care programs. The point has already been made that a developmentally-oriented child care program is not different in terms of potential for most areas of child development from a formal preschool program, only that the program philosophies and structures vary and the child care program also includes a broader range of child support services. In favor of integration are ease of movement of children from preschool to child care for the second half of the day, shared resources, and interaction of children in outdoor informal spaces. In favor of separation are the possible confusions from too many children at one site, and bureaucratization if too much structure is applied to a large omnibus program. Our recommendation, therefore, is the following (made in Travel Report, 1978, p. 379): where several different programs are offered for early childhood development such that the total number of children served is greater than 75, they can benefit from proximity in a village or campus arrangement. The campus might then include a formal preschool program and facility or wing, special resources for handicapped children if necessary, an after-school center, and one or more child care modules, perhaps one for regular full-day care and one for drop-in care, etc. It is important, however, that these modules in the campus or village plan have separate identities, separate staffs, and separate program directors (see CAMPUS PLAN FOR VERY LARGE CENTERS).

PROGRAM STRUCTURES

Basically there are two distinct approaches to early childhood education. All variations are modifications of the models (Evans, Shub, and Weinstein, 1974):

- Highly structured, teacher-directed
- Free choice, child-directed

The highly structured, teacher-directed program is characterized by specific objectives carried out under the direction of the teacher. In this model, adults set predetermined goals for children and plan specific lesson plans through which such goals may be achieved. Predominantly cognitive in nature, it emphasizes preparing children for school, and thus is little different from a formal preschool (Evans et al., 1974).



The free-choice, child-directed program is characterized by allowing the child to direct his or her own activities according to his or her own individual inclinations. Adults set the stage carefully in this model, then act as resources to the children rather than as initiators of programmed lesson plans. All activities, including play and so-called child care activities like diapering, eating, napping, are regarded as having developmental and learning potential.

Of military child centers studies (see Travel Report, 1978) all were predominantly of the child-initiated type, though several included periods each day of structured academic learning. No center followed a particular developmental theory: the names of Piaget, Montessori, Skinner, and the human potential movement were all mentioned. All of the centers could best be characterized as child-initiated, happily eclectic.

The patterns at 32 civilian centers visited was the same. All 32 were developmentally-oriented, and all were primarily child-initiated in program structure. None followed any single orthodoxy, though most were influenced more by Piaget, Montessori, and other theorists emphasizing the interaction of the child with the social and physical environment than they were by strict behaviorism or laissez-faire nativism. No center visited followed either a strict, academic program or a behavior-modification program, though all had elements of structured learning situations and some behavioral modification in their day. Most centers stressed child-initiated and spontaneous behavior with staff members being arrangers of interest centers, resource persons, facilitators, and guides for development.

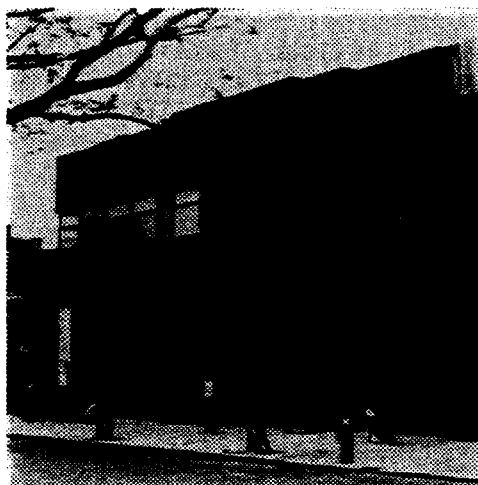
Based on this research, our recommendation is the following (as stated in the Travel Report, 1978, p. 388): most child care programs should be eclectic in program and philosophy. They should combine a number of theories and approaches to early childhood development. They should emphasize child-initiated activities, and should include brief periods of more staff-structured learning or structured academic learning, the use of interest centers, high degrees of child-adult interaction, and engaging environments.

Having decided upon the overall type of program to be offered, program structure, scheduling alternatives, and age groups to be served, people involved in establishing a child care program and center will next wish to choose a range of more specific developmental goals to be stressed in the program, and activities to implement the goals. For more information on the range of program options, especially more subtle models of child care structuring between the child-initiated and staff-structured models, see Cohen (1974). For procedures for selecting developmental goals and activities, and in turn for selecting design patterns to support the goals and activities, see the chapter on Program Development.

204 TYPES AND LOCATIONS OF CHILD CARE FACILITIES

There is common agreement that no one type of child care facility is suitable for all children and all family situations. Rather a comprehensive child support system can make available a range of types and locations of facilities and can coordinate them into a network of child support services for a community or installation.

The four major types of child care facilities on military bases are discussed below, including their main advantages and disadvantages:



- Center-Based Child Care Facilities, also simply termed Child Care Centers:

- specially designed for child care needs
- easier to recruit highly trained personnel to work in centers than in other types of facilities
- centralized budget for staff and supplies
- more economical to use specialists and consultants
- centralized curriculum
- high image in the community
- since it does not usually resemble a home, transition may be more difficult for younger children
- easy monitoring of the program
- can be work-based
- numbers of children and staff involved requires a high degree of organization, and the rules and procedures needed to ensure efficiency may make center-based care the least flexible and least responsive to family and children's needs



- Neighborhood Child Care Centers:

- often used by children of families who are friends of each other
- have easy access, and less time wasted commuting
- walking to them is "intimate to the schema"
- have relatively good supplies
- easier to involve parents than in a large center-based facility, and thus can be a more active part of the community

- Family Child Care Homes:

- setting is a private home, which is more natural for younger children
- neighborhood location
- possible to get trained workers
- particularly good for handicapped children who may need close contact with a caregiver
- flexible and informal
- important advantages for neighboring
- homes may not meet the state requirements for child care centers, or may require modifications
- keeps children of the same family together
- even after modifications, play space is likely to be more restricted than in a center
- monitoring of care and development is easier than for in-home care, but more difficult than for center care

- In-Home Care:



- simplest and most flexible for parents as it simply is care given by a relative, family friend, or a hired "babysitter" in the child's own home
- all arrangements are centered on the needs of that one family, and the caregiver may also do housework or cook for the family
- difficult or impossible to provide in one home all the services that could be provided in a neighborhood center
- children have less opportunity for group interaction, variety of experiences, and play space, materials, and equipment may be very limited
- as trained caregivers are unlikely to work in this situation, the caregiver likely sees himself or herself more as a babysitter or household help than as a child care professional

A fifth option is actually a combination of the advantages of each of the above:

- Network of Child Care Facilities: in a study commissioned and published by the U.S. Department of Health, Education, and Welfare, Donald Cohen (1974) recommends that communities and towns establish a comprehensive child-

care network combining one center-based facility, a few neighborhood child care centers, and several family child care homes. Such a comprehensive child care network can have centralized administration, purchasing, curriculum guidance, etc., with satellite neighborhood and family child care facilities using their own resources plus resources available from the center-based facility and the rest of the network. Such a plan has been found in a number of case studies reported in Cohen (1974) to achieve the organization and financial efficiency of large centers and the intimacy and community contact of small, neighborhood-based centers. In a well-planned network, emphasis is on central coordination of functions (purchasing, hiring, curriculum, consultation, diagnosis, health and safety standards, etc.) while most of the children are actually in medium size neighborhood centers or family day care homes. Thus the advantages of both large centralized facilities and small decentralized facilities are combined, while eliminating most of the disadvantages of both. Diversity and choice, consistent with quality care and concern, are thereby assured.

205 EXISTING STANDARDS AND REGULATIONS

INTRODUCTION

Regulation in the child care field, as in many others, began as a response to serious abuses. In the late 19th and early 20th centuries, the number of public and private institutions gave little attention to the qualifications of their staff and were characterized by poor sanitation, poor nutrition, and so on. Early regulation was mainly concerned with the basic physical safety of the children in these homes and was directed toward the shortcomings of the health, welfare, and facilities (Cohen, 1974).

In the early 1960's, States of the Union began to regulate child care through licensing. However, like the old time laws, most of these regulations are oriented more toward base minimums of physical facilities and safety than toward setting standards for maximizing the developmental potential of the children. The military now also has a set of regulations for child care, Chapter 8 of AR 608-1, but again these focus heavily on minimum standards for health and safety, with less attention given to creating optimal conditions.

Advanced nutritionists have always said that the U.S. minimum daily requirements for various foods, vitamins, etc., are just that--minimum requirements; adhering to them will prevent sickness, but it may not lead to good health. The same is true for most child care regulations.

This Design Guide and the Staff Development Modules being prepared by the Military Child Care Project are exceptions to this pattern, in that both efforts are aimed clearly at maximizing the developmental potential of every child, both through creative, developmentally-oriented programs and staff, and through supporting and stimulating physical facilities.

TYPES OF STANDARDS

For military child care, there are three levels of standards which apply to child care programs and facilities:

- Military regulations--standards for child health and safety protection at any military facility offering temporary care for children, e.g., AR 608-1, Chapter 8 for the Army. These regulations--equivalent to state licensing requirements--represent the basic

floor of protection for all children in child care centers and family child care homes. State and local building codes for child care centers (sometimes under "educational occupancies") are other regulations which must be followed to allow occupancy of any new or renovated facility.

- Standards set by public funding agencies-- these standards set a higher quality level as a condition for subsidy, and are often more focused on developmentally-oriented activities and professional qualifications of staff, e.g., the Federal Interagency Day Care Requirements (FIDCR). As stated in Prescott and David's (1976) recommendations for revision of the FIDCR, such standards assume basic regulations for health, building or fire safety, and thus are aimed at features which are important for child development. We would include the present Design Guide and accompanying Technical Manual on outdoor play environments (TM 5-803-11) in this second level of standards, in as much as they are focused on development and adherence to them is required for capital improvements to be done to military installation child care centers.
- Standards for voluntary accreditation--a third level of quality, a set of standards which are the ceiling, to be continually raised over time, e.g., accreditation by the Child Welfare League of America.
- Since the first printing of this monograph, there have been many additional regulations, standards, and guidelines promulgated for child care facilities. The base-line regulations are the building codes that apply for the jurisdiction in which the child care center is to be built (or renovated, expanded, etc.). If the child care centers is to be licensed, then the relevant state day care licensing regulations also apply. Voluntary accreditation is still available; it has been formalized in the U.S. through the National Association for the Education of Young Children's Academy for Early Childhood Programs. There are in addition, several design

guidelines which are recommendations put forward by agencies for the design of child care centers under their jurisdiction. Some are more compulsory than others (like the City of Vancouver Planning Department's Childcare Design Guidelines [1993] which must be met for any new or renovated child care centre requiring a zoning variance). Others include the Commonwealth of Massachusetts' *Architectural Prototype Document for Day Care Centers in State Facilities* (1987), the American Association for the Care of Children's Health *Child Health Care Facilities Design Guidelines* (1987), the GSA *Child Care Center Design Guide* (PBS-PQ140, 1993) which apply for all child care centers in federal and other buildings managed by the U.S. General Services Administration, the Child Welfare League of America's (1992) *Standards of Excellence for Child Care Services*, and the American Public Health Association/American Academy of Pediatrics (1992) *National Health and Safety Performance Standards* for out-of-home child care programs.

RECOMMENDED CHANGES IN EXISTING POLICY

400

This chapter makes a series of recommendations for changes to existing ACS Child Care policy as contained in Army Regulation AR 608-1 and one recommended change in the Department of Defense Construction Criteria Manual, DOD 4270.1-M. It also proposes several other policies which will greatly affect the quality of child care services offered by any community.

The results of the latest research on child care indicates that there are some existing policies which are not in the best interest of child development. We also feel, based on our professional judgement, that certain existing policies unintentionally have architectural implications which are not in the best interest of children.

This section is intended to serve the purpose of DA Form 2028 (Recommended Changes to Publications), and as a stimulus for additional policy decisions.

The first eight recommendations pertain to AR 608-1, the ninth to DOD 4270.1-M. Underlined portions are marked for revision, either deletions in existing paragraphs or additions. The remaining four recommendations are for new policy suggestions.

- 401 Developmental Services
- 402 Family Child Care
- 403 Mixed-Age Groupings
- 404 Infant Stimulation
- 405 Developmental Importance of Outdoor Play Yards
- 406 Role of the Kitchen
- 407 Safe Windows
- 408 Sources for Design Guidance
- 409 Square Feet per Child
- 410 Maximum Center Size and Campus Plans
- 411 Network of Child Care Services

While these policy recommendations were written initially for one context only, they apply also to most other contexts.



401 DEVELOPMENTAL SERVICES

ISSUE

There is no question that quality child care is equated with developmentally-oriented child care, i.e., the provision of developmentally-oriented services to stimulate intellectual, social, and physical development in a context of security, warmth, love, care, health, and safety.

It is clear from various statements in Army Regulation AR 608-1, Army Community Services Program, that the role of child care in the military is to include both child care and child development services (e.g., Chapter 1, Section I, paragraphs 1-3j(1) and (2) and elsewhere).

Though most sections stress child care and development equally, other sections seem unnecessarily to stress care matters to the relative exclusion of development. It is commonly agreed, however, that all child-care facilities, for infants through their use for after-school drop-in programs, and including all outdoor play areas, should be designed first and foremost to stimulate development, and that this emphasis must be in a context of health and safety.

The consultants therefore recommend that several sections of AR 608-1 be revised to make this point as clear as possible.

EXISTING

The Chief of Engineers, HQDA, will provide technical guidance on all engineer matters concerning CSS facilities. This includes developing design and space criteria, conducting periodic studies to update facility designs and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers, HQDA, . . . , and methods to insure a developmentally-appropriate, safe, and healthy environment for children.

EXISTING

Energy conservation. Buildings used exclusively for child support services will be designed and operated to conserve energy resources to the extent possible, while providing a healthy environment for children.

PROPOSED

Energy conservation. . . . extent possible, while providing a developmentally-appropriate and healthy environment for children. (See also DEVELOPMENTAL IMPORTANCE OF OUTDOOR PLAY YARDS below for additional proposed changes to this paragraph.)

EXISTING

The environment of CSS facilities should be pleasant, child-scaled, well-lighted, attractively furnished, easily kept in a sanitary condition, and conducive to efficient operation.

PROPOSED

The physical environment of CSS facilities should be designed to facilitate both child care and developmental services, should be pleasant, child-scaled, well-lighted, attractively furnished, easily kept in a sanitary condition, and conducive to efficient operation.

EXISTING

Play equipment will be selected carefully with regard to size, safety, and sanitary features.

PROPOSED

Play equipment will be selected carefully with regard to potential for intellectual, social, and physical development, and with regard to size, safety, and sanitary features. (See also DEVELOPMENTAL IMPORTANCE OF OUTDOOR PLAY YARDS below for additional proposed changes to this paragraph.)

ISSUE

Family child care is one of the three major types of child care offered nationally. It refers to care offered in a home part-time by the residents of the home. It serves only as many children as it can integrate into its own physical setting and pattern of living. As stated in the Federal Interagency Day Care Requirements (1978), "it is especially suitable for infants, toddlers, and sibling groups and for neighborhood-based day care programs, including those for children needing after-school care" (p. 4).

A family child care home may serve no more than six children (3 through 14) in total (and no more than five when the age range is infancy through 6), including the family child care parent's own children.

As stated in the Federal Interagency Day Care Requirements (1978):

It is expected that a community program of day care services will require more than one type of day care facility if the particular needs of each child and his parents are to be taken into consideration While it is preferable that the three types of facilities be available (family day care home, group day care home, and day care centers), this is not a requirement. (p. 4)

As stated elsewhere in this Design Guide, family child care homes account for upwards of 40-50% of all children in organized child care (Cohen, 1974). It is, furthermore, recognized as having distinct advantages for some children over other forms of care. By using an existing home, slightly modified to make it an appropriate place for child developmental services, the setting is more natural for younger children than a large center, yet by integrating it into a base-wide network, it is possible to have the advantages of trained workers, extensive resources, consultants, centralized purchasing, and centralized curriculum coordination of the largest centers. It is, furthermore, the most flexible arrangement for children, both in terms of daily activities and responsiveness of the caregiver to the children.

Despite the fact that the current use and expected increase in demand for family child care homes is a clearly emerging trend, very little is said about family child care in current military regulations. The authors of this Guide are aware of the worries about monitoring and safety of family child care homes on military installations. But rigorous registration and incorporation of child care homes into a comprehensive network can alleviate most of these concerns (Cohen, 1974).

EXISTING

Family Day Care Centers. If Family Day Care Centers are authorized, local policy will be developed to ensure that each home is evaluated by the medical authority, in coordination with the ACS Officer. Each home must receive authorization to operate as an individual Family Day Care Center. Approval to operate a Family Day Care Center will depend on local need, the adequacy of the child care, and health and safety considerations. Provisions of the local regulation will be compatible with the provisions of NFPA 101, Family Day Care Homes, and with the provisions of Paragraphs 8-18a(1), b, 8-20a, b, d, f, g, h(1), i, j, 8-21, 8-22, 8-23.

PROPOSED

Family Day Care Homes. . . . Approval to operate a Family Day Care Home will depend on local need, the adequacy of the child care and developmental services offered, and health and safety considerations. Family Day Care Homes should be integrated into a comprehensive Child Care Network of services for the base as a whole. Family Day Care Homes may serve no more than six children (3 through 14) in total (and no more than five when the age range is infancy through 6) including the family child care parent's own children. Modifications to homes to make the setting more developmentally-appropriate for a group of children will be made within the confines of Army Regulations which prohibit the use of appropriated/nonappropriated funded structural changes. Provisions of the local regulation will be compatible with 8-23. Simple, inexpensive modifications to Family Day Care Homes will be in accordance with the recommendations of DG 1110-3-143.

ISSUE

Field research conducted by the authors of this Design Guide has found that the centers judged to be the best programmatically make few age-specific distinctions among pre-schoolers from about 2 to 5 or 6. Directors and staff interviewed preferred a separation between infants and older preschoolers, and between preschoolers and after-schoolers, but not total isolation of any age group from other age groups (Travel Report, 1978). Recent national research supports the values of cross-age contacts and cross-age learning in child-care settings.

The weight of evidence, both from our observations of children's behavior on military and civilian sites, from our interviews with child-care directors and national experts, and other recent research strongly favors opportunities for both indoor and outdoor activities in cross-age groups. This evidence is in slight variation to several portions of AR 608-1.

Reference is made to a letter of July 3, 1978 on these issues from Gary T. Moore to Messrs. William E. Johnson and Murray Geyer, DAEN-MPE-B and DAEN-MPE-I, with copy to Marla Bush, formerly of DAAG-PSC, and follow-up letter to Ms. Bush on July 27, 1978, and to a DF memorandum of November 6, 1978 from LTC J. J. Kelly, DAAG-PSC to William E. Johnson.

The consensus of opinion in the Army Community Services Division is that AR 608-1 should be reviewed and will probably have to be amended in terms of providing opportunities for both indoor and outdoor activities in cross-age groups.

EXISTING

Child Care Services . . . Providing for the diversity of abilities, interest, physical strength, dexterity, and passive or aggressive characteristics of children of the same age so that the caregiver can consider allowing children of similar abilities to play together.

PROPOSED

Providing for the diversity of abilities . . . of children of the same and different ages so that the caregiver can consider allowing children of similar abilities and similar or mixed ages to play together.

EXISTING

Play areas should be separated by age group (para. 8-5c). Unsupervised access of older children to toddlers and infants should be restricted.

PROPOSED

Provision should be made for children of similar and different ages to play together in developmentally-appropriate play yards. Although unsupervised access of older children to toddlers and infants should be restricted, mixed-age grouping benefits both the older and younger children. Caregivers should allow mixed ages to play together, and play yards should not be strictly separated by age. Also, children should not be separated and grouped simply because staff-child ratios are different for different age groups (para. 8-5 c(1)).

EXISTING

An outdoor play area of at least 100 square feet per child is recommended. Play areas will be enclosed by child-safe fencing which is not readily climbed. Horizontal slat fences are prohibited. Separation of children by age group is strongly encouraged. Supervision of all children at all times is required.

PROPOSED

Outdoor play yards . . . slat fences are prohibited. Although unsupervised access of older children to toddlers' and infants' play yards should be restricted, provisions should be made for children of different ages to play together in developmentally-appropriate play areas. Supervision of all children at all times is required.

404 INFANT STIMULATION

ISSUE

The first 5 years, and especially the first 3 years of life are recognized as critically important to later development. An infant needs much more than just adequate physical care. A number of environmental stimulation ideas have arisen recently in the child development literature, and have been interpreted in terms of improving the physical environment to provide a full range of infant environmental stimulation (see Burnette, 1970; Chase, 1974, 1975; Chase and Williams, 1973; Chase, Williams, Welcher, Fisher, and Geller, 1974).

EXISTING

Provide meaningful interactions between caregivers and infants, to include playing with the infant outside the crib.

PROPOSED

Provide meaningful interactions between caregivers and infants, to include playing with the infant outside the crib and to include providing a full range of infant environmental stimulation.

EXISTING

Infants occupying the crib room will never be left unattended.

PROPOSED

Infants will never be left unattended in any indoor or outdoor space at the facility.

405 DEVELOPMENTAL IMPORTANCE OF OUTDOOR PLAY YARDS

ISSUE

Play is integral to development and not a superfluous burning off of excess energy (Millar, 1968). Children's play is critical to psychomotor, intellectual, and social development.

Relative to goals of child development, traditional and sculptural playgrounds have been evaluated and have been found wanting (Hayward, Rothenberg, and Beasley, 1974). Designers are beginning to stress cognitive and social play opportunities along with traditional physical play. This means that such things as adventure play, creative play, and environmental play are receiving more emphasis in child-care play yards.

The space programmed for outdoor play and the equipment provided is usually poor and an after-thought. While the problem of providing adequate outdoor areas is most critical in civilian and urban facilities, the problems of low aspirations and lack of ideas for developing and furnishing outdoor areas are a significant problem for the military as well. Even the new, well-furnished outdoor area at Bolling Air Force Base doesn't hint at the possibilities of gardens, animals, or a "work yard" of loose building materials that could fascinate and contribute to the development of children.

Thus while the trend has been to realize the developmental importance of play both indoors and outdoors, budgets and design skill has not followed suit with regard to the design of outdoor play yards at child-care centers. (For a range of program and design options, see DEVELOPMENTALLY-APPROPRIATE PLAY YARDS in the SITE DESIGN AND DEVELOPMENT section below.)

EXISTING

The Chief of Engineers This includes developing design and space criteria, conducting periodic studies to update facility design and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers This includes developing design and space criteria for indoor and outdoor activity spaces, conducting . . . and methods to ensure a developmentally-appropriate, safe, and healthy environment for children. (See also DEVELOPMENTAL SERVICES and SOURCES OF DESIGN GUIDANCE for additional changes to this paragraph.)

EXISTING

Play equipment will be selected carefully with regard to size, safety, and sanitary features.

PROPOSED

Play equipment will be selected carefully with regard to potential for intellectual, social, and physical development, and with regard to size, safety, and sanitary features.

EXISTING

Play area surfaces will be as safe as possible. Surfaces under swings and climbing equipment will be of a type that will minimize injuries from falls.

PROPOSED

Play area surfaces will be as safe as possible. Surfaces in all physical play areas will be of a type that will minimize injuries from falls.

EXISTING

Safety and sanitation will be considered first when selecting play equipment. . . .

PROPOSED

Appropriateness for intellectual, social, and physical development together with safety and sanitation will be considered when designing play yards and selecting play equipment.

Very young children experiment upon the world of taste, texture, size, and temperature by placing objects in their mouths. Through this general mode, they learn about their environment, and eventually as they get older, about the specific task of eating. Piaget (1967) has discussed the importance of the child's understanding the entire cycle of where food comes from, how it is prepared, and so on. But in many educational institutions in the U.S., food experiences tend to be limited to a 15-minute regimented gobbling of preprocessed food in disposable containers.

In discussing Swedish child care centers, Passantino (1971) describes a very different attitude:

All aspects of food, its growing, preparation, and consumption are seen as learning experiences to be capitalized upon. The children themselves tend vegetable gardens and fruit-tree orchards located on-site; they are taught nutritional values of the products by "educator-dieticians" and encouraged to participate in the cooking of their own meals. Electric ovens, many designed with a high platform on one side for the children, real sinks, and plate storage at child level, afford the opportunity for the children to prepare their own mid-day snacks. The dining tables alongside these cooking areas are set daily with well-designed tableware, utensils, napkins, and fresh flowers. (p. 410)

While insitutional kitchens are potentially dangerous places and a child can easily be hurt there, and cleanliness is also a major concern, kitchen activities, cutting, washing, cooking, cleaning, etc. are important developmental activities and a program that doesn't include them is missing a major and rich resource to the program. Unfortunately the new Army Regulations, AR 608-1, do not allow children in the kitchen.

It has been suggested in correspondence to the consultants from DAAG-PSC that all child care centers do not require full kitchens, but may have catered meals. Here the problem looms again,

for the children are prevented from any developmental learning from the cycle of food growing, preparation, and clean-up that Passantino so eloquently speaks of above. Some agreement has already been expressed in concordance with the position of the consultants that while it is preferable to allow small supervised groups of children in the kitchen, it is not possible without changing existing Army Regulations.

Two options seem viable.

- One central institutional kitchen for staff only, with satellite kitchens supplied with equipment for child-adult use, e.g., small warming ovens with platforms on one side, low sinks, local storage at child level, or regular height equipment with a raised platform for children on one side (see the diagram in pattern 1026, CHILDREN IN THE KITCHEN), and immediately adjacent eating areas for a maximum of 8-16 children.
- Alternatively, several fairly complete kitchens throughout the center (e.g., one for each HOME BASE FOR 8-16 CHILDREN as specified in pattern 906), each one capable of being used by staff to prepare group meals (8-16 children) and to be used by children and staff together to prepare food and mid-day snacks.

EXISTING

A kitchen is required as a separate unit when children are to remain for meals

PROPOSED

At least one kitchen is required as a separate unit when children are to remain for meals

EXISTING

Children will not be allowed in the kitchen of CSS centers.

PROPOSED

Children will not be allowed in the central kitchen of CSS centers. If food is prepared in a central kitchen and then garnished and served in satellite kitchens, children will be allowed in such satellite kitchens, but only under close supervision. If a series of small kitchens are contained in the CSS center, each one designed to be capable of being used by staff and children, children will be allowed in such mini-kitchens, but only under close supervision. Design Guidelines for both types of kitchens are given in DG 1110-3-143.

ISSUE

There is no question that one function of child care services is to maintain the physical well-being and safety of the child. Following the lead of the American Institute of Architect's guidelines on performance specifications, contemporary regulations are often phrased in terms of the performance to be achieved, not one particular material solution. A case in point in the current Army regulations on child care is the issue of window safety. There is no question that windows should be safe so that children will be protected from falls, and yet there is also no question that heavy screening is not the only solution. Shatter-proof glass, windows low to the ground, and windows designed in terms of a pattern of small panes are all other possible solutions to this problem. In fact, as will be seen from the argument in the pattern on EXTENDED INDOOR-OUTDOOR RELATIONS, it is very desirable for a developmentally-oriented child care center to have windows low enough--and clear enough--so that children can see indoors and outdoors with no difficulty. This relation helps to reinforce the importance of the DEVELOPMENTALLY-APPROPRIATE PLAY YARDS and helps to maintain CHILD-SCALED ENVIRONMENTS and CHILD-SCALED BUILDING MATERIALS (see patterns below).

EXISTING

All windows will be firmly screened to protect children from falls and to prevent insects from entering

PROPOSED

All windows will be designed to protect children from falls and to prevent insects from entering. . . . Design Guidance on alternative ways to accomplish this given in DG 1110-3-143.

408 SOURCES FOR DESIGN GUIDANCE

ISSUE

In any future revision of AR 608-1 and corresponding documents for other military services, the current Design Guide on Child Care Facilities and parallel Technical Manual on Children's Play Environments should be referenced as principle sources for design guidance for implementation of the regulations, alternative equally appropriate ways of accomplishing the same regulations, and further criteria and recommendations for the planning, programming, and design of developmentally-oriented child care facilities and their outdoor play yards.

There is some question that it may be redundant and unnecessary to list these documents in the AR, but as these are the basic regulations, equivalent to State licensing requirements for child care facilities, and thus will be the first and perhaps the only standards that some people will think necessary to follow, it seems that they should refer to other recommendations and requirements.

There are a number of places requiring minor revisions.

AR 608-1 PARAGRAPH 8-3b

EXISTING

The Chief of Engineers, HQDA, will provide technical guidance on all engineer matters concerning CSS facilities. This includes developing design and space criteria, conducting periodic studies to update facility designs and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers, HQDA, will provide design and technical guidance on all architectural, landscape architectural, and engineering matters concerning CSS facilities. This includes developing design and space criteria for indoor and outdoor facilities, conducting periodic studies to update facility designs and construction techniques, and methods to ensure a developmentally-appropriate, healthy, and safe physical environment for children.

AR 608-1
PARAGRAPH 8-10a

EXISTING

The Chief of Engineers will periodically issue design guides and definitive drawings, supplementary criteria, and requirements for constructing and renovating physical facilities

PROPOSED

The Chief of Engineers will periodically issue design guides and technical manuals, supplementary criteria, and requirements for constructing and renovating physical facilities

AR 608-1
PARAGRAPH 8-10b

EXISTING

Construction of new buildings, alterations, or modifications of existing facilities are covered in AR 210-55, AR 415-10, AR 415-16, AR 415-20, AR 415-35, AR 420-70, DOD 4270.1-M, and NFPA 101.

PROPOSED

Construction of new buildings, alterations, or modifications of existing facilities are covered in AR 210-20, AR 210-55,, NFPA 101, DG 1110-3-143, and TM 5-803-11.

AR 608-1
PARAGRAPH 8-10d

EXISTING

Facility construction requirements, regardless of source funding, will be coordinated with the Installation Planning Board (AR 210-20). Definitive drawings or design guides issued by the Chief of Engineers will be used to the extent possible in planning and construction of CSS centers

PROPOSED

Facility construction requirements . . . (AR 210-20). Design guides and technical manuals issued by the Chief of Engineers will be used in planning and construction CSS centers (e.g., DG 1110-3-143 and TM 5-803-11).

AR 608-1
PARAGRAPH 8-23e

EXISTING

Design guidance on play areas and equipment
is contained in TM 5-803-11.

PROPOSED

Design guidance on the location, siting, and
design of play yards is contained in TM 5-803-11
and sections of DG 1110-3-143.

409 SQUARE FEET PER CHILD

ISSUE

Next to the total number of children in a child care facility and the maximum group sizes, many national experts advise that an adequate amount of space available for children's activities is absolutely necessary to ensure a quality, developmentally-oriented child care program.

In calculating the total number of square feet per child, the following are the major categories of space to be considered:

- Primary usable activity space
- Secondary activity space, staff space, and other assignable space
- Non-assignable space, including circulation, partitions, and walls

Detailed calculations for each of these, considering the range of activities necessary to be programmed into a good center and nationally recognized standards for amount of square footage of usable activity space per child are contained in charts in pattern 901 BUILDING GROSS SQUARE FOOTAGE.

For licensing, most states require a minimum of 35 square feet per child of usable activity space, exclusive of eating, napping, closed storage, sinks, circulation, etc. One state requires 50 square feet. Cohen (1974) has therefore recommended that a child care center needs at least 35 square feet per child, and that 50 square feet is preferable.

Research has been conducted to determine the relation between amount of space and tendencies toward social versus aggressive behavior. Several studies have found that most social involvement appears to occur at medium density (35-50 sq. ft.), while aggressiveness occurs at higher densities (below 35 sq. ft.) and random behavior occurs in large, undifferentiated settings (over 50 sq. ft. per child).

Based on such research, the Child Welfare League of America (who accredit quality child care centers--see EXISTING STANDARDS AND REGULATIONS) has recommended the following:

A ratio of 50 sq. ft. of playroom floor space per child exclusive of space occupied by sinks, lockers, and storage cabinets, is the optimum requirement for appropriate program activity and comfort. (1973, p. 83)

Existing Army regulations have adopted the slightly lower, 35 square feet per child standards for usable space for child activities.

Detailed calculations in pattern 901 GROSS BUILDING SQUARE FOOTAGE also show that 25-38 square feet per child is required for secondary activity space, staff spaces, storage, lockers, cubbies, kitchens, napping areas, etc.

Finally, a multiplier of 20-25% of assignable space is required to provide for circulation, partitions, and walls, i.e., all those spaces which are neither assignable for primary or secondary activities.

As shown in the accompanying chart, the absolute minimum total square footage for a child care center is 72 square feet per child. As also shown, an adequate amount, and thus the recommended amount, to ensure quality developmentally-oriented child care, following the above arguments, is 100 square feet per child.

**CALCULATIONS FOR
GROSS SQUARE FOOTAGE
FOR CHILD CARE BUILDING
AND SITE UNDER MINI-
MUM, RECOMMENDED,
AND GENEROUS CONDI-
TIONS**

	ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
1. FACILITY PRIMARY ACTIVITY SPACE	35 S.F./C (Some state min.; N.E.P.A.; AR 600-1)	42 S.F./C (Evans; Prescott min.)	50 S.F./C (Prescott rec.)
2. FACILITY OTHER ASSIGNABLE SPACE	25 S.F./C (Moore)	38 S.F./C (Moore)	42 S.F./C (Moore)
3. FACILITY NON- ASSIGNABLE SPACE	20% of assignable 12 S.F./C	25% of assignable 20 S.F./C	33% of assignable 30 S.F./C
4. TOTAL FACILITY SIZE (1+2+3)	72 S.F./C	100 S.F./C	122 S.F./C

Current military construction standards specify a ceiling of 75 square feet per child. This should be immediately revised to 100 square feet per child to ensure that centers will be allowed at this adequate-recommended size.

Other self-explanatory, recommended changes are shown below.

EXISTING

Child Care Centers: Child care centers may be established as required to provide day care for preschool age children (up through 5 years old in situations where the mother is employed, or at times when the family is temporarily unable to oversee and care for the child. Minimum size of facility shall accomodate not less than 25 children. Space allowances for child care centers shall be based on 75 gross square feet per child. The space allowance is intended to provide multi-bed sleeping rooms and playrooms (separate rooms for children under two years old), isolation rooms, food service facilities, toilets, office and lobby waiting room. Number of children to utilize the facility shall be based on local experience where applicable. Where no previous experience is available, number of children anticipated shall be based on the number of married military families receiving direct installation support, multiplied by 20%.

PROPOSED

Child Care Centers: Child care facilities may be established as required to provide developmentally-oriented child care for preschool age children (6 weeks through 5 or 6 years) and to provide after-school care for elementary school children (6 through 12) in any situation where it is warranted for care and for the stimulation of early development. Child care facilities shall include child care centers to accomodate not less than 26 children and family child care homes for a maximum of 6 children including the children of the caregiver. Space allowances for child care centers shall be based on 100 gross square feet per child. The space allowance is intended to provide primary child activity areas

(separate spaces for infants under two years of age), sleeping areas, kitchens and eating areas, bathrooms, sick bay, laundry, etc., as required for the full functioning of a quality child care center. Number of children to utilize the facility shall be based on local experience where applicable.

Suggestion has been made that it would be valuable to have a formula for determining child care need. The current DOD Construction Guide criteria seem inadequate. Consideration should be given to commissioning a study of this matter.

410 MAXIMUM CENTER SIZE AND CAMPUS PLANS

ISSUE

One of the most important decisions to be made in planning and programming child care centers is the number of children to be served in one facility. Current military child care center capacities range from less than 50 children up to over 300 children (e.g., Oakland Army Depot to Ft. Lewis, Ft. Bragg, or Ft. Hood). Most civilian centers visited as part of the research phase of this project served between 50 and 100 children, with only the Helen Owen Carey Child Development Center in New York (235 children) and the Pacific Oaks College Children's School in Pasadena, California (200+ children) being of the scale of the average military centers, and none was in the scale of Ft. Lewis (260 normally, 315 overflow capacity, 700 children passing through in an average day, 3000 per month) or the two 300-child centers being planned for Ft. Hood and Ft. Bragg.

On the other hand, a number of studies have found that the optimal number of children in a center at one time is 45 to 60 children. Evans, Shub, and Weinstein (1971) found that the optimal number was between 45 and 60 and that this size allows teachers to feel close to one another while still being a large enough group to allow for sharing of materials, cooperative program development, and substitution in case of absence. In addition, they also found that it is the most effective grouping in which a single supervisor can be effective--fewer children will not make full use of a supervisor's time and expertise, and more children will dilute his or her benefits or require an assistant director or supervisor, with the attendant increase in bureaucracy. Similarly, centers with fewer than about 45 children find they cannot economically make ends meet without very high fees or massive outside assistance.



In a nationally recognized study, Prescott and Jones (1976) found that center size was a reliable predictor of program quality. The variety and quality of children's developmental experiences were directly affected by the size of the facility. In centers which served over 60 children, major emphasis tended to be placed on rules and routine guidance. Conversely, teacher emphasis on these concerns was found to be significantly lower in smaller centers. Opportunities for "pleasure, wonder, and delight" were significantly higher in centers under 60 children.

Prescott and Jones (1976) and Prescott and David (1976) also found that large centers rarely offered children the experience of participating in wide age-range groups. Mixing of ages in smaller centers offered opportunities for older children to serve as models and facilitators as well as enriching the overall play possibilities.

The play areas of large centers were rated low on organization, variety, and amount of things to do per child. Children were seldom observed to be highly interested and enthusiastically involved.

From our own interviews (Travel Report, 1978) we found general agreement with these findings. For example, Evan Nelson, the director of the Federal Employees Cooperative Day Care Center in Washington, D.C., suggested that from the child's point of view, 30-40 children is as large a group as should be accommodated. The younger children (around 2 years of age) are overwhelmed by a variety of things including the numbers of staff, the impact of the older children, the size of the space, and the total number of children.

Private civilian day care centers find that the first financial break-even point is around 50 children. A study by Abt Associates (1971) also found that although larger centers cost a little less per child for operating expenses, they seem to find it harder to provide quality care even when they maintain favorable staff-child ratios.

The "best judgement" of Richard Ruopp of Abt Associates after 10 years of experience studying child care centers across the country, is that units of 75 children are best, both for the children and the caregivers. Centers as large as 300 may be all right, he says, if they are subdivided into modules to create a series of mini-centers (Personal communication, 1978).

At the present time in this country, the magic number 60 is just in the recommendation stage by a number of national experts. But in Australia, the Regulations of the Child Welfare Act of 1939, which are found to be appropriate and therefore still in effect--specifies that:

The maximum number of children who may be cared for in the licensed premises at any one time shall be 60. (Kindergarten Union of New South Wales, Regulations from the Child Welfare Act of 1939)

We can summarize this situation in this country in four points:

- Many military child care centers exceed the nationally recommended sizes, and the current orally expressed policy seems to be for military centers planned for the near future to continue this trend.
- The civilian trend, for the most part, is toward smaller centers, in the range of 60 to 100 children.
- The nationally recommended maximum size to ensure quality child care is 60-75 children.
- Two large centers (200+ each) judged to be successful and to offer individualized, sensitive, developmentally-oriented programs for children--Ft. Bragg Nursery Village and Pacific Oaks College Children's School--are planned on a village or campus concept. Different programs are housed in different buildings each with its own qualified staff and head teacher and with the overall direction being to establish authority and yet allow autonomy. This is an emergent idea which may deserve to be a trend.

POLICY
RECOMMENDATION

- Whenever possible, child care centers should be planned for a maximum capacity of 60 to 75 children.
- Any center needing to serve significantly more than 60 children should be administratively, conceptually, and architecturally subdivided into programs and modules of 60 to 75 children maximum each. These programs and modules can be combined in a campus plan or village concept, either in separate buildings or in well-defined separate wings of one building. In the latter case, separate

entrances should be assured. Separate buildings or wings in a village or campus plan might include an infant program, scheduled part- or full-day care, drop-in care, formal preschool, and an after-school program.

Planning and design guidelines for the above centers are given in DG 1110-3-143; see sections on NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN, CAMPUS PLAN FOR VERY LARGE CENTERS, and NETWORK OF CHILD-CARE SERVICES AND FACILITIES.

411 NETWORK OF CHILD CARE SERVICES

ISSUE

A network of child care services is a comprehensive system of center-based child care centers and family child care homes organized in an integrated system to serve an entire community. In a study commissioned and published by the U.S. Department of Health, Education, and Welfare, Donald Cohen (1974) recommends that communities and towns establish a comprehensive child-care network with centralized administration, purchasing, and curriculum guidance, but with satellite neighborhood-based and family child care homes. Hopefully, this would achieve the organizational consistency of large centers, and the intimacy of both small, neighborhood- or work-based centers and neighborhood-based family child care homes.

A number of networks have evolved and have been the subject of national studies (e.g., the Kentucky Rural Child Care Project, the Berkeley California Early Childhood Education System, the Pasadena Community Family Day Care Project, the Houston Neighborhood Centers Day Care Association, and the Children's Centers of Santa Monica; cf. Cohen, 1974, p. 164 for references to the various studies).

Generally, it has been found that networks are capable of a range of planning and program operations beyond the resources of an individual program. Mass purchasing, curriculum development, formal consultation, community-wide planning, integration of various child care settings, integration of child care and public school programs, centralized professional administration, evaluation--all of these have been found to be easier to accomplish through a child care network. The existing networks illustrate the importance of diversity, choice, and the responsiveness of organized systems to varying needs and changing conditions.

Though it is still a small emergent trend, the idea seems very sound and should provide another valuable model for military child care planning. Most importantly, it provides a supportive network and resources so that a series of small family child care homes can be authorized on installations without the worries of lack of control, lack of adequate staff, consultants and resources, and lack of monitoring of safety, health, and developmental standards.

Our recommendation, therefore, is the following:

POLICY
RECOMMENDATION

- Every military installation should plan a comprehensive child care services network, to be coordinated by the installation Child Care Coordinator, or equivalent for other services.
- A network should include one large center-based child care facility (organized in a module campus or village plan if significantly larger than 75 children capacity), several neighborhood-based medium-sized child care centers (60-75 children capacity, e.g., one for each identifiable community within the installation if a large installation), and several family child care homes.
- The center-based child care facility should also serve as the central hub of the network, and should contain the office of the installation-wide Child Care Coordinator, a resource center, and offices for installation-wide itinerant professionals.
- A unified procurement procedure is advised whose goal is to encourage small, dispersed facilities across the installation.
- Although there is little difference between "preschools" and the highest quality of "developmentally-oriented child care" (the differences being mainly in the amount of time spent in the center and the ages served), if a formal, academically-oriented preschool is to be included as part of the network, it should be close to other child care facilities or part of them, e.g., part of a large center-based campus plan center.

Planning and design guidelines for networks and their constituent parts are given in DG 1110-3-143; see sections on NETWORKS OF CHILD CARE SERVICES AND FACILITIES, FAMILY CHILD CARE IN THE NETWORK, NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN, CAMPUS PLAN FOR VERY LARGE CENTERS, and MODIFICATIONS TO HOMES FOR FAMILY CHILD CARE.

PART 2

PLANNING GUIDELINES



PROJECT PLANNING CRITERIA

500

Upon recognition of the general need for more or better Child Care Services, the installation shall be responsible for identifying precise need, identifying site or sites, and the functional requirements of the project (with the use of this Design Guide), and for preparation of the required documentation. At present, required documentation consists of preparing a Project Development Brochure and DD Form 1391, Military Construction Project Data, with supporting data. Preparation of the Project Development Brochure is discussed in AR415-20, and TM 5-800-3. DD Form 1391 is the instrument by which projects are defined for inclusion in military construction programs. Preparation of DD Form 1391 is discussed in AR415-15. On DD Form 1391, "Standard Design" (Block 17) should be checked and "DG-1110-3-143" should be entered under "Drawing Number". Thus, in developing the project, the project planning guidelines in this chapter should be considered in concert with the guidelines for architectural program development in the next chapter (600 series) and with the general design criteria in Part III, Design Guidelines.

This first chapter introduces the considerations involved in estimating installation needs for child care services, developing networks of child care facilities, and choosing locations for particular projects. It also includes formulae for determining the number of child care spaces needed for a community and charts for estimating the gross building and site square footage required for various sizes of facilities.

Project planning for child care has two distinct parts:

- First, a program plan that identifies the general need for different types of child care on a base.
- Second, a physical master plan based on the above local program decisions that identifies the specific types, numbers, and locations of different child care facilities.

The necessary project planning guidelines follow. Following them step by step will lead to a comprehensive installation master plan for child care facilities.

- 501 Estimating Need
- 502 Network of Child Care Facilities.
- 503 Family Child Care in the Network
- 504 Neighborhood Centers for 60-75 Children
- 505 Formula for Number of Child Places
- 506 The Role of Found Space in Child Care
- 507 Area of Stable Child Population
- 508 Seams Between Neighborhoods
- 509 Positive and Negative Proximities
- 510 Integration of Child Care in the Community Center
- 511 High Visibility in the Community
- 512 Favorable Natural Features
- 513 Site Size: 220 Sq. Ft. per Child



501 ESTIMATING NEED

ISSUE

TO DETERMINE IF DAY CARE IS NEEDED FOR A COMMUNITY, AND IF SO, THE MAGNITUDE OF THE NEED, THE FOLLOWING FIVE CONSIDERATIONS MUST BE TAKEN INTO ACCOUNT:

- EXISTING LOCATIONS
- EXISTING POPULATION DENSITIES
- POPULATION PROJECTIONS
- CULTURAL ATTITUDES
- POSSIBILITY OF CREATING A CLIMATE OF ACCEPTANCE

DISCUSSION

The need changes in relation to these variables and therefore does not remain constant over any great length of time. This, then makes the distinction between present need and future need. Determination of future need requires examination of trends over time. Calculations should be made for these six considerations: *

1. Plot existing ECDC locations, catchment areas, and capacities on a base map.
2. Consider the current area population and especially the number of children 0-2½ years, 2½-6, and 6-12 from census tract data or equivalent.

From this in relation to current locations, determine the areas of greatest need.
(Note: Richard Ruopp, a national expert on child care, has indicated in a personal telephone interview, November 1978, that if adequate child-care facilities were provided in a community, 100% of all families with both parents or a single parent working would use them.)

* Our thanks to our students in the School of Architecture and Urban Planning, University of Wisconsin-Milwaukee, especially Scott Campbell and others for their early analysis of these issues.

3. Determine the projected population for the area of children in the above three age groups. There are two main ways of doing such projections: a) using existing projections, e.g., school projections; and b) the Cohort-Survival Population Projection Method (see, for example, Kennedy, 1973), which is based on the local birth rate, death rate, and migration rate. But either way, or from local military data, determine the number of dependent children eligible for child care: number on base in family housing; number of off-base military families; plus the number off base in military support families.

4. Determine the existing cultural attitudes on the local level regarding child care. For example, our earlier report (Travel Report, 1978) found that parents on Army bases are generally open to and in favor of child care--in fact they are strongly requesting more facilities--but only under the conditions of a) quality, developmentally-oriented child care, b) in new or conceptually "new" facilities (major renovation with a new image), and c) in safe facilities.

Parents' interest in early "head start" type education can also be a significant positive factor. The specific, local climate should be determined through mail or phone survey, through community meetings, or through discussion with legitimate representatives of community organizations. Include factors which would keep people from using new child-support facilities. Determine, therefore, the proportion of families with children in the three age groups who would use the services if available.

5. A climate of increased public acceptance can be established through community meetings, informational brochures, etc. This can modify the above percentage to an expected percentage of families who would use new services if available.

6. Availability of financing can be a major factor affecting changes in the climate of acceptance. Richard Ruopp (telephone interview, November 1978) has indicated that this can be the number one factor affecting use of day care. Success at securing subsidies is critical, which, in turn, as a base, depends on state licensing. The second real issue here is sliding fee scales and economy of operation (see Marlene Scavo Interview and the Fort Lewis Case Study in Travel Report, 1978). Together, these economic factors can have a major impact on how many families--and which families--are interested and able to use new child-support facilities.

PATTERN

ESTIMATING NEED

CALCULATE AND PLOT PROJECTED NEED FROM CHILD POPULATION PROJECTIONS MODIFIED BY EXPECTED PERCENTAGES OF USE ACCORDING TO THE ABOVE STEPS.

RELATED ITEMS

IMAGE
HOMES FOR FAMILY CHILD CARE
NEIGHBORHOOD CENTERS FOR 60 TO 75 CHILDREN
SEAMS BETWEEN NEIGHBORHOODS

502 NETWORK OF CHILD CARE FACILITIES

ISSUE

NO ONE TYPE OF CHILD-CARE FACILITY IS SUITABLE FOR ALL CHILDREN AND ALL FAMILY SITUATIONS. RATHER, A COMPREHENSIVE CHILD-CARE NETWORK COULD COORDINATE THE ADVANTAGES OF FAMILY CARE IN HOMES (FOR 6 OR FEWER CHILDREN) WITH THE ADVANTAGES OF LARGER FACILITIES (FOR 60 CHILDREN), AND GIVE MANY VARIED OPPORTUNITIES FOR CHILD-CARE PROGRAMS.

JUSTIFICATION

The three major types of child-care facilities on military bases include the following:

1. Center-Based Facilities

- specially designed for child-care needs
- centralized budget for staff, supplies
- centralized curriculum
- high image in the community
- easy monitoring of program
- can be work-based and employer-sponsored

2. Neighborhood Centers

- often used by children of related families
- have easy access--less time wasted commuting
- walking is intimate to the schema
- have relatively good supplies, etc.
- can be a more active part of community

3. Family Child-Care Homes

- homelike setting
- neighborhood location
- often a relative or friend of the families
- flexible and informal
- important advantages for organized community effort and therefore for community organization, neighboring, etc.

In center-based facilities and neighborhood centers, special places can be provided for infants, after-school drop-in children, and regularly scheduled preschool attendees.

Arguments concerning center-based facilities have been raised by concerned parents and staff. The ones most often discussed on military bases visited and in the early childhood literature are the following:

Pro-Centralization

- mass purchasing (can be centralized even if centers are not)
- wide and rich range of resources
- shared use of scarce or expensive resources
- formal consultation economically feasible (also true of a coordinated system of decentralized centers)
- professional curriculum development and monitoring (can happen in a coordinated decentralized system)
- organizational economy and efficiency (can happen in a coordinated decentralized system of small child-care centers)
- control over hazards to safety, like fire regulations in widely dispersed housing units
- assumed cost efficiency

Pro-Decentralization

- close to home, in the child's neighborhood
 - little time for the child spent in commuting
 - "walking is intimate to the schema" (Lee, 1968), i.e., children learn more about their environment if they actively walk through it and interact with it
- lack of bureaucracy in a small facility encourages innovation and changes
- parents more likely to get involved (Cohen, 1974)

- less administrative staff; more actual contact time (also true of small center-based care)
- transition from home to first non-home environment is easier for the child if the facility is small and neighborhood based (extrapolated from the work of Ainsworth and Bell)

These are general findings. But there are additional considerations relative to Army bases in particular:

- Decentralization encourages the development of a full range of services, which will appear to a wider range of families
- Decentralization fits general master planning concepts at several bases (see Travel Report, especially Forts Lewis and Hood)
- Centralization would seem to economize on staff as only one overall director would be necessary (also true of coordinated centers).
- For decentralization to work, it assumes a large number of trained early childhood specialists who can be sub-directors of perhaps several medium-sized facilities and many smaller family-group facilities.

Comprehensive Child-Care Network

In a study commissioned and published by the U.S. Department of Health, Education, and Welfare, Donald Cohen (1974) recommends that communities and towns establish a comprehensive child-care network with centralized administration, purchasing, curriculum guidance, etc., but with satellite neighborhood-based and family-group child-care facilities predominating. Hopefully, this would achieve the organizational consistency of large centers and the intimacy of both small, neighborhood work-based and neighborhood-based family-group facilities.

For reasons also to be discussed under NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN, many other authors are warning about the disadvantages of large child-care centers, and are strongly recommending small, homey, neighborhood-based settings close to the child's home and close to the parents' locus of involvement.

In a child-care network, the advantages of both centralized and decentralized facilities are combined, while eliminating most of the disadvantages of both. In a community-wide, well-planned child-care network, emphasis is on central coordination of functions (purchasing, hiring, curriculum, consultation, diagnosis if necessary, health and safety standards, etc.), while the majority of children are actually in family-group care settings (renovated homes and specially designed small centers for 60 children). Diversity and choice, consistent with care and concern, are thereby assured.

Within the network will be several types of centers which are distinguished as follows:

- center-based facilities (including work-based centers and central administration offices)
- neighborhood centers
- in-home family-group care

Center-Based Facilities

To make child care convenient for parents and to include it as part of a fringe-benefits package, many employers now sponsor child care, and the military is clearly a case in point. Large, on-base, central facilities were studied at Forts Lewis, Hood, Meade, and Bragg.

In civilian settings, centers are often close to or part of the place of work. Appropriate sites could be near hospitals, shopping centers, universities or colleges, city halls and community-service centers, or any other area of intensive adult use (see INTEGRATION OF CHILD CARE IN THE COMMUNITY CENTER).

Neighborhood-Based Center -- discussed in
NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN

In-Home Family-Group Care -- discussed in
FAMILY DAY CARE FOR 4-6 CHILDREN

Networks of child-care facilities basically combine the best of the intimacy and flexibility of a small neighborhood-based facility with the economy, efficiency, and supervision of a large, center-based facility.

From Cohen (1974):

A day care network or system is not a different setting but a systematic combination of programs in various settings under a central administration. A system makes it possible to minimize the disadvantages of the different types of settings. In one system, the intimacy and flexibility of the family setting can be combined with the resources and capabilities of the large day care center, and the center can become a focal point from which services are extended to all the other settings. Central administration makes it possible to provide professional consultation and other resources to the community's day care programs; counseling and consultation to families; expert curriculum planning; professional training for day care staff; a pool of substitute workers; a communitywide screening system; and the economies of mass purchasing of supplies, food, and equipment.

Such a system allows families to choose family care if they wish, without having to sacrifice the benefits of trained personnel, curriculum, and special consultation available at a center. They have the option of starting a child in a small family setting and advancing him to a center when he is ready. Children in an in-home or family setting could be taken

to another setting for short periods, perhaps a few times a week, as a gradual introduction to a more formal program. Children and parents alike could use the center for such services as consultations and counseling. The system, in short, makes it possible to combine the advantages of all types of day care. (p. 5)

Along with Osmon (1971), Prescott and David (1976), and most of our interviewees (see Travel Report, 1978; Conclusions--Child Support Facilities), we agree that no one type of child-care service is suitable for all children and all family situations. A variety and freedom of choice, combined with the organizational and economic advantages of some centralization, are essential components of an effective program of coordinated, quality community child care. A Child-Care Network provides these combined advantages.

But we recognize several institutional problems that will make it difficult for a Community Services branch at a military base to develop and implement a new, higher quality network of facilities. These include:

- predilection for single, large facilities (see Travel Report, 1978; Fort Hood Army Base Child Care Center and Fort Lewis Army Reserve Child Care Center)
- separation of procurement procedures for the integrative parts of a child-care facility
 - outdoor activity areas
 - equipment
 - facility
- lack of appreciation for role and importance and major developmental aspects of a child-care program by base decision-makers
 - importance of group size to quality
 - importance of outdoor activity areas
 - importance of partially protected activity areas, porches, arcades, etc.
 - impact of day care on the life of a full-time day-care child
 - the disruption of drop-in service
 - misunderstanding of the role of age-group separation

Therefore, we recommend a unified procurement procedure similar to turnkey housing that encourages proposals to provide a package of facilities, equipment, and play areas.

PATTERN

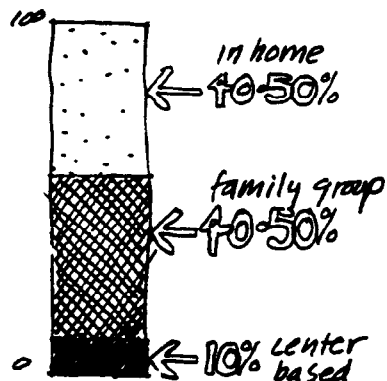
NETWORK OF CHILD-CARE FACILITIES

NATIONAL DATA (HEW, REPORTED IN COHEN, 1974) INDICATES THAT 10% OF ALL CHILDREN IN CHILD CARE ARE IN LARGE CENTER-BASED FACILITIES, 40-50% IN FAMILY-GROUP CHILD-CARE FACILITIES (VERY FEW OF WHICH HAVE BEEN RENOVATED SPECIFICALLY FOR CHILD CARE), AND 40-50% IN IN-HOME SERVICES.

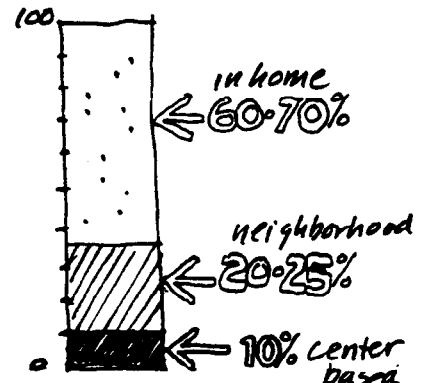
SINCE FAMILY-GROUP CARE IS PRECLUDED ON MILITARY BASES, WE WILL ASSUME THAT 40% TO BE SPLIT BETWEEN CENTERS AND HOME-BASED CARE.

NETWORK OF CHILD CARE FACILITIES TYPES OF CENTERS	RECOMMENDED LOCATIONS		
	CENTER OF "TOWN", AT A PX, AT A HOSPITAL	IN A NEIGHBORHOOD WITH APPROPRIATE SUPPORT POPULATIONS	IN HOMES IN FAMILY HOUSING AREAS (SUPPLEMENTARY)
VERY LARGE CENTER-BASED FACILITY 180-240 CHILDREN	● 10%		
NEIGHBORHOOD CHILD CARE CENTER 45-75 CHILDREN		● 20-25%	
FAMILY CHILD CARE 1-2 CHILDREN			● 60-70%

national distribution

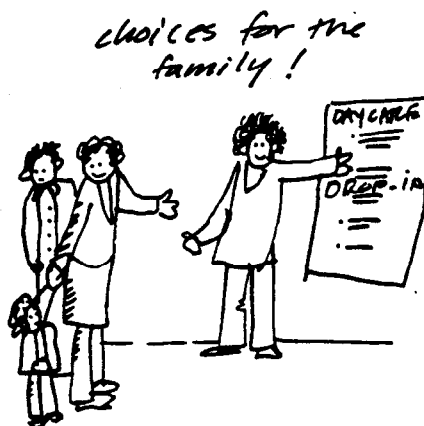


recommended distribution of kinds



RECOMMENDATIONS

- For every community with some form of self-defined identity (e.g., a small town, Army base, suburb, closely-knit inner-city family housing area), establish a network of developmentally oriented facilities in the following proportions:
 - 10% new, center-based facilities (center of town, at a PX, hospital, etc.)
 - 20-25% neighborhood-based child-care facilities (perhaps one for each identifiable sub-community or neighborhood, e.g., the clear residential neighborhoods at bases like Fort Hood and Fort Lewis)
 - 60-70% in-home child-care facilities (in homes, by sponsoring minimum necessary renovation to make a home double-function for child-care purposes for 6 or fewer children)
- Provide also for a central administration-coordination for the entire network.
- Use a unified procurement procedure whose goal is to encourage small, multiple, dispersed facilities as recommended in NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN.



- Designate a central network administrator who can oversee all aspects of child care on a particular base:
 - organize in-service training sessions for all child-care staff
 - coordinate the systematic borrowing and lending of resources between child-care facilities--including both child-care centers and family-group child care
 - make special resource people available for all children in child care (e.g., psychiatrist, social worker, nurse, etc.)
 - arrange the trading of information between family child-care homes--facilitate the cooperation of separate homes in giving children extra play possibilities and extra child contacts (e.g., cooperative play sessions in nearby parks, cooperative field trips, visits between homes, etc.)

RELATED ITEMS

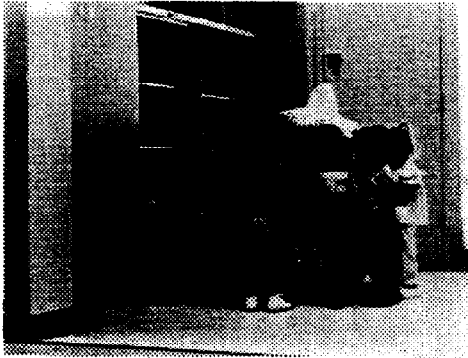
NEIGHBORHOOD CENTERS FOR 60 TO 75 CHILDREN
HOMES FOR FAMILY CHILD CARE

503 FAMILY CHILD CARE IN THE NETWORK

ISSUE

FAMILY CHILD CARE WILL REMAIN IMPORTANT AS AN OPTION FOR CHILDREN ON MILITARY BASES. BUT MAJOR REMODELING OF HOUSING FOR FAMILY CHILD-CARE FACILITIES IS NOT ALWAYS POSSIBLE--THUS A LIMIT OF 6 CHILDREN IS IMPOSED.

JUSTIFICATION



Caring for children in a private house or apartment will, of course, be different than caring for them in a specially designed and equipped center. But this difference is precisely what gives a special quality to family child care; a sense of home, and close personal interaction which improperly designed centers may lack. In making adjustments in a home to adapt it for child-care use, attempts should not be made to turn it into a miniature center (Cohen, 1974). Rather, changes should make the home safe, convenient, and child-responsive without altering those home-characters and home-functions which make it especially welcoming and secure for children.

Enriching the Possibilities.

The disadvantages of non-center-based care may include a paucity of resource materials and resource people, less staff training, fewer play choices, and fewer possible contacts with other children and adults. These disadvantages may be lessened by bringing family child care into an organized network of child care (see NETWORK OF CHILD CARE SERVICE FACILITIES).

PATTERN

FAMILY CHILD CARE IN THE NETWORK

MAKE FAMILY CHILD CARE PART OF THE ORGANIZED NETWORK OF CHILD CARE. EMPHASIZE HOMES AS VIABLE CHILD-CARE ALTERNATIVES BY CONCENTRATING EFFORTS ON: SAFETY, STORAGE, INDOOR PLAY SPACE, AND OUTDOOR PLAY ENVIRONMENT.

RECOMMENDATIONS

- For design recommendations and criteria, see FIXING HOMES FOR FAMILY CHILD CARE.

RELATED ITEMS

FIXING HOMES FOR FAMILY CHILD CARE
THE ROLE OF FOUND SPACE IN CHILD CARE
ACTIVITY-SHAPED SPACES
DEVELOPMENTALLY APPROPRIATE PLAY YARDS
SITE SIZE 190 to 500 SQUARE FEET PER CHILD

504 NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN

ISSUE

PERHAPS THE SINGLE MOST IMPORTANT DECISION TO BE MADE IN PLANNING AND PROGRAMMING CHILD-CARE CENTERS IS THE NUMBER OF CHILDREN TO BE SERVED IN ONE FACILITY. IT HAS BEEN FOUND THROUGH VERY RELIABLE RESEARCH THAT THE DEVELOPMENTAL QUALITY OF CHILD-CARE SERVICES DROPS SHARPLY WITH INCREASES IN THE NUMBER OF CHILDREN SERVED IN ONE BUILDING

JUSTIFICATION



A number of studies have found that the optimal number of children in a center at one time is 45 to 60 children. Evans, Shub, and Weinstein (1971) found that the optimal number was between 45 and 60 and that this size allows teachers to feel close to one another while still being a large enough group to allow for sharing of materials, cooperative program development, and substitution in case of absence. In addition, they also found that it is the most effective grouping in which a single supervisor can be effective--fewer children will not make full use of a supervisor's time and expertise, and more children will dilute his or her benefits or require an assistant director or supervisor, with the attendant increase in bureaucracy. Similarly, centers with fewer than about 45 children find they cannot economically make ends meet without very high fees or massive outside assistance.

In a nationally recognized study, Prescott and Jones (1976) found that center size was a reliable predictor of program quality. The variety and quality of children's developmental experiences were directly affected by the size of the facility. In centers which served over 60 children, major emphasis tended to be placed on rules and routine guidance. Conversely, teacher emphasis on these concerns was found to be significantly lower in smaller centers. Opportunities for "pleasure, wonder, and delight" were significantly higher in centers under 60 children.

Prescott and Jones (1976) and Prescott and David (1976) also found that large centers rarely offered children the experience of participating in wide age-range groups. Mixing of ages in smaller centers offered opportunities for older children to serve as models and facilitators as well as enriching the overall play possibilities.



The play areas of large centers were rated low on organization, variety, and amount of things to do per child. Children were seldom observed to be highly interested and enthusiastically involved. Prescott and David (1976) noted that:

Such findings have been corroborated by studies of other kinds of settings, such as schools and factory groups. (p. 164; see also Gump, 1975)

From our own interviews (Travel Report, 1978) we found general agreement with these findings. For example, Evan Nelson, the director of the Federal Employees Cooperative Day Care Center in Washington, DC, suggested that from the child's point of view, 30-40 children is as large a group as should be accommodated. The younger children (around 2 years of age) are overwhelmed by a variety of things including the numbers of staff, the impact of the older children, the size of the space, and the total number of children.



At the present time in this country, the magic number 60 is just in the recommendation stage by a number of national experts. But in Australia, the Regulations of the Child Welfare Act of 1939, which are found to be appropriate and therefore still in effect--specifies that

The maximum number of children who may be cared for in the licensed premises at any one time shall be 60. (Kindergarten Union of New South Wales, Regulations from the Child Welfare Act of 1939)

PATTERN

NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN

WHEREVER AND WHENEVER POSSIBLE, ESTABLISH CHILD-CARE FACILITIES DESIGNED FOR ABOUT 60 TO 75 CHILDREN. THE PROGRAM PLANNING MODULE AND THE FACILITY PLANNING MODULE FOR CHILD-CARE FACILITIES SHOULD BE 60-75 CHILDREN MAXIMUM.

RELATED ITEMS

NETWORK OF CHILD-CARE SERVICES AND FACILITIES
SITE SIZE 190 TO 500 SQUARE FEET PER CHILD

505 FORMULA FOR NUMBER OF CHILD PLACES

ISSUE

MOST BASES WILL REQUIRE MORE THAN ONE CHILD-CARE FACILITY. FACILITIES WILL DIFFER IN NUMBER OF CHILDREN AND SIZE.

JUSTIFICATION

No exact number can be given to how many child-care places will be required on a particular base, for this depends on local factors, but the following is a formula for use in making such a projection for a particular community and its given and expected population.

It is now estimated that nationally, 40% of mothers with children under 6 years of age work, and this means a heavy demand for part- or full-day child care (1978 date, up from 14% in 1950). In fact, 5 million children under the age of 13 now spend upwards of 30 hours a week under the care of someone other than their parents or teachers, most of which are in organized child-care, after-school drop-in care, or other forms of non-organized care (Gottschalk, 1978).

The formula for estimating the number of child-care positions needed in a community is the following:

Let n = population of children

and $n + y$ = expected population of children

Let a = % of children expected to use child care

$(n + y)$ = number of children expected to use child care

Then let b = % using full-day service

c = % half day

d = % after-school drop-in

number of positions needed = $a(n+y)(b + \frac{1}{2}c)$

* See discussion under #2 of ESTABLISHING NEED for estimating this percentage.

For example, for a community like the Comanche II residential area at Fort Hood:

population $m \doteq 4000$
 children $n = 900$
 growth $= \text{stable}$
 % of children
 using care $a = 50\%$
 (a guess--we know of
 no Army data on this)

If $b = 20\%$

and $d = 10\%$

then number of
 positions $= a (n + y) (b + \frac{1}{2}c)$
 $= .50(900 + 0)(20 + \frac{.70}{2})$
 $= .50(900)(.55)$
 $= 250 \text{ positions}$

or approximately 1 in 20 of total population
 or 1 of every 7.5 total children or 14% of
 the number of children in that family-housing
 area.

As a continuation of the example, given that NETWORK OF CHILD-CARE FACILITIES recommended that 10% of child-care children in center-based facilities, or a minimum of 60 children, which ever is more, 40-50% in family-group facilities, and 40-50% in organized home care, this would translate into the following:

center-based $= 60 \text{ positions}$

family-group $= 100\text{-}125 \text{ positions}$

in-home $= 100\text{-}125 \text{ positions}$

PATTERN

FORMULA FOR NUMBER OF CHILD PLACES =
 $a(n + y)(b + \frac{1}{2}c)$. PROVIDE CHILD-CARE PLACES
 IN THE COMMUNITY ACCORDING TO CALCULATIONS
 PERFORMED USING THE ABOVE FORMULA.

RECOMMENDATIONS

- Therefore, in such a community of approximately 4000 people, or 900 children between 6 weeks and 6 years of age, there is need for one center-based facility for 60 children, and about 20 neighborhood-based family-group centers for 6 children each, with the other 100 children in in-home care.

RELATED ITEMS

ESTABLISHING NEED
 NETWORK OF CHILD-CARE SERVICES
 HOMES FOR FAMILY CHILD CARE
 NEIGHBORHOOD CENTERS FOR 60 TO 75 CHILDREN
 CAMPUS PLAN FOR VERY LARGE CENTERS

506 THE ROLE OF FOUND SPACE IN CHILD CARE

ISSUE

FOUND SPACE IS NO BARGAIN IF THE LOCATION IS INCONVENIENT OR IF THE BUILDING IS NOT SOUND. HOWEVER, AT THE ARMY'S CURRENT RATE OF TWO NEW FACILITIES PER YEAR, IT WILL TAKE 100 YEARS FOR THE 200 EXISTING FACILITIES TO BE REPLACED BY NEW CONSTRUCTION. SEVERAL QUESTIONS HAVE BEEN RAISED: WHAT IS THE FUNCTION OF FOUND SPACE IN PROVIDING CHILD CARE ON MILITARY BASES? WHAT ARE THE BENEFITS OF REMODELING OLD FACILITIES VS. THE CONSTRUCTION OF NEW FACILITIES?

JUSTIFICATION

The decision of remodeling vs. construction of new facilities should be based on the following considerations:

- initial capital investment/long-term economics
- life cycle costing
- potential major expenses: heating plant, insulation, roof repairs, plumbing, kitchen renovation, partition removal, air conditioning, handicapped access, new circulation including fire exits, and most importantly, fire proofing
- image: "Makeshift is second class" and "Barracks are fire traps for children" are opinions expressed by parents and child-care directors and staff on the bases visited; the quality of a program cannot always overcome a poor initial image from a partially renovated facility
- predicting where found space will be suitable for an educational program when an architectural program has not yet been written
- With old house renovation, children's image will probably be positive because of the homelike atmosphere (see Anita Olds, 1978)

If a building is basically sound, economics are a major consideration for the renovation of found space. One estimate is that even considering long term repairs, renovation should come in at 2/3 the price of new construction for the same amount of square feet (Felicity Brogden, personal communication, 1978).

The major issue however, is image. For children, an old house has a positive image because it has a "homey" atmosphere. For parents however, new construction has a positive image because of the relative ease in creating functional space. In order to change the architectural-visual character of an old building, and satisfy both parents and children, Olds (1978) has recommended several solutions: give the renovated building a distinguishable entry, a "feeling of place;" increase the articulation of the new function; create a warm, informal atmosphere, a "fun place to be."

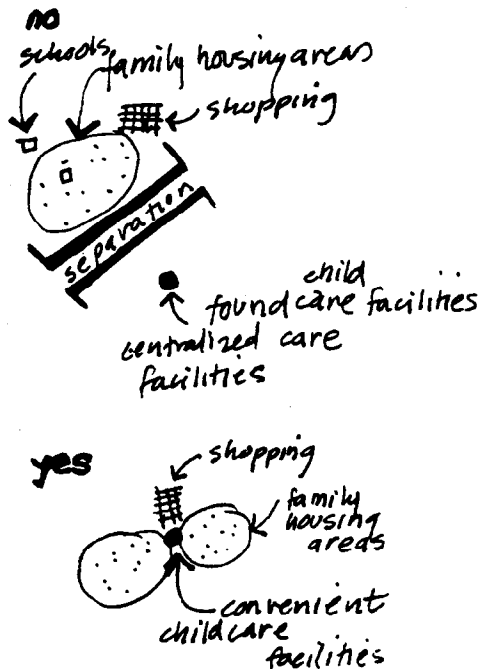
PATTERN

THE ROLE OF FOUND SPACE IN CHILD CARE

WHERE AVAILABLE, CONSIDER THE ADAPTABILITY OF FOUND SPACE FOR CHILD-CARE FACILITIES ESPECIALLY HOMES FOR CHILD CARE AND FOR SMALL NEIGHBORHOOD-BASED CHILD-CARE CENTERS. CONSIDER THE PROS AND CONS OF ADAPTIVE REUSE IN ACCORDANCE WITH THE ABOVE ISSUES.

RECOMMENDATIONS

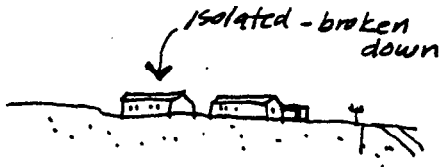
For renovation of found space:



- Ensure convenient location--do not compromise on this.
- Ensure that the renovation leads to an image for children of a warm, informal, fun place to be.
- Ensure before selection that the building is sound structurally, mechanically, electrically, and that renovations to meet special child-care codes through additional plumbing requirements, kitchen renovation, partition removal, air conditioning, handicapped access, new circulation including fire exits, and fireproofing will not exceed the costs of new construction.

image is important

no



- Ensure that the image for parents will be one of a new, progressive, professional facility in this regard:
 - create a new, distinguishable entry
 - change the image of the grounds
 - lively, safe, child-scaled play yards at the public side of the buildings can do much to change the image of the building
- Scale the exteriors and the noticeable interiors to the child
- Create a perimeter of the building which is also an interface and makes seeing children's projects, activities, and spaces in the building possible from passing paths (see Osmon, 1971, pp. 22 ff.)
- Child-care centers should be located on the ground floor, regardless of building construction. However, multi-story facilities may be used for children age 5 or above if special construction standards or automatic fire extinguishing systems are incorporated (AR 608-1; NFPA).
- If relocation to noncombustible facilities is not feasible, existing child-care centers constructed of unprotected wood frame or unprotected ordinary construction may be used for children under 3 if the following conditions are met (AR 608-1):
 - the entire building is protected by an automatic fire extinguishing system
 - the infant room and play or sleep room for children under 3 is individually separated from other areas by 3/4 hour fire-related partitions
 - the infant room has an exit opening directly to the outdoors. All other play or sleep rooms will have two exits. Family day-care centers will comply with the section on Family Day Care Homes in the NFPA 101. Floors below ground level will not be used for child-care centers.

- Child-care facilities will meet the fire and safety requirements of DOD 4270.1-M and NFPA 101, as well as local codes.

RELATED ITEMS

FAMILY CHILD CARE IN THE NETWORK
FIXING HOMES FOR FAMILY CHILD CARE
BUILDING AS A FRIEND
OBVIOUS ENTRY

507 AREA OF STABLE CHILD POPULATION

ISSUE	TO FINANCIALLY SUPPORT A VIABLE, DEVELOPMENTALLY-ORIENTED CHILD-CARE PROGRAM, AND TO MEET THE GREATEST COMMUNITY DEMAND, CHILD-CARE CENTERS NEED TO BE LOCATED WHERE THERE IS A STABLE OR INCREASING CHILD POPULATION.
JUSTIFICATION	As described in below patterns, most children should be able to walk to the child-care center. A critical mass of paying users is necessary to maintain quality services. Conversely, for the image of the center as a viable, growing part of the community, it should not be located in an area where there is a noticeable outflow of population. These considerations argue for choosing a location in an area of stable or increasing child population.
PATTERN	AREA OF STABLE CHILD POPULATION LOCATE CHILD-CARE CENTERS IN AREAS OF STABLE OR INCREASING CHILD POPULATION.
RECOMMENDATIONS	<ul style="list-style-type: none">● There are a number of techniques for estimating the shift in child population over time, among the best known being use of any available school predictions, the cohort-survival technique based on census information, and long-range family-housing master plans.
RELATED ITEMS	NEIGHBORHOOD CONTEXT ESTABLISHING NEED

ISSUE

YOUNG CHILDREN SOMETIMES EXPERIENCE ANXIETY WHEN FIRST GOING TO A CHILD-CARE CENTER. EVIDENCE INDICATES THAT THIS ANXIETY IS HEIGHTENED WHEN THE CHILD-CARE FACILITY IS IN AN UNFAMILIAR LOCALE. CHILD-CARE CENTERS SHOULD NOT BE LOCATED, HOWEVER, SO AS TO CONTINUE DE-FACTO SEGREGATION OF DIFFERENT MILITARY CLASSES.

JUSTIFICATION

	\$15/ WEEK	FREE
NEXT DOOR	58%	
1/2 HOUR AWAY	9%	33%

Location can make or break a child-care program. Many parents are reluctant to have their very young children attend child care in an unfamiliar, distant locale. There is considerable evidence that parents prefer care near their own home. In a study using trade-off techniques with 390,000 families in Massachusetts, Rowe, et al. (1972; cited in Prescott & David, 1976), found that given a choice between paying extra for care next door versus having free care one-half hour away, 58% of families (226,000 families) would willingly pay for neighborhood proximity, 9% didn't care, and 33% would opt for free care even if driving were involved. Other studies (e.g., Ruderman, n.d. in Emlen, 1970) indicate that distance from home is associated with dissatisfaction with child-care arrangements.

Furthermore, a very important study by environmental psychologist Terrance Lee (1963) in England has shown that children who are passively taken to schools in cars or buses develop a much less detailed understanding of their urban and natural environments than children who actively walk to school and interact with nature, people, and built places along the way. Such a finding is not surprising, given Piaget's general theory of child development which stresses that for the young child, knowledge is concrete and active, that it arises from actions on objects, not abstract considerations of them. A conclusion is that children should be able to walk between home and child-care facilities.

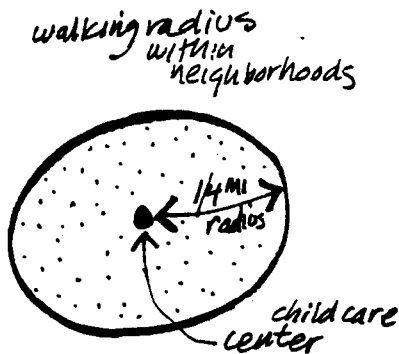


As so stated in a U.S. Department of Health, Education, and Welfare guide to child care for preschoolers:

The ideal location for day care-- whether a center or a family home-- is the neighborhood of the children served. (Cohen, 1975, p. 55)

The Child Welfare League of America (1973) reiterates this position:

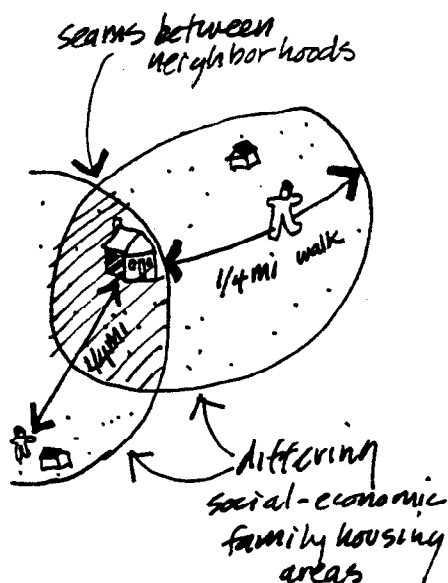
Day care facilities, with outdoor space for children to play actively and safely, should be located so that they are easily accessible to the families needing them, preferably in the neighborhoods where they live. (p. 76)



Cohen, in the HEW guide, even argues in favor of neighborhood location over work location:

Day care programs at the parent's place of work demonstrate the importance of good location. Since such programs are located in industrial areas, often far from the homes of working families, they almost always involve travelling long distances. Even where employers have attempted to establish free child care at the work site, parents often choose day care closer to home to avoid exposing their children to rush hour traffic and long daily rides. (1974, p. 55)

Thus a wide and impressive group of national experts (Cohen, 1974; Prescott and David, 1976), and national agencies (Child Welfare League, 1973; HEW, 1974), all supported by empirical data (e.g., Rowe et al., 1972; Emlen, 1970) are in general agreement that child-care facilities should be located in the child's own neighborhood whenever possible.



Argument will be made, however, that such a position sounds socially regressive in that, given *de facto* housing segregation (classes, races, NCO/enlisted/officers), integration cannot happen without some strategy for permitting and encouraging mixing of children from different residential areas.

In theory the resolution of this conflict is not difficult, though in practice it can be very difficult. If new construction is anticipated, or even renovation of found facilities, it is possible and desirable to locate child-care centers which are within walking distance of the homes of the children who will be using them and at the same time on the seams of at least two residential areas or communities.

Such a solution has other benefits. Parents are more likely to drop in and participate in the program if it is close to their home. Most of the acknowledged leaders in the child-care movement (e.g., Prescott and David, 1976; Cohen, 1974; Child Welfare League of America, 1973) favor location near the child's home.

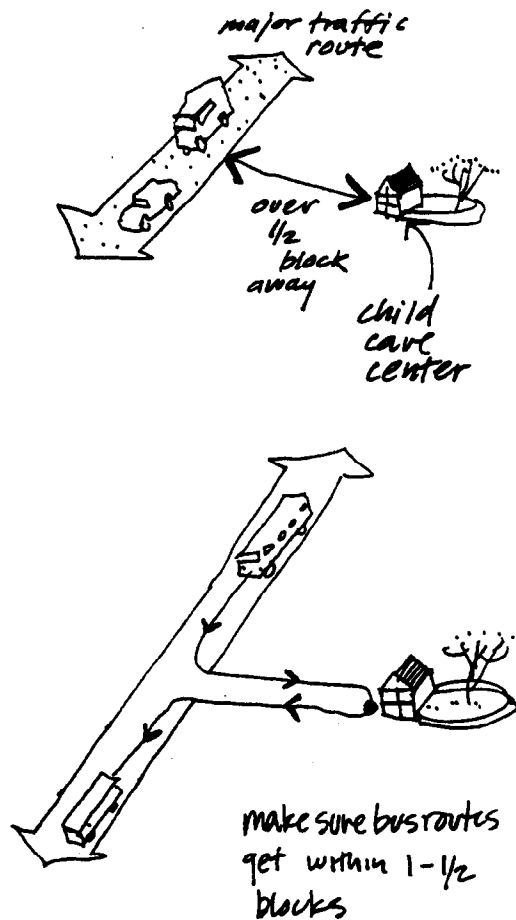
PATTERN

SEAMS BETWEEN NEIGHBORHOODS

LOCATE MEDIUM TO LARGE CHILD-CARE CENTERS ON THE SEAMS BETWEEN TWO OR MORE RESIDENTIAL AREAS OR COMMUNITIES WHEREVER POSSIBLE. IN SITUATIONS WHERE FAMILY-HOUSING AREAS ARE FULLY INTEGRATED, LOCATE CENTERS AT THE CENTER OF GRAVITY OF THE NEIGHBORHOOD. IN EITHER CASE, LOCATE THE CENTER WITHIN WALKING DISTANCE OF MOST CHILDREN (CATCHMENT AREA EQUAL TO $\frac{1}{4}$ MILE RADIUS).

RECOMMENDATIONS

- Locate child-care centers so most children live within walking distance ($\frac{1}{4}$ mile radius).
- Locate child-care facilities on the seams between neighborhoods in the case where neighborhoods have different racial, economic, or military classification compositions (e.g., on a seam between the residential areas of NCO and commissioned officers).



RELATED ITEMS

- Where family-housing master planning has led to completely integrated housing and communities, locate child-care centers in the center of different neighborhoods.
- When it is not possible to locate the center within walking distance for most children, it becomes important to make access by automobile and public transportation easy. The location of facilities thus needs to be near major arteries and on major bus lines.
- Safety considerations indicate that child-care facilities should not be directly on major arteries (though minor, low-traffic arteries are acceptable). Therefore, locate all child-care centers $\frac{1}{2}$ to one block off major arteries.
- Any children and parents coming by car or bus should not have to cross streets on foot to get to the facility.
- Walking distance should also be minimized in cold weather climates.
- Reroute bus lines and stops to provide a major bus stop $\frac{1}{2}$ -1 block from the selected location.

LEARNING FROM COMMUNITY RESOURCES
 DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
 PEDESTRIAN ACCESS AND CIRCULATION
 OBVIOUS ENTRY

509 POSITIVE AND NEGATIVE PROXIMITIES

ISSUE

CHILDREN SIMULTANEOUSLY ARE THEIR OWN SPECIAL CREATURES AND YET ARE DEVELOPING TOWARD ADULT ROLES IN THEIR COMMUNITY. AS CHILDREN, A NUMBER OF PROXIMITIES BETWEEN LOCATION OF CHILD-CARE CENTERS AND OTHER FACILITIES ARE INAPPROPRIATE. YET AS BUDDING ADULTS, OTHER PROXIMITIES HAVE POSITIVE DEVELOPMENTAL POTENTIAL.

JUSTIFICATION

There are four types of proximity issues to be considered in locating child-care centers (in addition to neighborhood and seam location discussed above):

- the potential for learning from community resources
- access to other community services
- dangers
- the creation of defensible space
- locational image

LEARNING FROM COMMUNITY RESOURCES

From research conducted in child-care centers in Europe, Utzinger (1970) concluded that it is important to integrate child-care facilities into the ongoing urban fabric. Such facilities should be viewed as part of a larger scheme, rather than an isolated entity serving only a single need. Children need to spend some time in the center of things, near schools, libraries, places of work, shops, and the like, in order to acquire a familiarity with the adult life of the community. Facilities for early childhood development should therefore establish some link with community activities.

Alexander, Ishikawa, and Silverstein (1977) also argue strongly that any form of children's facility should provide the foundation of a network of learning in a community. As children grow older and become more independent, patterns of learning must be supplemented by a mass of institutions, schools and yet not schools, dotted among the living functions of the community. Piaget and Inhelder (1969)

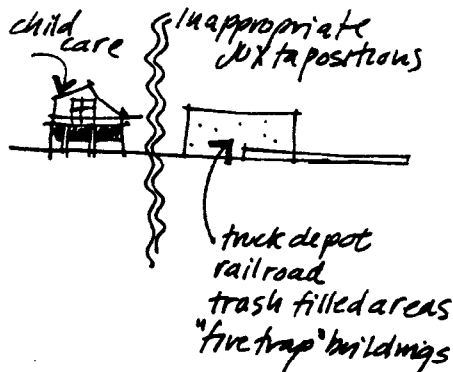
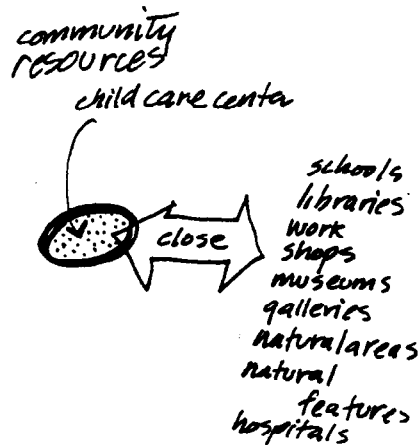
and other child-development theorists have shown that children learn from doing--there is no substitute for involving children in the actual functions and adult behaviors of their community.

Two types of activities should be close to child-care centers: housing (or work) and interesting community resources. In general, the location of a center is one of the most important factors affecting use.

Child-care facilities should be located near places of natural interest to children. This provides opportunities for field trips, use of the natural environment as a learning environment, and provides the possibility of sharing certain facilities.

Examples of such proximities would be:

- libraries
- interesting places of work
- shops
- museums
- galleries
- nature areas, zoos, botanical gardens
- other natural areas, fields, rock outcroppings, streams, woods



DANGERS

On the other hand, there are a number of obvious negative proximities:

- dangers from arterial streets and roads
- dangers from heavily-used intersections
- dangers from railroads
- dangers from special facilities on Army bases such as storage depots, service vehicles areas, drill fields, etc.

- dangers from dust, fumes, car exhausts, hazardous wind-carried pollutants
- disruptions from noise of busy intersections, arterials, air fields, manufacturing facilities, etc.

DEFENSIBLE SPACE

The location of a center is also important with respect to possible vandalism and theft. Jane Jacobs (1961) and Oscar Newman (1973) have suggested a need for creating "defensible space." They note that some spaces are safer from vandalism and crime due to site and architectural considerations. The four aspects of defensible space are:

- surveillance--eyes on the street--that the area is naturally well-peopled and that there are naturally sufficient numbers of people watching activities to provide surveillance and protection
- clearly defined territory--that the architectural cues define a clear territory which is noticeably under jurisdiction of the center and which can be defended if necessary
- image and milieu--that the center has an image of being busy, active, peopled
- safe zones--that the center be located in proximity to other safe activities, and not in proximity to dangerous or seemingly dangerous activities, i.e., close to a church rather than beside a large parking lot of a supermarket

LOCATIONAL IMAGE

In addition to the locational factor, interviews with child-care directors and parents on military installations indicated that the image of child-care facilities is important to their overall success as programs (Travel Report, 1978). Directors felt that the appearance of the exterior of the building, its location, and the quality of surrounding buildings and other facilities are the most

important variables in this image. (We know of no hard empirical research on this topic.)

With regard to this issue of what we might call "image contagion," some military child-care centers we visited were located next to very inappropriate facilities (truck depot, rail line, refuse-strewn dead-end streets), while others were located amidst viable community services (recreation halls, PX, newly renovated buildings, etc.). Significantly, the former facilities had much poorer images in parents' minds than the latter, and it is entirely possible that the quality of surrounding buildings was a most relevant variable.

PATTERN

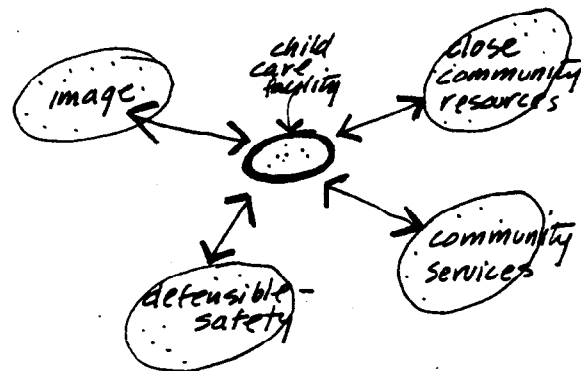
LOCATE CHILD-CARE CENTERS SO AS TO MAXIMIZE THE POTENTIAL THAT CHILDREN WILL BE ABLE TO LEARN FROM COMMUNITY RESOURCES, SO AS TO BENEFIT FROM POSITIVE LOCATIONAL IMAGE, SO AS TO BENEFIT FROM NATURAL SURVEILLANCE AND OTHER FACTORS INFLUENCING DEFENSIBLE SPACE, AND SO AS TO MINIMIZE DANGERS FROM NEGATIVE PROXIMITIES.

RECOMMENDATIONS



- Locate child-care centers as a part of a natural network of connected learning opportunities in the community.
- Locate child-care centers near community learning resources, e.g., schools, libraries, places of work, shops, museums, galleries, nature areas, zoos, botanical gardens, other natural areas, etc.
- Locate child-care centers away from all possible dangers and noxious elements, e.g., away from dangers from arterial streets and roads, heavily used intersections, railroads, special facilities like storage depots, service areas, drill fields, noxious elements like generators of dust, fumes, exhausts, hazardous wind-carried pollutants, etc., and away from noise and vibrations caused by busy intersections, air fields, manufacturing facilities, etc.

- Locate child-care centers in areas of natural surveillance, in an area which can become a clearly defined territory, and in a safe zone in proximity to other activities perceived as positive, desirable, and safe.
- Locate child-care centers to borrow from positive neighborhood images, e.g., amidst community facilities, in a park, or in the midst of housing, rather than near rail lines or pool halls.
- Locate child-care centers on current lines of all major public services: sewers, water mains, gas lines, electricity, and telephone lines.
- Locate child-care centers such that the building entry can be highly visible so that it presents the image of being a busy, active, peopled place.



RELATED ITEMS

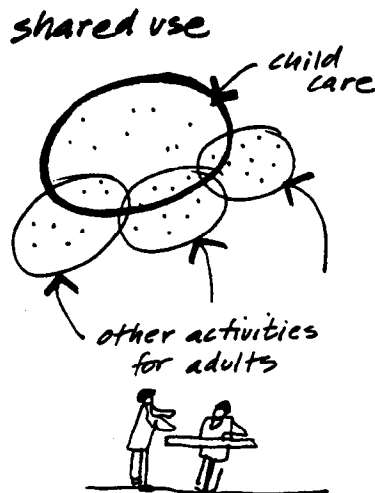
SEAMS BETWEEN NEIGHBORHOODS
 INTEGRATION WITH A COMMUNITY CENTER
 VARIED OR FAVORABLE NATURAL FEATURES
 OBVIOUS ENTRY

510 INTEGRATION OF CHILD CARE IN THE COMMUNITY CENTER

ISSUE

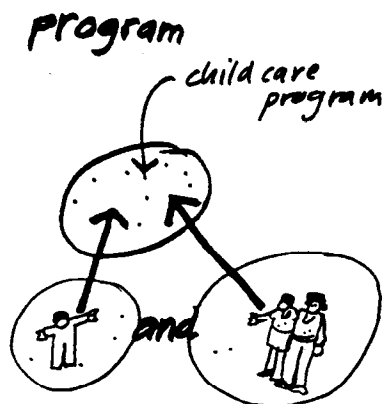
PROGRAMS WHICH CONSIDER THE CHILD BUT NOT THE FAMILY ARE NOT COMPATIBLE WITH CURRENT CHILD-CARE PHILOSOPHY. THE IMAGE OF A CHILD-CARE CENTER AS BEING ONLY FOR WOMEN AND CHILDREN, WHILE MEN AND OTHER FAMILY MEMBERS HAVE LITTLE OR NO INVOLVEMENT IS IN CONFLICT WITH TRENDS IN AMERICAN SOCIETY AWAY FROM SEX-ROLE STEREOTYPING.

JUSTIFICATION



Learning environments should serve both young and old, and should appeal to women, men, and children. A primary approach to achieve the above goal and other benefits as well, is to physically integrate one child-care facility on base with other centralized facilities for community services. Physical integration contributes to:

- Close proximity of services which in return increases users' conveniences, reinforces their sense of community, and saves travel time and energy.
- Shared use of facilities which in return results in some saving in capital investment and on-going maintenance costs, increase in familiarity with the facility enhanced sense of community, and increased use of all facilities.



A community-oriented center which supports child care and other related programs provides convenience for the user who can come to the facility, drop off children, and participate in a variety of associated Community Service programs. Familiar surroundings probably encourage participation in all of these activities, thus lead to a less-institutional atmosphere as users become less suspicious of government/army-administered programs. The proximity of child care to other child-oriented and other community service programs may lead to increased use of these other programs, e.g., health care, nutritional center, family social clubs, and vice-versa.

The economics of the efficient use of buildings also speaks in favor of the intensive and multi-functioning use of buildings at different times through the day. Multi-purpose buildings can lead to savings in time and materials in construction because sharing space and doubling-up in the use of single spaces reduce the total demand for space. Such buildings can be used in the day time for child care and other community service programs, and at night for formal and informal community use, continuing education, etc.

Cohen (1974, p. 145), in a survey of day care systems, noted that day care programs range from those which provide a complete range of family services to those which offer instructional programs for multi-ethnic urban populations. Family services might include guidance counseling, meal and budget planning, and other life-skills. Other integrated community programs provide instruction in typing, filing, record-keeping, and remedial English to help local residents improve their job skills.

PATTERN

INTEGRATION WITH A COMMUNITY CENTER

AT LEAST ONE CHILD-CARE FACILITY (THE CENTER-BASED ONE) SHOULD BE COMBINED AND PHYSICALLY INTEGRATED WITH OTHER COMMUNITY PROGRAMS AND FACILITIES.

RECOMMENDATIONS

- Base-wide surveys made at the programming stage can determine possibilities for combining specific community service programs and facilities.

Army Community Service (ACS) Center has several programs which might be incorporated in a multi-function community center. Included are the following:



RELATED ITEMS

- ACS lending closet
- civilian credit counseling service
- food locker assistance
- handicapped referral and placement
- child advocacy office
- foster care office
- ACS Volunteer Corporation
- ACS Human Resource Council
- personal affairs assistance office
- financial planning office
- consumer education office
- family counselling service
- community organization office
- vocational training
- health and nutritional services office

FOUND SPACE
 NETWORK OF CHILD-CARE FACILITIES
 CENTERS FOR 60
 ESTABLISHING NEED
 IMPLEMENTATION STRATEGIES
 FORMULA FOR NUMBER OF CENTERS

511 HIGH VISIBILITY IN THE COMMUNITY

ISSUE

A NEW CHILD-SUPPORT FACILITY SHOULD HAVE REASONABLY HIGH VISIBILITY FOR TWO REASONS: SO THAT PARENTS KNOW ABOUT ITS EXISTENCE AND LOCATION, AND AS A MEASURE OF PROTECTION FOR CHILDREN, BUILDING(S), AND GROUNDS.

JUSTIFICATION

In a community unaccustomed to quality child-care facilities, it is important that a new facility announce itself. (This is much less necessary for a well-known, well-attended facility.) Parents on military bases either are unaware of child-care opportunities, or, in many cases, have negative images of them based on old, barely remodeled barrack facilities (see Travel Report, 1978). It is thus important that any new program offering developmental services be highly visible to passers by.

In any community where there is a high incidence of part-day drop-in child care, which is the tradition on military bases, it is also important that infrequent users easily be able to find the facility, parking, its entry, etc. (This concern is less important for a facility of primarily long-term regular users.)

Supporting these specific arguments is the general finding of Appleyard (1970) that people remember buildings first and foremost in terms of their function, secondly in terms of visibility to the cone of vision walking and driving, and third and last in terms of architectural character and detail.

PATTERN

HIGH VISIBILITY IN THE COMMUNITY

LOCATE (AND SITE) NEW CHILD-CARE FACILITIES WITHIN A 90 DEGREE CONE OF VISION OF MAJOR ARTERIES, PUBLIC TRANSPORTATION ROUTES, AND MAJOR WALKWAYS.

RECOMMENDATIONS

- Insure that child-care centers are easily seen to passing motorists, riders of public transportation, and people walking in the area.
- While not violating specifications for COMPATABILITY WITH NATURAL AND BUILT ENVIRONMENTS, insure that child-care centers are clearly recognized as such, e.g., by the use of playful images.



RELATED ITEMS

PEDESTRIAN ACCESS AND SITE CIRCULATION
OBVIOUS ENTRY

512 FAVORABLE NATURAL FEATURES

ISSUE

CHILDREN WANT TO USE THE OUTDOORS AS MUCH AS POSSIBLE FOR ACTIVITIES AND PLAY. THE OVERALL DEVELOPMENTAL QUALITY OF CHILD-CARE FACILITIES IS A FUNCTION OF THE QUALITY OF THE NATURAL OUT-OF-DOORS.

JUSTIFICATION

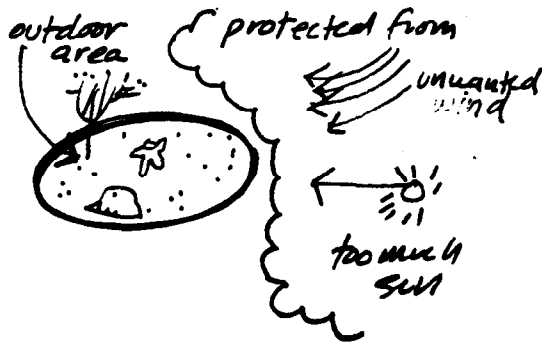
Child-care directors and staff desire to make great use of the outdoors as an extension to the indoors for various activities. Often, in fact, the distinction between indoors and outdoors is minimal. In some centers (e.g., Pacific Oaks College Children's School, see Travel Report, 1978), children enter the "center" through the outdoors along a "lane" but spend most of their day outdoors. A constant lament, at many centers however, is that the lack of quality outdoor spaces makes this indoor-outdoor relation impossible.



National experts point to quality outdoor space as being a necessary component of developmentally-oriented child care (Prescott and David, 1976; Cohen, 1974; Child Welfare League, 1975; Osmon, 1971). While some states require only 75 sq. ft. per child for 1/3 of the children in attendance at any one time, i.e., as little as 25 sq. ft. per child. Other states require 75 sq. ft. per child and national experts recommend between 100 and 200 sq. ft. of usable outdoor space for every child in attendance at a given time. Army regulations (AR 608-1) suggest 100 sq. ft. of outdoor space per child.

To maximize the out-of-doors potential for children, and to maximize the possibilities of what they can learn from the out-of-doors, locations for child-care centers should be selected for natural amenities: plant life, animals, water, earth forms, trees, bushes, etc. Variety is a key to the success of outdoor play areas. If a choice is available, a naturally rolling site should be selected. In addition, land should be well drained, well shaded, and should be near to natural areas like creeks, fields, woods, rock outcroppings, ponds, etc. for possible field trips.

To extend the seasonal use of outdoor spaces, the location for child-care centers should be chosen with two additional things in mind:



- Protection from Elements

Protection can be provided by vegetation in its natural state; large stands of trees, shrubs, hedges, etc. not only provide shade from harsh mid-summer sun, but also provide protection from wind and driving rain or snow. In addition, they help hold soil and help with natural drainage of outdoor areas.

- Natural Light

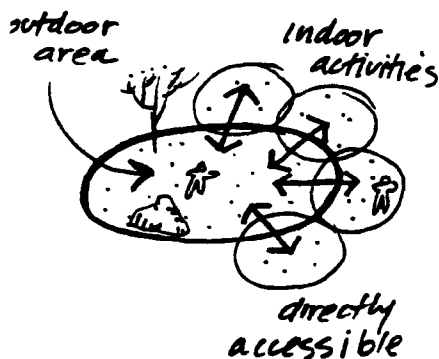
Sunlight and fresh air will allow a greater use of the outdoors on cool days and early and late in the season. South and west exposures in particular are appropriate for winter use in most parts of the country.

PATTERN

FAVORABLE NATURAL FEATURES

LOCATE CHILD-CARE FACILITIES WHERE QUALITY OUTDOOR ACTIVITY SPACE IS AVAILABLE; AND WHERE THERE IS A FAVORABLE MICRO-CLIMATE WHICH PROVIDES PROTECTION FROM THE ELEMENTS WHILE PROVIDING NATURAL LIGHT AND SUN. CHILD-CARE CENTERS SHOULD BE LOCATED SO AS TO MAKE USE OF ANY NATURAL VARIED TOPOGRAPHY IN THE DISTRICT.

RECOMMENDATIONS



- Choose a site so that there is the potential of at least 100 sq. ft. of usable outdoor space for every child in attendance at a child-care center at a given time.
- Choose a location for a child-care center such that outdoor activity areas can be directly adjoining the building, can be directly accessible from each indoor activity space.
- Choose a location which will provide potential protection of outdoor play yards from sun, wind, and precipitation.



*children develop
affection for
significant
natural
features*

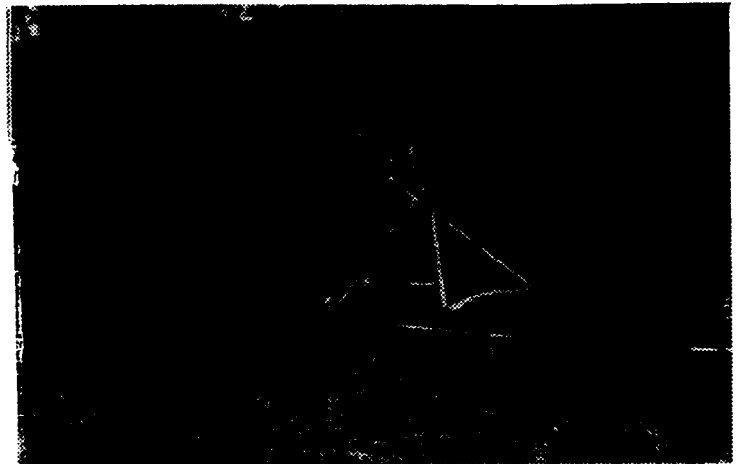
- Choose a natural site with as many natural amenities as possible. Plants, animals, creeks, and earth forms provide rich learning experiences for children.
- Site planning recommendations are made, generally, in the following:

TM5-803-3 Installations Planning--Site Planning General

TM5-830-1 Planting--Planting Design

TM5-830-2 Planting--Planting Turf

TM5-822-2 General Provision and Geometric Design for Roads, Streets, Walks, and Open Storage Areas



RELATED ITEMS

DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
CREATING FAVORABLE MICROCLIMATES
INDOOR-OUTDOOR RELATIONSHIP
FORM IN RESPONSE TO CLIMATE
FRONT YARD AND FRONT PORCH
PORCHES AND DECKS AS ACTIVITY SPACES
NATURE STUDY AREAS

513 SITE SIZE: 220 TO 500 SQUARE FEET PER CHILD

ISSUE

DEVELOPMENTALLY ORIENTED CHILD CARE REQUIRES ADEQUATE SQUARE FOOTAGE FOR INDOOR ACTIVITY SPACE, OUTDOOR PLAY YARDS, AND VEHICULAR PARKING AND SERVICE. IN SELECTING A POTENTIAL SITE, THE QUESTION IS, WILL IT FIT?

JUSTIFICATION

Having identified one or more potential sites which fit the above site selection criteria, the final question must be, "Will a developmentally oriented child-care facility fit on this potential site?" The question not only involves the question of gross square footage for the building itself, but also for the play yards and for vehicular circulation and parking. Furthermore, the question not only involves the determination of gross square footages, but also preliminary siting design to see if a reasonable fit of buildings, yards, and service can be made on a particular site given its constraints of orientation, topography, and neighborhood context.

A preliminary siting design is thus an absolutely necessary part of any site selection process, and should be done in the light of both the above site-specific location criteria and the principles for site design and development given below (e.g., HIGH VISIBILITY IN THE COMMUNITY; FAVORABLE NATURAL FEATURES; DEVELOPMENTALLY-APPROPRIATE PLAY YARDS; OBVIOUS ENTRY; PARKING AND SERVICE AREAS AWAY FROM PEDESTRIANS AND PLAY).

Gross square footages are calculated from a variety of sources combined with the research and professional experience of the authors. The three critical components are:

- facility size (comprised of primary activity space, secondary activity space, and non-assignable space)
- outdoor play area (comprised of child-care play yards plus after-school drop-in playing fields)
- vehicular space (comprised of staff parking, parent-visitor parking, drives, drop-off area, and service area)

The following two tables document the relevant calculations necessary to determine the gross square footage of the facility, play area, and vehicular area.

The left column is the absolute minimum square footage allowable by minimum state requirements, fire laws, and some military documents. The center column, however, is the recommended sizes for all military child-care centers, and--as can be seen--is in line with the civilian recommendations which have been in effect for a number of years (e.g., Child Welfare League of America, 1969; Osmon, 1971; Cohen--Office of Child Development, HEW, 1974; Evans, Saia, and Evans, 1974; Prescott and David, 1976).

The second table gives sample square footages for a typical range of child-care facilities (child-care homes for 6 children; small neighborhood centers for 40-45 children; large neighborhood or work-based centers for 60-75 children; and very large center-based campuses for 240 children).

PATTERN

SITE SIZE 220 TO 500 SQUARE FEET PER CHILD

SELECT A SITE WHICH HAS AN ABSOLUTE MINIMUM OF 190 SQUARE FEET OF USABLE SPACE PER CHILD, AND PREFERABLY ONE WHICH HAS 300 TO 350 SQUARE FEET PER CHILD.

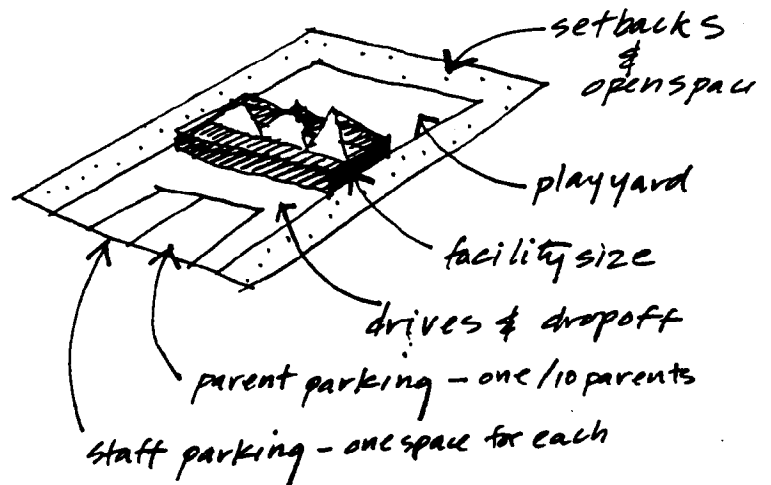
RECOMMENDATIONS

- Provide a preliminary siting design as part of any approval of site process to insure not only that the site is large enough in gross square footage terms, but also that the basic building and siting requirements can be met by the site.
- Absolute minimum and recommended sizes can be read on the accompanying charts.

- The absolute minimum size of 190 square feet per child will provide for only the following:
 - minimum indoor activity space
 - an outdoor activity area which will have to have staggered use in order to meet some state codes
 - parking space for only half the staff members and one out of every 20 parents

Therefore, it is more appropriately called "care only" service.

- The recommended square footages equalling 300 to 400 square feet per child will provide:
 - adequate indoor activity space for developmentally appropriate child care
 - adequate play yards, including a modest-sized playing field for after-school drop-in children if using 400 s.f./child
 - off-street parking for all staff members (assuming an average ratio of 1:6 -- staff to children).
 - parking for one out of every 10 parents so as to encourage them to become involved with their children for a few minutes at drop-off and pick-up time
 - adequate service space and drives to insure PARKING AND SERVICE AWAY FROM PEDESTRIANS AND PLAY.



CALCULATIONS FOR
GROSS SQUARE FOOTAGE
FOR CHILD CARE BUILDING
AND SITE UNDER MINI-
MUM, RECOMMENDED,
AND GENEROUS CONDI-
TIONS

	ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
1. FACILITY PRIMARY ACTIVITY SPACE	35 S.F./C (Some state min.; N.F.P.A.; AR 608-1)	42 S.F./C (Evans; Prescott min.)	50 S.F./C (Prescott rev.)
2. FACILITY OTHER ASSIGNABLE SPACE	25 S.F./C (Moore)	30 S.F./C (Moore)	42 S.F./C (Moore)
3. FACILITY NON- ASSIGNABLE SPACE	20% of assignable 12 S.F./C	25% of assignable 20 S.F./C	33% of assignable 30 S.F./C
4. TOTAL FACILITY SIZE (1+2+3)	72 S.F./C	100 S.F./C	122 S.F./C
5. DAY CARE PLAY YARD(S) SIZE	75 S.F./C (Some state min.; N.F.P.A.)	100 S.F./C (AR 608-1; Evans; Osmon)	200 S.F./C (Prescott)
6. AFTER-SCHOOL DROP-IN PLAY- ING FIELDS	0	5,000 S.F. (TM 5-803-10)	81,000 S.F. (TM 5-803-10)
7. TOTAL OUTDOOR PLAY AREA (5+6)	75 S.F./C	100 S.F./C + 5,000 S.F.	200 S.F./C + 81,000 S.F.
8. STAFF PARKING AND DRIVES	1:12 C 153 S.F./CAR Parking only 315 S.F./CAR Total 26 S.F./C (TM 5-822-3)	1:6 C 200 S.F./CAR 396 S.F./CAR Total 66 S.F./C (TM 5-822-3)	1:6 C 200 S.F./CAR 396 S.F./CAR Total 66 S.F./C
9. PARENT/VISITOR PARKING AND DRIVES	1:20 C 153 S.F./CAR Parking only 315 S.F./CAR Total 16 S.F./C (TM 5-822-3)	1:10 C 200 S.F./CAR 396 S.F./CAR Total 40 S.F./C (TM 5-822-3)	1:6 C 200 S.F./CAR 396 S.F./CAR Total 40 S.F./C
10. DROP-OFF AREA	660 S.F. (Moore)	1,584 S.F. (Moore)	1,584 S.F. (Moore)
11. SERVICE AND DRIVES	624 S.F. Service Only 1,248 S.F. Total (Jules)	720 S.F. Service Only 1,440 S.F. Total (Jules)	912 S.F. Service Only 1,824 S.F. Total (Jules)
12. TOTAL VEHICULAR SPACE (8+9+10+11)	42 S.F./C + 1,908 S.F.	106 S.F./C + 3,024 S.F.	106 S.F./C + 3,408 S.F.
13. TOTAL SITE SIZE (4+7+12)	189 S.F./C + 1,908 S.F.	306 S.F./C + 3,024 S.F.	422 S.F./C + 3,408 S.F.

EXAMPLE GROSS SQUARE
FOOTAGES* FOR CHILD
CARE CENTERS AND
SITES FOR DIFFERENT
NUMBERS OF CHILDREN
UNDER MINIMUM,
RECOMMENDED, AND
GENEROUS CONDITIONS

		ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
1. FAMILY CHILD CARE HOMES (6 Children)	FACILITY	Available Home = ca. 2,000 S.F. .960 S.F. (.093M ²) assignable	Available Home = ca. 3,000 S.F. .480 S.F. (.045M ²) assignable	Available Home = q.t. 3,000 S.F. 552 S.F. (.050M ²) assignable
	PLAY YARDS	450 S.F. 42 M ²	600 S.F. 55 M ²	1,200 S.F. 110 M ²
	VEHICULAR	Available Drive	Available Drive	Available Drive
	TOTAL SITE	Home + 450 S.F. (42M ²) Play	Home + 600 S.F. (55M ²) Play	Home + 1,200 S.F. (110M ²) Play
2. SMALL NEIGHBOR- HOOD CENTER (45 Children)	FACILITY	3250 S.F. 300 M ²	4,500 S.F. 420 M ²	5,500 S.F. 510 M ²
	PLAY YARDS	3375 S.F. 315 M ²	9,500 S.F. 890 M ²	90,000 S.F. 8,370 M ²
	VEHICULAR	9800 S.F. 355 M ²	7,800 S.F. 725 M ²	8,175 S.F. 760 M ²
	TOTAL SITE	10,425 S.F. 970 M ² .25 A. 1 H.	21,800 S.F. 1,935 M ² .50 A. 2 H.	105,675 S.F. 2,100 M ² 2.4 A. 21 H.
3. LARGE NEIGHBOR- HOOD/OR WORK-BASED CENTER (75 Children)	FACILITY	5400 S.F. 500 M ²	7,500 S.F. 700 M ²	9,150 S.F. 850 M ²
	PLAY YARDS	5625 S.F. 525 M ²	12,500 S.F. 1,205 M ²	96,000 S.F. 8,930 M ²
	VEHICULAR	5050 S.F. 470 M ²	10,975 S.F. 1,020 M ²	11,350 S.F. 1,055 M ²
	TOTAL SITE	16,075 S.F. 1,495 M ² .4 A. 1.5 H.	30,975 S.F. 2,925 M ² .7 A. 3 H.	116,500 S.F. 10,835 M ² 2.67 A. 11 H.
4. VERY LARGE CENTER-BASE CHILD CARE CAMPUS (4 Modules @ 60 Children = 240 Children)	FACILITY	17,500 S.F. 1,630 M ²	24,000 S.F. 2,230 M ²	29,500 S.F. 2,750 M ²
	PLAY YARDS	18,000 S.F. 1,675 M ²	29,000 S.F. 2,700 M ²	129,000 S.F. 12,320 M ²
	VEHICULAR	12,000 S.F. 1,125 M ²	28,500 S.F. 2,650 M ²	28,900 S.F. 2,720 M ²
	TOTAL SITE	47,500 S.F. 4,430 M ² 1.1 A. 4.5 H.	81,500 S.F. 7,580 M ² 1.9 A. 7.5 H.	187,400 S.F. 17,450 M ² 4.3 A. 18 H.

* Calculated from above chart. Rounded.

RELATED ITEMS

NETWORK OF CHILD CARE
HOMES FOR FAMILY CHILD CARE
CENTERS FOR 60 TO 75 CHILDREN
HIGH VISIBILITY IN THE COMMUNITY
FAVORABLE NATURAL FEATURES
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
OBVIOUS ENTRY
PARKING AND SERVICE AWAY FROM PEDESTRIANS
AND PLAY

ARCHITECTURAL PROGRAM DEVELOPMENT PROCESS

600

This chapter describes how to develop a specific project program through an interaction of community input, local needs and conditions, and use of the following design patterns. It stresses broad participation of users--parents, staff, children--in the programming and design process. Topics covered, in sequence, range from establishing developmental goals and program activities to choosing patterns from the Design Guide and estimating total building, site development, and furniture costs.

It is our firm belief that facility programs should not be developed either by rote use of the following design principles and patterns, nor by community expressions of needs in isolation of these principles and patterns. Rather, innovative and responsive programs will be developed through an interaction of these two sets of forces--community needs and more general child development considerations as articulated into architectural terms in the below principles and patterns.

Matrices accompanying this chapter are at the end of the Design Guide. They show how to select patterns corresponding to users, developmental goals, and program activities; for ease of use, they can be folded out during program development and design.

- 601 Establishing Overall Program Objectives
- 602 Identifying Users and Developmental Goals
- 603 Choosing Activities and Functional Requirements
- 604 Selecting Patterns and Establishing Quantitative Requirements
- 605 Establishing Site Development and Building Costs
- 606 Establishing Furniture Needs and Costs



601 ESTABLISHING OVERALL PROGRAM OBJECTIVES

ISSUE

ONE OF THE MOST CRITICAL STEPS IN THE DEVELOPMENT OF A CHILD CARE PROGRAM AND RELATED FACILITIES ON MILITARY INSTALLATIONS IS TO ESTABLISH THE BROAD PURPOSES OF THE PROGRAM, WHICH WOULD IN RETURN DETERMINE THE SPECIFIC FEATURES OF THE FACILITY.

DISCUSSION

There are several types of program goals:

- One set of goals is universally applicable to all child care centers as prescribed by AR 608-1--Army Community Services Programs.
- Another set of goals is dependent on local conditions, preferences and aspirations, and deals with the scope and range of services.
- The third type of goals also deals with local choices, and consists of issues related to educational orientation.

The broad and universal objectives of the child care program on military installations are:

- To contribute to the morale and welfare of the Army personnel upon whom the children are dependent, and provide child care while parents are busy with work and other activities.
- To provide a comprehensive system of facilities for child care and aid in the positive child development: the most important function of the Child Care Program is to foster the development of the children--identity development, social development, and physical and cognitive development.
- To provide a setting which can serve as an extension of the family: for many children the center is their home for most of the day. For other children--from a single child family or a single parent family--this is an opportunity to meet and interact with significant others.
- To provide a receptive environment to the transient. Because of the frequent transfers military families face, children often do not have the opportunity to develop long-term associations of friends with whom to pursue activities. The Child Care Program must provide a context for activities into which the transient newcomer can fit easily and quickly.

The goals which are subject to local conditions, preferences and aspirations might include:

- To provide a setting for intervention, e.g., clinical and other children's health related services, counselling to parents, etc.
- To provide integration with other parent- and child-oriented community service programs and facilities.
- To be tied to career development possibilities and to a Family Learning Center.

Similarly, educational orientation and operational approach might involved locally-based goals such as:

- Selecting a particular educational approach or "going eclectic".
- Leaning on active parental involvement vs. professional and hired staff.
- Locating facilities in locus of work zones, e.g., in hospitals, etc., vs. in residential neighborhoods only.
- Outdoor play areas thought of as outdoor classrooms, thus involving heavily natural features for exploration, self-discovery, group play, etc.

PROCESS

Establish a check list of your goals. They should be established collectively by all interested parties. First review the mandatory goals as defined by AR 608-1 and relevant documents such as TM 5-803-11. Then generate a long list of possible goals such as discussed above, and select the ones which are preferred and compatible with your circumstances. These goals should then be transferred to the worksheet in pattern # 1301, SUMMARY OF CRITERIA.

602 IDENTIFYING USERS AND DEVELOPMENTAL GOALS .

ISSUE

THE FIRST ISSUE TO BE ADDRESSED IN DEVELOPING A PROJECT PROGRAM IS TO DETERMINE THE ELIGIBLE USER GROUP, AND WHO THE USERS ARE TO BE SERVED, I.E., WHAT AGE GROUPS AND HOW MANY OF EACH AGE GROUP. FOLLOWING THAT, THE CHILD CARE COORDINATOR, DIRECTOR FOR THE PARTICULAR FACILITY UNDER CONSIDERATION (IF A DIFFERENT PERSON), THE CHILD CARE STAFF, AND REPRESENTATIVE PARENTS SHOULD DETERMINE WHICH DEVELOPMENTAL GOALS ARE TO GUIDE THE OPERATION OF THE PROGRAM FOR EACH AGE GROUP. APPROPRIATE DESIGN PATTERNS CAN THEN BE SELECTED WHICH WILL FACILITATE THOSE DEVELOPMENTAL GOALS.

PROCESS

Selection of Design Criteria by User Age Groups

Consideration must be given to the relative numbers of children in the different functional age groupings and special factors such as physical and mental handicaps among the eligible population.

The residential location of eligible children on-post or off-post will also affect the type of program offered. Off-post residents are less likely to come to the Center except for special events and unique programs unavailable elsewhere. Nearby on-post children are more likely to take regular advantage of a drop-in facility. An understanding of the locational distribution and activity interest of these user populations should inform the decisions as to the service orientation of the Child Care Center.

One way to select principles and patterns is to determine the demographic composition of children in an area to be served, and to insure that sufficient patterns have been selected that pertain to that group. If insufficient patterns have been selected, it may be necessary either to review developmental goals and to select additional patterns, or to select patterns directly related to the age group in question. An example would be if a community has a large number of infants or very young toddlers (6 weeks to 2-1/2 years), such a situation may require a specially designed facility which will facilitate their developmental needs and accomodate their numbers.

Selection of Patterns by Developmental Objectives

The most valuable way to select patterns for a particular facility is to determine the most pressing developmental needs of children in the community in question, and then select those patterns which will lead to those developmental objectives.

In this process, you can review the list of developmental goals, skills, and objectives, and select the ones which are appropriate for your situation. This approach assumes that you will be developing an architectural program based on a set of goals to be accomplished by children's play, learning and other experiences in the child care setting. The eventual selection of proper solutions will be dictated by these goals. These goals include the development of physical abilities, intellectual-perceptual abilities, and social-emotional abilities.

RELATED ITEM

SERVING DEVELOPMENTAL NEEDS

603 CHOOSING ACTIVITIES AND FUNCTIONAL REQUIREMENTS

ISSUE

A CRITICAL STEP IN THE DEVELOPMENT OF THE CHILD CARE CENTER'S PROGRAM IS CHOOSING THE ACTIVITIES TO BE ACCOMODATED IN THE FACILITY. THIS PROCESS MUST BE GROUNDED IN A GOOD UNDERSTANDING OF THE GOALS AND SCOPE OF THE PROGRAM, AND THE LINK BETWEEN ACTIVITIES AND DEVELOPMENTAL GOALS FOR THE CHILDREN.

FOLLOWING THE SELECTION OF DESIRED ACTIVITIES AND RELATED FUNCTIONS, THE QUANTITATIVE REQUIREMENTS FOR THE FACILITY CAN BE ESTABLISHED.

PROCESS

Selection of Program Criteria by Activity

One way to select design patterns to establish the building program is to choose those patterns which interrelate with activities selected beforehand as desirable and needed in the child care facility.

Typical classifications of children's activities are: physical, intellectual, and social activities.

The following are the main domains of activities:

- Activities which develop physical and manual skills.
- Activities to develop intellectual skills.
- Activities to develop sense of self or identity.
- Activities which foster relating to other children, to adults, or to a larger group.

The following list of specific items is an example for the range and types of activities the programmer might choose from. Clearly, this is not an exhaustive list. One can add, modify, and refine the list further. However, the activities listed are basic, and allow entry into this Design Guide--with the aid of the ACTIVITY X DESIGN PATTERNS MATRIX (at the end of the Guide).

Activity Types

- Physical
 - Climbing, running, etc.
 - Crawling
 - Napping

- Physical-Intellectual
 - Sand and water play
 - Quiet, fine-motor play
- Intellectual
 - Arts and crafts
 - Watching A/V and films
 - Nature study
- Intellectual-Social
 - Fantasy-drama
 - Story telling
 - Animal play
 - Building activities
- Social
 - Food preparation
 - Talking-listening
 - Club house play
- Social-Physical
 - Ballgames
 - Wheel-toy play
 - Eating
 - Toileting

RELATED ITEMS

SELECTING DEVELOPMENTAL NEEDS
ESTABLISHING A PROGRAM

604 SELECTING PATTERNS AND ESTABLISHING QUANTITATIVE REQUIREMENTS

ISSUE

A GOOD FACILITY PROGRAM FOR A CHILD-CARE CENTER SHOULD BE GUIDED BY A STRONG AND COHERENT APPROACH TO THE SELECTION OF DESIGN RESPONSES APPROPRIATE FOR THAT FACILITY.

PROCESS

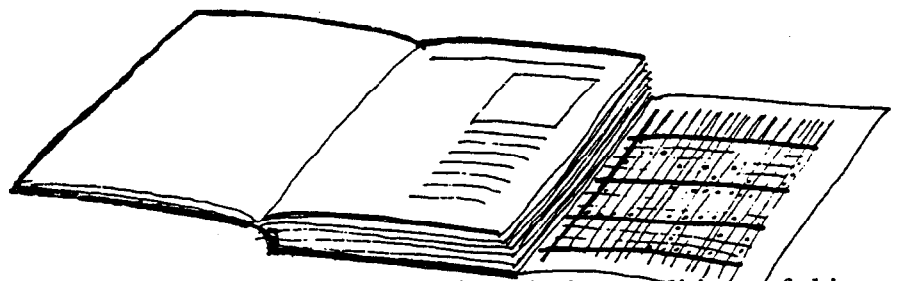
Selecting the Appropriate Design Principles and Patterns

In using this Design Guide, there are three major approaches to the selection of design patterns which will guide the programming and design of any specific child-care center.

- selection by user age groups to be served
- selection by developmental goals and objectives to be achieved
- selection by activities and functions to be accommodated

How to Use This Book to Establish a Program

The matrix with the information classified in the three categories discussed above is located in the last section of this book. Simply open the fold-out chart and use it as a reference guide to any appropriate planning or design pattern.



The matrix is not contained in later editions of this design guide. The remainder of the suggestions for how to use this design guide to establish an architectural program for a particular facility still apply.

A format for a program checklist is also enclosed at the end of the Guide. The purpose of the checklist is the following:

- To document your own set of design goals and the appropriate design patterns
- To monitor application of design patterns in the design process.

The filled checklist is only the first stage in several cycles of the programming process. The input and participation of others (see USER PARTICIPATION IN THE PLANNING PROCESS) is critical to the success of both the programming and the design processes. The filled checklist will serve, then, as an outline for the first of several iterations of the program, to be tuned up by user participation.

Establishing Quantitative Requirements

In order to facilitate cost estimates and begin space allocation and schematic design, quantitative requirements have to be established.

After establishing the basic program, each pattern pertaining to specific activity areas should be consulted for recommendations or directives related to space and area requirements (optimal or minimum square footage). These figures for areas will serve as the basis for an initial "bubble diagram." Their total multiplied by the proper cost factor will establish the estimated cost for the construction of the building (see the tables of square footages recommended for each activity and function in BUILDING GROSS SQUARE FOOTAGE).

RELATED ITEMS

ESTABLISHING DEVELOPMENTAL GOALS
CHOOSING ACTIVITIES AND FUNCTIONAL REQUIREMENTS
USER PARTICIPATION IN THE PLANNING AND DESIGN
PROCESS
BUILDING GROSS SQUARE FOOTAGE
SITE SIZE
ESTIMATED SITE DEVELOPMENT AND BUILDING COSTS

605 ESTABLISHING SITE DEVELOPMENT AND BUILDING COSTS

ISSUE

COST ESTIMATES FOR SITE DEVELOPMENT AND BUILDING CONSTRUCTION ARE ONE OF THE MOST CRITICAL STEPS IN THE PROGRAMMING PROCESS; GROSSLY OVER OR UNDERESTIMATING THE COST CAN BE EQUALLY DISASTROUS TO THE PROJECT AND ITS QUALITY.

PROCESS

Cost estimates for the site development should be done with the aid of a site layout plan and in consultation with mechanical and electrical engineers. Approximate empirical cost estimates are provided in AR 415-17 and should be listed on a check list itemizing the supporting facilities and activities required in site development, including:

- Site preparation
- Demolition if necessary
- Grading and excavation
- Water supply
- Sanitary sewer
- Gas
- Exterior electric service
- Paving (drives, parking, and walks)
- Fencing
- Landscaping
- Signage
- Site work related to outdoor play area
- Other, as appropriate to the site

The building cost estimates will be prepared in accordance with AR 415-17 which provides empirical SF cost figures for all types of facilities. Cost estimates must provide for complete and usable facilities with consideration having been given to life cycle costs as required by DOD 4270.1-M. The cost data in AR 415-17 are relevant to the building proper including those equipment items which are permanently built into or attached to the building. The following items are typical:

- Built-in counters, sinks and shelving
- Central PA and speaker system
- Telephone, fire alarm and intercom systems
- Built-in furniture, cabinets, hoods and vents
- Built-in movable partitions and platforms
- Built-in projection screens
- Waste disposers and built-in kitchen appliances

- Floor and window coverings
- Chalk boards, bulletin boards and display cases
- Fixed seating and tables
- Mirrors
- Signage and graphics
- Special features for the handicapped
- Other items identified as "CF-CI" (contractor furnished-contractor installed).

A very rough estimate of military construction cost for a building type similar to day care center in 1977 dollars is approximately \$48 per square foot (correct for April 1977; see AR 415-17).

To summarize, the steps in the process are:

- List individual items of site development work under "supporting facilities" on DD Form 1391. Base the list on the site plan.
- Estimate the total square footage of the building.
- Use AR 417-17 to estimate the total cost for the site and the building, excluding unattached equipment and furnishings.

RELATED ITEM

ESTIMATING FURNITURE NEEDS AND COSTS

606 ESTABLISHING FURNITURE NEEDS AND COSTS

ISSUE

PROPER FURNISHINGS AND EQUIPMENT ARE ABSOLUTELY VITAL TO THE SUCCESS OF ANY CHILD CARE OPERATION (CENTER OR HOME). THEY SHOULD NOT BE LEFT AS AN AFTERTHOUGHT, BUT SHOULD BE INCLUDED IN THE SAME CAPITAL EXPENDITURE AS BUILDING AND SITE COSTS. FURNITURE AND EQUIPMENT THAT IS PORTABLE AND DETACHED FROM THE STRUCTURE MUST BE FURNISHED BY THE USING SERVICE. THESE ITEMS SHOULD BE IDENTIFIED IN CONJUNCTION WITH PLANNING THE BUILDING, IN ORDER TO ANTICIPATE A REALISTIC BUDGET AND DEVELOP A TOTALLY INTEGRATED AND USEFUL FACILITY.

PROCESS

The two ways to estimate the cost of furnishings are:

- To use a general formula (an allowance per child, or a percentage of the total construction cost). The well-known study of educational specifications (the Metropolitan Toronto School Board, 1968) suggests a single per-pupil allowance of \$106 for equipment for a K-6 elementary school (in 1967).
- To list all needed items and assign costs according to catalogue information.

Often it is economically advantageous to design as much as possible of the furnishings as built-in and attached components of the building. This will make the cost of these furnishings part of the building--and not furnishing--cost. Yet many child care directors (see Travel Report 1978, especially Big Sisters Colleagues Infant Care Center) are extremely wary of this strategy for in the long run it severely limits program and facility flexibility.

Sources for selection of furniture and equipment are provided in the GSA Federal Supply Schedules, the Federal Prison Industries Schedule of Products, and the general GSA supply catalogue. These sources are mandatory insofar as they meet requirements, and cost estimates should be based on prices therein, escalated to time of actual procurement. Design factors relevant to the selection of furnishings are discussed in FLEXIBLE FURNISHINGS. The following list indicates typical items that should be considered:

- Kitchen utensils
- Infant cribs
- Cots
- Infant changing tables
- Bookshelves
- Rugs
- Cushions, bean bags, stuffed chairs
- Task-oriented lighting
- Sand and water tables
- Animal cages and settings
- Cubbies
- Coat lockers
- Low, movable dividers
- Movable storage units
- Desks, chairs; tables
- Lounge furniture
- Storage and filing cabinets
- Audio-visual equipment, TV set, record players
- Wall clocks; plug in
- Outdoor play furnishings (for specifics, see RECOMMENDATIONS FOR PLAY AREAS)
- Other items

Other sources for selection of furnishings are suggested in this report as well as in books addressing custom made children's furniture, etc. In these cases, rough estimates will have to be made where prices are not quoted.

RELATED ITEM

ESTIMATING SITE DEVELOPMENT AND BUILDING COSTS

Total project costs also include professional fees.

PART 3

DESIGN GUIDELINES

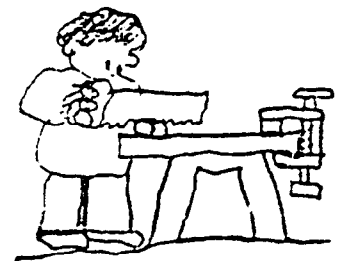


GENERAL DESIGN CRITERIA

700

This chapter presents the major, general design considerations which affect the entire building and site.

- 701 Serving Developmental Needs
- 702 Barrier-Free Design and Mainstreaming
- 703 Energy-Conscious Design
- 704 Life-Cycle Economy



701 SERVING DEVELOPMENTAL NEEDS

ISSUE

GENERAL PRINCIPLES OF PROFESSIONAL DESIGN, WHICH SHOULD BE RECOGNIZED IN ANY ARCHITECTURAL OR LANDSCAPE ARCHITECTURAL PROJECT, MUST BE APPLIED TO THE DESIGN OF CHILD-CARE CENTERS, INCLUDING TO THEIR OUTDOOR PLAY YARDS AND THE REST OF THE SITE.

DISCUSSION

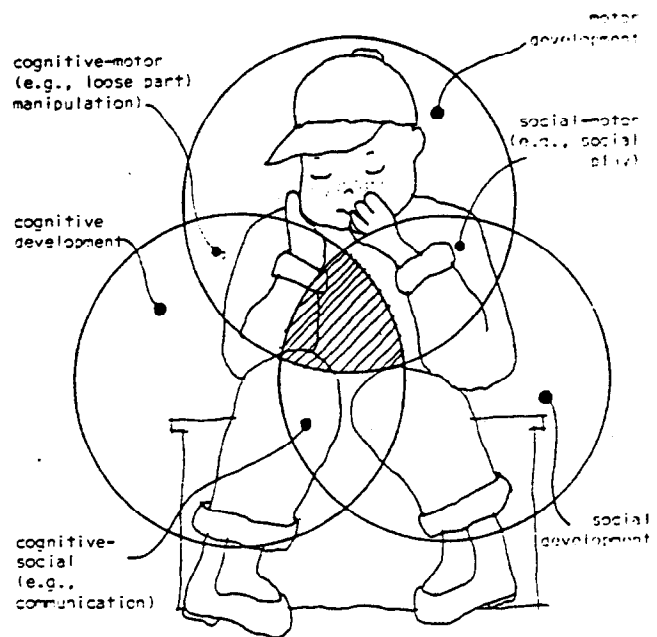
Excellence of design is the primary objective, for the quality of the environment of the Child Care Center will greatly influence its value as a place for child-care and child development activities. The design should be informal, warm, inviting, and comfortable to children, their parents, and staff (criteria for each of these qualities are given in the relevant design patterns below, e.g., CHILD-SCALED ENVIRONMENT; BUILDING AS A FRIEND; FRIENDLY FACES ENTRY SEQUENCE, etc.). To assist in this general objective of design quality, criteria for the selection of architects and other design professionals are given in RESPONSIBILITIES AND USE OF THE GUIDE.

The primary purpose of the Child Care Facility--to serve the developmental needs of children of different ages and cultural backgrounds--must be the dominant objective of its architecture. This objective must be fully appreciated by any architect or other design professional who intends to be involved with the design of any architecture for children.

Developmental needs are organized in three main categories: physical or motor; intellectual or cognitive-perceptual; and social including emotional.

Designing environments for children means designing for a balance between these three areas of development. Too often environments are planned with only the physical needs in mind--this is especially apparent in the greater proportion of indoor child-care space often given to a motor activities room and the almost exclusive design of outdoor play environments for physical, rough and tumble chasing play. But all environments for children--indoor and outdoor; child-care centers, outdoor play environments and other types of children's buildings, and all buildings in

which children spend a sizable proportion of their time--must be designed with all three areas of child development firmly in mind. This consideration has not only influenced the generation of the below design criteria, but it should also be used as a general criterion for evaluating concept designs and approving proposals for new construction, renovation, or adaptive reuse of found space.



The principal developmental needs are discussed in more detail above in the 200 section. This section should be read before working with any of the planning and design patterns below, for it is part of the framework for interpreting the patterns and seeing their relative importance.

A developmental orientation, operationalized through intensive use of the research literature on child development, early childhood education, and child-environment relations, has influenced every part of this Design Guide. The guide is organized to reflect the developmental needs of different children--both in the planning guidelines, in the site design criteria, in the individual space criteria, and in the design guidelines for organizing the building and play yard as a whole. However, should the designers of a

Child Care Center feel that modification of certain specific criteria or patterns is required for better satisfaction of developmental needs, such modifications can be justified on this basis.

RELATED ITEMS

NATURE OF CHILD CARE, PROGRAMS, AND FACILITIES
CHILD-SCALED ENVIRONMENT
BUILDING AS A FRIEND
FRIENDLY FACES ENTRY SEQUENCE

702 BARRIER-FREE DESIGN AND MAINSTREAMING

ISSUE

BARRIER-FREE DESIGN AND MAINSTREAMING ARE REQUIRED BY MOST STATES.

DISCUSSION

Military Child Care Centers must be barrier-free for all persons including the handicapped and able-bodied persons with temporary restrictions. This includes physically handicapped and those with other handicapping conditions like perceptual handicaps, hearing disabilities, etc. Handicapped persons should be able to act independently in order to pursue opportunities which would normally be afforded able-bodied persons.

Design for the physically handicapped is discussed in detail in ER 1110-1-102 and EM 1110-1-103. In short, sites and buildings must be organized in the early stages of design to ease access and egress in and around the facility. Level changes must be negotiable by persons--children, staff, parents--who use wheelchairs, crutches, or braces. Toilet rooms must be located, sized, and equipped to accommodate handicapped men and women. Provisions must be made for parking wheelchairs and for seating crutch and brace users in waiting areas, in parent/staff areas, and in other adult spaces. Considerations must also be given to hard-of-hearing and visually handicapped persons.

In addition, provisions should be made so that physically and mentally handicapped children can be mainstreamed into the regular program of the child care center, that is, there should not be a separate building for handicapped children, and not even a special space or program where they are segregated from other children. Special resources are necessary, however, to support teaching staff if more than one or two moderately handicapped children are included among the children. If sufficient children on a base are handicapped (the national average is about 1 in 10 children having some form of handicapping condition, most of which are minor), a special resource space may be created for use by an itinerant professional with the children.

For more information on the design of buildings and outdoor play yards for all handicapped children, see Moore, Cohen, Oertel, and van Ryzin (1979), and Cohen, Beer, Kidera, and Golden (1979).

RELATED ITEM

BARRIER-FREE ENVIRONMENT

703 ENERGY-CONSCIOUS DESIGN

ISSUE

ALL SEGMENTS OF OUR SOCIETY AND ECONOMY MUST CONSERVE ON ENERGY USE IF WE ARE TO SURVIVE.

DISCUSSION

Buildings used for child care services will be designed, constructed, and operated to conserve energy resources to the fullest extent possible, while providing a healthy and developmentally-appropriate environment for children. Renovations and new construction will conform to the requirements of DOD 4270.1-M for energy conservation, and will be responsive to the latest thinking, information, and criteria of relevant energy conscious texts and design guides (e.g., Watson, 1979; Mazeira, 1979).

704 LIFE-CYCLE ECONOMY

ISSUE

MILITARY BUILDING DESIGN MUST CONSIDER NOT ONLY THE INITIAL COST OF CONSTRUCTION, BUT ALSO THE COST OF OPERATION, MAINTENANCE, AND CUSTODIAL CARE PROJECTED OVER A 25-YEAR LIFE OF THE BUILDING.

DISCUSSION

To provide an effective, developmentally-oriented facility at the most economical cost and least adverse environmental impact is an important overall design objective. To do so, the design must be determined by studies that balance cost with social and environmental values. In developing designs, the potential of alternative systems and components should be analyzed for their impact on life-cycle economy. This should include selection of structural systems, exterior and interior finishes, utility systems, and all other parts of the building and site design and development. These studies should also investigate the use of local skills, stock products, and new materials and techniques to reduce costs. An important part of this can be the use of Reserve Corps of Engineers and parents to build some of the outdoor play equipment, indoor equipment and furnishings, storage units, shelves, light-weight movable partitions, etc. (see DEVELOPMENTALLY-APPROPRIATE PLAY YARDS, FLEXIBLE FURNISHINGS). Life-cycle cost analyses should appraise initial costs, operation and maintenance expenses (including energy costs), and replacement costs over the life span of the Child Care Center, i.e., over a 25-year estimated life of the facility, before cumulative functional changes would dictate major facility and site changes.

RELATED ITEMS

ENERGY-CONSCIOUS DESIGN
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
FLEXIBLE FURNISHINGS

SITE DESIGN AND DEVELOPMENT

800

This chapter is one of several dealing with the major user-derived design determinants for the building and the site. As there are several distinct issues to be addressed and distinct stages in the design process, these chapters are divided into site design, organizing principles for the building as a whole, individual space criteria, and other design considerations affecting all activity areas.

Having selected a site for the child care facility, one of the first design steps is to explore the site as a whole and to identify the best locations for the building, the play yards, parking, service, walkways, etc. There are two major issues to be addressed: the siting of the various parts of the overall facility; and the development of the site through the manipulation of landscape materials. Many of the same design principles hold in both siting of outdoor play yards as the siting of the building, and are based on the developmental goals of the children and staff.

Aspects of site design and development which are not particular to the needs of children are not covered here (e.g., the laying of drainage tiles)--any standard reference on site design treats these fully. Included are:

- 801 Creating Favorable Microclimates
- 802 Pedestrian Access and Site Circulation
- 803 Front Yard and Front Porch
- 804 Obvious Entry
- 805 Parking and Service Access Away From Pedestrians and Play
- 806 Developmentally-Appropriate Play Yards
- 807 Site Design Details



801 CREATING FAVORABLE MICROCLIMATES

ISSUE

PLANNING OF OUTDOOR SPACES AT A CHILD-CARE FACILITY SHOULD INCLUDE PROVISION FOR YEAR-ROUND USE OF SUCH AREAS.

JUSTIFICATION



In planning the relationship of building and outdoor space, climate must be considered. The creation of favorable microclimates will have a positive influence on the amount of use outdoor areas receive.

Microclimates are places which deviate from the general climate on a regular basis--they can vary by being colder or warmer. In winter we seek warmer microclimates: the south-side, protected terrace of a ski lodge. In summer we seek cooler microclimates: a shaded and cool picnic area on the north side of a hill. Microclimates can be a few hundred square feet in size, or they can be whole neighborhoods or even protected mountain valleys.

The two main factors which must be designed for are wind and sun. In a microclimate which is warmer than the surrounding areas, prevailing cold winds are blocked and the sun is captured in a sun pocket.

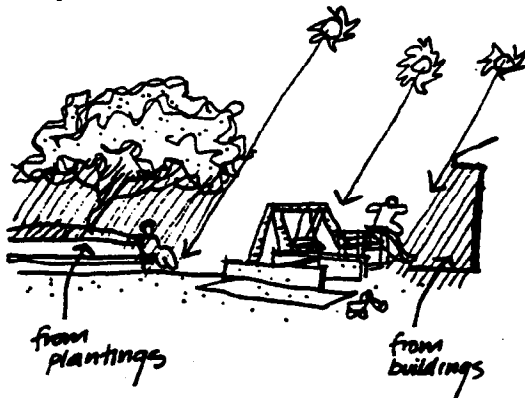
In a microclimate which is cooler than the surrounding areas, hot gusty winds are blocked and (if possible) cooling breezes are admitted and the area is shaded from the sun.

Children may not always be conscious of the reason why they sometimes find it unpleasant outside and prefer to stay at home, but we know from investigations carried out that wind has a very great influence on this, especially if combined with low temperatures. (Bengtsson, 1974, p. 37)

The Department of the Army (1975) has identified on-site features which will affect temperature, wind velocity, and precipitation. For instance, a rise in the land will alter wind patterns to create calm areas, while a dip will hold cool air or create frost pockets.

Since wind problems may be exaggerated rather than relieved by built forms, this is an especially tricky problem.

sun/shade mixture

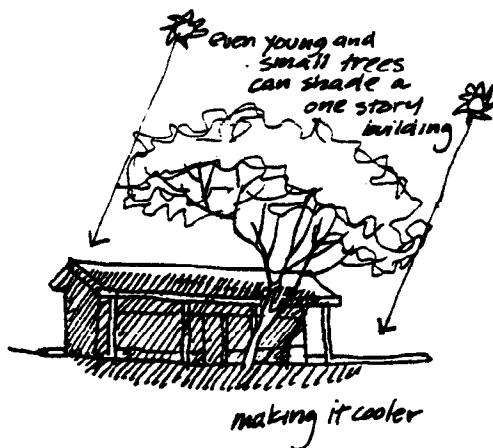


Sun-shade mixture must be considered from several standpoints. (The requirements for sunshine will change with latitude, season, and climatic zone.) In warm climates, shade is obviously necessary as protection from too-strong sunlight. Further, asphalt, concrete, and sand areas must have at least partial shade to be bearable in hot weather.

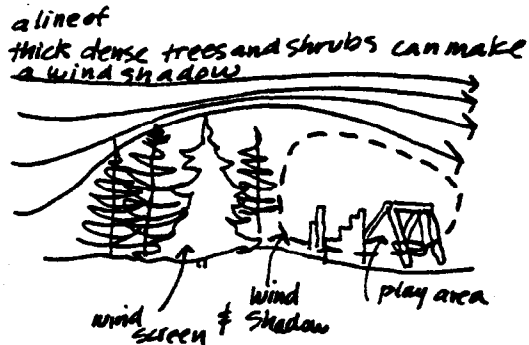
In colder climates a sun-shade mixture in summer with full sun in winter is desirable. Alexander, Ishikawa, and Silverstein (1977) cite evidence showing that people in general avoid using areas on the north sides of buildings. Shadows from existing buildings should be plotted at their worst (December 21 in the northern hemisphere) and play areas placed outside these shadows.

Other microclimate considerations include vegetation and open water. Vegetation can affect wind patterns on a site and will also affect sun-shade balance. Further, vegetation can provide significant cooling through evaporation.

In addition to these properties, plants are also useful because they help to purify the air. Polluted air which flows around plants is mixed with oxygen given off by the plants and is diluted. Another beneficial feature of grass and shrubs is their usefulness in reducing absorption of moisture. Because shrubs are less reflective than most paving materials, planted areas remain cooler than paved surfaces.



Design implications for buildings and outdoor areas are numerous. In warm climates, trees provide shade for buildings thus making them easier to cool. In cool climates, removing evergreen trees which shade the building throughout the year and replacing them with deciduous trees can provide summer shade while allowing the sun to warm the building in winter.



Trees also provide wind protection for the children in outdoor play areas. When combined with dense shrubs, walls and building overhangs, trees give protection from chilling winds and rains.

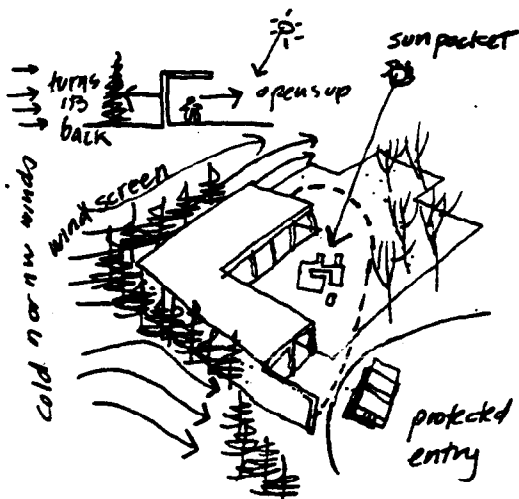
Outdoor play periods can be considerably extended through careful integration of natural elements which screen the sun and wind, cool ground surfaces, and purify and add moisture to the air, with building design features which further modify or enhance on-site weather conditions.

PATTERN

CREATING FAVORABLE MICROCLIMATES

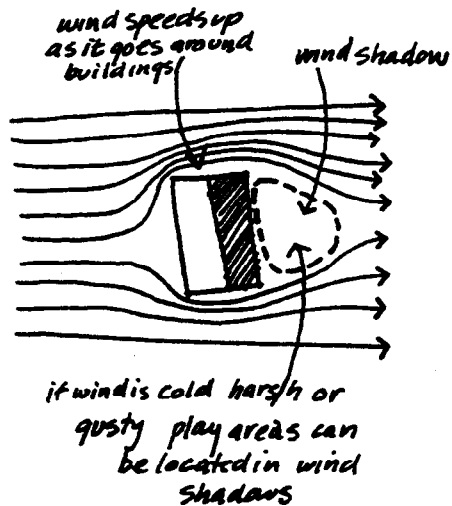
CREATE FAVORABLE MICROCLIMATES WHEREVER A CHILDREN'S OUTDOOR USE AREA IS INTENDED. PROTECT THE AREA FROM PREVAILING WINTER WINDS AND FROM THE EXTREME SUMMER SUN WHILE ALLOWING WINTER SUN TO PENETRATE. SITE THE BUILDING SUCH THAT OUTDOOR USE AREAS ARE IN THE MOST FAVORABLE MICROCLIMATIC LOCATIONS.

RECOMMENDATIONS



- Outdoor space should have positive form, i.e., spaces should be partially defined and partially enclosed. Create small, child-scaled outdoor spaces by using the building as a partial defining element and by using berms, trees, hedges, fences, arcades, trellised walks, major play structures, gardens, fenced animal areas, etc. as defining elements. In this way (as in ACTIVITY-SHAPED SPACES) they will look like a place for activity and can be designed to support different group sizes.
- In siting the building, identify positive microclimates: study wind directions, sun angles, and shade conditions year round.

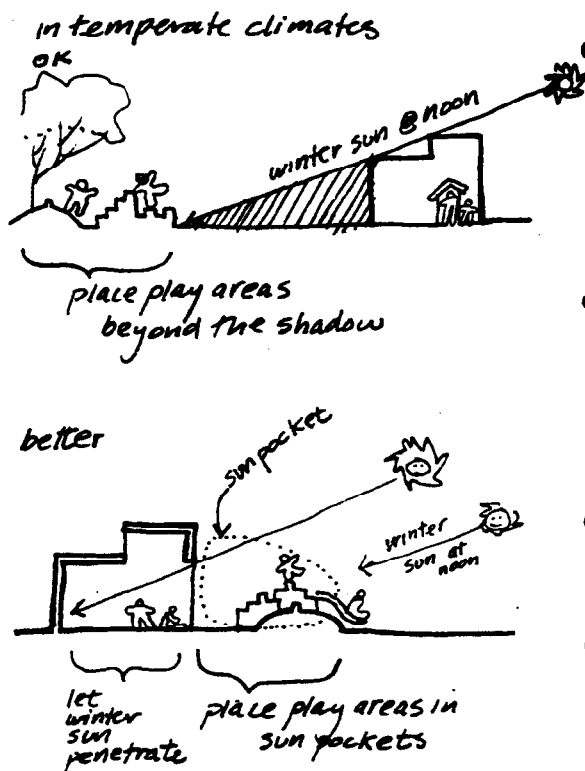
To create a favorable microclimate, manipulate the natural and built environments in the following ways:



Wind Protection

- Buildings should be oriented with a closed side toward winter winds; open sides should face cooling summer breezes.
- Use earthforms, dense evergreens, and existing buildings as windbreaks on the side of the outdoor area facing prevailing negative winds (hot and gusty, or cold).
- In colder regions, windbreaks trap snow and prevent build-up on roadways and walkways of the site. Windbreaks or shelter belts are the most effective when placed perpendicular to prevailing winds.

Sun-Shade Mixture



- Site the building to capture sunny exposures in the spring and fall, and so that indoor spaces will open directly onto sunny outdoor spaces.
- Ensure that all outdoor spaces receive sunlight. If an outdoor-use space must be created on a northeast or northwest side of the site, this can be achieved by stepping the building down on that side of the site so that the amount of shade created by the building is minimized.
- Play areas and other spaces which rely on visual connection to the outdoors should be planned so that children do not have to look into the sun. Overhangs and other natural shading features will reduce the solar heat load.
- Site outdoor-use areas to have sun pockets and shady areas in both cold and hot climates.
- While areas of partial shade are desirable, they should not become dominant unless the climate is extremely hot and humid, in which case shade and natural ventilation should be important site design factors.

- In temperate and cold climates, use deciduous trees (rather than evergreens) within the outdoor-use area and near the building; they will provide shade in summer and will not block sun in winter and early spring.
- Vine coverings on walls and trellises act as temperature control devices by providing a shade cover which cools the immediate surface.
- Providing trees, shrubs, grass, and open water will cause significant cooling through evaporation.

Other Considerations

- Place surfacing materials so that heat collectors (asphalt, sand, concrete, etc.) will not be in direct mid-day sun in hot weather.
- Provide good drainage in order to make the outdoor-use area more usable after rain and in the spring.
- Place surfacing materials so that the surfaces which dry most quickly (paving) are closest to the entry to the outdoor area, and those which dry more slowly (dirt, grass, sand) farthest from entry.
- See the American Institute of Architects Research Corporation (1976) for further suggestions.

RELATED ITEMS

DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
FRONT YARDS AND FRONT PORCHES
PORCHES AND DECKS AS ACTIVITY SPACES
PARKING AND SERVICE ACCESS AWAY FROM
PEDESTRIANS AND PLAY
ACTIVITY-SHAPED SPACES
INDOOR-OUTDOOR RELATION

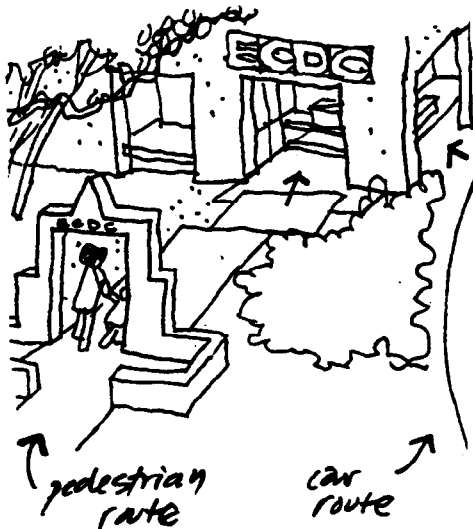
802 PEDESTRIAN ACCESS AND SITE CIRCULATION

ISSUE

PEDESTRIANS NEED SAFE, CONVENIENT SITE ACCESS POINTS AND CIRCULATION PATHS WHICH ARE SEPARATE FROM AUTO TRAFFIC. FOR THIS DESIRED GOAL OF SAFETY, A MAJOR DESIGN OBJECTIVE IS TO SEPARATE PEOPLE AND TRAFFIC.

JUSTIFICATION

It is a common occurrence that wherever they are permitted, automobiles tend to dominate the landscape. Parking areas and access roads which accommodate on-site traffic can easily become a major focal point if not carefully considered during the design process.



Due to the low speeds and relatively small number of cars using them, driveways do not have to be designed for highway standards. With maximum auto speeds of 15-20 mph, curves can have shorter radii and the course of the drive can easily be varied to preserve such natural elements as trees and earth forms.

Pedestrian site access points must be made convenient for parents and children. The walkways must also be kept separate from auto drives. Similarly, the walkway system and the building should be made easily visible to the approaching child. Although shade along such walks is desirable to reduce surface temperatures, dense shrubs which line paths may obscure vision and thus be frightening to small children.

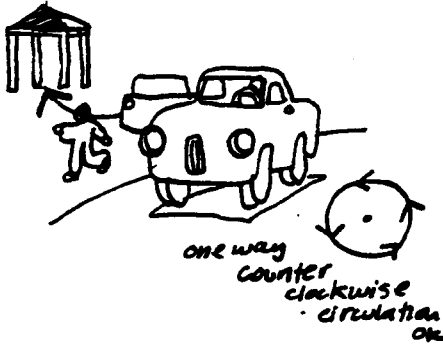
Paving of walks is usually necessary in order to prevent soil erosion and eliminate muddy conditions. In cases where erosion is not a problem, other surface materials such as pine bark or wood chips can be used to create lovely natural paths.

PATTERN

PEDESTRIAN ACCESS AND SITE CIRCULATION

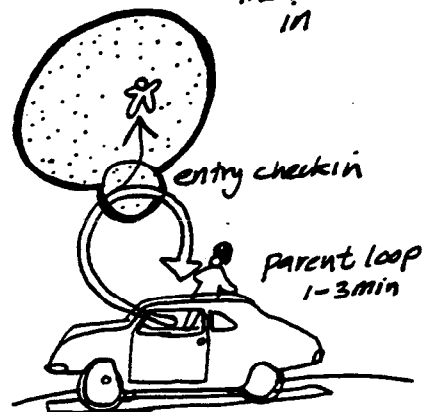
PROVIDE SAFE POINTS OF ACCESS FOR CHILDREN AND ADULTS WHICH ARE SEPARATE FROM AUTO CIRCULATION. DESIGN DRIVES AND WALKS WHICH PRESERVE AND UTILIZE AS MUCH OF THE NATURAL LANDSCAPE AS POSSIBLE.

RECOMMENDATIONS



- Allow pedestrian paths to be dominant on the site by using more desirable and more visible parts of the site for pedestrians than for vehicles, and by blocking parking from view.
- Consider having pedestrian walkways entering adjacent to play yards.
- The building and walkways which approach it should be highly visible. Walks need sun protection but should not be overgrown with shrubs. Where night use is expected, low level lighting will be necessary.
- Paving of the walks prevents erosion and muddy conditions. As paved walks are often popular places for games, they need to accommodate both playing children and adults and children passersby. Where drainage and erosion are not problems, natural surfaces such as wood chips may be substituted.
- A sheltered walkway should lead directly from the parking area to the building.

• Short-term parking
most
parents must check
their child
in



- See Military Construction Civil Works document EM-1110-1-103, "Design for the Physically Handicapped," Chapter 4, for site design criteria with regard to drop-off points, parking, walks, ramps, and entry stairs.

RELATED ITEMS

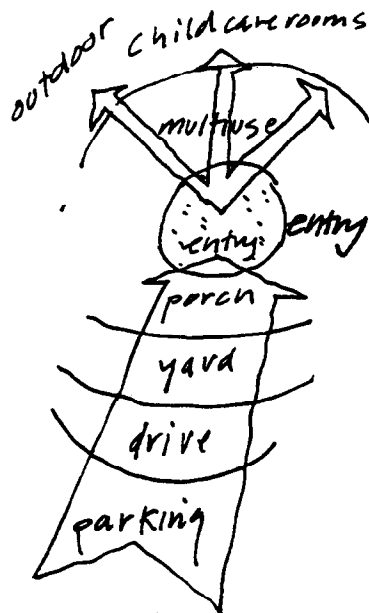
SERVICE ACCESS AND PARKING AWAY FROM PEDESTRIANS
AND PLAY
FRONT YARD AND FRONT PORCH
OBVIOUS ENTRY
PORTE COCHERE
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS

86.7 FRONT YARD AND FRONT PORCH

ISSUE

THE APPROACH TO THE BUILDING FROM PUBLIC SPACE (SIDEWALK OR STREET) CAN HELP TO REASSURE BOTH CHILD AND PARENT THAT THE FACILITY WILL BE "HOME-LIKE" AND CAN HELP REDUCE ANXIETY WHICH BOTH CHILDREN AND PARENTS MAY FEEL ABOUT SEPARATION.

JUSTIFICATION



*home like approach
images*



Pollowy (1977) cites research which indicates that young children are more likely to be content parting from parents if they are in a familiar setting. The approach to the building should, then, attempt to remind children of the most familiar setting: home. In a very urban environment, the approach might be a front "stoop." On military bases, however, most children are more likely to have a front yard (even in multi-family housing).

The front yard of a child-care center should offer the following aspects of "home":

- be in relation to residential scale
- provide a sense of protection and enclosure
- include residential objects, textures, plantings
- provide views through the entry to the activities inside

The yard should lead directly into a front porch as the next degree of enclosure in the overall entry-transition sequence. This front porch is a covered space which provides weather protection. It is here that a parent and child may linger for a few minutes before entering the facility.

The next degree of enclosure in the entry-transition sequence is the building entry itself (see FRIENDLY FACE ENTRY SEQUENCE).

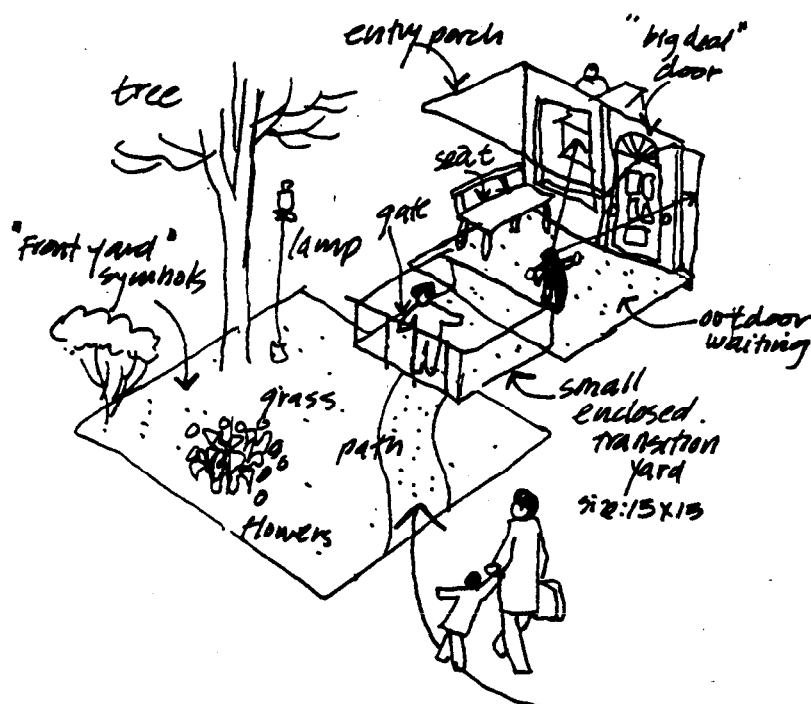
PATTERN

FRONT YARD AND FRONT PORCH

USE FAMILIAR HOME-LIKE ELEMENTS TO MAKE THE APPROACH TO THE BUILDING RESEMBLE A RESIDENTIAL FRONT YARD AND FRONT PORCH.

RECOMMENDATIONS

- The outdoor area leading to the entry should be partially enclosed by shrubbery, fence, wall, etc., and scaled like a small, enclosed yard or court. A minimum of approximately 15 ft. X 15 ft. is recommended.
- Use plants and landscaping materials which are residential rather than institutional in nature (e.g., a wooden fence rather than a chain-link fence).
- A view of indoor activity spaces will be helpful.



- The covered entrance should be large enough to provide outdoor waiting space and protected enough to provide transition space for people using the building.

- An outdoor covered space at the entry should include a minimal amount of seating at both adult and child scale. This could be under an overhang, on a porch, or on a deck, etc. Because parents are encouraged to go inside and interact with their children (see PARENT INVOLVEMENT), outdoor seating should be minimal, e.g., two benches or one table-and-bench combination (see Recommendations for Child Play Areas, 1979--INFORMAL PAVED AREAS).



friendly
face entry
view of interior play
adjacent parents & kids
view of outside play

RELATED ITEMS

OBVIOUS ENTRY
FRIENDLY FACE ENTRY SEQUENCE
PORTE COCHERE

804 OBVIOUS ENTRY

ISSUE

FIRST IMPRESSIONS OF A CHILD-CARE FACILITY WILL BE FORMED BY PARENTS AND CHILDREN LONG BEFORE ENTERING THE BUILDING ITSELF. PART OF THESE IMPRESSIONS WILL INVOLVE THE DEGREE OF CLARITY OR CONFUSION INVOLVED IN FINDING THE ENTRY.

JUSTIFICATION

Sanoff (1971) describes the transition from outside community to facility activities as a critical factor in the child's acceptance of the new environment. This is especially critical in the military context where tradition and current demand indicate a very high percentage of casual, drop-in children as compared to regular, full-day users (e.g., Fort Lewis, Alameda NAS, etc.; see Travel Report, 1978).

If the path from community to facility is unclear and the entry is difficult to find, both child and parent will enter the facility with a residue of frustration and a possible feeling of "I'm not wanted here."



Further, and this is very important, children who are unaccustomed to identifying building types by subtle architectural cues may identify buildings by the activities they actually see happening (Appleyard, 1969). If children can see activities through windows while they are approaching the entry, this may relieve anxieties and apprehensions.



Methods of making the pathway obvious include a gateway, possibly even with a sign over it, landscaping and pavement cues, level changes, rhythmically spaced color, lights, or reflectors, etc. (see Harold E. Jones Child Study Center and Pacific Oaks College Children's School--Travel Report, 1978).

Making the entry itself obvious may simply be an extension of the pathway cues (e.g., carrying the same pavement indoors), or can be an emphasis point in the building form (e.g., entry at 45 degree angle to the line of approach--see Mission Annex, Travel Report, 1978). Any combination of cues may be used which will make the entry obvious to first-time users.

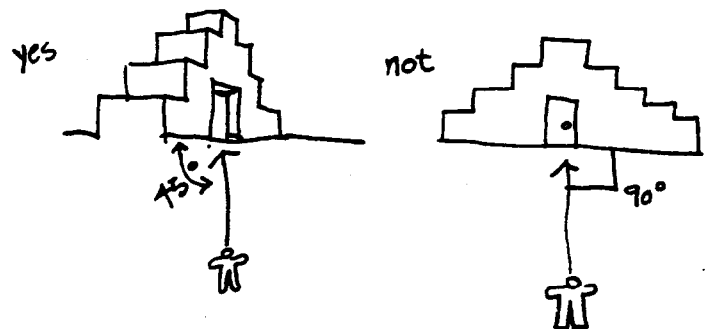
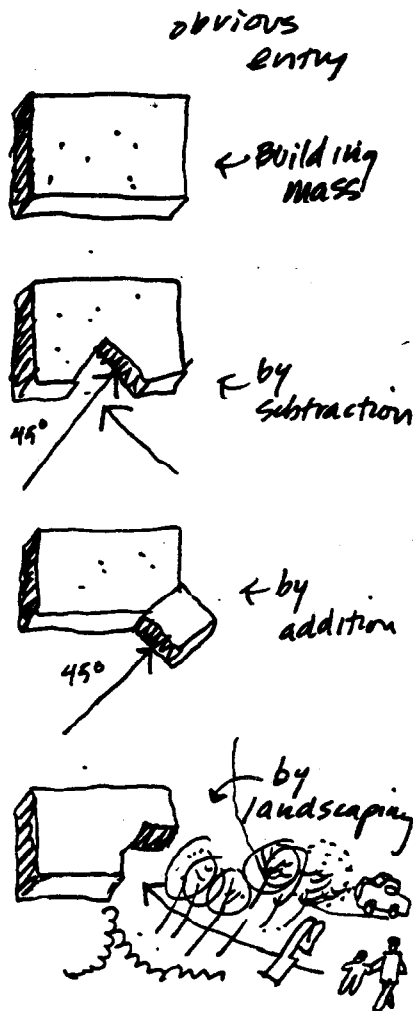
PATTERN

OBVIOUS ENTRY

THE PATH FROM COMMUNITY TO FACILITY AND THE ENTRY TO THE BUILDING ITSELF SHOULD BE MADE OBVIOUS THROUGH SIGNS, GATES, PATHS, LEVEL CHANGES, COLOR, LIGHTS, ENTRY AT 45 DEGREE ANGLES TO THE LINE OF APPROACH, OR ANY COMBINATION OF CUES TO ENSURE THAT THE ENTRY IS OBVIOUS TO FIRST-TIME USERS.

RECOMMENDATIONS

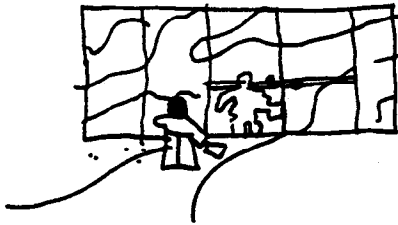
- Use landscaping, gates, paving, levels, color, lights, etc. to draw users from public streets and sidewalks onto an obvious pathway to the facility.
- Use extensions of the pathway, graphics, architectural forms, building transparencies, etc. to make the entry obvious.
- Emphasize the entry to some highly visible part of the entry sequence by a change in building form, e.g., extrusion, indentation, 45 degree angle to entry path, curving wall, etc.



- Ensure that the entry and the door are child-scaled and home-like, e.g., wooden doors with small panes of glass rather than heavy aluminum doors, etc.

- All entry sequences should be accessible to handicapped users. Ar-608-1 notes that "all new CSS facilities will be designed to allow use by physically handicapped children and access by physically handicapped children and adults" (no page). Specific recommendations for site and building access are made in Military Construction Civil Works document EM 1110-1-103, "Design for the Physically Handicapped," Chapters 4 and 5.
- Demonstrate what the facility is by using small, child-height windows between outdoor pathway-entry and indoor child-activity spaces. (Large expanses of glass may become mirrors to those outdoors and leave children indoors feeling exposed and distracted. Smaller windows will allow views without these problems.)

no large glass areas that
act as mirrors!



RELATED ITEMS

BUILDING AS A FRIEND
ACCESS AND SITE CIRCULATION
PORTE COCHERE
FRIENDLY FACE ENTRY SEQUENCE



805 PARKING AND SERVICE ACCESS AWAY FROM PEDESTRIANS AND PLAY

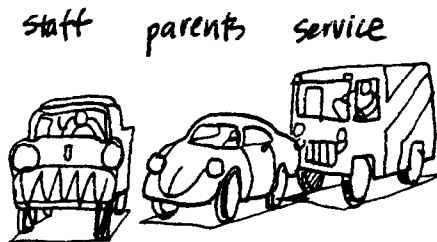
ISSUE

VARIOUS VEHICLES WILL COME ON SITE REGULARLY-- MOST COMMONLY PARENTS' CARS, STAFF CARS, AND SERVICE VEHICLES. PARENTS SHOULD BE ENCOURAGED TO STAY FOR A WHILE, SEE WHAT THEIR CHILDREN DO AT DAY CARE, AND BECOME INVOLVED WITH THE PROGRAM. BECAUSE STAFF WILL ALSO WANT PARKING SPACE AND SERVICE VEHICLES WILL MAKE REGULAR DELIVERIES, SEVERAL TYPES OF PARKING MUST BE PROVIDED. VARIOUS PROBLEMS CAN ARISE, E. G., SURFACE PARKING AREAS CAN TEND TO BE UNSIGHTLY, VEHICULAR ACCESS MAY PRESENT HAZARDS TO CHILDREN, AND CHILDREN MAY SEE PAVED PARKING AREAS AS PLAY SPACES AT INAPPROPRIATE TIMES.

JUSTIFICATION

The United States is a car country, and many people feel that individuality and independence demand private transportation. It is therefore likely that most children, parents, staff, and visitors who don't walk to the child-care center will arrive by car. While WALKING IS INTIMATE TO THE SCHEMA, there will still be some parents who lack the time (or energy) or who may be prevented by health or weather from walking with their children

Especially on military bases, distances between various amenities tend to be long, thereby making walking difficult in most situations. Equally important, when parents do come with their children, or come to pick up their children, they should be encouraged in every way to stop for a while, to look around at what their children are doing at their child-care center, to talk with the staff, to play with their children, and generally to become involved in the overall functioning of the center. This will be discouraged at the first instance if they bring a car and there is insufficient or inconvenient parking.



Therefore, adequate and convenient parking must be provided at the child-care facility site. This parking will include PORTE COCHERE for quick three-minute parent parking, longer-term parent/visitor parking, and all-day (and night) staff parking.

Car access to the site and proximity to the building entry from parking must be considered. A very clearly delineated driveway (OBVIOUS ENTRY) will be as important to drivers as a clear pathway is to pedestrians. A view from parking to the building entry will also be part of OBVIOUS ENTRY. This is most important for parents, children, and visitors; staff have other needs which will be discussed later.

Parents who will be staying for more than the 3-minute drop-off time will need to park longer. It is therefore important that the distance from longer-term parking to the building entry be kept as short as possible. Parents may be carrying a child, supplies, toys, etc. and the task will be made easier if distances are minimized. Obviously, after leaving the car, parents and children should not have to recross traffic areas.

Staff members will be familiar with the building and site circulation patterns. Thus, it may well make sense in many site situations to make staff parking and entry separate from general parking and entry. Staff members will probably prefer to park very close to the building since they might be carrying equipment, paperwork, and other materials to and from the facility. Also, it is reasonable that staff may wish to enter their own area (STAFF BACK STAGE) rather than through the main entry (but see CONTROLLED ACCESS). The SERVICE ACCESS may be used as staff access to parking.

In order to separate service vehicles from on-site auto traffic, a service vehicle apron is necessary. Trash will be collected, supplies delivered, and utilities serviced without interruption to other building functions.

In whatever manner that vehicular access and on-site parking is managed, it must be separated from pedestrian movement and outdoor child-use areas. To minimize the possible intrusiveness of surface parking, separation can be achieved through the use of natural barriers. Barriers which double-function, such as berms for play elements, thickets which

become nature areas while defining walkways, and raised garden beds are unique site design features which can separate parking and other outdoor areas.

Parking areas do not have to be rigidly laid out for maximum efficiency, but rather, can be interspersed with trees and shrubs which help to de-emphasize the presence of autos. These same elements can be used to contain autos in designated areas and shape the path of the approach drive. Trees and shrubs are also valuable as they provide shade which reduces the buildup of unpleasant heat in parked autos.

The paving of such areas used by autos is required to reduce dust and erosion. Installation of curbs may also be necessary to control storm drainage. Where drainage and erosion is not a problem and vehicular traffic is very light, wood chips or pine bark might be used in lieu of hard-surfaced paving materials. Earth mounding with a plant cover, dense shrubs, or depressing the service drive are methods for screening this area from public view. These design features also give visual clues to children about the "off limits" quality of this area.

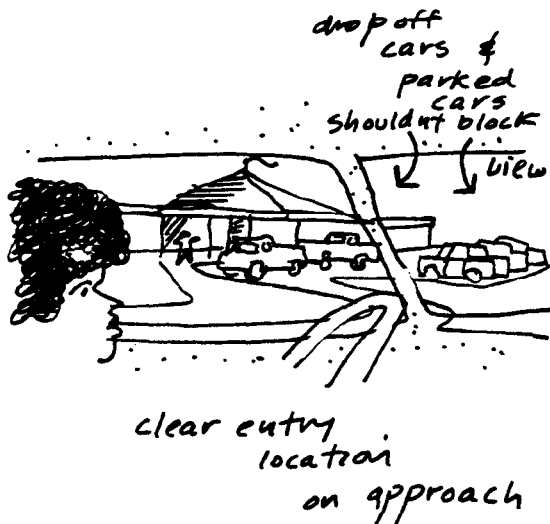
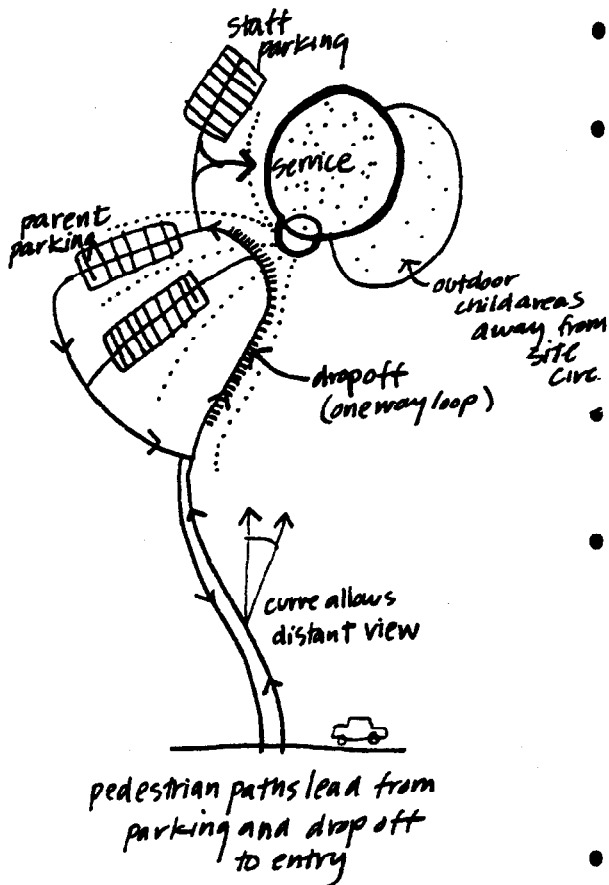
PATTERN

PARKING AND SERVICE ACCESS AWAY FROM PEDESTRIANS AND PLAY

LOCATE PARKING FOR PARENTS, STAFF, AND VISITORS NEAR THE BUILDING WITH A VIEW TO THE ENTRY. SEPARATE AND VISUALLY SCREEN VEHICULAR ACCESS, SERVICE AREAS, AND PARKING FROM PEDESTRIAN AND PLAY AREAS.

RECOMMENDATIONS

- Parking for parents, children, and visitors should be very near the building with a view from the parking area to the entry (OBVIOUS ENTRY).
- Assuming that one out of six parents may wish to stay longer than three or so minutes and interact with their children at the end of the day, parking should be provided for a 1:6 ratio of parents.



- Parking for staff should be near either the main entry or a special staff entry.
- A center for 60-75 children should have 9 to 12 staff members. Provide parking for staff in a 1:1 ratio. Depending on local regulations and the availability of on-street parking, portions of this can be on- and off-site parking, assuming compliance with the above recommendations for siting.
- Separate parking from pedestrian and play areas with barriers which may also be used as play items whenever possible.
- Implications for building design include locating the service core where direct service access from the outside is possible or using a service corridor to connect the core and the service entry. For building security, surveillance of the service area should be possible from administrative areas. Access should also be under administrative control.
- All service access and service areas should be separated from children's play areas and from on-site pedestrian circulation, and should be buffered to be out of sight.
- In addition to fences or depressions, plants, shrubs, trees, and mounds can be arranged to screen the service area from public use areas. Physical barriers must separate outdoor child areas from all service areas.
- Approach drives and parking areas should be designed to retain as many natural site elements as possible. Drives can follow most horizontal and vertical variations, and can easily pass around trees, shrubs, and earthforms. Shrubs, trees, and earthforms provide natural screening of car parking areas.
- Turn-arounds are convenient for dropping someone off and then proceeding to the parking area.

- A back-up spur should be provided for dead-end and service drives which exceed 100 ft. in length.
- Two-way approach drives should be 20'-0"; single lanes require 12'-0".
- Lighting the approach and parking area is necessary if night use is expected.
- Pave roadways to decrease dust and prevent erosion. Provide curbs to control drainage.

RELATED ITEMS

OBVIOUS ENTRY
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
PORTE COCHERE
FRONT YARD AND FRONT PORCH
ACCESS AND SITE CIRCULATION
WALKING IS INTIMATE TO THE SCHEMA

806 DEVELOPMENTALLY-APPROPRIATE PLAY YARDS

ISSUE

THIRTY-SIX OUT OF FIFTY STATES REQUIRE A DAILY PERIOD OF OUTDOOR PLAY. STATE LICENSING REGULATIONS ALSO TYPICALLY REQUIRE A MINIMUM OF 75 SQUARE FEET PER CHILD FOR OUTDOOR PLAY SPACE. OUTDOOR PLAY IS NOT ONLY IMPORTANT FOR THE CHILD'S HEALTH BUT IS ALSO AN INTEGRAL PART OF THE LEARNING EXPERIENCE.

JUSTIFICATION

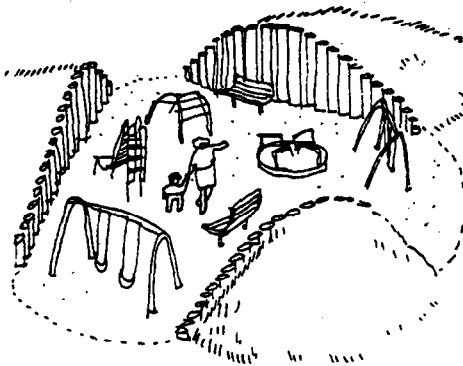
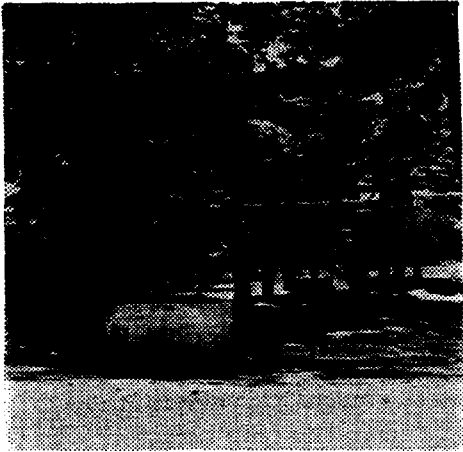
The importance of play in the child's overall development has been discussed at length in the document, and the point has been made that unstructured activities combined with semi-structured activities provide for the full spectrum of early childhood development. The Child Welfare League of America (1969) makes a particularly clear statement about the purposes of outdoor play in particular:



Outdoor play is not only important for the child's health, but it is an integral part of his/her learning experiences. Outdoor play space should offer opportunities for adventure, challenge, and wonder in the natural environment. The child care center that cares for children during a major part of the day needs a playground of its own. It should be planned with flexibility and imagination so that growth and learning can take place within it, and it should be suitable for the particular climate and urban or rural location. (p. 83)

Play yards were an integral part of several child-care centers visited by the research team (see Travel Report, 1978). In particular, the play yards at the Pacific Oaks Children's School and at the Bing Nursery School in California were impressive and had many architectural lessons for future facilities. Exciting features of these two facilities--and of several others--were the following:

- excellent visual connection and free movement from indoors to outdoors
- multiplicity of things for children to do, from structured activities to unstructured activities



- well-landscaped settings built upon the natural features of the sites
- covered transitional space between the indoors and outdoors, which also provides some year-round outdoor play space
- distinctly different types and styles of play yards, each of which provided different developmental possibilities for the children, and though somewhat separated, freedom of movement from one to the other
- lots of outdoor storage
- good balance between ambiguous and specific play equipment
- porches as activity spaces
- sufficient drop-off and pick-up parking very near play areas
- medium-low vegetation and foliage which provided for acoustic and visual separation while allowing for awareness of neighboring activities
- sitting walls and other similar places near activity areas which provided unobtrusive watching places for children
- adequate provision for wheel-toy play separated from other quieter pursuits
- good zoning of quiet from noise, active from passive, large group from small group
- equipment with multiple uses, with parallel uses, with breakaway points, and which was judged superior developmentally to other types of equipment

As a contrast, many, many facilities visited, including most of the military facilities, had little or no adequate out-of-doors provision for developmental challenges in natural, aesthetic settings for children. On many bases, an appropriate amount of space was provided in terms of raw square footage, but was not designed or developed in ways conducive to the many needs of children and staff.

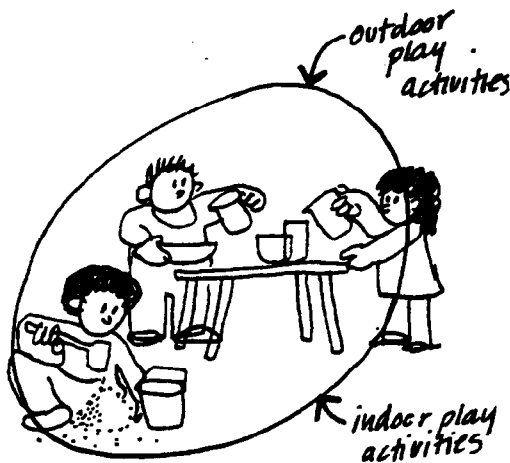
Therefore, in short, the design and development of those parts of the site which are devoted to outdoor play space are an important part of the success of any child-care facility. They must be considered to be as important as, and at the same time as, the design and development of interior spaces and the building itself.



The only difference between indoor and outdoor activity space is that one has a roof over it. Both, however, need architectural (and landscape architectural) definition, and both need to provide for the multiplicity of children's developmental needs. This goal can be achieved by providing activity-shaped spaces which are suited to the activities they are to house and facilitate.

Note: As we have devoted a whole document to the design of children's play environments (Recommendations for Child Play Areas, 1979), this pattern will list those parts of that document which pertain to the site design and development of play yards at child-care centers. The reader is referred to these for more information. In addition, as outdoor and indoor activity spaces meet many of the same developmental and functional requirements, several of the Patterns for the Design of Specific Activity Spaces are relevant here also, and are listed below.

In this latter case, the user will have to employ different design elements to achieve the goals stated, e.g., using landscape materials to define ACTIVITY-SHAPED SPACES, not building materials, and so on.



PATTERN

DEVELOPMENTALLY-APPROPRIATE PLAY YARDS

DEVELOP OUTDOOR PLAY YARDS OF 100 SQUARE FEET PER CHILD TO PROVIDE FOR THE DEVELOPMENTAL AND FUNCTIONAL NEEDS OF CHILDREN AND STAFF. PROVIDE A SERIES OF INTERCONNECTED, DEVELOPMENTALLY-APPROPRIATE ACTIVITY-SHAPED SPACES FOR DIFFERENT ACTIVITIES AND AGES.

RECOMMENDATIONS

See the following patterns in *Recommendations for Child Play Areas*, 1979:

SITE ORGANIZING PRINCIPLES

- 503 COMPREHENSIVE PLAYGROUNDS
- 504 FAVORABLE MICROCLIMATES
- 508 SEPARATED BUT LINKED ZONES
- 509 SEMI-ENCLOSED PLAY SPACES FOR INFANTS
- 510 LOOPED CIRCULATION
- 511 CONTINUITY AND BRANCHING
- 512 DEGREES OF SHELTER

PATTERNS FOR ACTIVITY SPACES

- 602 INFORMAL PAVED AREAS
- 605 HARD-SURFACE PLAYING AREAS
- 607 CREATIVE PLAY AREAS
- 608 ENVIRONMENTAL YARDS
- 609 CHILDREN'S GARDENS
- 610 FENCED ANIMAL AREAS
- 611 DESIGNATED PLAY STRUCTURES
- 612 PLAY SPACES FOR INFANTS
- 614 RESIDUAL AREAS

GENERAL DESIGN OF PLAY SPACES

- 701 AMBIGUOUS SETTINGS AND OBJECTS
- 702 LOOSE PARTS
- 703 PACED ALTERNATIVES
- 704 CHALLENGING ENVIRONMENTS
- 705 NESTS FOR QUIET PLAY
- 706 RANGE OF SOCIAL SCALE
- 707 "CHILDREN ONLY"
- 708 WATER PLAY AREAS
- 709 PROTECTED SAND AND DIRT PLAY AREAS
- 710 PLAY ABOVE THE GROUND
- 711 PLAY AREAS AS LANDMARKS
- 712 CLEAR ACCOMPLISHMENT POINTS
- 713 RETREAT AND BREAKAWAY POINTS
- 714 VARIETY OF 3-D SPACES
- 715 SMALL ARTS AND CRAFTS NOOKS
- 716 STAGES AND PROPS
- 717 SUPERVISED FIRE AND COOKING AREA
- 718 IMAGEABILITY AND ORIENTATION
- 719 ORDERLINESS AND CONSISTENCY
- 720 EMOTIONAL RELEASE POINTS
- 721 REPETITION AND MULTIPLE CODING
- 722 BARRIER-FREE ENVIRONMENT

RELATED ITEMS

RICH RESOURCE NODULES
SMALL GROUP SIZE
INDOOR-OUTDOOR RELATION
PARENT-COMMUNITY USE OF THE CENTER
APPROACH AND ENTRY SEQUENCE
ACTIVITY-SHAPED SPACES
MULTIPURPOSE-MOTOR ACTIVITY SPACE
RETREAT AND OBSERVATION POINTS
CHILD CAVES
A PLACE FOR BUILDING
BLOCK PLAY AREAS
AREAS FOR ARTS AND CRAFTS
OBJECTIVE AND NON-OBJECTIVE STAGES AND PROPS
NATURE STUDY AREAS
LIQUID OASIS
"INDOOR" SAND PLAY
TIME-OUT AND EMOTIONAL RELEASE AREAS
SHORT TROT TO THE POT
INFANTS AND TODDLERS CIRCLES OF ACTIVITY
A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS
PLACES TO OBSERVE CHILDREN
PARENT-STAFF CORNER
NEVER TOO MUCH CHILD ACCESSIBLE STORAGE



807 SITE DESIGN DETAILS

ISSUE

HAVING CONCEPTUALLY DESIGNED DEVELOPMENTALLY-APPROPRIATE PLAY YARDS AND OTHER FEATURES OF THE SITE, THE REALIZATION OF THESE IDEAS DEPENDS IN PART ON THE CORRECT DESIGN OF MANY SITE DETAILS.

JUSTIFICATION

There are a number of site design issues to be considered to insure the adequate design of outdoor play yards. Among them are the following:

- difficulty in moving bulky toys outdoors
- children's enjoyment of varied terrain
- visibility of children's activities to adults
- importance of general landscaping relative to the provision of "play equipment"
- provision of safety, security, and calm
- potentials for winter play
- proper drainage to permit an extended season of use

Note: As we have devoted another document to the design of children's play areas, including the detailed design and development of the site (Recommendations for Child Play Areas, 1979), this pattern will list those parts of that document which speak to the above issues. The reader is referred to these for more information, per the list given below.

PATTERN

SITE DESIGN DETAILS

DESIGN AND DEVELOP THE CHILD-CARE CENTER SITE IN ACCORDANCE WITH DEVELOPMENTALLY-ORIENTED SITE DESIGN CRITERIA.

RECOMMENDATIONS

- See the following patterns in Recommendations for Child Play Areas, 1979:

SITE DETAILS

- 801 OUTDOOR STORAGE
- 802 BERMS AS PLAY EQUIPMENT
- 803 LANDSCAPED BARRIERS
- 804 LANDSCAPING MATERIALS
- 805 PLANTING AND GROUND SHAPING
- 806 SNOW AND ICE PLAY
- 807 APPROPRIATE UTILITIES
- 808 POSITIVE DRAINAGE.

- For other standard site design details pertaining to other than the children's play yards, see any standard landscape architecture and site design textbook, like Kevin Lynch's *Site Design*; Albert Rutledge's *Anatomy of a Park*; J. H. Callender's *Time Saver Standards*; Joseph de Chiara's *Time Saver Standards for Building Types (Recreation)*; or J. de Chiara and L. F. Koppelman's *Site Planning Standards*.
- For military site design criteria, see AR420-72, Surfaced Areas; TM 5-803-3, Site Planning; TM 5-803-1 through 3, Planting Design.

RELATED ITEMS

DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
PARKING AND SERVICE AREAS AWAY FROM
PEDESTRIANS AND PLAY
PEDESTRIAN ACCESS AND CIRCULATION
CREATING FAVORABLE MICROCLIMATES

BUILDING ORGANIZING PRINCIPLES

900

This chapter presents the significant concepts involved in organizing individual spaces into a whole child care facility. The chapter applies to new construction, adaptive reuse of other buildings, and renovations and modifications to existing facilities.

Before designing the individual spaces of a child care facility, there are a number of more general issues to consider which will influence the organization and character of the building as a whole:

- 901 Building Gross Square Footage:
100 SF/Child
- 902 Campus-Plan Concept for Very Large Centers
- 903 Ground-Floor Centers
- 904 Activity-Shaped Spaces
- 905 Modified Open Space
- 906 Home Bases for 8-16 Children
- 907 Group Size: Just the Right Size Spaces
- 908 Resource-Rich Activity Pockets for 2-5
Children
- 909 Separate Spaces for Drop-In Care
- 910 Zoning: The Infant-Toddler-Preschooler
Connection
- 911 Zoning: Noisy to Quiet, Active to Passive
- 912 Clear Circulation Which Overlooks
- 913 Barrier-Free Environment
- 914 Building Perimeter as a Controlled Filter
- 915 Extended Indoor-Outdoor Relationships
- 916 Interior Visibility: Welcome at First
Sight
- 917 Appropriate Areas for Parents' Participation
- 918 Image: Building as a Friend
- 919 Scale: Child-Scaled Environments
- 920 An Environment That Responds
- 921 Modifications to Homes for Family Child
Care



901 BUILDING GROSS SQUARE FOOTAGE: 100 SQ. FT. PER CHILD

ISSUE

NEXT TO THE TOTAL NUMBER OF CHILDREN IN A CHILD-CARE CENTER, MANY NATIONAL EXPERTS ADVISE THAT AN ADEQUATE AMOUNT OF SPACE AVAILABLE FOR CHILDREN'S ACTIVITIES IS ABSOLUTELY NECESSARY TO INSURE A QUALITY, DEVELOPMENTALLY-ORIENTED CHILD-CARE PROGRAM.

JUSTIFICATION

There are a number of different age groups and functions to be accommodated in a child-care center: infants; toddlers; other preschool-age children; after-school drop-ins; part-day as well as full-day children; staff and administration; other secondary activities like eating, food preparation, and napping; circulation and service; and in some centers, space for other community services.

In addition to the building, the development of the site will include one or more play yards, parking and drop-off areas, pedestrian circulation, and open space.



The number of children in the center, their ages and the activities appropriate for each age, and the range of other services provided determines the gross size both for indoor and outdoor areas.

The following is a way to estimate the gross square footages for the building and the overall site without developing a full and specific architectural program. Consider the following:

- best size for quality child care (already established as being between 60 and 75 children--see NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN)
- ratio of staff-children for quality care
- minimum amount of "usable" square footage per child for primary activities to insure a quality program
- amount of secondary activity space for other activities (eating, toileting, etc.)
- amount of circulation and service space

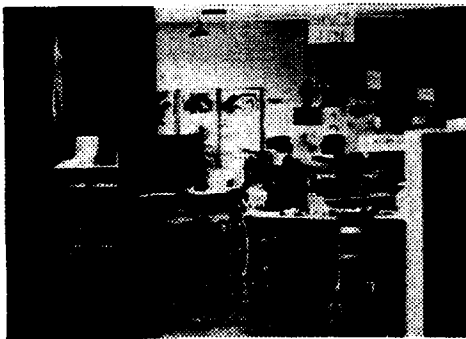
And for the site:

- total building size
- number of square feet per child for quality play yards
- number of square feet per child for parking, drop-off, pedestrian circulation, and service

It should be pointed out that state licensing regulations, the National Fire Prevention Association's Life Code (1976), and current military regulations (e.g., AR608-1) all concur that child-care centers should be located on the ground floor, regardless of building construction. Provision is made, however, for after-school drop-in spaces to be on a second floor. Thus in calculating building and site gross square footage, it must be realized that all or most of the building will be on the ground level.

INDOORS

42-50 Square Feet per Child



Chapman and Lazar (1971) have summarized the then current minimum space requirements for child-care licensing by state. They found that 33 states required a minimum of 35 sq. ft. of usable play space per child, exclusive of eating, napping, circulation, closed storage, etc. Only 12 states required less than 35 sq. ft. per child, while one state requires 50 sq. ft. per child. Cohen (1974) has therefore recommended in a national HEW monograph that a playroom needs at least 35 sq. ft. of usable space per child (not including storage), and that 50 sq. ft. per child is preferable.

According to research done by Whalen, Flowers, Fuller, and Jernigan (1975), smaller children use more personal space than do older children. Personal space refers to the imaginary boundaries around people which they consider to be private. Entry into that space by another person would be considered an intrusion unless proper social interaction had taken place.

Quality child-care programs recognize that so-called "instructional activities" are not the only activities from which children learn. So-called "secondary activities" like eating, food preparation, diapering and toileting, even preparation for napping have important developmental potentials. Secondary activity spaces may be just as important to the overall quality of a center as the primary activities of arts and crafts, block building, etc.

Therefore, a facility for 75 children made up say, of 15 infants, 10 toddlers, 40 older children, and 10 after-school drop-ins would have 10-13 caregivers. At this scale, the director can also be one of the caregivers. In addition, there might be one special resource person and one itinerant consultant-special education teacher, etc.

Our calculations and experience with child-care centers indicate that 25 sq. ft. per child for secondary and staff activities is very tight, and that for quality programs, 38-42 sq. ft. per child is more preferable. For a typical center of 60-75 children, this will include the following: kitchen and eating areas, bathrooms, sick bay, staff areas, and laundry (see also the chart "Recommended Square Footages for Individual Activity Spaces").

Service Space: 1 Square Foot per 15 Square Feet of Total Building

Minimum and recommended amounts of service space are shown in the chart "Recommended Square Footages for Individual Activity Spaces").

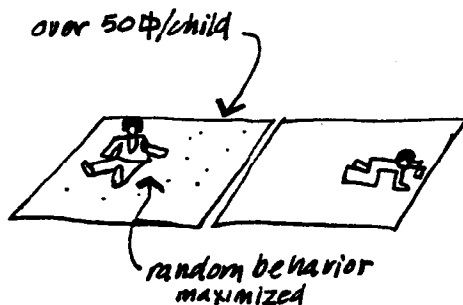
25% - 33% Circulation Multiplier

The recommended multiplier for circulation and other non-assignable space (partitions, walls) for this building type is 25%. As child-care centers are often MODIFIED OPEN SPACE, 25% should be sufficient. Closed plans require more circulation space as none of the circulation paths double function as activity space (e.g., up to 33% for closed-plan schools).

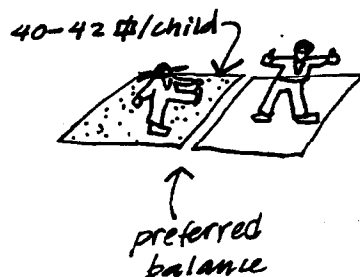
no



no



yes



Several studies have been done to analyze the relationship of density and social behavior in children (summarized in Prescott and David, 1976). The tendency appeared to be more aggressive behavior in crowded conditions and less relevant involvement in too-dense conditions (less than 30 sq. ft. per child). Most social involvement appears to occur at medium density, while more random behavior occurs in large, undifferentiated settings (over 50 sq. ft. per child).

Another study shows that higher densities can be compensated for by extra resources (Rohe and Patterson, 1974). Therefore the 80-100 sq. ft. small-group areas should be rich in resources (see VARIED AND EXCITING SENSORY ENVIRONMENTS; RICH ACTIVITY POCKETS FOR 2-5 CHILDREN).

Based on such research, in 1973 the Child Welfare League recommended the following:

A ratio of 50 sq. ft. of playroom floor space per child exclusive of space occupied by sinks, lockers, and storage cabinets, is the optimum requirement for appropriate program activity and comfort. (p. 83)

Based on a review of six environment-behavior studies of density and resultant behavior (like aggression) in child-care settings, Prescott and David (1976) recommended to the Federal Government in a commissioned study a minimum of 40-42 sq. ft. of usable floor space per child for Federal Interagency Day Care Requirements.

Interviews as part of our research (see Travel Report, 1978) confirmed that a minimum of 35-40 sq. ft. per child would be minimum, but that 40-45 sq. ft. per child provides a much more flexible program, options, active and quiet pursuits happening simultaneously without disturbing each other, etc.

We therefore recommend providing a minimum of 42 sq. ft. of usable floor space per child for quality programs.

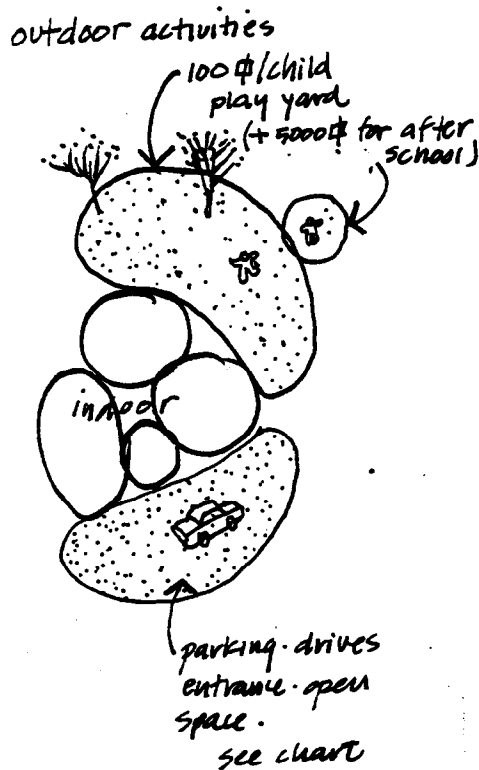
RECOMMENDED SQUARE FOOTAGES FOR INDIVIDUAL ACTIVITY SPACES	ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
A. INDOOR SPACE			
1. Primary usable activity areas			
a. All children/emphasis on preschoolers (@35-50 s.f./c.; assume 40 c.)			
Resources at the Heart	100 ¹	120 ¹	140
Darkened Room	1	1	120
Multi-Purpose/Motor Activities Building Area	500 ²	600	600
Block Play	250 ²	150	150
Sand Play/Liquid Oasis	150	250	250
Nature Study	150	150	180
Reading/Listening	200	210	240
Arts and Crafts	175 ¹	210	240
Music	250	260	275
Total preschooler activity	150	180	180
b. After-School Drop-Ins (@35-50 s.f./c.; assume 10 c.)	1,775	2,130	2,630
c. Infant Circle (@20-35 s.f./c.; assume 15 c.)	350	420	500
d. Toddler Territory (@20-35 s.f./c.; assume 10 c.)	300	360	525
Total primary activity	200	240	350
	2,625	3,150	3,750
2. Secondary activity spaces			
Infant-Toddler Napping	150	190	220
Preschooler Napping	160	200	200
Intimate Diapering	60	75	100
Learning Bathrooms	120	180	200
Kitchen	150	200	220
Eating Clusters	300	500	500
Sick Bay	80	100	120
3. Caregiver Staff Spaces			
Administration	260	370	380
Parent/Staff Corner	100 ⁴	150	180
Staff Back Stage	4	150	165
Social Service	100	150	165
Laundry	50	75	85
4. Service Spaces			
Maintenance and Service	20	60	75
Mechanical and Electrical	325	450	540
Total other assignable space	1,875	2,850	3,150
Total net assignable space	4,500	6,000	6,900
5. Non-assignable space (@20%, 25%, and 33%)	900	1,500	2,250
Total indoor space	5,400	7,500	9,150

RECOMMENDED SQUARE FOOTAGES (cont'd)	ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
B. OUTDOOR ACTIVITY SPACE			
1. Primary activity areas			
a. Emphasis on preschoolers (@75-200 s.f./c.; assume 40 c.)			
Motor Activity	1,500	2,000	4,000
Intellectual Activity	750	1,000	2,000
Social/Emotional Activity	750	1,000	2,000
b. After School Drop-Ins	5	5,000 ⁵	81,000 ⁵
c. Infants (@35-100 s.f./c.; assume 15 c.)	525	750	1,500
d. Toddlers (@35-100 s.f./c.; assume 10 c.)	350	500	1,000
Total outdoor activity area	3,875	1,250	91,500

Footnotes:

1. Under restricted budgetary and spatial constraints, RESOURCES AT THE HEART can triple function with the DARKENED ROOM as part of the READING/LISTENING AREA.
2. BLOCK PLAY and A PLACE FOR BUILDING may double function.
3. SAND PLAY and water play in LIQUID OASIS should be in the same space under all conditions.
4. Under tight constraints, STAFF BACK STAGE may have to double function with PARENT/STAFF CORNER.
5. After-school drop-ins require an informal open playing field if at all possible (ca. 5,000 square feet) or access to an official playing field (ca. 81,000 square feet).

OUTDOORS



100 Square Feet per Child Outdoor Activity Space

Most states require a minimum of 75 sq. ft. of outdoor play yard per child enrolled in child care, though some recognize that on the average no more than 1/3 are liable to be outdoors at one time. Prescott and David (1976), however, feel strongly that for a quality child-care program, the use of the outdoors as integral to the program cannot be underestimated, and that therefore 100 to 200 sq. ft. per child is recommended.

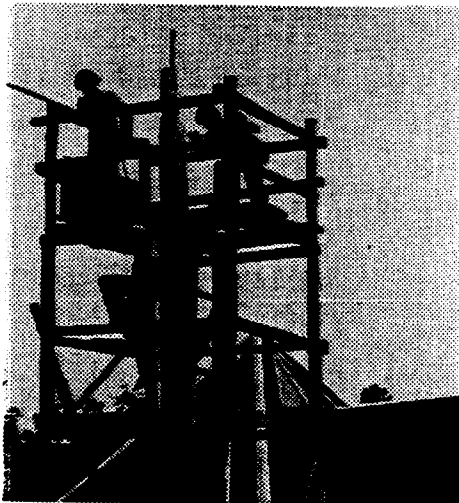
The Child Welfare League (1973) makes a clear statement of the importance of the outdoor play area:

Outdoor play is not only important for the child's health, but it is an integral part of his learning experiences. Outdoor play space should offer opportunities for adventure, challenge, and wonder in the natural environment. The day-care center that cares for children during a major part of the day needs a playground of its own. It should be planned with flexibility and imagination so that growth and learning can take place within it, and it should be suitable for the particular climate and urban or rural location. (p. 83)

AR608-1 requires a minimum of 100 sq. ft. of outdoor activity space per child.

Parking and Outdoor Service

See SITE SIZE: 190-500 SQUARE FEET PER CHILD and the following chart for building and site square footage, lines 8-12.



PATTERN

BUILDING GROSS SQUARE FOOTAGE: 100 SQUARE FEET PER CHILD

PROVIDE AN OVERALL BUILDING SIZE CALCULATED AT 100 SQUARE FEET PER CHILD. INCLUDE IN THIS SPACE, 42 SQUARE FEET OF PRIMARY ACTIVITY SPACE, 38-42 SQUARE FEET OF SECONDARY ACTIVITY SPACE, AND 25% CIRCULATION

CALCULATIONS FOR GROSS SQUARE FOOTAGE FOR CHILD CARE BUILDING AND SITE UNDER MINIMUM, RECOMMENDED, AND GENEROUS CONDITIONS

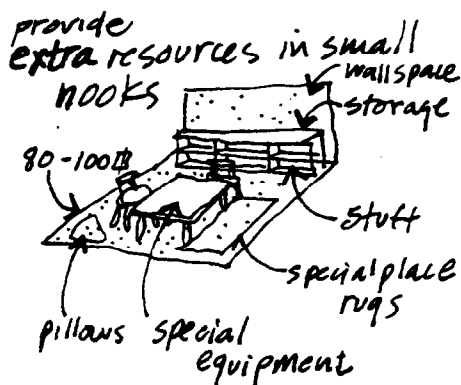
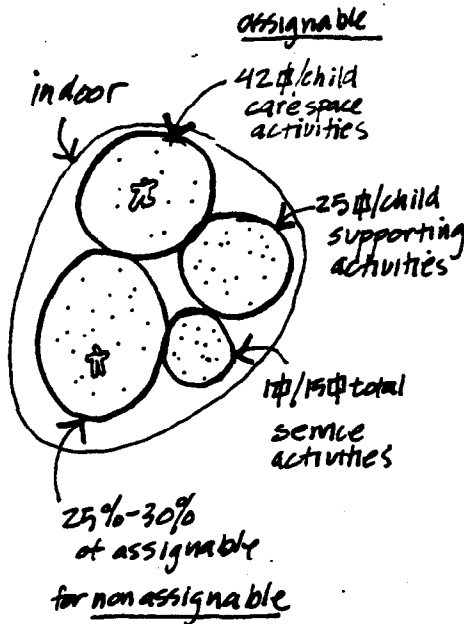
	ABSOLUTE MINIMUM	ADEQUATE/RECOMMENDED	GENEROUS
1. FACILITY PRIMARY ACTIVITY SPACE	35 S.F./C (Some state min.; N.F.P.A.; AR 608-1)	42 S.F./C (Evans; Prescott min.)	50 S.F./C (Prescott rec)
2. FACILITY OTHER ASSIGNABLE SPACE	25 S.F./C (Moore)	38 S.F./C (Moore)	42 S.F./C (Moore)
3. FACILITY NON-ASSIGNABLE SPACE	20% of assignable 12 S.F./C	25% of assignable 20 S.F./C	33% of assignable 30 S.F./C
4. TOTAL FACILITY SIZE (1+2+3)	72 S.F./C	100 S.F./C	122 S.F./C
5. DAY CARE PLAY YARD(S) SIZE	75 S.F./C (Some state min.; N.F.P.A.)	100 S.F./C (AR 608-1; Evans; Osmon)	200 S.F./C (Prescott)
6. AFTER-SCHOOL DROP-IN PLAYING FIELDS	0	5,000 S.F. (TM 5-803-10)	81,000 S.F. (TM 5-803-10)
7. TOTAL OUTDOOR PLAY AREA (5+6)	75 S.F./C	100 S.F./C + 5,000 S.F.	200 S.F./C + 81,000 S.F.

EXAMPLE GROSS SQUARE
FOOTAGES* FOR CHILD
CARE CENTERS AND
SITES FOR DIFFERENT
NUMBERS OF CHILDREN
UNDER MINIMUM,
RECOMMENDED, AND
GENEROUS CONDITIONS

		ABSOLUTE MINIMUM	ADEQUATE/ RECOMMENDED	GENEROUS
1. FAMILY CHILD CARE HOMES (6 Children)	FACILITY	Available Home = ca. 2,000 S.F. .960 M ² (.053M ²) assignable	Available Home = ca. 3,000 S.F. .480 M ² (.045M ²) assignable	Available Home = q.t. 3,000 S.F. .552 M ² (.090M ²) assignable
	PLAY YARDS	450 S.F. 42 M ²	600 S.F. 55 M ²	1,200 S.F. 110 M ²
	VEHICULAR	Available Drive	Available Drive	Available Drive
	TOTAL SITE	Home + 450 S.F. (42M ²) Play	Home + 600 S.F. (55M ²) Play	Home + 1,200 S.F. (110M ²) Play
2. SMALL NEIGHBOR- HOOD CENTER (45 Children)	FACILITY	3250 S.F. 300 M ²	4,500 S.F. 420 M ²	5500 S.F. 510 M ²
	PLAY YARDS	3375 S.F. 315 M ²	9,500 S.F. 890 M ²	40,000 S.F. 3,370 M ²
	VEHICULAR	3800 S.F. 355 M ²	7,800 S.F. 725 M ²	8,175 S.F. 760 M ²
	TOTAL SITE	10,425 S.F. 970 M ² .25 A. .14 H.	21,800 S.F. 1,935 M ² .50 A. .21 H.	103,675 S.F. 2,100 M ² 2.4 A. .21 H.
3. LARGE NEIGHBOR- HOOD/OR WORK-BASED CENTER (75 Children)	FACILITY	5400 S.F. 500 M ²	7,500 S.F. 700 M ²	9,150 S.F. 850 M ²
	PLAY YARDS	5625 S.F. 525 M ²	12,500 S.F. 1,205 M ²	46,000 S.F. 4,130 M ²
	VEHICULAR	5050 S.F. 470 M ²	10,975 S.F. 1,020 M ²	11,350 S.F. 1,055 M ²
	TOTAL SITE	16,075 S.F. 1,495 M ² .4 A. .15 H.	30,975 S.F. 2,925 M ² .7 A. .31 H.	116,500 S.F. 10,835 M ² 2.67 A. 1.1 H.
4. VERY LARGE CENTER-BASE CHILD CARE CAMPUS (4 Modules @ 60 Children = 240 Children)	FACILITY	17,500 S.F. 1,630 M ²	24,000 S.F. 2,230 M ²	29,500 S.F. 2,750 M ²
	PLAY YARDS	18,000 S.F. 1,675 M ²	29,000 S.F. 2,700 M ²	129,000 S.F. 12,330 M ²
	VEHICULAR	12,000 S.F. 1,125 M ²	28,500 S.F. 2,650 M ²	28,900 S.F. 2,700 M ²
	TOTAL SITE	47,500 S.F. 4,430 M ² 1.1 A. .45 H.	81,500 S.F. 7,580 M ² 1.9 A. .75 H.	187,400 S.F. 17,450 M ² 4.3 A. 1.6 H.

* Calculated from above chart. Rounded.

RECOMMENDATIONS



- For quality child care, provide 42 sq. ft. of primary activity space per child. Use this space for all primary activities (see preceding square footage charts, plus the patterns in the section "Design of Specific Activity Spaces").
- While each activity-group space may not have 42 square feet per child, the overall environment should allow 42 square feet times the total number of children in the facility of child-usable space.
- Plan small-group areas 80-100 sq. ft. with adjoining space to be used when necessary.
- Provide some double-deck spaces for children only 4-5 ft. high in order to increase child-usable space without increasing overall square footage.
- Provide 38-42 sq. ft. per child for secondary activities like eating, food preparation, toileting, napping, and for staff and parent-staff spaces.
- Provide circulation and other non-assignable space (including any entry space which is not a part of the PARENT-STAFF CORNER) at a ratio of 20% of assignable space.
- Provide service space (including mechanical and electrical space plus utility spaces) at a ratio of 1 sq. ft. per 15 sq. ft. of total building size.
- Child-care centers should be located on the ground floor, regardless of building construction. However, multi-story facilities may be used for children age 5 or above (e.g., after-school drop-ins) if special construction standards or automatic fire extinguishing systems are incorporated (NFPA 101; DOD 4270.1-M; and AR608-1, #8-18).
- Floors below ground level will not be used for child-care facilities (AR608-1, #8-18(c)).

RELATED ITEMS

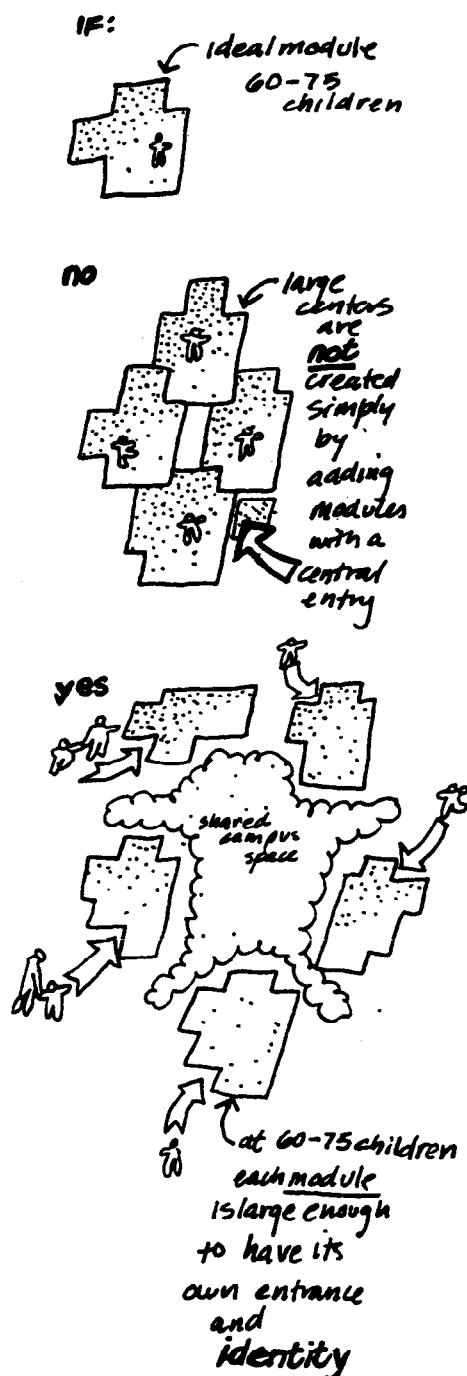
SITE SIZE: 220 TO 500 SQ. FT. PER CHILD

902 CAMPUS-PLAN CONCEPT FOR VERY LARGE CENTERS

ISSUE

IT HAS ALREADY BEEN ESTABLISHED THAT THE IDEAL SIZE FOR A CHILD-CARE CENTER IS FOR BETWEEN 60 AND 75 CHILDREN. CURRENT MILITARY STANDARD OPERATING PROCEDURE IS FOR SOME CENTERS TO HOUSE MANY MORE CHILDREN. THE QUESTION IS HOW TO MAINTAIN THE IDEAL MODULE SIZE IF THESE CONDITIONS ARE NECESSARY.

JUSTIFICATION



Research is mounting that quality child care, i.e., developmentally oriented child services, not just physiological care, is highly dependent on small-group sizes (Prescott, Jones, and Kritchevsky, 1972; Ruopp, 1979; Prescott and David, 1978; Abt Associates, 1979). The two critical sizes are the total number of children in a primary group (14-16 for preschool-aged children 3-5; smaller for younger children) and the total number of children in a center (60-75 children).

Extensive research has been done by Elizabeth Prescott and her associates at Pacific Oaks College on 60 child-care centers in California for the Office of Child Development, HEW, and by Richard Ruopp and his associates at Abt Associates on 64 centers across the country for the Office of Human Development, HEW. Both research projects indicate that these two size factors may be the most important environmental influences on quality care.

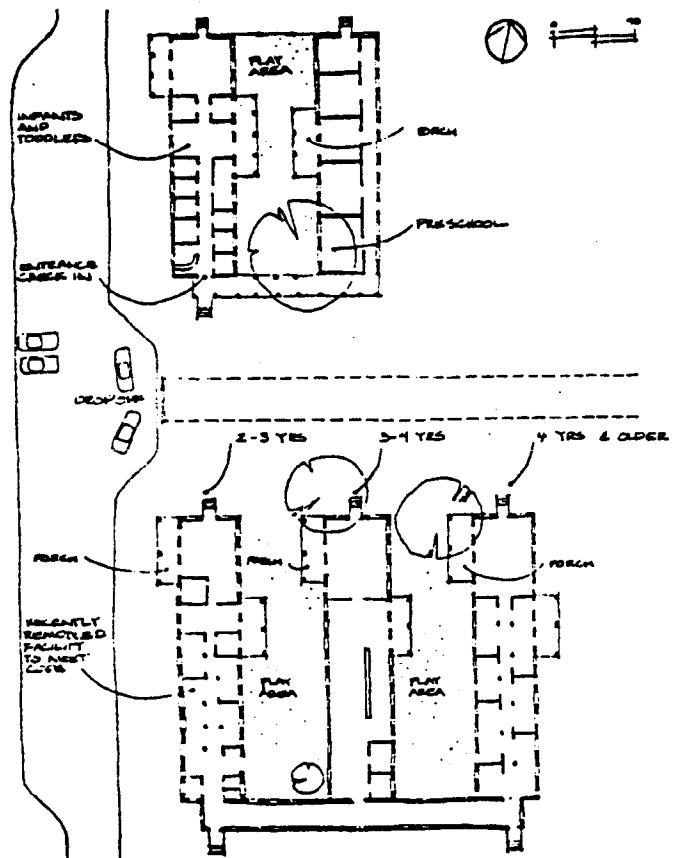
All expert opinion suggests much smaller facilities than those currently (ca. 1978-79) proposed for Army construction (e.g., new Fort Bragg, Fort Hood, and Bolling AFB child-care centers). Concern is expressed that the 300-plus center may become defacto-standard size for new facilities.

The conventional wisdom is that single, large facilities are significantly less expensive to operate. That view is not consistent with HEW findings (Abt Associates, 1971) that larger programs are only slightly less expensive. The benefit-cost ratio seems to argue strongly in favor of slightly more expense for smaller centers in order to assure more developmental opportunities for the 1,000,000 children of military families.

The Village or Campus Plan Concept is one way of handling the dilemma of cost to quality. Two such very successful facilities were visited as part of this team's field research (see Travel Report, 1978)--Fort Bragg Army Base in North Carolina and Pacific Oaks College Children's School and Day Care Center in California. In fact, the Pacific Oaks program and facility are known as one of the three best in the entire country.

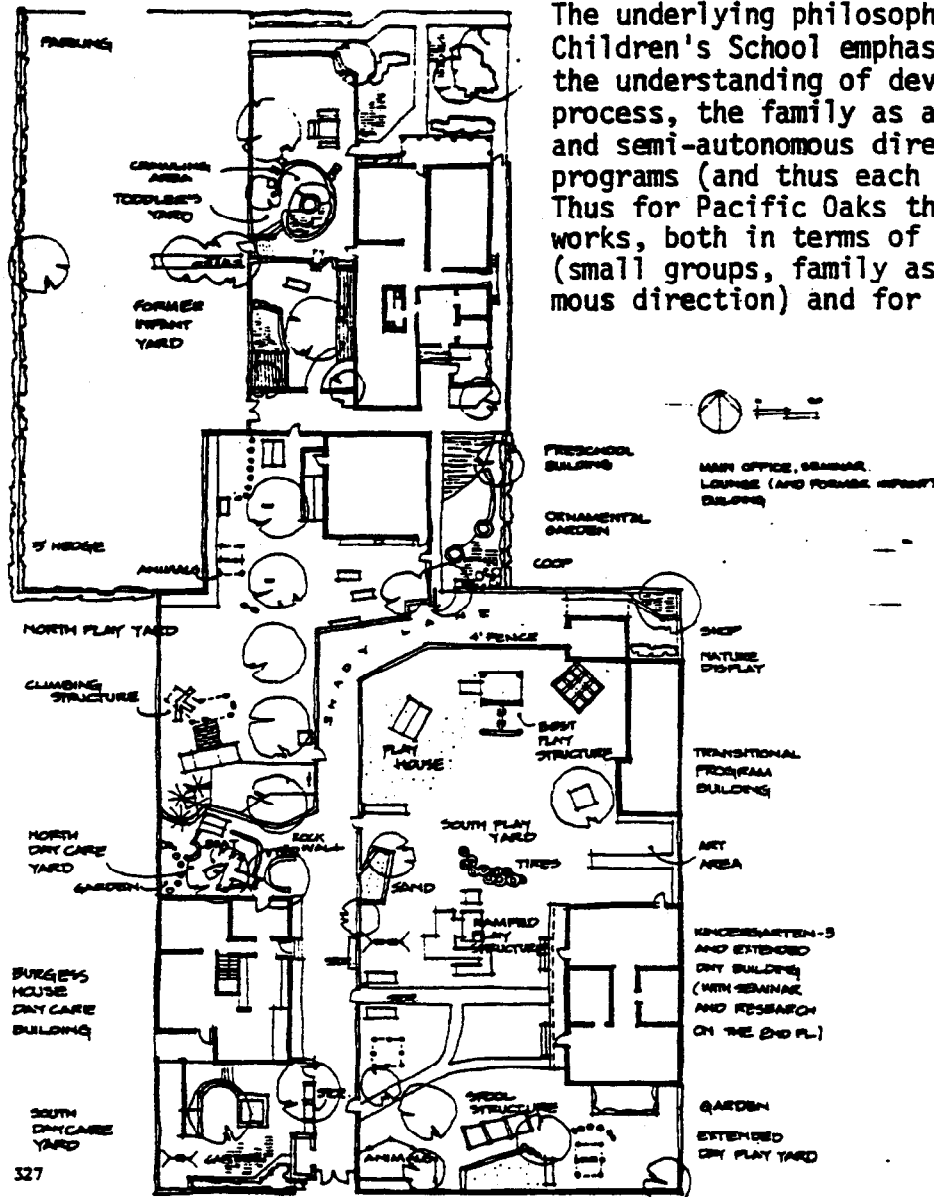


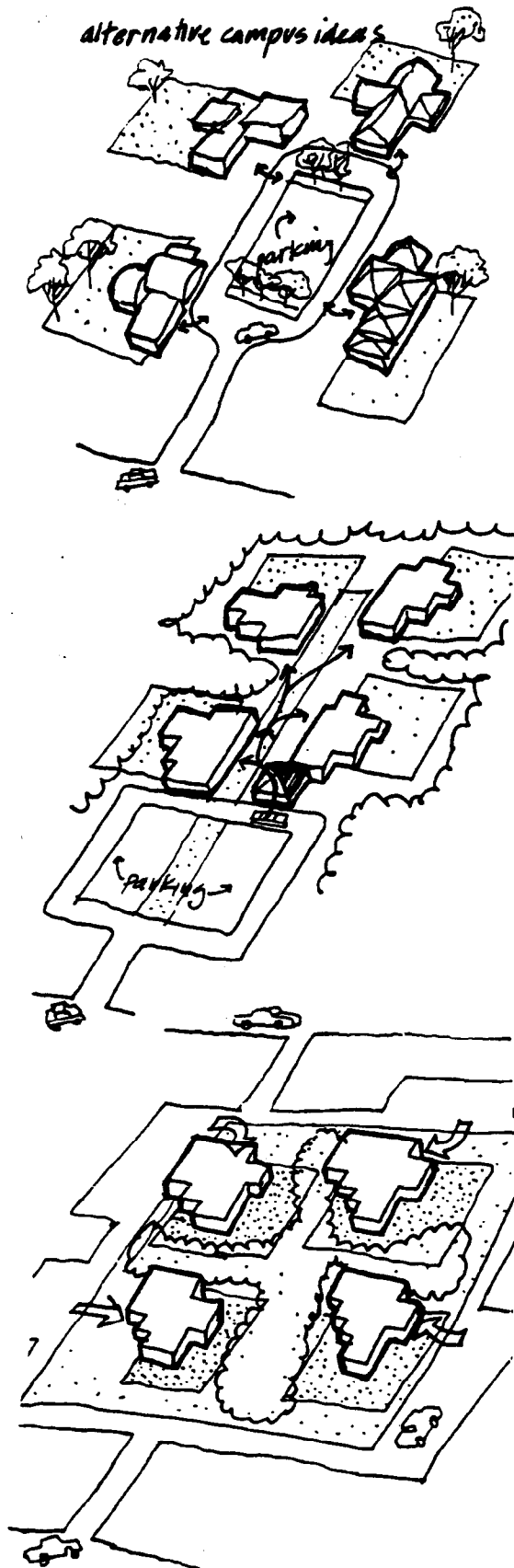
The Director of the Fort Bragg Child Care Center is very proud that the facility is a collection of buildings and not a single monolithic one that would overwhelm children and adults (Travel Report, 1978, p. 194). Five interconnected buildings (19,526 sq. ft.) house 290 children at a time in preschool and full- and part-time child-care programs (67.3 sq. ft. per child). Despite the large size and number of children, this center is still able to retain an image of being small, intimate, and dedicated to children. Friendly entry desks, spaces which encourage children to be in small groups, porches as activity spaces, and cheery graphics were all a part of this campus-plan center.



At the Pacific Oaks Children's School, five buildings ranging in size from 100 to 7200 sq. ft. (total approximately 15,000 sq. ft.) house 200 children in four different programs (ca. 75 sq. ft. per child plus very extensive, developmentally appropriate play yards). Group sizes are kept small, with about 15 children working with one head teacher and several assistants. Ages range from the infant-toddler group (six weeks to roughly 2 years), to four preschool groups (3-5 years), two kindergarten through grade three groups (5-9 years), and one after-school group (6-12 years).

The underlying philosophy of the Pacific Oaks Children's School emphasizes, among other things, the understanding of development as a life-long process, the family as a model for the center, and semi-autonomous direction for each of the programs (and thus each of the buildings). Thus for Pacific Oaks the campus-plan concept works, both in terms of program philosophy (small groups, family as a model, semi-autonomous direction) and for the facility (five





buildings each with a separate program though sharing outdoor play yards). In fact, one of the strengths of the program, as expressed by its director and director of research, is minimizing hierarchy by having separate programs each with their own local directors and staff.

Lessons learned from the case study of this facility were the following (see Travel Report, 1978, pp. 338-341):

- a variety of programs can benefit from proximity
- small indoor and outdoor activity spaces encourage small groups
- home-like settings are especially valuable for full-day children
- child-scaled environments can be achieved relatively easily in a home vernacular with fine-grained, natural materials
- services and facilities for parents as part of the campus can aid in the formation of community (food co-op, parent groups, seminars, opportunities to help in design and construction)
- partially separated, partially interconnected spaces can provide special places outdoors where children from different "houses" or programs can be with their own group and yet can mix with other children of different groups and ages
- incremental growth and evolution of the program and of the facilities (indoor modifications and outdoor construction) through parent and staff involvement helps lead to the formation of community

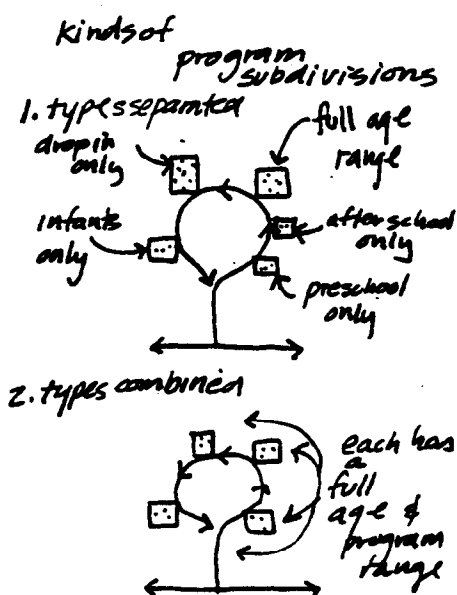
The concept of a village or campus--both in terms of program philosophy and facility planning and design--may prove to be an important educational-design concept for bases concerned about children's developmental needs and parent-staff-child community while feeling the need for a center-based facility for more than 60-75 children.

PATTERN

CAMPUS PLAN CONCEPT FOR VERY LARGE CENTERS

WHENEVER AND WHEREVER A CENTER IS TO HOUSE MORE THAN 75 CHILDREN, PLAN THE CENTER (BOTH IN TERMS OF PROGRAM PHILOSOPHY, DIRECTION, AND FACILITIES) AS A VILLAGE, CAMPUS, OR ARTICULATED MULTI-FACETED BUILDING COMPRISED OF A SERIES OF INTERCONNECTED MODULES FOR 60-75 CHILDREN EACH.

RECOMMENDATIONS



- Design separate modules (buildings, or separate parts of buildings) each to house a maximum of 60-75 children; each module may either house one program (e.g., one for a 3-5-year-old preschool full-day program; another for a drop-in program) or may house a combination of programs (e.g., full-day and drop-in, though in different, articulated parts; see SEPARATE SPACES FOR DROP-IN CARE).
- Provide semi-autonomous direction for each of the modules, i.e., a local staff director and his or her staff should have control over day-to-day program decisions in order to maintain the small-scale modular effect not only in facility design but also in management style.
- Design each module to have MULTIFUNCTIONAL HOUSES with home bases for a maximum number of 14-16 preschool children (smaller for younger children; see GROUP SIZE: JUST THE RIGHT SIZE SPACES).
- Create a scale which is not a single, monolithic building, but which is rather home-like (see BUILDING AS A FRIEND; FRIENDLY FACE ENTRY SEQUENCE; CHILD-SCALED ENVIRONMENT; CHILD CAVES).
- Design all spaces to encourage small groups, 14-16 in the largest size group, and nooks for 2-5 children (see GROUP SIZE: JUST THE RIGHT SIZED SPACES and RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN).

- Provide proximity and the possibility of interior circulation between different modules and programs.
- While indoor areas are articulated modules, outdoor play yards can be shared, though there still must be provision for children of one program and module to play together in relative privacy from the larger group i.e., play spaces should be SEPARATE BUT LINKED ZONES and should have VIEWS TO AND FROM PLAY AREA (see DEVELOPMENTALLY APPROPRIATE PLAY YARDS and patterns referenced there in *Recommendations for Child Play Areas*, 1979).

RELATED ITEMS

MULTIFUNCTIONAL HOUSES

GROUP SIZE: JUST THE RIGHT SIZE SPACES

RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN

DEVELOPMENTALLY APPROPRIATE PLAY YARDS

IMAGE: BUILDING AS A FRIEND

SEPARATE SPACES FOR DROP-IN CARE

CHILD-SCALED ENVIRONMENTS

CHILD CAVES

SEPARATE BUT LINKED ZONES

903 GROUND-FLOOR CENTERS

ISSUE

VERY YOUNG CHILDREN, INFANTS AND TODDLERS IN PARTICULAR, MUST BE AIDED FROM A BUILDING IN THE EVENT OF FIRES OR OTHER CATASTROPHIC OCCURRENCES.

JUSTIFICATION

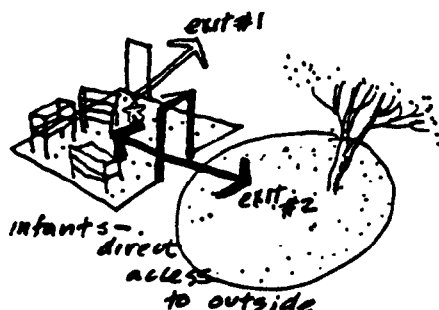
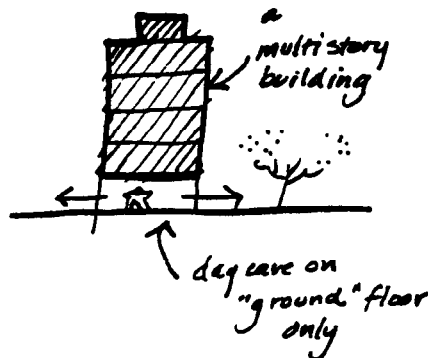
In the unlikely event of a fire, very young children must be helped from a building. National life safety standards together with most state licensing requirements for child-care centers require that child-care centers be constructed only of one story except under special circumstances.

PATTERN

GROUND-FLOOR CENTERS

CHILD-CARE CENTERS WILL BE OF A SINGLE STORY OR WILL BE LOCATED ON THE GROUND FLOOR OF AN EXISTING BUILDING REGARDLESS OF BUILDING CONSTRUCTION. SEPARATE SPACES FOR AFTER-SCHOOL DROP-INS MAY BE ON A SECOND STORY IF SPECIAL CONSTRUCTION STANDARDS OR AUTOMATIC FIRE EXTINGUISHING SYSTEMS ARE INCORPORATED.

RECOMMENDATIONS



- Multi-floor centers may be used for children 5 years of age or above (i.e., for after-school drop-ins) if special construction standards or automatic fire extinguishing systems are incorporated as specified in National Fire Protection Association (1976, 101; and DOD 4270.1-M; AR608-1, #8-18).
- For existing buildings being renovated, if relocation to noncombustible facilities is not feasible, existing child-care centers constructed of unprotected wood frame or unprotected ordinary construction may be used for children under 3 years of age if the following conditions are met:
 - the entire building is protected by an automatic fire-extinguishing system
 - the infant room and play or sleep room for children under 3 is individually separated from other areas by 3/4 hour fire-related partitions
 - the infant room has an exit opening directly to the outdoors, and all other play or sleep rooms have two exits

- Floors below ground level will not be used for child-care centers (AR608-1, 8-18(c)).
- Family child-care homes will comply with the section on Family Day Care Homes in National Fire Protection Association (1976).

RELATED ITEMS

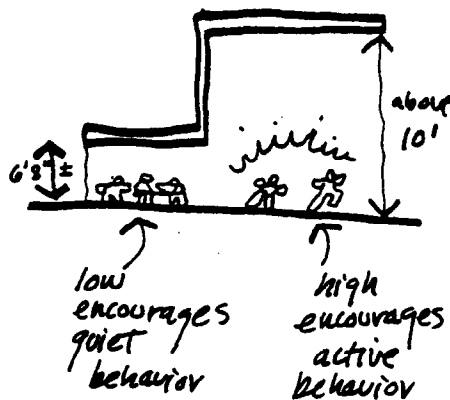
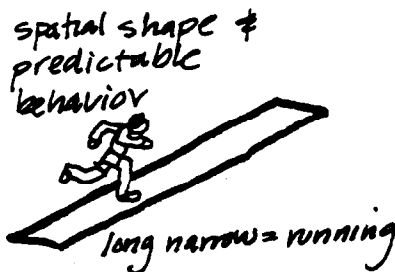
SITE SIZE: 220-500 SQUARE FEET PER CHILD
SEPARATE SPACES FOR DROP-IN CARE
A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS
FIXING HOMES FOR FAMILY CHILD CARE

904 ACTIVITY-SHAPED SPACES

ISSUE

ACTIVITY SPACES AFFECT CHILDREN'S BEHAVIOR. SHAPES AND SIZES OF THESE AREAS SHOULD CORRESPOND TO THE DEMANDS OF THE ACTIVITY BEING HOUSED.

JUSTIFICATION



Although small children see details more readily than whole spaces (Millar, 1968), they are still affected by the shape of space. In a nationally-distributed HEW study, Cohen (1974) notes that a long, narrow room may encourage running. A high ceiling may encourage very active behavior, while a low ceiling tends to encourage quiet behavior.

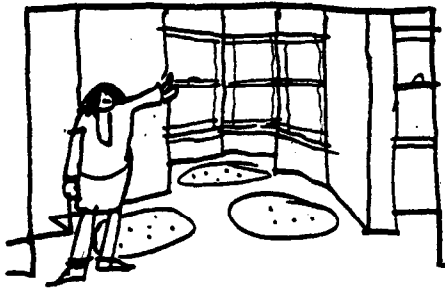
Texas A & M University (1969) recommends the following:

The classroom's arrangement should contribute to the child's concepts of order and space. A perceptually clear and distinct room environment, achieved through uncluttered equipment and furniture arranged in an orderly fashion, helps the child focus his attention on the curriculum instead of distracting him with irrelevant stimuli. Daily contact with an uncluttered, structurally simple environment helps teach time and space organization. (p. 36)

Can we, in the abstract, suggest what shape is best for most activity spaces?

Kritchevsky (1967, in Prescott and Jones, 1967) found that square activity spaces tend to cause problems. She found that overall spatial organization tended to lower in both square rooms and square outdoor areas. In reviewing this evidence, Prescott and David (1976) suggest that the problem arises because the staff follow the standard practice of organizing interest areas along the perimeter of the room. If the space is square, this leaves an empty or dead space in the center which seems to collect unoccupied children as the "bog down" in moving from one interest area to another.

*director preference for
irregular shapes that
make nooks & spaces*



Our own informal research corroborates this. During research site visits, we found that irregular rooms were preferred.

Corner nooks . . . become important activity spaces and facilitate zoning of activities in a way that a simple rectangular shape couldn't.
(Travel Report, 1978, p. 308)

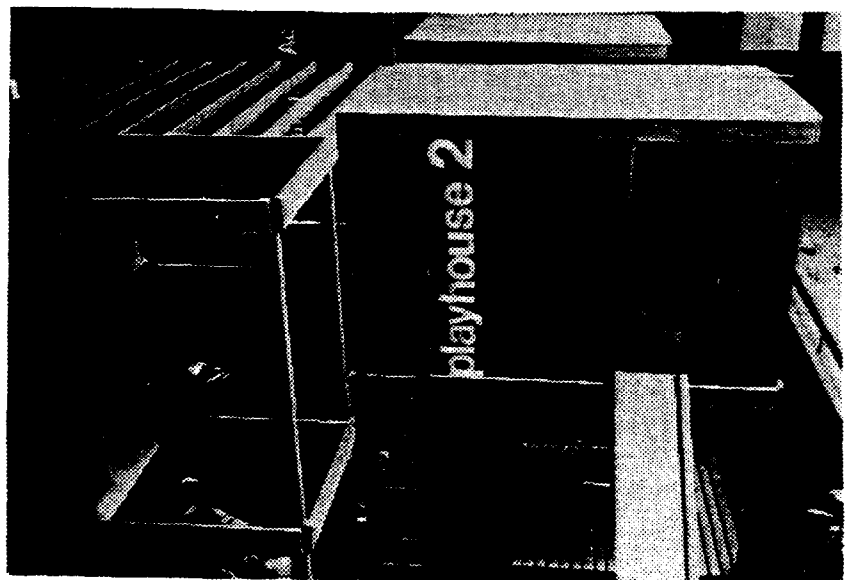
The director of the National Child Research Center, Emily MacCormack, recommends the use of "L"-shaped rooms with some "dead end" spaces (Travel Report, 1978)

However, Murphy and Leeper (1973) suggest that a roughly square area is easier for teachers and staff to supervise since distances between staff and children in emergency situations are minimized.

PATTERN

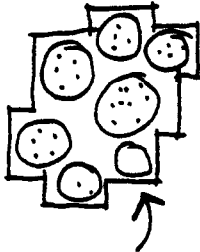
ACTIVITY-SHAPED SPACES

PLAN THE SHAPE OF SPACE TO SUIT EXPECTED ACTIVITIES. A SIMPLE, NON-SQUARE ARRANGEMENT WHICH MINIMIZES DISTANCES AND PROVIDES POSSIBILITIES FOR ACTIVITY CORNERS WOULD BE BEST.



RECOMMENDATIONS

recommended: irregular square

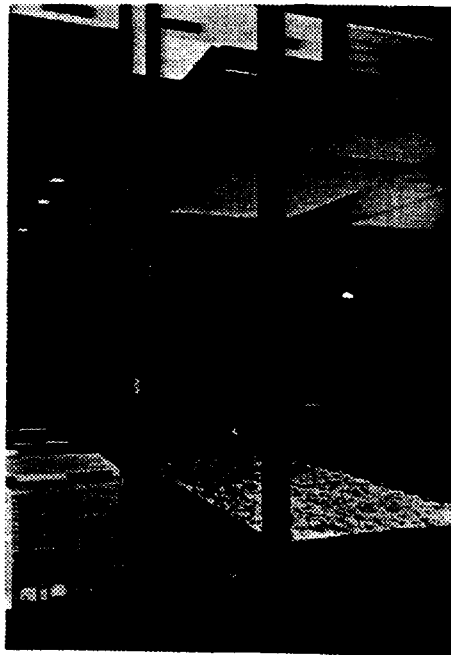


*roughly square room
with alcoves
and nooks
to house
activities*

RELATED ITEMS

- Plan activity spaces in an irregular shape, manipulating the perimeter to form activity interest corners.
- Squares are to be avoided, while "L"-shaped activity spaces work best.
- Use ceiling height and floor level as well as walls, columns, and furnishings to shape the space.
- Zone activity spaces so circulation does not interrupt activities (see CIRCULATION WHICH OVERLOOKS).
- Use high ceilings in very active areas, low ceilings in less active ones.

SMALL GROUP SIZE
CHILD-SCALED ENVIRONMENT
RICH RESOURCE NODULES

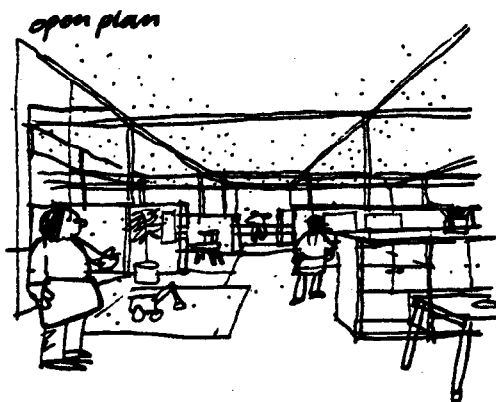


ISSUE

ONE OF THE MOST INTENSIVELY STUDIED ISSUES WITH REGARD TO EDUCATIONAL FACILITIES IS WHETHER OPEN OR CLOSED PLANS ARE PREFERABLE. DISTRACTION, NOISE, VARIETY OF ACTIVITIES, AND ENCOURAGEMENT FOR EXPLORATION ARE SOME OF THE ISSUES. BUT IN ADDITION, EDUCATIONAL PROGRAMS AND PHILOSOPHIES CHANGE TO MEET THE NEEDS OF CHILDREN AND THE TENOR OF THE TIMES.

JUSTIFICATION

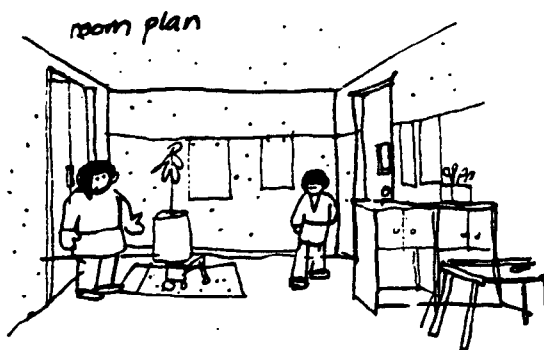
One of the most intensively studied issues with regard to child care is whether open or closed structure and plans are preferable. Prescott (1973) studied both types of structure and found the following:



Open Structure

- children exhibited a greater amount of active, initiating behavior (physically active, giving orders, selecting, choosing, asking for help, giving opinions)
- greater amount of receiving and giving help (finding a puzzle for another child)
- greater amount of tactile, sensory exploration
- greater direction of attention to other children

Closed Structure



- children ranked highest in meeting adult expectations of them
- greater amount of frustration, rejection, and pain from social interactions (e.g., child is reprimanded, looks visibly upset at being contradicted, etc.)
- greater amount of tentative behaviors (such as looking across the yard while fumbling with a puzzle)
- greater amount of not attending to external stimuli (thumbsucking, crying)

- greater amount of decisions being made by adults and significantly more adult pressure (i.e., input which requires compliance)
- greater amount of time spend in structured transitions (waiting for lunch, lining up to go outside, lining up for toileting, etc. averaged 24% of the child's time in closed-structure centers)

From these observations therefore, Prescott concludes the following:

Closed Structure



Closed-structure group child care appears to provide clear limits and adult input to which children must attend, but it appears to be somewhat lacking in opportunities for autonomy and initiative and in positive adult-child interaction, or in supports for self-esteem. Sensory stimulation also is notably lacking.

Adults rarely hold or hug children, and messy materials such as finger paint, clay, and other tactile-sensual materials are characteristically absent. Environmental responsiveness in the form of rugs, pillows, swings, animals, and cuddly toys is usually lacking. Restrictions on mobility and requirements to maintain specific body positions are high.

Open Structure

Open-structure group care offers opportunities for rewarding child-child interaction and provides more opportunities for autonomy and initiative. However, adult input appears to be markedly diluted as compared to other types of care. Opportunities for cognitive engagement were relatively low (pp. 6-7).

Family Child Care

Interestingly, family child-care homes scored more highly on most measures related to quality child care than did either open- or closed-structure centers (e.g., adult involvement

child-initiated activities, opportunities for choice, opportunities for the child to control the environment, support for self-esteem).

Prescott and David (1976) also reported on the findings of Twardosz, Cataldo, and Risely (1974) who examined an open environment in a small infant-toddler center and found the following:

- an open environment decreased the amount of time a child could not be seen by an adult
- the amount of time staff members were unsupervised was decreased
- the supervising effort was reduced
- open environments were found to be as conducive to pre-academic activities as a separate room

While Twardosz et al. concluded that open environments are preferable for infant-toddler care, Prescott (1976) suggests that the square footage required to support open-plan arrangements is well above the 35 sq. ft. per child minimum suggested by many states.

For these reasons, Day (1974) advocates closed-plan centers. He suggests that with closed-plans, activity stays within one place with less distraction and that small-group activities are encouraged by the defined spaces. He further argues that open plans make it difficult for children to find quiet areas (naps, sick children, etc.).

In a study of open-plan schools, Gump (1975) also found several problems which tend to be associated with open plans:

- children in open-plan schools spend more non-substantive time; open plans encourage mobility and frequent re-groupings at other activity areas (but compare with the findings of Prescott, 1973, that more structured transition time occurred in closed-plan centers)
- teachers believe that inflexibility of programming, the space, and the noise are the two most serious problems which confront them

Durlak (1972) reports, however, that with less structuring of spaces, teachers tend to be more personal and informal with students.

Prescott and David (1976) emphasize that open plans require a greater control over the level of both auditory and visual stimuli. She stresses the importance of zoning, or separating noisy areas from quieter ones, particularly for very young children who are easily distracted.

Modified Open Space

A type of space division which allows the best of both philosophies to be practiced is commonly called "modified open space." It consists of a mixture of several open areas with smaller, enclosed spaces. The open spaces can be subdividable for smaller-group use; the smaller areas can be opened up to each other and to the open spaces to provide a large-group area.



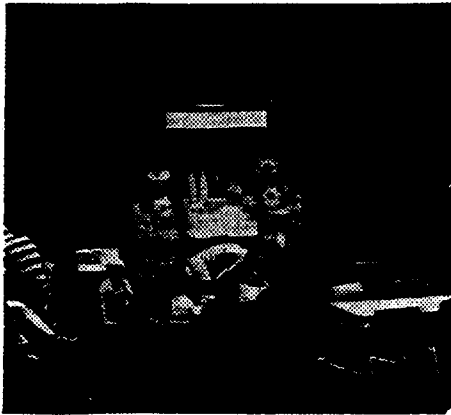
Modified open space allows child initiative, variety of opportunities, freedom for exploration, opportunities for the child to control the environment, opportunities for autonomy and initiative, sensory stimulation, and environmental responsiveness. Yet it is also a way to control noise, to zone activities into different areas, and provide close adult supervision, etc.

Nancy McCormick Rambusch of Child Minders School in Greenwich, Connecticut believes that design of the child-care facility should direct children from one activity to another and delineate activities that can be carried on in a specific area.

At Child Minders, a "maze strategy" has been developed. Children can always see and move into other areas, but they are always within enclosed spaces. Within these spaces there are further breakdowns where visual and acoustic privacy are stressed.

Child Minders School also contains a unique set of play bays which are modular spaces with 4 ft. high walls which give adults the feeling of a maze, but which provide total privacy for a child. A board placed at the top of each bay entrance keeps adults out. Each individual bay is outfitted differently and can be changed at the whim of the children.

This philosophy of modified open space is similar to Prescott and David (1976). They note that private corners or "get-away" spaces are often absent in group care, and suggest that it is imperative that caregivers regulate children's experiences through judicious use of private or protected bounded areas. Children are then free to intuitively self-select areas which provide the degree of closure and privacy they desire.



From their observations, Prescott and David (1976) have developed a measure of intrusion-seclusion potential as a component for rating "good space" in preschool and school-age child care. Among their recommendations are the following:

- provide insulated units which provide "protection" for 3-4 children
- provide hiding places (see CHILD CAVES) with cozy, private space for one or two children

An additional argument for modified open space is its potential flexibility to changes in program and philosophy, and, therefore, to space needs. Educational programs and philosophies change to meet the needs of children, and may well change from year to year. As pointed out in Gump's (1975) review, a major concern of child-care directors is the inflexibility of facilities.

The distinction between modified open space in a building and a totally flexible building must be made. A totally flexible building might be interpreted as one large space in which nap cots pull down from the wall into an area previously occupied by a climbing frame which is dismantled and rebuilt daily, an area which will eventually become a reading corner when naptime is over, by the addition

of mobile bookshelves. While this type of "all things to all children in one day" approach has been tried out of necessity, it is certainly not the preference of either staff or children.

When most space involves multiple uses daily, children can easily be confused and "rootless." Further, this type of use implies a uniformity of behavior which is not natural to children. All children are not ready to nap, or eat, or play at the same time. These activities must be able to happen simultaneously within a building without interfering with each other.

Modifiable space, on the other hand, may be defined as activity areas which can be easily changed to suit different group sizes, different degrees of "openness or closedness," or, longer-term, somewhat different activity uses.

An example of modifiable space might be an arts and crafts area which can be large enough for 5 or 6 potters, small enough for 2 finger-painters, and can be opened to a water area or sand-play area to become an extension of these areas if needed.

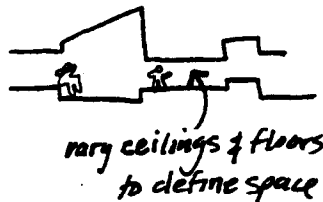
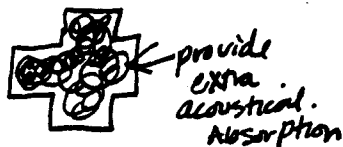
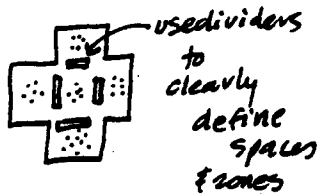
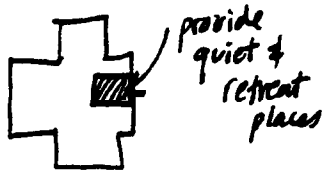
PATTERN

MODIFIED OPEN SPACE

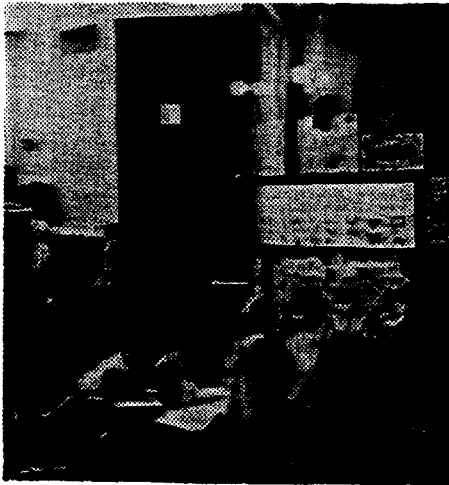
PLAN AND DESIGN THE CENTER IN TERMS OF MODIFIED OPEN SPACE. PROVIDE BOTH LARGE AND SMALL ACTIVITY SPACES EACH OF WHICH ARE OPEN ENOUGH TO PERMIT CHILDREN TO SEE THE VARIETY OF PLAY POSSIBILITIES OPEN TO THEM BUT WHICH PROVIDE ENOUGH CLOSURE FOR THE CHILD TO FEEL PROTECTED FROM DISTRACTION.

ZONE ACTIVITY AREAS, PROVIDE A RANGE OF ACTIVITY SPACE SIZES, AND DIFFERENTIATE LARGER SPACES BY USE OF FLOOR LEVELS, CEILING LEVELS, AND SOME TYPE OF FLEXIBLE PARTITIONING. FOR THE ARRANGEMENT OF OPEN AND CLOSED SPACES, SEE THE FOLLOWING PATTERNS: GROUP SIZE: JUST THE RIGHT SIZE SPACES; HOME BASES FOR 8-16 CHILDREN; AND RESOURCE-RICH ACTIVITY POCKETS.

RECOMMENDATIONS



- In the general, modified open space play, zone related activities as described in ZONING: THE INFANT-TODDLER-PRESCHOOL CONNECTION and ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE.
- Provide for a range of activity spaces, sizes, and shapes within each zone, including for 1-2 children who want to escape and watch from a distance, for groups of 4-5 engaged in an activity, and for gatherings of 14-16; see GROUP SIZE: JUST THE RIGHT SIZE SPACES; CHILD CAVES; and RETREAT AND OBSERVATION POINTS.
- Use changes in floor levels, ceiling levels, niches, activity pockets, structural cues, fixed and moveable partition systems (full and half height, with openings, etc.), define semi-open, semi-closed spaces and to make spaces easily divisible into smaller or larger group areas as required.
- For arrangement of activities, see also HOME BASES FOR 8-16 CHILDREN and SEPARATE SPACES FOR DROP-IN CARE.
- Use sound-absorbing materials on floors and ceilings to lessen the radiation of noise away from its source; carpet large activity spaces where noise is generated by groups of children or children engaged in noisy activities (e.g., block building, physical play, etc.); see ACOUSTIC CONTROL).
- Use portable shelves, cabinets, and partitions on casters or which slide smoothly in order to easily reorganize a space to form a new one and also to delineate paths around activity spaces. Select pieces which are low enough to see over but high enough to provide protection for activities from circulating children (see CLEAR CIRCULATION WHICH OVERLOOKS, FLEXIBLE FURNISHINGS, and NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE).
- Allow children to personalize left-over spaces in the center; see AN ENVIRONMENT THAT RESPONDS.



- Open-plan schools shall have furniture, fixtures, or low-height partitions so arranged that exits will be clearly visible and unobstructed, and exit paths are direct, not circuitous. If paths or corridors are established, they shall be at least as wide as required by general fire codes.
- With regard to fire regulations, where a facility or open space houses more than one age group, the requirements for the younger children shall apply, unless the area housing the younger children is maintained as a separate fire area (National Fire Protection Association, 1976). For alternative suggestions, see INFANT CIRCLE OF ACTIVITIES; TODDLER TRANSITIONAL TERRITORY; A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS; and THE INFANT-TODDLER-PRESCHOOL CONNECTION.
- The travel distance to exits in open-plan centers for children 3 years of age and older shall be no more than 150 ft. from exit and all such exits shall discharge directly to the outside (National Fire Protection Association, 1976).
- The National Fire Protection Association (1976) life safety code requires that a solid wall or smoke partition shall be provided at maximum intervals of 3000 feet and openings in such walls or partitions shall comply with NFPA 108-88.

RELATED ITEMS

GROUP SIZE: JUST THE RIGHT SIZE SPACES
 HOME BASES FOR 8-16 CHILDREN
 RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN
 ZONING: THE INFANT-TODDLER-PRESCHOOL CONNECTION
 ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE
 SEPARATE SPACES FOR DROP-IN CARE
 INFANT CIRCLE OF ACTIVITIES
 TODDLER TRANSITIONAL TERRITORY
 AN ENVIRONMENT THAT RESPONDS
 CHILD CAVES
 RETREAT AND OBSERVATION POINTS
 A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS
 ACOUSTIC CONTROL
 CLEAR CIRCULATION WHICH OVERLOOKS
 NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE

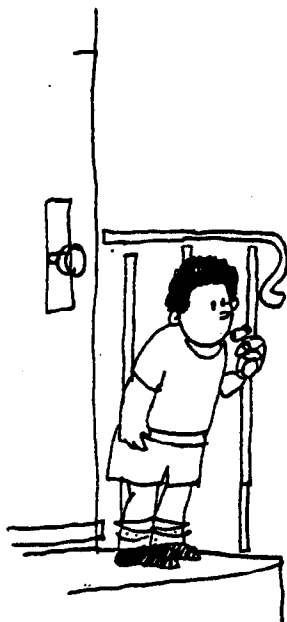
ISSUE

IN ORDER TO LEARN, A CHILD MUST EXPLORE, BUT A CHILD'S ABILITY TO EXPLORE AND LEARN IS DIRECTLY RELATED TO THE DEGREE OF SECURITY AND STABILITY FELT.

JUSTIFICATION

Pollowy (1977) summarizes various research studies by noting the following:

During the preschool period, children who have a physically secure and emotionally stable home base are likely to explore farther into the physical environment. (p. 17)



Children between infancy and 3 years feel attachment to a particular person very strongly and will be able to feel secure enough to explore only when that person is nearby (Pollowy, 1977). The persons to whom a child becomes attached will be those who perform "mothering-fathering" functions of care, feeding, affection-giving, etc.

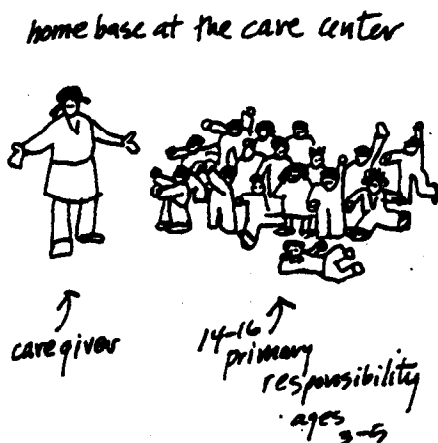
It thus seems, on the one hand, that security requires the child to have a sense of belonging to a group of peers, a caregiver, and a place. On the other hand, exploration is the child's method of learning and developing independence, and is fostered by settings which provide a wide range of interesting choices. Caregivers have to be responsive to both aspects of children's needs, and the environment can likewise reflect and respond to both these needs.

For the exploration needs, the environment should be varied and rich, with a number of distinct activity centers and resource areas (see RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN; AN ENVIRONMENT THAT RESPONDS; JUST THE RIGHT SIZE SPACE; and the specific patterns under the 1000 Section: Individual Space Criteria).

But in addition, in a quality child-care center, in order to respond to the needs for security, a child should have a special person and a special place to become "home." Responsibility for a certain few children will allow a staff member to become the attachment figure those children need in order to explore their learning potentials. Caregivers must feel

responsible for specific children--to recognize when they are tired or bored or scared. They must also make a home setting interesting and try to foster group interaction, self-confidence, cooperative play, and security. From this "home base" children can then move out into the exciting, stimulating environments which the rest of the facility will provide.

The idea of a home base which includes a primary caregiver to whom each child can relate and from which a child can explore the rich sensory and intellectual environments provided in the center, is in harmony with the concepts of a small primary group (14-16 for preschool-age children 3-5 years of age; 10-12 for toddlers; 8-12 infants--see GROUP SIZE: JUST THE RIGHT-SIZE SPACES), of children being free to explore a variety of stimulating settings (MODIFIED OPEN SPACE and RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN). Thus using a module of semi-open space as a home base, and defining and articulating these home bases with rich resource areas, would seem to satisfy both the child's need for security and the need for stimulation and exploration.



PATTERN



HOME BASES FOR 8-16 CHILDREN

USE SEMI-OPEN SPACES TO FORM HOME BASES FOR 8-16 PRESCHOOLERS (LESS FOR YOUNGER CHILDREN). INCLUDE IN THESE HOME BASES SPACE FOR NAPS, STORY-TELLING, INITIAL GROUP MEETING AT THE BEGINNING AND END OF THE DAY, CUBBIES FOR PERSONAL BELONGINGS, AND PERHAPS SPACE FOR EATING CLUSTERS FOR THE HOME GROUP OF 8-16 CHILDREN.

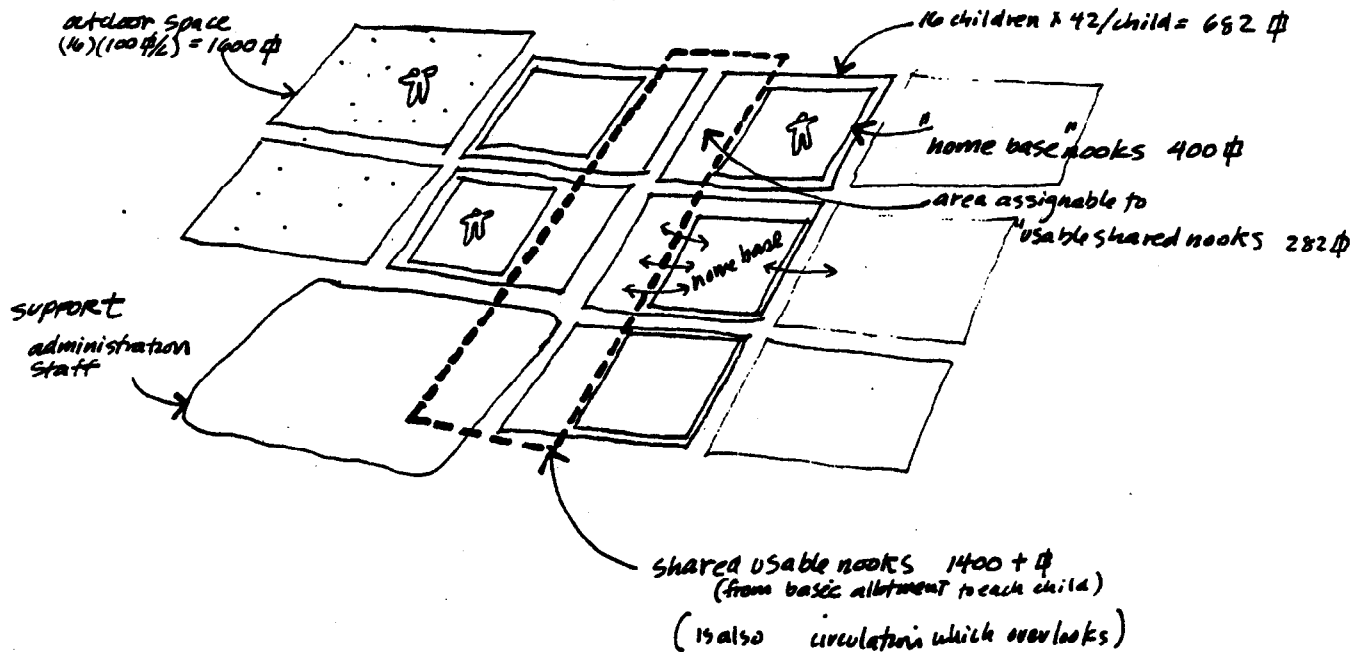
EACH HOME BASE MUST HAVE DIRECT ACCESS TO SECONDARY ACTIVITY SPACES (LEARNING BATHROOMS; INTIMATE DIAPERING SPACES; EATING CLUSTERS (IF NOT IN THE HOME BASE)), CLEAR CIRCULATION WHICH OVERLOOKS OTHER ACTIVITY SPACES, AND TO THE OUT-OF-DOORS.

RECOMMENDATIONS

- For very small centers (e.g., 20 or 25 children), the whole center may be thought of as one cluster comprised of one HOME BASE plus several RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN for different primary activities (ARTS AND CRAFTS AREA; BLOCK PLAY AREA, etc.).
- Larger centers (e.g., 60-75 children) will be comprised of one HOME BASE for every 14-16 preschoolers, for every 10-12 toddlers, and for every 8-12 infants plus their requisite number of caregivers.
- Very large, campus-plan centers will be comprised of a series of modules for 60-75 children (CAMPUS PLAN CONCEPT FOR VERY LARGE CENTERS), and each module will be subdivided into one HOME BASE for every primary group per the above ratios.
- Each HOME BASE will provide for all the security needs of children, and for the activities most normally associated with security and home-like atmosphere, e.g., EATING CLUSTERS for lunch and group snacks; a small READING-LISTENING AREA for storytelling before naps; PRESCHOOLER NAPPING PLACES; INTIMATE DIAPERING AREAS, and LEARNING BATHROOMS for toddlers in the process of becoming toilet-trained (though not necessary for older preschool children); a space for group meetings at the beginning and end of the day; and CUBBIES for the children's personal belongings, outdoor clothes, personal snacks, etc. These important secondary-activity spaces will be provided either within the HOME BASE or in direct proximity to it.
- Each HOME BASE will have direct access to CLEAR CIRCULATION WHICH OVERLOOKS other activity areas, to other shared primary-activity spaces (see all the patterns in the 1000 Section: Individual Space Criteria), and to DEVELOPMENTALLY APPROPRIATE PLAY YARDS (see also EXTENDED ENVIRONMENTS).



- HOME BASES should be separated enough from one another to let children identify their own "place" and see that it is different from other HOME BASES. This could be accomplished with half partitions, movable walls, shelves, alcoves, separation by activity pockets, structural articulation, etc.



RELATED ITEMS

GROUP SIZE: JUST THE RIGHT SIZE SPACES
 CAMPUS PLAN CONCEPT FOR VERY LARGE CENTERS
 BUILDING AS A FRIEND
 CHILD-SCALED ENVIRONMENTS
 RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN
 EATING CLUSTERS
 READING-LISTENING AREA
 MODIFIED OPEN SPACE
 PRESCHOOLER NAPPING PLACES
 INTIMATE DIAPERING AREAS
 LEARNING BATHROOMS
 SEPARATE INFANT-TODDLER NAPPING PLACES
 CUBBIES
 CLEAR CIRCULATION WHICH OVERLOOKS
 DEVELOPMENTALLY APPROPRIATE PLAY YARDS
 EXTENDED ENVIRONMENTS

ISSUE

SINCE THE SIZE OF EACH GROUP IN A CHILD-CARE CENTER HAS BEEN FOUND TO BE ONE OF THE MOST RELIABLE INDICATORS OF QUALITY CHILD CARE. BUILDING DESIGN MUST REFLECT BOTH ACTIVITY DIFFERENTIATION AND GROUP SIZES FOR DIFFERENT AGE GROUPS.

JUSTIFICATION

The National Day Care Study, sponsored by the U.S. Department of Health, Education, and Welfare, Administration for Children, Youth, and Families (Ruopp, 1978; Abt Associates, 1979) has determined the following:

Small groups work best. The size of the group in which the preschool child spends day care hours makes the most difference (in influencing quality day care. (Ruopp, 1978, p. 38)

small groups work best



In smaller groups (e.g., those under 14 children to a group) as contrasted to larger ones (e.g., over 14 children to a group), the following was found with respect to preschool children:

- Lead teachers engage in more social interaction with children and less passive watching of children.
- Children show more cooperation, verbal initiative (giving opinions, preferences, information or comments) and reflective-innovative behavior (considering, contemplating, tinkering or adding a new toy or new idea to an ongoing activity).
- Children show less hostility and conflict and are less frequently observed to wander aimlessly or to be uninvolved in tasks or activities.
- Children make greater developmental gains over the course of a year on two standard measures of development, the Preschool Inventory (PSI) and the Peabody Picture Vocabulary Test (PPVT).

For infants and toddlers, the following were the major findings for small versus large group sizes:

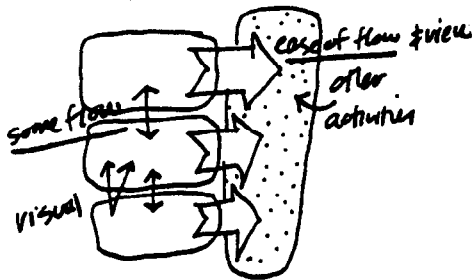
- Caregivers devote more time to developmental activities as opposed to management of children and routine tasks.
- Infants and toddlers show less overt distress and apathy.
- Infants and toddlers show less potentially harmful behavior.

The results of this four-year study are recommendations for revision of the Federal Interagency Day Care Requirements (FIDCR) to the following effect:

- tightening the ceiling on the total number of preschool children permitted in each group (group size), namely a limit of 14 to 16 for the most positive impact on the quality of child-care provided with public funds.
- adding a group-size requirement for infants and toddlers which would be more stringent than the preschooler requirement, namely 8-12 for infants and 12 for toddlers

Although AR608-1 does not currently address group sizes, many state licensing requirements enforce the current FIDCR requirements not only by insisting on staff-child ratios which will insure these maximum group sizes, but also by requiring identifiable spaces for the maximum-sized groups. The architectural implication, however, is not for closed-plan designs. Open-plan designs, or MODIFIED OPEN PLAY designs can reinforce the group size by providing defined and articulated spaces for the maximum group sizes. The division of space can be indicated by a variety of architectural cues, and must allow for children to see the activities of other groups and to come together in still larger groups for special activities (see A ROOM WHICH CAN BE DARKENED; MULTIPURPOSE-MOTOR ACTIVITIES SPACE; DEVELOPMENTALLY APPROPRIATE PLAY YARDS).

PATTERN

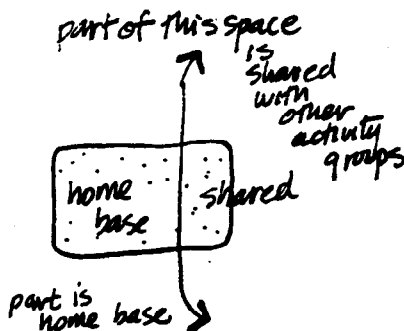
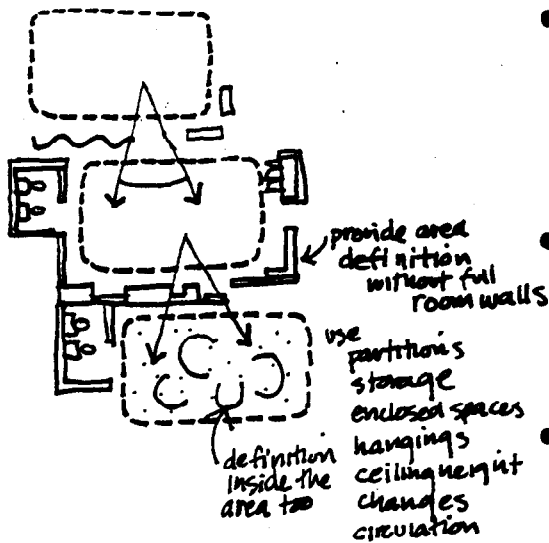


GROUP SIZE: JUST THE RIGHT SIZE SPACES

PROVIDE DIFFERENT AND IDENTIFIABLE ACTIVITY SPACES FOR A MAXIMUM OF 14-16 PRESCHOOLERS, FOR 10-12 TODDLERS, AND FOR 8-12 INFANTS. THE DIVISION OF SPACE CAN BE INDICATED BY A VARIETY OF ARCHITECTURAL CUES AND MUST ALLOW FOR CHILDREN TO SEE OTHER GROUPS AND TO COME TOGETHER IN STILL LARGER GROUPS. WITHIN EACH GROUP SPACE, PROVIDE A CLUSTER OF ACTIVITY POCKETS FOR SMALLER GROUPS OF CHILDREN TO FOCUS ON PARTICULAR ACTIVITIES.

RECOMMENDATIONS

relationships between groups



- The most important spaces are the RICH ACTIVITY POCKETS FOR 2-5 CHILDREN, but three or four of them can be clustered together to create a larger area for the maximum-sized group depending on age.
- For preschoolers, plan the overall preschooler activity areas as a series of group spaces for a maximum of 14-16 preschoolers, comprised of a cluster of 3-4 activity pockets, each for 4-5 children (plus the possibility of a caregiver).
- For toddlers, plan the TODDLER'S TRANSITIONAL TERRITORY as a series of spaces for a maximum of 10-12 toddlers, comprised of 2-4 activity pockets, each for 4-5 toddlers (plus the possibility of one caregiver).
- For infants, plan the INFANT CIRCLE OF ACTIVITIES as a series of little spaces for a maximum of 8-12 infants, comprised of 3-4 activity pockets, each for 2-3 infants (plus a caregiver).
- The smallest spaces for 2-5 children should follow the design guidelines given under RICH ACTIVITY POCKETS FOR 2-5 CHILDREN.
- Spaces for 8-16 children can be defined by structural cues (see SIMPLE STRUCTURAL SYSTEM ON DISPLAY), e.g., column placement, extended walls, changes in ceiling height, floor levels, etc.



- Provide ceiling heights of 4-5 ft. (e.g., child balconies 4-5 ft. high can create space above and below, and be shallow enough for adult access from the side).
- For older children, provide spaces for larger groups which are temporarily divisible for flexible use.

RELATED ITEMS

SEMI-OPEN SPACE
MULTI-FUNCTIONAL HOUSES
RICH ACTIVITY POCKETS FOR 2-5 CHILDREN
INFANT CIRCLE OF ACTIVITIES
TODDLERS' TRANSITIONAL TERRITORY
SIMPLE STRUCTURAL SYSTEM ON DISPLAY
A ROOM WHICH CAN BE DARKENED
MULTIPURPOSE-MOTOR ACTIVITIES SPACE
DEVELOPMENTALLY APPROPRIATE PLAY YARDS



908 RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN

ISSUE

WHEN CHILDREN ARE MOST CONCENTRATED ON ACTIVITIES THEY ARE NOT IN LARGE GROUPS BUT TEND TOWARD GROUPS OF 2 TO 5 CHILDREN. DIFFERENT GROUP SIZES ARE APPROPRIATE, HOWEVER, FOR DIFFERENT TYPES OF ACTIVITIES. DEVELOPMENT IS SPURRED ON BY A RICH VARIETY OF ACTIVITIES AND BY A WIDE RANGE OF STIMULATING RESOURCES CLOSE TO ACTIVITY CENTERS.

JUSTIFICATION

Research done on play among small children shows that children playing outdoors spontaneously gather 3-5 to a group (Saarinen, 1968). Millar (1968) argues that the best size for a preschool play group is 2-4 children. Since children sometimes need to be alone (RETREAT AND OBSERVATION POINTS) a "small group" may at times consist of only one child. So the majority of activity spaces in a child-care center will actually need to accommodate 1-4 children plus the possibility of one adult.

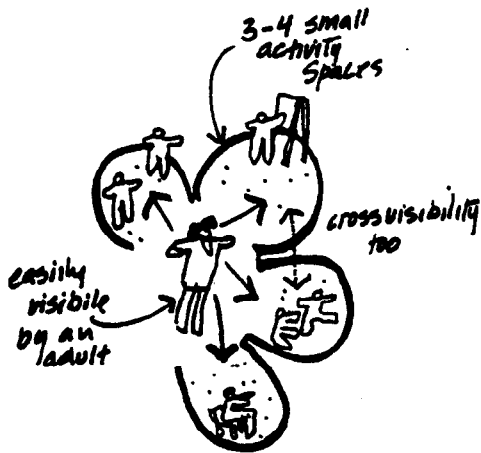
There may be times when large groups should be accommodated, particularly among the older children, 4-5 years old who are preparing to enter kindergarten and are more socially developed. While watching a video tape, or playing an active circle game, the staff may temporarily want to gather children into groups of 14-16.

In planning space, it seems reasonable to group 3-4 activity spaces for 2-5 children each plus one adult, together so that children may separate into groups of 2-5 or join into a larger group of 14-16.

For infants and toddlers, the small group sizes should be somewhat smaller and the large group size proportionally smaller. As many states require a 3:1 infant to staff ratio, and the National Day Care Study recommends a 4-5:1 toddler to staff ratio, it seems reasonable to create activity pockets for 2-3 infants and for 2, 4, or 5 toddlers.

These pockets, however, are not to be empty spaces, devoid of stimulation and resources. Educational research has shown that children who have an early environment which is rich in books, reading, language, music, and manipulative materials, expand their cognitive development (sometimes measured as I.Q.) much more





quickly than children who do not have such an environment. Interest in using words, music, and other representational materials will be stimulated as children find these forms of communication can actually help them answer the constant questions raised by normal play.

Playing with sand, shells, water, etc. may well raise questions about where they come from, how they were made, etc. Hearing rain on a good resounding roof, observing plants and animals, seeing a truck drive by, baking brownies in a real oven, feeling the wind, building with blocks, watching a mower cut the grass, seeing a butterfly, playing mother and father, all are activities which will raise questions and excite interest in knowing more.

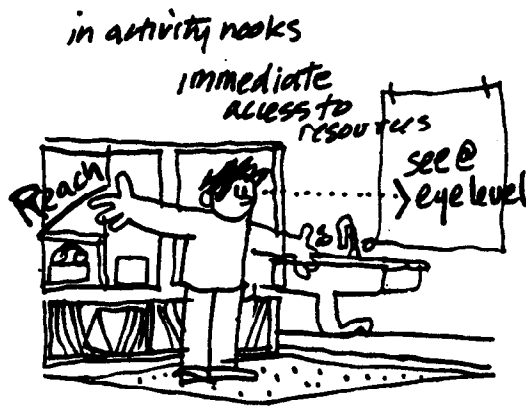
How immediate and intimate the connection between the activity and the availability of the "more" will determine how long the interest and motivation will last and how much learning can occur. Because young children do have fairly short attention spans, and because time and distance will be critical factors in maintaining attention, resource-material-manipulable areas for children must be directly related to specific activity spaces where questions are likely to occur.



Small activity-resource pockets which can help define the perimeters of specific larger group-activity spaces will provide this direct relationship. These pockets can contain many types of materials, tapes, books, games, pictures, toys, etc. which relate directly to the adjacent activity. In a nature study area, the pockets may include animals, plants, etc. In a building area, the pockets may include trucks and cars (etc.), buildings, and trains. In the block area, the pockets may well include numbers and counting.

But in each activity-resource pocket, the materials must include a wide variety of pre-reading manipulable items as well as purely informational-type items.

The variety of activities which may happen in these resource-activity pockets can include the following:



- "reading" picture books
- being read to by adult (groups of 2-5 children)
- listening to music or stories read on tape
- taping and listening to their own voices
- watching filmstrips, video tapes, TV programs (e.g., the ever-popular Sesame Street)
- using manipulatives which help introduce number or language concepts (e.g., cuisenaire rods)
- using puppets to act out stories in books
- using "touchable" textured and colored materials (e.g., textured alphabet blocks, yarn sewing cards, etc.)

These areas must become inviting by using color, texture, and lighting to set a quiet mood.

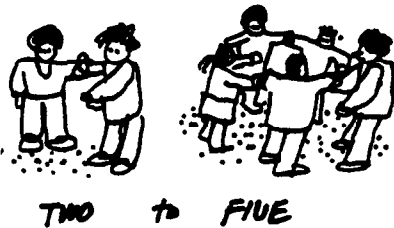


After reconstructing areas of the classroom with soft fabric, carpeting, and pillows, we noticed that when children entered the area, their behavior immediately changed from active to more subdued. Often they sought a book, begged to be read to or took a nap. (Taylor and Vlastos, 1975, p. 34)

A sense of enclosure and "awayness" will also encourage physically quiet activities.

PATTERN

*important group sizes
to design for*



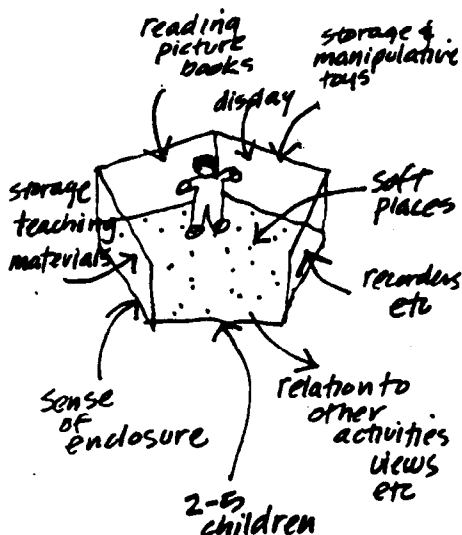
RECOMMENDATIONS

RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN

CREATE SMALL GROUP ACTIVITY POCKETS FOR 2-5 CHILDREN WHICH ARE RICH IN RESOURCES RELATED TO THE PRINCIPAL ACTIVITY WHICH HAPPENS IN THE SPACE. USE THESE RESOURCE-RICH ACTIVITY SPACES TO DEFINE THE PERIMETERS OF LARGER GROUP ACTIVITY SPACES (GROUP SIZE: JUST THE RIGHT SIZE SPACE).

USE TEXTURE, COLOR, AND LIGHTING TO GIVE A QUIET, ENCLOSED FEELING TO THESE POCKETS, YET RELATE THEM DIRECTLY TO THE LARGER ACTIVITY SPACE. ALLOW FOR STORAGE, SURFACE AREA EQUIPMENT PLUG-IN, AND DISPLAY SPACE WITHIN EACH POCKET.

in any activity pocket



- In preschool activity spaces, plan resource-rich activity pockets for 2-5 children (plus the possibility of one adult) in clusters of 3-4 and allow these pockets to open into a space for 14-16 when needed.
- For toddlers, plan resource-rich activity pockets for 1-3 children (plus the possibility of one adult) and cluster them into larger group spaces for 10-12 toddlers maximum.
- For infants, plan resource-rich activity pockets for 2-4 or 5 children (plus one adult) and cluster them into larger group spaces for 6-8 infants maximum.
- Spaces for 2-5 children are most successful when they are small enough to give a sense of safety and closure (80-100 sq. ft.).
- Spaces for one can be planned by using the recommendations in RETREAT AND OBSERVATION POINTS.
- Spaces for 2-5 may be created by using a combination of furnishings (FLEXIBLE FURNISHINGS).
- Create small, enclosed spaces with elements such as shelving, display racks, etc. These can also be moved and changed as staff and children wish, in order to accommodate varied group sizes.

- Provide several electrical outlets in each space. Some modular method of supplying electricity would increase flexibility (e.g., floor grid).
- Textures, colors, and lighting should be warm, informal, and inviting.
- Seating should adapt to many positions-- floor seating with various sized and shaped floor cushions and pillows would be most appropriate.
- Some area should be able to be darkened for small-group audio-visual use.
- To make the space "special," a floor level or ceiling level change would be appropriate.
- Since some materials will be borrowed (from RESOURCES AT THE HEART) and changed every few weeks, storage should be flexible (adjustable, movable shelves, display racks, etc.).
- Provide acoustic separation from more active areas. Some visual connection would make these areas appropriate for RETREAT AND OBSERVATION POINTS from play and also for children wishing to observe more active play without participation.
- Provide some flat surface for "writing" and for laying out games. The surface could be fold-down or movable to make space use flexible.



RELATED ITEMS

GROUP SIZE: JUST THE RIGHT SIZE SPACES
 MULTIFUNCTIONAL HOUSES
 MODIFIED OPEN SPACE
 ACTIVITY-SHAPED SPACES
 CHILD-SCALE ENVIRONMENTS
 CLEAR CIRCULATION WHICH OVERLOOKS
 RETREAT AND OBSERVATION POINTS
 FLEXIBLE FURNITURE
 NEVER-TOO-MUCH CHILD-ACCESSIBLE STORAGE
 TIME-OUT AND EMOTIONAL RELEASE AREAS

909 SEPARATE SPACES FOR DROP-IN CARE

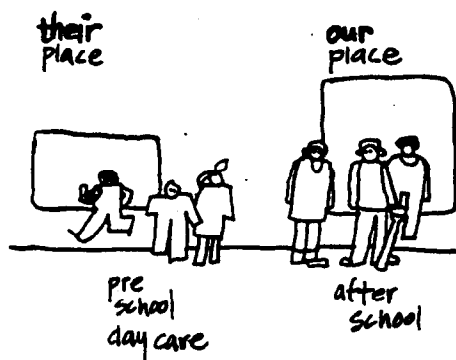
ISSUE

PRESCHOOL CHILDREN WHO "DROP IN" OCCASIONALLY CAN EASILY DISTURB PROGRAMS PLANNED BY STAFF FOR CHILDREN WHO ATTEND ON A REGULAR BASIS. SIMILARLY, OLDER, SCHOOL-AGED CHILDREN WHO DROP IN AFTER REGULAR SCHOOL HAVE VERY DIFFERENT NEEDS FROM THOSE OF THE YOUNGER CHILDREN.

JUSTIFICATION

There are two types of drop-in children:

- infant through preschool-age children who are brought to the center for brief, unscheduled periods of time (e.g., while parents are shopping, at the doctor's, etc.).
- after-school 6 to 12 year-olds who come after regular school is out, but while parents are still working on or off base



These groups of children have different needs from each other, and both can cause disruptions to the children who are there on a more regular basis.

Developmental opportunities are necessary for all children, but a vast majority of child-care directors spoken with, agree that the full-day or half-day child must be greeted with a full range of developmental opportunities--social, intellectual, physical (including good nutrition), proper health care, and adequate rest and sleep. For the full-day child, the child-care center is in large part a surrogate home, and must have the warmth, attention, and caring that a good home exudes.

The drop-in child's needs, on the other hand, are very different. He or she is with parents or caretakers most of the day, and the child-care stay is just a brief sojourn in the midst of a family-oriented day.

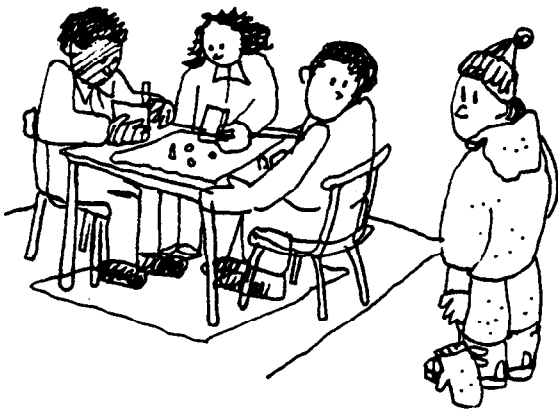
The older, school-aged child, who may well be a budding teenager, has very different needs from the younger children, and will not attend if he or she perceives that the facility is a "baby place" or even a "day care center-ugh." Being old enough to be in school is a very important milestone in a child's life. Children who have attended a child-care center before reaching school age and then have "graduated"

to a regular school will resist returning unless great care is taken to respect their new needs by making a special place, easily identifiable as more "grown up" and just for the school-age child (see SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS).

With regard to possible disruptions caused by the drop-in children for the full-day children, the following are areas of concern:

- circulation--the rapid entry and exit, and the greater degree of excitement brought by the child when entering or leaving with a parent which disturbs the more ongoing activities of the full-day child
- staff knowledge and continuity--many staff members express the concern they have for knowing what is happening at all times for the full-day child, knowing how he or she is progressing. This continuity can be severely disrupted by a steady stream of coming and going drop-in children.
- anxiety--the drop-in child may be upset at the new situation and may in turn disrupt the other children

DROPPING-IN CAN DISRUPT



PATTERN

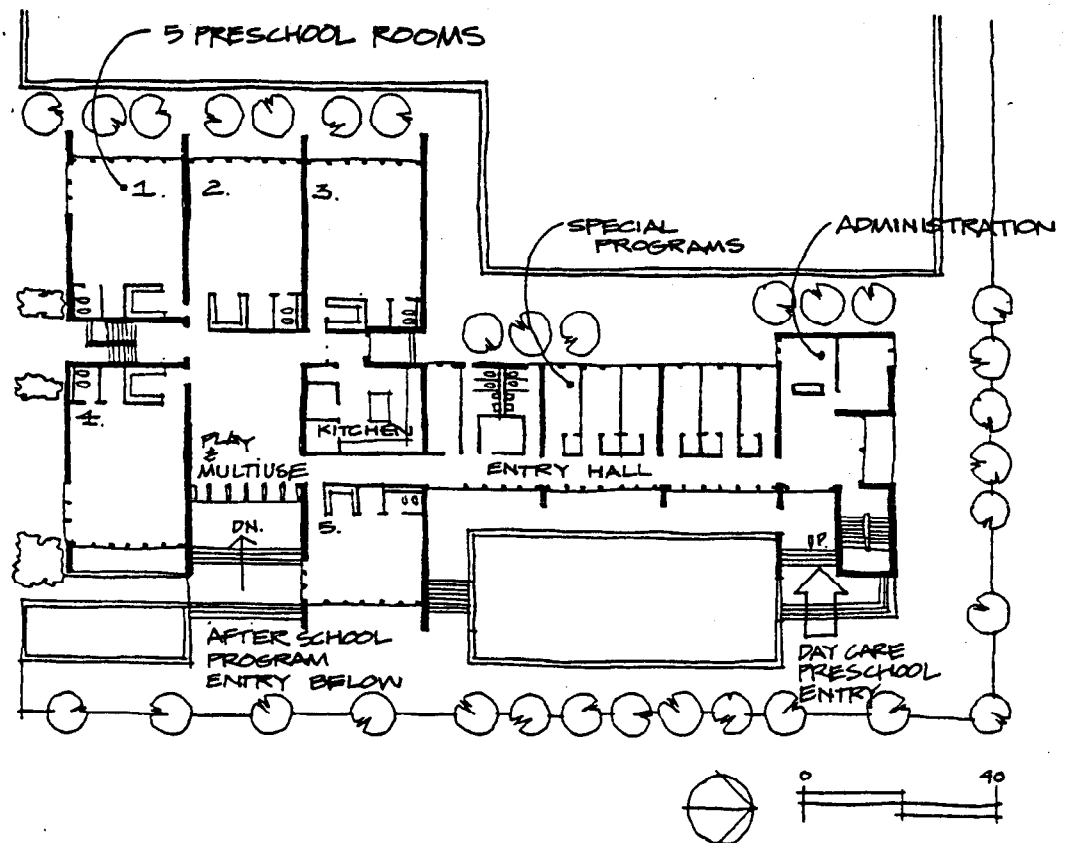
The different needs of the full-day or regular half-day child from those of the drop-in child, and the disruptions which the drop-in may cause for the full-day child has led us to recommend strongly that separation be planned into any center which provides services for both types of children. This recommendation is consistent with the prevailing wisdom of the early childhood community nationally.

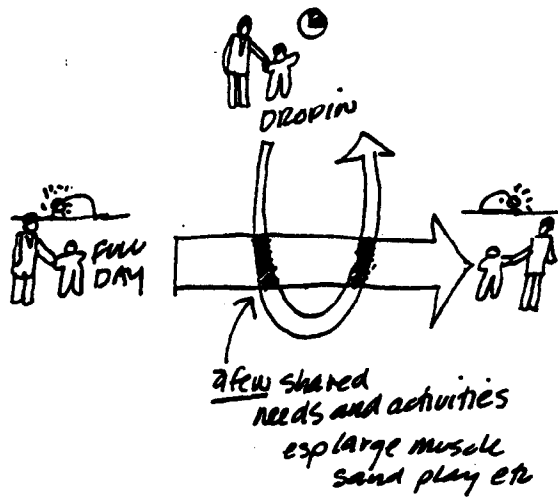
SEPARATE SPACES FOR DROP-IN CARE

IN EARLY SPACE PLANNING, AND IN OVERALL BUILDING DESIGN, ALLOCATE SPACES FOR REGULAR CHILD CARE (INFANTS, TODDLERS, PRESCHOOLERS) SEPARATE FROM SPACE FOR DROP-IN CARE (INFANTS, TODDLERS, PRESCHOOLERS, AFTER-SCHOOLERS).

RECOMMENDATIONS

- In a medium-sized neighborhood center (i.e., total of 60-75 children), provide separate, though visually interconnecting sections of the building for preschool drop-in care.
- In a medium-sized center, provide an entirely separate section of the building for after-school care, neither functionally nor visually connected with the rest of the care space.
- Although child-care centers should be located on the ground floor regardless of building construction, multi-story facilities may be used for children age 5 or above if special construction standards or automatic fire extinguishing systems are incorporated (NFPA 101, 1976).
- In very large centers, consider entirely different pods or modules for drop-in preschool care, for after-school care, and for regular child care.





- In very large centers, preschool drop-in care and after-school drop-in care areas require their own separate entrances.
- Internal circulation routes for any of these three groups should be functionally separate from each other, though visual connections are possible.
- Outdoor play areas should be partially separated to insure that caregivers can keep contact with full-day children, but these spaces can be partially interpenetrating.

RELATED ITEMS

SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS

ZONING

CAMPUS PLAN FOR VERY LARGE CENTERS

MULTIFUNCTIONAL HOUSES

THE INFANT-TODDLER-PRESCHOOLER CONNECTION



910 ZONING: THE INFANT-TODDLER-PRESCHOOLER CONNECTION

ISSUE

CHILDREN LEARN A TREMENDOUS AMOUNT AND GAIN SECURITY FROM PEERS OF ROUGHLY THE SAME DEVELOPMENTAL LEVEL, AND YET THEY ALSO LEARN A TREMENDOUS AMOUNT FROM OLDER AND EVEN FROM YOUNGER CHILDREN.

JUSTIFICATION

Child development theory (e.g., Piaget and Inhelder, 1968; White, 1975; Bower, 1977) suggest that the most important developments for infants are the following:

- basic sensorimotor development
- early cognitive development (especially understanding properties of the physical world and relations between self and objects)
- autonomy and trust

Thus the relation of the infant to object, the physical environment, and the caregiver is of the greatest importance.

The most important developments for older preschool children (i.e., 2 to 5 or 6) are:

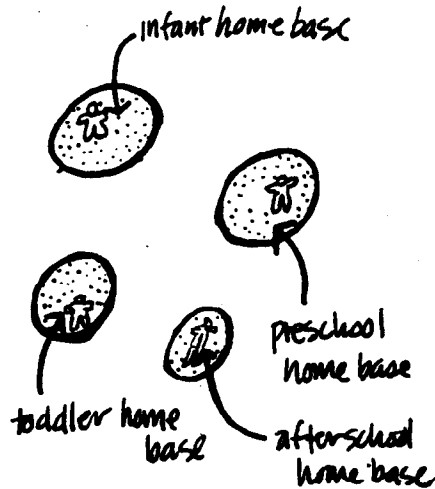
- basic interpersonal development
- personality development, including self-confidence
- social development (such as the child learning about cooperation as opposed to earlier egocentrism, rules of the game, and in general beginning to understand the reciprocity and social-contract nature of social relations)

Thus the relation of the child to other peers and to a range of older children and adults in appropriate settings is taken to be of the greatest importance.

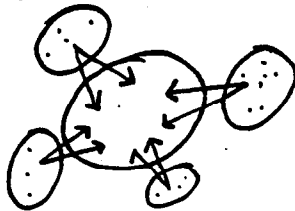


The differences between the primary areas of development for the infant in contrast to the older preschooler could be taken to favor clear separation between the age groups. Children learn not only from their peers, but also from "cross-peer learning," i.e., from children older and younger than themselves. The three-year old is watched intently by the

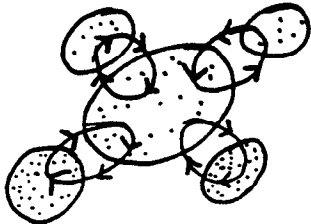
IF: Home base is age specific



then: some shared visual space

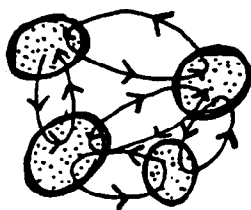


then: some supervised shared use space



then:

controlled "invasion" of territory



infant (observational learning)--later the infant may try the actions he or she has observed (deferred imitation). The infant is stimulated and challenged by what the older child can do. For the infant trying to walk, it may be more instructive to watch a toddler struggling along than to watch an adult for whom the challenge of walking is gone.

The same is true in the areas of language and social development. The older preschool child often has a remarkable ability to understand and translate the first babblings of the infant. This is not only a learning experience for the infant, who sees his or her needs being understood and met (ability to control the environment), but also for the older child who receives some sense of self-worth and ability to help in social situations from the interaction. Thus the younger child learns about language while the older child learns something about cooperation and responsibility (Huntington, Provence, and Parker, 1971). Both learn from each other, and from the transaction which has just occurred between them. It is a unique experience, which cannot be replicated by adult-child interactions.

However, not everything argues in favor of full and complete integration of children of different ages and developmental levels. We argue elsewhere that school-age drop-in children wish for their own space (A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS). The boisterousness of the older preschoolers can get in the way of the younger toddlers and especially the infants. Conversely, the babiness of the infants is something which at times the older preschooler wants nothing better than to get away from.

The infant activities are of a different type and degree of activity from those of older children. They require a smaller-scale space, more interaction with caregivers, and more concern for safety. One implication for child-care centers is to have a somewhat separate infant area with a well-controlled transition space between it and any other activity spaces. Similarly, infant and preschooler toileting is very different, as are their styles of eating; bathrooms, napping areas, and eating areas all should be separated. But as for primary activity spaces, visual connection to and from

each area enhances observational learning.

The majority of caregivers interviewed (see Travel Report, 1978) have thus found it convenient to have some spaces specifically for different-age children (e.g., what we are calling HOME BASES FOR 8-16 CHILDREN) but also to have sepcific activities--indoors and outdoors--that encourage and stimulate some cross-age interaction.

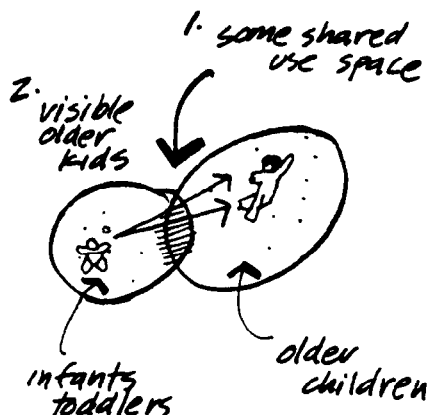
PATTERN

ZONING: THE INFANT-TODDLER-PRESCHOOLER CONNECTION

ZONE THE CHILD-CARE CENTER BY DEVELOPMENTAL AGES, INDOORS AND OUTDOORS, INCORPORATING HOME BASES FOR PRIMARY GROUPS OF INFANTS, TODDLERS, AND PRESCHOOLERS, AND A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS. ZONE SUCH THAT INFANTS AND TODDLERS ARE PARTIALLY SEPARATE BUT SHARE SOME COMMON VISUAL CONNECTIONS AND PERHAPS ACTIVITY SPACES, SUCH AND THAT PRESCHOOLERS CAN SEE AND PERHAPS ENGAGE IN SOME OF THE ACTIVITIES OF THE AFTER-SCHOOL DROP-INS. DO NOT, HOWEVER, HAVE INFANTS AND PRESCHOOLERS SHARING COMMON SPACES, NOR TODDLERS AND AFTER-SCHOOLERS, ETC. I.E., ZONE THE BUILDING BY DEVELOPMENTAL AGES.

RECOMMENDATIONS

- Provide many opportunities for children of different ages to observe the activities of other age groups (e.g., provide both CLEAR CIRCULATION WHICH OVERLOOKS; MODIFIED OPEN PLAN; and PLACES TO OBSERVE CHILDREN).
- Plan the HOME BASE FOR 8-16 CHILDREN to be age specific (or more appropriately, developmental-age specific), but plan other shared facilities, multipurpose spaces, and outdoor spaces to be conscientiously designed to facilitate cross-age group interactions.
- Locate infant and toddler primary-activity areas separate from preschooler's areas (INFANT CIRCLE OF ACTIVITIES; TODDLER TRANSITIONAL TERRITORY), with visual connections and the possibility of adjacency between secondary-activity areas (like eating) and sharing some service areas such as food preparation.



- Consider the possibility of a linear or horseshoe arrangement of infants' to toddlers' to preschoolers' to after-schoolers' spaces.
- Provide a separate and SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS.

RELATED ITEMS

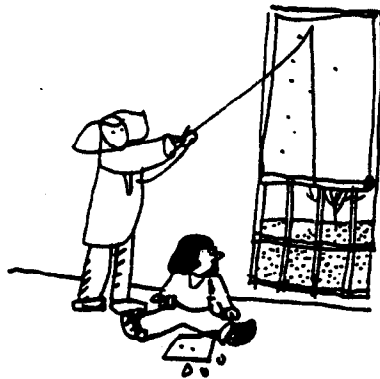
ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE
SEPARATE SPACES FOR DROP-IN CARE
A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS
HOME BASES FOR 8-16 CHILDREN
CAMPUS-PLAN CONCEPT FOR VERY LARGE CENTERS
MODIFIED OPEN SPACE

911 ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE

ISSUE

THE MOTIVATION TO INTERACT WITH THE ENVIRONMENT EXISTS IN ALL CHILDREN AS AN INTRINSIC PROPERTY OF LIFE. MOVEMENT, REST, AND ENCOUNTER ARE BASIC PROPERTIES OF THIS INTERACTION, AND YET MOVEMENT, REST, AND ENCOUNTER CAN CONFLICT WITH EACH OTHER IF NOT PROPERLY ZONED.

JUSTIFICATION



*manipulating the environment
as part of the curriculum*

movement



PATTERN

A cornerstone of Piaget's theory of child development (e.g., Piaget, 1963; Piaget and Inhelder, 1968; cf. Hart and Moore, 1971) is the insight that the motivation to interact with the environment is intrinsic to life, and especially to human development. But as Olds (1978) points out:

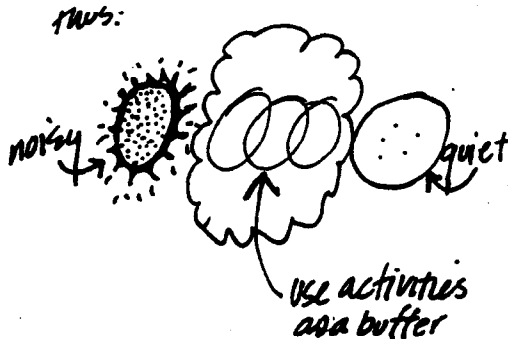
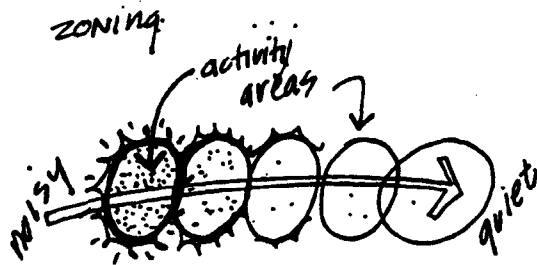
The quality of interactions is dependent upon possibilities for engagement which the environment provides. Hence, in all its manifestations, the environment is really the curriculum, and the physical parameters of classrooms must be manipulated by teachers as much as books, toys, and work sheets, as essential aspects of the educational process. (p. 1)

In a recent dissertation, Seamon (1977) has shown that movement, rest, and encounter are basic modes of interacting with and experiencing the environment. For children, movement creates noise and perhaps mess, while rest is best achieved in quiet places where the visual situation is somewhat muted. Different types of encounter require different types of spaces, different layouts, different ambiances.

ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE

WITH REGARD TO ACTIVITY LEVEL, ZONE ALL CHILD-CARE CENTERS INDOORS AND OUTDOORS SUCH THAT NOISY ACTIVITIES ARE SEPARATED FROM QUIET ACTIVITIES AND ACTIVE, BOISTEROUS ACTIVITIES FROM CALMER, RESTFUL PURSUITS.

RECOMMENDATIONS



- Noisy activities are better separated from quiet activities (e.g., MUSIC NOOK from READING-LISTENING AREA; BLOCK PLAY AREAS from CHILD CAVES).
- Active activities are better separated from more passive activities (e.g., MULTIPURPOSE-MOTOR ACTIVITY AREA; NATURE STUDY AREA; SICK BAY; RETREAT AND OBSERVATION POINTS, and even from A ROOM WHICH CAN BE DARKENED).
- Similarly, messy activities function best when made contiguous with each other and near a sink but separate from clean ones (e.g., AREAS FOR ARTS AND CRAFTS and NATURE STUDY AREA from MUSIC NOOK and NON-OBJECTIVE STAGES AND PROPS).
- Similarly, expansive activities are best separated from contained activities (e.g., MULTIPURPOSE-MOTOR ACTIVITY SPACE and NONOBJECTIVE STAGES AND PROPS from A ROOM WHICH CAN BE DARKENED and RESOURCES AT THE HEART).

RELATED ITEMS

HOME BASES FOR 8-16 CHILDREN
 THE INFANT-TODDLER-PRESCHOOL CONNECTION
 SEPARATE SPACES FOR DROP-IN CARE
 MODIFIED OPEN PLAN
 CAMPUS PLAN CONCEPT FOR VERY LARGE CENTERS

912 CLEAR CIRCULATION WHICH OVERLOOKS

ISSUE

AMBIGUOUS CIRCULATION PATTERNS IMPEDE CHILDREN'S USE OF THE CENTER AND CREATE UNNECESSARY CHAOS AND DISORGANIZATION.

JUSTIFICATION

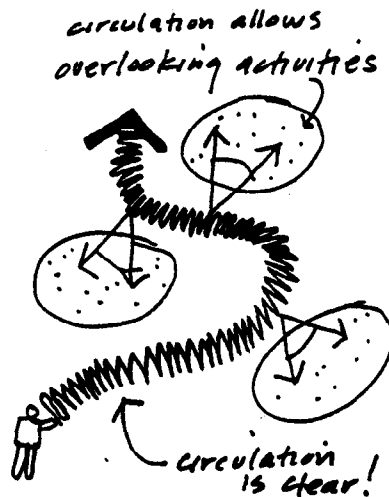
The central issue with regard to circulation patterns is "substance" time versus "non-substance," "transitional," or "preparatory" time. Studies by Gump (1975) and others have shown that more so-called nonsubstance time is spent by children in open-plan schools than in closed-plan schools, with some of this being transit time between activities.



In child-care centers, the dominant program in early childhood education is the free-choice program. In such programs, children tend to "shop" around, looking at ongoing activities before selecting one. If activity areas are grouped too closely together, children may disrupt one another as they move about. Because children tend to remain engaged with one material an average of only 3-11 minutes (Landreth, 1976; as cited in Osmon, 1971), a large number of children may be meandering among activity spaces at any one time.

From his design experience, Osmon (1971) suggests that circulation patterns surrounding activities encourage children to look around to see what is available. Taylor and Vlastos (1975) also suggest that fluid traffic patterns provide a means for better communication. Informal post-occupancy evaluations of open-plan schools conducted at the University of Wisconsin-Milwaukee have found more teacher-peer communication and learning and a wider variety of interaction among students and between students and learning materials when circulation was clear and not disruptive of activities.

Our own recent observations (Travel Report, 1978) confirm these findings, and, in addition, point out the behavioral conflict between activity and circulation when adequate and clear circulation paths are not provided. One interpretation is that this may account for some of the "nonsubstance" time in many open-plan schools and preschools.



Other problems also occur if circulation is not clear. Children who cannot see a clear path to an activity may be too shy to search for one. Kritchevsky and Prescott (1969) have also found that clear pathways are important to the functioning of play areas because ambiguous circulation patterns impede children's seeing and moving to an empty space, and encourage unnecessary intrusions and chaos. In addition, caregiver supervision becomes more difficult, or more obtrusive, if circulation is poor. Generally, poor circulation paths interfere with children and staff seeing into a play unit, moving to it, and remaining concentrated on an activity (Kritchevsky and Prescott, 1969, as cited in Prescott and David, 1976).

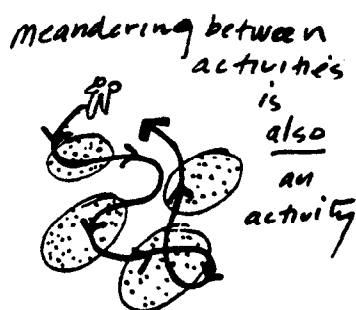
Further research by Robin Moore (1966, see Lady Allen of Hurtwood, 1968; and Osmon, 1971) has indicated that children desire a sense of enclosure, and that this privacy appears to be a question of reducing visual access from outside-in rather than inside-out (Moore, 1969).

PATTERN

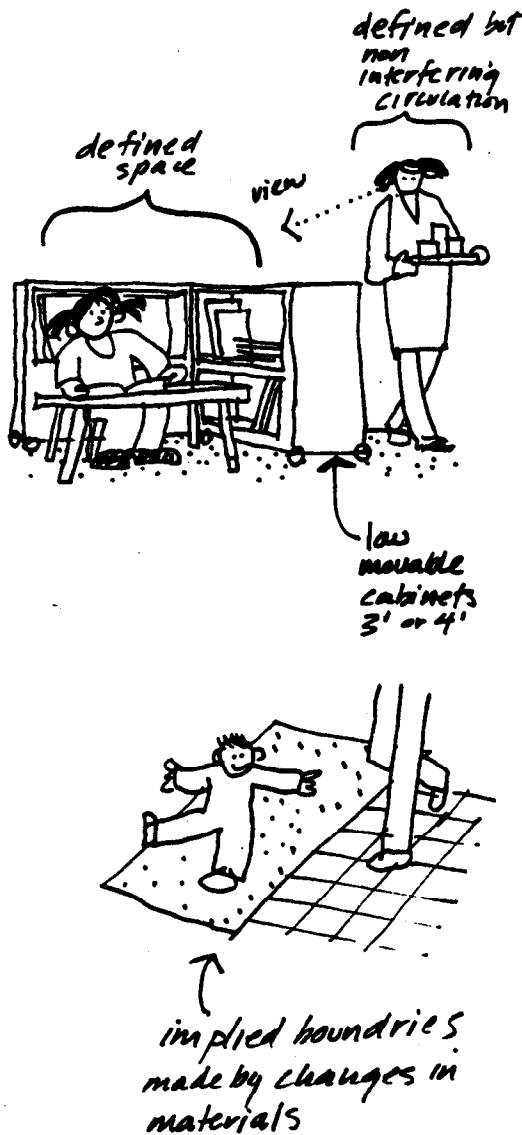
CLEAR CIRCULATION WHICH OVERLOOKS

CIRCULATION PATHS SHOULD BE HIGHLY VISIBLE AND FLOW THROUGH A CENTER OVERLOOKING AVAILABLE ACTIVITIES. IMPLIED BOUNDARIES TO ACTIVITY SPACES SHOULD REINFORCE THE CLARITY OF CIRCULATION RELATIVE TO ACTIVITY SPACES. AT NO TIME, HOWEVER, SHOULD ACTIVITY SPACES BECOME CLOSED ROOMS, NOR CIRCULATION BECOME CLOSED HALLS.

RECOMMENDATIONS



- Surround each activity by a meandering path so children can look over a potential activity, and if there is need for a more direct, uninterrupted path of circulation, provide a bypass route.
- Activity units must be separate enough to avoid interference from each other and from circulation--it should be possible to walk through a large area or room without entering the various play units.



- Nonfixed and semifixed spatial delineators which are low and open such as storage shelves, low furniture, and moveable dividers are ideal to enclose an area while still allowing children and staff to see over (or in some cases, through or around) into the area inside.
- Define activity spaces with implied boundaries indicating where it begins and ends to reinforce the clarity of circulation from activity spaces.
- In renovating existing facilities, use fixed structural features as cues for defining circulation paths (e.g., columns, ends of bearing walls, mechanical stacks, changes in level).
- Insure that all circulation is barrier-free for physically handicapped as well as perceptually or learning-handicapped children.
- Include CUBBIES as a part of entry circulation space, providing a minimum of 1 sq. ft. per child.
- Provide CLEAR CIRCULATION WHICH OVERLOOKS in outdoor activity areas as well as indoor areas (i.e., in DEVELOPMENTALLY APPROPRIATE PLAY YARDS).
- See Osmon's Pattern 9, "The Group Play Environment", for a further discussion of organization of circulation paths

RELATED ITEMS

ACTIVITY-SHAPED SPACES
 BARRIER-FREE ENVIRONMENT
 RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN
 SCALE: CHILD-SCALED ENVIRONMENTS
 CUBBIES
 DEVELOPMENTALLY APPROPRIATE PLAY YARDS

913 BARRIER-FREE ENVIRONMENT

ISSUE

SINCE CHILDREN WHO ARE NOT ABLE-BODIED STILL HAVE THE SAME SOCIAL, COGNITIVE, AND EVEN PHYSICAL NEEDS AS ABLE-BODIED CHILDREN, IT IS OBVIOUS THAT THEIR PLAY AND ACTIVITY NEEDS ARE ALSO SIMILAR. BARRING THEM FROM ACTIVITY SPACES BY CREATING--OR NOT ELIMINATING--BARRIERS IN ACCESS, CIRCULATION, AND EQUIPMENT AMOUNTS TO STUNTING THEIR DEVELOPMENT BEYOND THE PROBLEMS THEIR PARTICULAR HANDICAP MAY IMPLY.

JUSTIFICATION

Children who have a handicap must be allowed and encouraged to develop as normally as possible, and to do this they must have access to most play and activity opportunities other children have. Further, they must have access to other children, both handicapped and able-bodied. Research reported in Alexander, Ishikawa, and Silverstein (1977, pp. 343-334) has shown that a child's peer group may be even more important than their parents to healthy emotional development. This is especially true for handicapped children.

While not a developmental argument, one very compelling reason for creating a barrier-free environment is that it is required by law.

PATTERN

BARRIER-FREE ENVIRONMENT

MINIMIZE BARRIERS WHILE EXPANDING ACTIVITIES IN WHICH ALL CHILDREN CAN PARTICIPATE. SOME SPECIAL ACTIVITIES MAY BE CONSIDERED WHERE USE INDICATES.

RECOMMENDATIONS



- While considering specific activity spaces, use U.S. Department of Housing and Urban Development (1978), ANSI 117.A (1978), and Moore, Cohen, Oertel, and van Ryzin (1979) to add experiences which would enhance this type of activity for handicapped children. For example, some activity areas or resource nodules may be made especially rich.
- Use ramps instead of, or in conjunction with, steps for children in wheelchairs or with braces, crutches, etc.

touchable
signs with raised
letters



- Use signage with raised letters at a height children can reach. Both handi-capped and able-bodied children will benefit from this.
- Wheelchair access to hills should be made easier with nonskid surfaces and down-slope stop curbs.
- A child should be able to sit under an overhang and play with his or her arms resting in sand and water.
- Surfaces should be hard enough for wheelchairs, yet safe and nonabrasive. Material such as composite rubber and acrylic or 3/8"-thick "Elastaturf" on concrete are appropriate.
- Youngsters with braces, crutches, or in wheelchairs cannot open back-up doors. Therefore, incorporate "tambour"-type doors which fold into recessed areas of the wall.
- Children should be able to easily move from the indoor activity area to transportation pick-up points.
- A berm, fence, or sign must be no higher than 48" if an adult in a wheelchair is to see over it. The height is reduced accordingly for children.
- Circulation paths should be of a continuing common surface; steps and-or abrupt changes are to be avoided; they should be 5'-0" wide to allow wheelchairs to pass; and gradients should not exceed 5%.
- Ramps must not have a slope greater than 1'-0" of rise in 12'-0" of run, and should be a nonskid surface; width should be 4'-0" at least; all ramps must have handrails on each side to fit children's reach, about 16"-24" above ramp. When appropriate, two parallel handrails should be used.
- All stairs should have rounded nosing; riser 5-3/4" and tread 14"; handrails should be of the height described in the preceeding recommendation.



- Rest areas should be provided especially where gradient is greater than recommended.
- Water fountains should have waterspouts upfront and foot- and-or hand-operated controls.
- Doors should be between 3' and 4' wide; thresholds should be flush with the floor.
- Indoor and outdoor seating furniture should have back and arm rests; the seat's depth and height should fit the specific age-group of users. Picnic and other tables should have separate stool seats of various heights and distances from the table for those wearing braces, which also allows wheelchairs a closer approach; the bottom of the table should be 30" above the ground for wheelchairs or as appropriate for other seating arrangements.
- Provide some soft surfaces which children who can't walk could crawl or roll on.
- Provide a slide and allow for a crawling area to reach a slide, or provide a ramp with 8% maximum grade to reach the top, and a 5' x 5' level platform on the top.
- For design ideas for outdoor play-learning environments for handicapped children, see Moore et al. (1979).

RELATED ITEMS

There are several patterns in *Recommendations for Child Play Areas* (1979) where, despite dealing specifically with outdoor areas, the underlying design idea is applicable for all spaces for handicapped children. See the following in that document:

VIEWS TO AND FROM PLAY AREAS
 CONTINUITY AND BRANCHING
 PACED ALTERNATIVES
 LOOSE PARTS
 CLEAR ACCOMPLISHMENT POINTS
 RETREAT AND BREAKAWAY POINTS
 IMAGEABILITY AND ORIENTATION
 ORDERLINESS AND CONSISTENCY
 EMOTIONAL RELEASE POINTS
 REPETITION AND MULTIPLE CODING

914 BUILDING PERIMETER AS A CONTROLLED FILTER

ISSUE

THERE IS AN INHERENT OPPOSITION BETWEEN THE NEED FOR OPENNESS--FOR THE BUILDING TO WELCOME CHILDREN, ADULTS, AND THE COMMUNITY--AND THE NEED FOR PROTECTION--CONTROL OF ACTIVITIES FROM UNWANTED INTERFERENCE.

JUSTIFICATION

Since the child-care center is an integral part of the community, and especially for those families with preschool-age children, the building should be open and welcoming to passersby. The center should also welcome the approaching child and adult. To encourage the use of the center as a dynamic part of the local community, it should be visually and functionally accessible to the public.

On the other hand, since the child-care facility takes on the character of a substitute home, the concept of privacy and security becomes as important as in a private dwelling. For just one example, directors of a majority of the child-care centers visited on military bases (see Travel Report, 1978) expressed concern about a child being picked up by the "wrong parent." Other dangers of allowing uncontrolled access to the facility are obvious. Children must be protected from people who do not have their welfare as a primary concern.

Besides people who might actually harm children, or steal money and equipment, there are others who mean no specific harm. However, their presence would interrupt the functioning of the center and possibly upset children by wandering through unannounced. There are many people who simply like to watch children play. This is a perfectly reasonable pastime, but without some control of this observation, it could become disruptive to staff and interfere with children's concentration and privacy.

Osmon (1971) has a number of interesting design suggestions for dealing with these opposing forces, and much of what follows is based on his analysis.

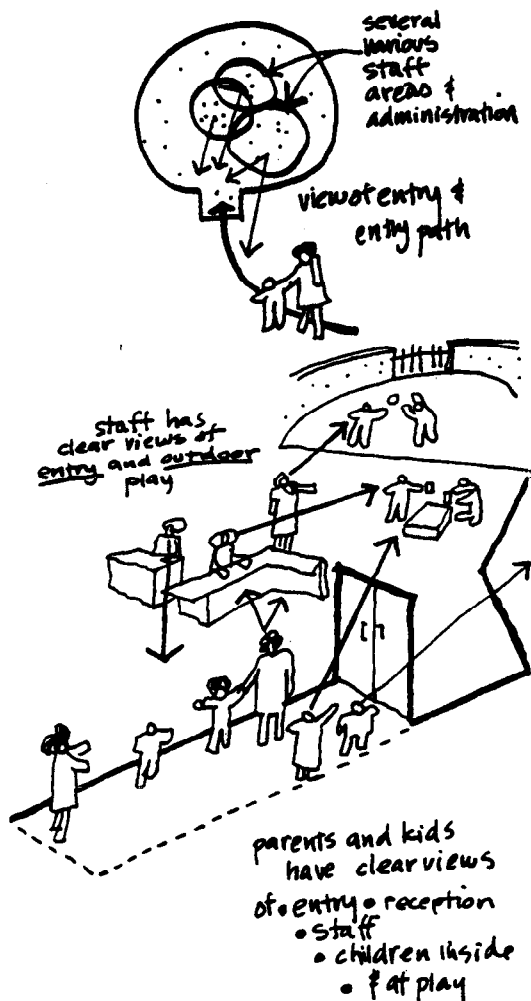
PATTERN

BUILDING PERIMETER AS A CONTROLLED FILTER

ESTABLISH THE PERIMETER OF THE BUILDING AS A CONTROLLED FILTER, ENCOURAGING PEOPLE TO ENTER AND YET CONTROLLING WHO MAY ENTER AND WHERE THEY ENTER.

RECOMMENDATIONS

small centers



- Establish the entrance as a point of controlled access with clear sight lines from regular staff positions to the door. E.g., it may be helpful to locate administrative areas adjacent to the entry for security.
- Have only one means of public access and egress to and from the building (other than fire escapes and exits to play yards).
- Outdoor play areas must have barriers which allow passersby some view of play, but which are difficult to climb over.
- The outdoor play yards should be visible from inside the facility.
- Provide an approach to the building which is visible to staff inside, thus making monitoring the entry easier in centers without a full-time receptionist.
- The entry sequence should bring the visitor directly to the reception area.
- Storefront-type windows should be on the community side of the building to permit the viewing of internal activities of the center.
- Motorists passing the center should also be aware of the center's function, e.g., signs could be perpendicular to the building.
- Approach paths to the center should be greeted by low windows and glass doors for children and adults to see internal activities.



- Approach paths to the center should be parallel to windows to allow some views into the center, but should be 10-20 feet removed from the windows so as to not create invasions of privacy; if paths must be close to the building, windows could be perpendicular to the paths (e.g., set back in small outdoor bays) for the same privacy reasons.

RELATED ITEMS

INTERIOR VISIBILITY
ADMINISTRATION IN THE MAINSTREAM
OUTGOING BUILDING INFILTRATING OUTDOOR SPACES
VISIBILITY FROM THE ENTRY WAY
FRIENDLY FACES ENTRY SEQUENCE
FRONT YARD AND FRONT PORCH
PEDESTRIAN ACCESS AND SITE CIRCULATION
DEVELOPMENTALLY APPROPRIATE PLAY YARDS
OBVIOUS ENTRY

ISSUE

THE RELATIONSHIP BETWEEN INDOOR AND OUTDOOR DESIGNED ENVIRONMENTS FOR CHILD-CARE CAN WELCOME CHILDREN, PARENTS, AND THE COMMUNITY TO PARTICIPATE IN PROGRAMS, SPACE, AND ACTIVITIES. IN PARTICULAR, THE RELATION BETWEEN INDOOR AND OUTDOOR SPACE WILL INFLUENCE THE "FACES" THE FACILITY PRESENTS TO THE SURROUNDING COMMUNITY AND THE WAYS CHILDREN MOVE BETWEEN INDOOR AND OUTDOOR ACTIVITY SPACES.

JUSTIFICATION

There are three major issues to resolve when considering indoor-outdoor relationships in the design of child-care centers:

- possibilities for communication and interaction with the community
- ways in which children will move--or will not be encouraged to move between indoors and outdoors
- views and natural light

COMMUNITY COMMUNICATION AND INTERACTION

The many possibilities for communication and interaction between the community and the child-care facility can make positive contributions to existing programs and enrich each experience.

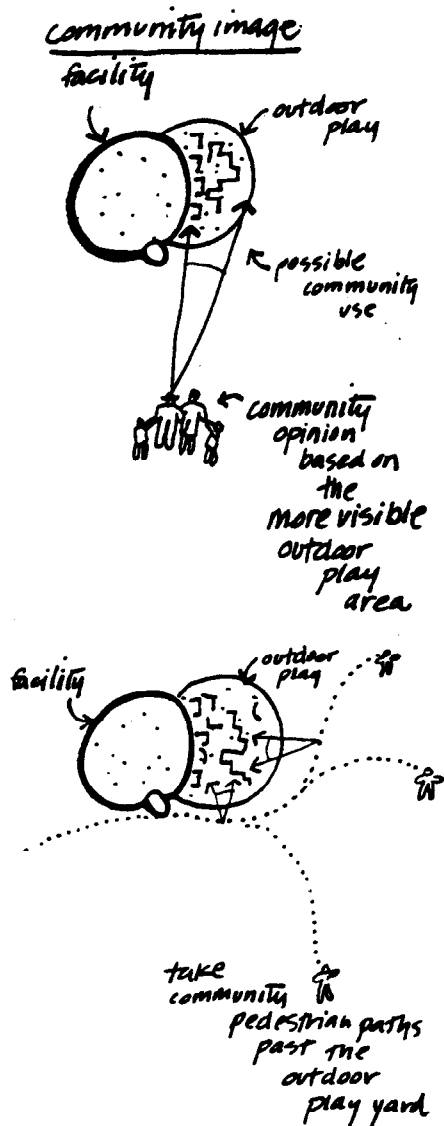
The introversion or extroversion of the building in relation to outdoor space may have a direct influence on how parents and the rest of the community feel about the child-care center (Osmon, 1971). A building that focuses inward without either physical or visual extensions into outdoor space may seem less welcoming, less interesting, and less usable from the outside.

On the other hand, an extroverted building will allow parts of the built form to extend like fingers penetrating the texture of the surrounding play area and community. These "fingers" may be actual parts of the building, outdoor forms linked to the building, or perhaps just visual extensions which allow those inside and outside the building to be aware of and appreciative of each other.



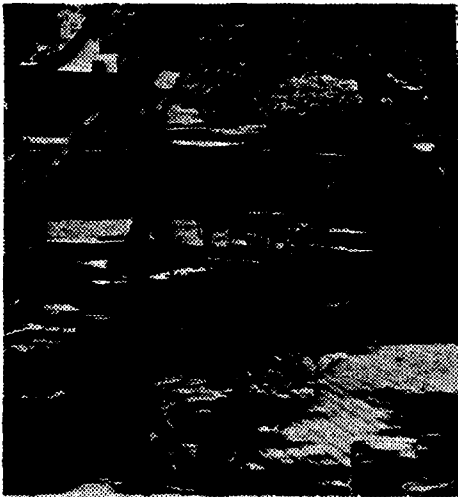
Achieving an outgoing building will involve a sensitive analysis of the interfaces between a particular facility and a particular community. Take into account some of the following particulars:

- The relationship between the public circulation paths and the entry to the center: If the entry can appear to be an extension of circulation with views from outside of activity occurring within the building, and views from inside of people approaching the building, the feeling of interest and welcome may be enhanced (see OBVIOUS ENTRY).
- The relationship between outdoor public areas and outdoor child-care center areas: There can exist a pleasant balance between privacy for children and the interest of passersby and the area residents in children's play. While direct access to children must be controlled (see also BUILDING PERIMETER AS A CONTROLLED FILTER) visual access for passersby to observe portions of the play area (and for children to observe them) could help integrate the facility into community life. Such integration will be valuable in extending use patterns and in reducing vandalism (Newman, 1971).
- Relationship between community-use spaces outside and inside the building: If a child-care facility is viewed as an out-reaching, active program, there will be many uses communities can make of space. Specialists such as the social worker and psychologists may have community group programs (see also SPECIAL COMMUNITY SERVICE AREAS). Regular meetings of various community groups may take advantage of facility meeting places (see PARENT-STAFF CORNERS). Auxiliary and volunteer groups may help with facility programs, improvements, clean-up, etc. All of these activities will be more likely to happen if access is easy from usual community circulation and public use areas (see also HIGH VISIBILITY IN THE COMMUNITY and PEDESTRIAN ACCESS AND SITE CIRCULATION).



MOVEMENT BETWEEN INDOOR AND OUTDOOR ACTIVITY SPACES

National authorities all agree on the importance of outdoor activity spaces for child-care centers, and on the importance of ease of movement for children and caregivers between indoors and outdoors. The only difference between indoor and outdoor spaces should be that one is climate-controlled (environmental control systems, walls, canopies, and mechanical devices). But it has already been established that the design of indoor and outdoor activity spaces should follow the same developmental goals and design principles (see DEVELOPMENTALLY APPROPRIATE PLAY YARDS). The remaining design issue, then, is the relationship between indoor and outdoor spaces to encourage a free flow of children and activities depending on climate and weather. Proper design of the indoor-outdoor relation will not only encourage children to use both spaces, but will help insure access to fresh air and sunshine, opportunities for exercising large muscles, and increased contact with nature.



When children are able to see beyond their immediate surroundings, it extends their range of sensory experiences and their understanding of the natural and physical phenomena that take place in the environment beyond them. These experiences can be especially important for the urban child who may have little experience with animals, plants, trees, natural cycles, and so forth. But it is becoming equally important for suburban children who are becoming frightfully unaware of their surrounding context--the natural world.

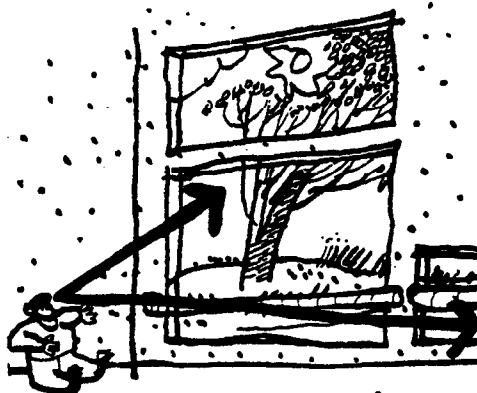
Children may also want to retreat to partial or total cover of the building from outdoor areas during sudden shifts in temperature or precipitation, or later in the day as the sun drops and the wind rises.

All of these possibilities speak to the necessity of careful design of the indoor-outdoor relationship in its many aspects--windows and transitional spaces.

In general, we can say that to establish both the outdoor and the indoor environments as conceptually equally important activity spaces, a continuity of activity should exist in the relation and transition between indoor and outdoor areas. There should not be a visual break or sharp change (Institute of Advanced Architectural Studies, 1976).

VIEWS AND NATURAL LIGHT

Being two distinct spaces, indoor and outdoor areas often lose touch with each other. While there are times when children will not be able to be outdoors to mingle with nature, or only partially outdoors due to slightly inclement weather, they can keep in touch with it by windows through which they may observe the world around them. A squirrel collecting bits of food for the winter, a late November snowfall, or a light summer rain are only a few of the outdoor happenings that can excite a child.



clear relationship
to the outside for
orientation

The quality of lighting in interior spaces is critical for a building's success, and all the more so for a children's building as there is mounting evidence (Ott, 1975) that the type of lighting available can affect activity levels and fatigue in children (see LIGHTING APPROPRIATE TO ACTIVITIES). The general assumption is that most activities require adequate amounts of natural light. Art areas are especially likely candidates for natural, northern light. Nature-study areas should have some direct and some indirect south or south-east lighting. Reading areas can benefit from natural lighting. Conversely, there are areas where the amount of natural light should be able to be strictly controlled (e.g., NAPPING AREAS; A ROOM WHICH CAN BE DARKENED; and SICK BAY).



Equally importantly, pools of natural light (Alexander, Ishikawa, and Silverstein, 1977) can be used to articulate space, to define open versus closed spaces and thus create MODIFIED OPEN SPACE, to soften HOME BASES while highlighting active areas like MULTIPURPOSE-MOTOR ACTIVITIES AREA, and to highlight activity areas in general in relation to circulation areas (RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN versus CLEAR CIRCULATION WHICH OVERLOOKS).

PATTERN

EXTENDED INDOOR-OUTDOOR RELATIONSHIPS

EXTEND THE INDOORS TO THE OUTDOORS, THE OUTDOORS TO THE INDOORS, AND BOTH TO THE COMMUNITY BE EXTENDING FINGERS OF THE CENTER AND SITE INTO THE COMMUNITY, BY MAKING THE INTERIOR VISIBLE TO THE COMMUNITY, BY LOW WINDOWS TO THE WORLD, BY CREATING INDOOR-OUTDOOR PLAY PATHWAYS, BY CREATING DEGREES OF SHELTERED TRANSITION ACTIVITY SPACES, AND BY USING POOLS OF LIGHT TO PROVIDE NATURAL LIGHT FOR APPROPRIATE ACTIVITIES AND TO ARTICULATE SPACE.

RECOMMENDATIONS

COMMUNITY COMMUNICATION AND INTERACTION

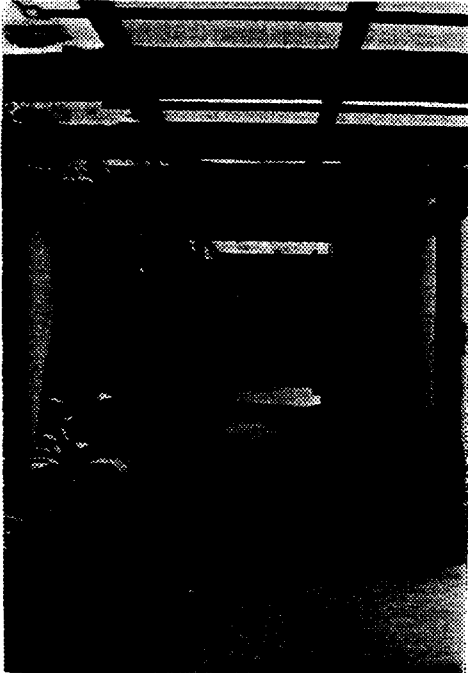
- In siting, site development, and building design, insure that the center will be highly visible to the community (see HIGH VISIBILITY IN THE COMMUNITY).
- Extend fingers of the indoors into outdoor spaces, and interpenetrate the outdoors into indoor spaces.
- Create the entry as an extension of existing public circulation paths (see also PEDESTRIAN ACCESS AND SITE CIRCULATION).
- Provide views of children's outdoor activity spaces from community spaces and public circulation paths while still retaining opportunities for children's privacy (see also PEDESTRIAN ACCESS AND SITE CIRCULATION and DEVELOPMENTALLY-APPROPRIATE PLAY YARDS).
- Encourage the possibilities of views to the parts of the interior of the building by allowing some community paths to run within 20 feet but not closer than 10 feet of windows of the building (see also BUILDING PERIMETER AS A CONTROLLED FILTER).
- Provide views of any interesting local community space or activity (e.g., overlooking a park, views of docks, views toward the community and base center).
- Provide views of approach paths from administrative spaces and some child spaces (see ADMINISTRATION IN THE MAINSTREAM).

- Insure that the entry to the building is obvious (see OBVIOUS ENTRY).
- Community children should be able to have access to play areas in off-hours, e.g., by providing a street-entry gate.
- Provide opportunities for passers-by to slow down while passing the center, linger for a while, and read posters and other information on walls or windows.
- Insure that any SPECIAL COMMUNITY SERVICE AREAS are highly visible and accessible to the community as well as to parents of children using the center by encouraging INTEGRATION WITH THE COMMUNITY CENTER, by encouraging a FRIENDLY FACE ENTRY SEQUENCE, and by making them readily accessible from community outdoor space (e.g., sidewalks).

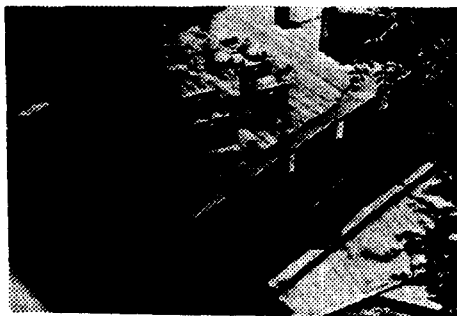
MOVEMENT BETWEEN INDOOR AND OUTDOOR ACTIVITY SPACES

- Minimize the barrier for children between indoor and outdoor activity spaces by providing lots of window connections, by providing large child-openable doors, and by insuring that there are no unnecessary steps or ramps between indoor and outdoor activity spaces.
- A minimum of 6'-0" should be provided between all doorways and any ramp, steps, or other elevation changes.
- Create partially-covered south-facing PORCHES AND DECKS AS ACTIVITY SPACES (min. width 6 ft.; ideal 10 ft.) as transitional areas with a protected microclimate between all indoor and outdoor spaces.
- Overhangs should be porch-like (low, intimate in scale); see also BUILDING AS A FRIEND; CHILD-SCALED ENVIRONMENTS).
- There should be at least a 6'-0" overhang covering any transitional space for shade and weather protection.





- Consider the possibility of arcades and partially covered degrees of sheltered play areas.
- Provide a minimum of 6'-0" of transition surface flush with the threshold at all indoor-outdoor transitions.
- For fresh air without loss of control, and for children to have the sense of doors being of a child scale, consider a combination child-door adult-door ventilation "Dutch door"; adult and child view windows in doors.
- NATURE STUDY AREAS are ideal parts of the building to have partially indoors and partially outdoors (e.g., a greenhouse which penetrates both the indoors and the outdoors).
- Site NATURE STUDY AREAS on the south or southeastern sides of buildings to capture maximum growing light.
- Site AREAS FOR ARTS AND CRAFTS on the north or northeast side of buildings to capture cool, even, north light, or on the southern side of the building to capture warmer light.
- Paved areas adjoining the building may be used for active motor pursuits, and thus should be zoned immediately opposite indoor motor activity areas (see ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE).
- Consider the possibility of providing an intimate, comfortable space to sit and watch the world, alone or in small groups; such a space can be one RESOURCE-RICH ACTIVITY POCKET FOR 2-5 CHILDREN stocked with books pictures, and other materials relating to natural events, animals, plants, etc.
- Double doors can give high indoor-outdoor visibility and easy access from play rooms to outdoor play spaces.



- Insure that all age groups housed in the center have direct and immediate views of and access to outdoor activity spaces appropriate to their age group and developmental level.
- All doors between indoor and outdoor activity spaces should be fully accessible and easily operable by children (see also ACCESSIBLE AND OPERABLE HARDWARE).
- Create indoor-outdoor play pathways from each major indoor activity space to the outdoors; insure that these pathways don't cross other activity spaces but are CLEAR CIRCULATION WHICH OVERLOOKS activities.
- At least two fire exits are required from each indoor activity space.

VIEWS AND NATURAL LIGHT

- Insure that caregivers outside can see activities immediately inside and vice versa.
- Create low windows to the world so children can have direct visual contact with the exterior environment from most activity spaces.
- Any child-view low windows must be of safety glass.
- To insure maximum child visibility between indoors and outdoors, place some windows close to the ground facing the play yard(s) side(s) of the building.
- Consider flexible awnings to reduce the heat and glare of a southern exposure, to cover transitional play areas, but also to be able to be withdrawn to allow more light and sun on gray and winter days.
- Articulate interior space; especially the creation of MODIFIED OPEN SPACE by the use of pools of natural light.



RELATED ITEMS

OBVIOUS ENTRY
BUILDING PERIMETER AS A CONTROLLED FILTER
SPECIAL COMMUNITY SERVICE AREAS
PARENT-STAFF CORNER
HIGH VISIBILITY IN THE COMMUNITY
PEDESTRIAN ACCESS AND SITE CIRCULATION
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
LIGHTING APPROPRIATE TO ACTIVITIES
MODIFIED OPEN SPACE
HOME BASES FOR 8-16 CHILDREN
CLEAR CIRCULATION WHICH OVERLOOKS
ADMINISTRATION IN THE MAINSTREAM
INTEGRATION WITH THE COMMUNITY CENTER
FRIENDLY FACES ENTRY SEQUENCE
PORCHES AND DECKS AS ACTIVITY SPACES
FRONT YARD AND FRONT PORCH
NATURE STUDY AREAS
AREAS FOR ARTS AND CRAFTS
BUILDING AS A FRIEND
CHILD-SCALED ENVIRONMENTS
ACCESSIBLE AND OPERABLE HARDWARE
ZONING: NOISY TO QUIET, ACTIVE TO PASSIVE
PORTE COCHERE

916 INTERIOR VISIBILITY: WELCOME AT FIRST SIGHT

ISSUE

THE VISIBILITY OF THE REST OF THE BUILDING FROM THE ENTRY WILL AFFECT BOTH THE CHILD AND PARENTS' PERCEPTIONS OF THE ATMOSPHERE AND QUALITY OF THE EXPERIENCE AWAITING THEM

JUSTIFICATION

As stated in FRIENDLY FACES ENTRY SEQUENCE, the time when child and parent must part may be very difficult for both. The use of familiar, homey clues and sights of familiar people will help reduce whatever trauma may be involved in the parting. Suggestions include parallels to a FRONT YARD AND FRONT PORCH and OBVIOUS ENTRY. These are definite spaces which designers can plan specifically to flow into each other and provide a smooth entry-transition sequence.

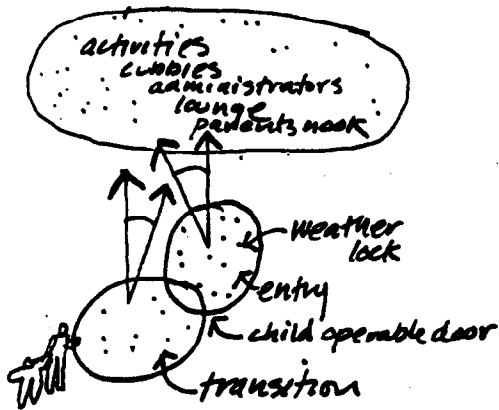
More difficult to design will be the view and image of the center which children and parents will perceive as they move through this sequence. Research cited in Pollowy (1977) suggests that sights of familiar settings and familiar people will help children feel at home and comfortable as they part from parents.



Since control of entry is required, administrative space may reasonably be expected to adjoin the entry (see BUILDING PERIMETER AS A CONTROLLED FILTER). If views for both parents and children are allowed to be unobstructed into this area, some contact with familiar people may be established. Unobstructed view at child eye level means any counters used must be very low (e.g., 28-29"), the cash keeping should not be in an obtrusive cash register (Travel Report, 1978), and light and color should be used to attract the eye.

A view of indoor and-or outdoor activity areas will provide more familiar settings and people. Even a glimpse or "Zen View," (Alexander, Ishikawa, and Silverstein, 1977) may be enough to reassure and draw the child on.

For first-time users, familiarity must be conveyed by color, texture, and light levels reminiscent of home. Use of plants (and animals) will also convey a sense that the facility is a "living" place.



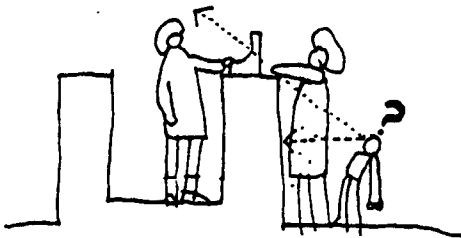
PATTERN

Another view which should greet parents and children is that of a place where parents, staff, and children can comfortably meet for informal discussions. Since many parents never go beyond the entry area, they must be enticed to a space with comfortable seating, attractive displays, etc., where they can get coffee, and talk to each other and to the staff who work with their children.

WELCOME AT FIRST SIGHT

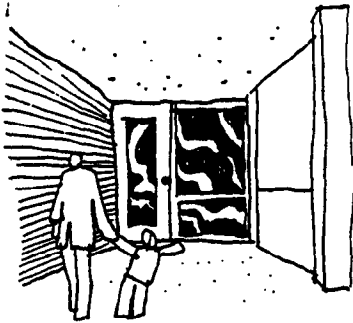
INSURE THAT THE FIRST SIGHT OF THE INTERIOR OF THE BUILDING FROM THE ENTRY IS FAMILIAR AND THAT VIEWS ARE UNOBSTRUCTED TO A RANGE OF OTHER PARTS OF THE CENTER. COLORS, TEXTURES, AND LIGHTING SHOULD BE SOFT AND HOME-LIKE.

RECOMMENDATIONS

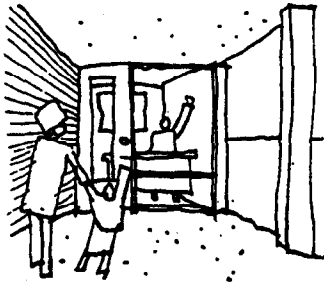


- From the entry, children and parents should be able especially to see a range of children's activity spaces, but unobstructed views of CUBBIES; ADMINISTRATION IN THE MAINSTREAM; PARENT-STAFF CORNER; MULTIUSE SOCIAL SERVICE AREA; any meeting spaces, and any special-use areas which might be especially appealing (e.g., plant-animal NATURE STUDY AREA, atriums, INDOOR SAND PLAY AREA, etc.)
- Unobstructed views must be checked at adult height (5 ft.) and at child height (20-30 in.).





TINTED GLASS WORKS
LIKE A MIRROR



CLEAR GLASS WOULD
MAKE ACTIVITIES
VISIBLE AND LESS
FOREBODING

- Use warm colors, bright accents, low general lighting levels and task lighting, textures, plants, and comfortable furniture to make views from entry inviting and familiar.
- An easily perceived coat-telephone area would help make the entry more usable.
- If there are multiple entries (e.g., SEPARATE SPACES FOR DROP-IN CARE), insure that WELCOME AT FIRST SIGHT is provided at each entry in keeping with the style of the interior spaces (e.g., A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS).
- Clear glass is not as reflective as tinted glass, and allows more visibility into interior spaces, so that approaching children and their parents can see activities inside.

RELATED ITEMS

INTEGRATION IN THE COMMUNITY CENTER
OBVIOUS ENTRY
DEVELOPMENTALLY APPROPRIATE PLAY YARDS
FRONT YARD AND FRONT PORCH
BUILDING AS A FRIEND
CHILD-SCALED ENVIRONMENT
CUBBIES
ADMINISTRATION IN THE MAINSTREAM
PARENT-STAFF CORNER
MULTIUSE SOCIAL SERVICE AREA
PLACES TO OBSERVE CHILDREN
NATURE STUDY AREA
SAND PLAY AREA
CLEAR CIRCULATION WHICH OVERLOOKS
BUILDING PERIMETER AS A CONTROLLED FILTER
SEPARATE SPACES FOR DROP-IN CARE
A SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS

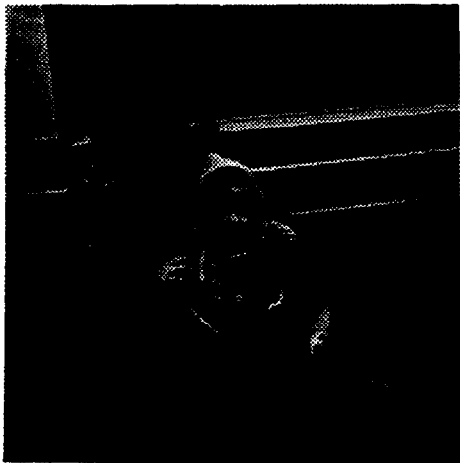
917 APPROPRIATE AREAS FOR PARENTS' PARTICIPATION

ISSUE

WHEN PARENTS BRING THEIR CHILDREN TO THE CENTER, THEY BECOME PARTICIPANTS IN IT (SANOFF, 1972). EXPECTED ACTIVITIES BY PARENTS IN CARE FACILITIES MAY INCLUDE SOCIALIZING WITH OTHER PARENTS, CONFERRING WITH STAFF MEMBERS, PLAYING WITH AND OBSERVING THEIR OWN CHILDREN, WORKING AS VOLUNTEERS, AND MEETING IN GROUPS FOR VARIOUS COMMUNITY-CENTER PURPOSES.

JUSTIFICATION

Parent involvement in the child-care experience outside the home is vital to the understanding of the child by staff. It is also important for cooperative work with the child by both staff and parents. Parents can continue the center's child-development activities at home if they are aware of them. Many centers wish to include a parent education and information service as part of the child-care program.



Parents also may need adult support for personal development. This help is most reasonably given by other parents with same-aged children. Parents can support each other through child-rearing crises if given frequent opportunities to meet.

Parents who are free during the day may wish to volunteer time to help in the child-care center. These volunteer workers are welcomed by most child-care staff. Some child-care centers have auxiliary parent groups who act as "PTAs" for fund raising, special projects, etc. These groups need to be able to meet in the center.

Parents who come to the center only to drop off children are still important users of the facility and their needs must be considered in design of entry sequence, waiting area, and informal conversation areas.



PATTERN

Three strategies to encourage parents to become involved in the child-care program are the following:

- Provide appropriate entry conditions to encourage parents to enter and linger for a while.
- Make almost all spaces welcoming and appropriate for parent use.
- Plan a progressively greater degree of participation as a parent moves through the center.

APPROPRIATE AREAS FOR PARENTS' PARTICIPATION

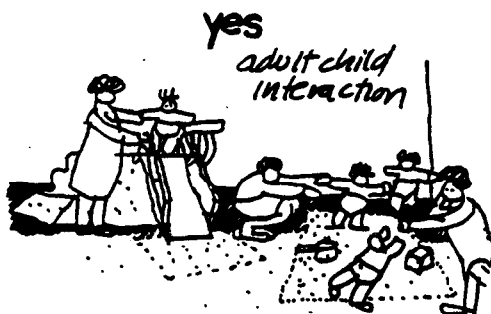
ALL CENTERS MUST BE PLANNED TO ACCOMMODATE PARENT USE. THIS PLANNING MUST ALLOW PROGRESSIVELY GREATER USE BY PARENTS, INCLUDING SIMPLE DROP-OFF AND PICK-UP AREAS, WELCOMING ENTRIES AND TRANSITIONS, AND SPECIAL PARENT-PARTICIPATION SPACES.



RECOMMENDATIONS

- Provide simple and convenient drop-off and pick-up spaces including covered entries (see PORTE COCHERE; FRONT YARD AND FRONT PORCH, and FRIENDLY FACES ENTRY SEQUENCE).
- Use by parents should be considered in designing entry-transition spaces, administration and staff spaces, and child-activity spaces.

- design the spaces to encourage adult-child contact



RELATED ITEMS

- Parent use of entry and circulation to child-activity spaces should be facilitated by clear circulation paths, high-lighting of entries and exits to and from circulation, and clear visual connection between circulation and adult spaces for parent use. Stop-off displays at adult height along the way would help lead parents on.
- Provide an inviting PARENT-STAFF CORNER with a view to the exterior car pick-up area and visual connection to other parts of the center (WELCOME AT FIRST SIGHT). These may overlap with other activity spaces.
- The entry-transition area to every major child-activity space is an important parent-use space, and should insure that parents can be out of circulation and yet not have to immediately enter the activity space. That is, there should be a sufficiently large entry-transition area at each major activity space (ca. 4-6 ft. deep) so that parents can meet or say goodbye to children, can help them dress or undress, or can quietly observe the children without having to become part of the activity (see also PLACES TO OBSERVE CHILDREN).
- Actual child-activity spaces might be made more inviting to parents by including some display space (e.g. of children's art work) at adult-eye level, some open storage at adult height ("Reach it for me, Daddy"), and some seating modes which can be comfortable for adults. Parents can then feel welcome to come in and play with their children for a while before leaving.
- Other parent spaces should be visible from major circulation but protected acoustically from children's activity circulation paths.

FRIENDLY FACES ENTRY SEQUENCE

PORTE COCHERE

BUILDING PERIMETER AS A CONTROLLED FILTER

PARENT-STAFF CORNER

STAFF BACK STAGE

ADMINISTRATION IN THE MAINSTREAM

VISIBILITY: WELCOME AT FIRST SIGHT

FRONT YARD AND FRONT PORCH

CLEAR CIRCULATION WHICH OVERLOOKS

PLACES TO OBSERVE CHILDREN

918 IMAGE: BUILDING AS A FRIEND

ISSUE

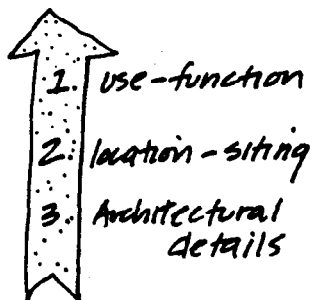
BEING ENROLLED AT A CHILD-CARE CENTER IS OFTEN A CHILD'S FIRST SEPARATION FROM PARENTS, FROM HOME, AND FROM FAMILIAR SURROUNDINGS. CHILDREN OF 2½ OR 3 ARE MORE ABLE TO HANDLE THIS TRANSITION THAN ARE YOUNGER CHILDREN, BUT ALL CHILDREN CAN FIND THIS EXPERIENCE DIFFICULT AND ANXIETY PROVOKING. INITIAL IMPRESSIONS OF THE CENTER--BOTH THE BUILDING AND ITS OCCUPANTS--CAN AFFECT ADJUSTMENT TO THE NEW ENVIRONMENT FOR BOTH CHILD AND PARENT.

JUSTIFICATION

People make assumptions about buildings and their inhabitants by the outward appearance of a building and its contextual setting. Buildings project certain "personalities" which make them seem warm and inviting in appearance, or cold and formal. A child-care center has the real possibility of being overwhelming to a child by its formality, size, and lack of friendliness. Both the site and the building should look like they "belong" to children and fit pleasantly into the physical context.

On several military bases visited, the image of the center and its program was considered by staff and director to be a main determinant of whether or not parents would bring their children to the center (see Travel Report, 1978). Parents want to be assured that the center is a safe place offering quality care. Child-care centers on Army bases created from renovated buildings have been found to have a negative image to the community. Parents may remember the former use and think that the child-care center is simply a reuse of old, inappropriate space.

why buildings are remembered



Research by Appleyard (1970) shows that people remember buildings first in terms of their use, second in terms of location, and third and last in terms of architectural details. The image is prevalent that child-care centers are no more than basements of old churches, and this negative image can influence enrollment.

Another negative image, especially of renovated, woodframe former-barracks, is that they are fire-traps, despite extensive renovation including fire-proofing and installation of sprinkler systems (e.g., Alameda Naval Air

Station Child Care Center, in Travel Report, 1978).

Considerations in creating a favorable image in the minds of parents, children, and other community members include the following:

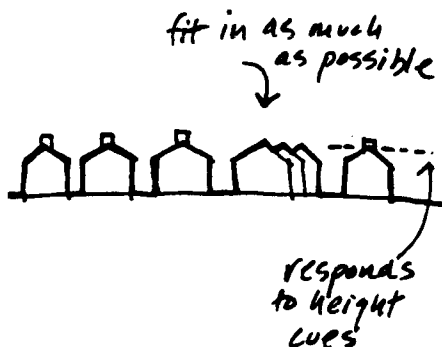
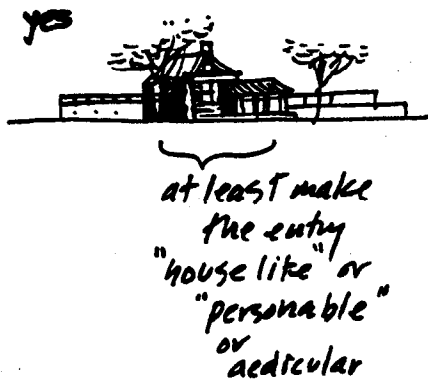
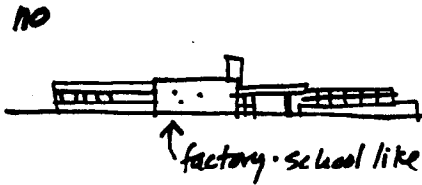
- compatability of the child-care center with the surrounding built environment
- compatibility with the natural environment
- use of home-like scale and building materials
- visual relation of the activity areas and the street
- an expression of newness and careful maintenance

Compatability With The Built Environment

Compatability with the physical context can be developed within the constraints of a child-care center by creating a building complex which forms "a collection of small buildings connected by arcades, paths, bridges, shared gardens, and walls" (Alexander, Ishikawa, and Silverstein, 1977, p. 471). The key, as Lili Peller (1972) has written is to create a "children's house."

Such special features can be arranged to form an interwoven connection of shared outdoor spaces between buildings along a street. The child-care center should be on the ground level of a multistory building to maximize the children's access to the site (see GROUND-FLOOR CENTERS).

Finally, buildings can be connected to form a single unit along a street rather than isolated buildings, each with its own scrap of useless outdoor space. Camillo Sitte (1965, cited in Alexander, Ishikawa, and Silverstein, 1977) referred to isolated buildings as a "foolish fad," saying that they appear like "a cake on a serving platter" (p. 534).



Compatibility, however, is not always desirable if the existing environment is sterile, formal, large-scale, and unresponsive to the natural environment. In this case, the key again is to create a child-care center, play yards, and site development which reflect the layout and character of children's homes and is compatible with siting constraints.

Compatibility With The Natural Environment

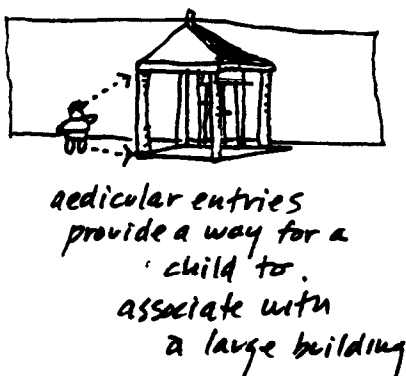
As noted by the AIA Research Corporation (1976), ideally, a building should be designed for the site on which it is built. By careful analysis, the building can be placed on the site with a minimum of disruption to natural features and with the greatest recognition and acceptance of distinctive aspects of the site.

It is especially important to maintain site features such as trees, hedgerows, ponds, left-over soil from excavations, rock outcroppings, and natural slopes which are appealing as play elements for children and which provide opportunities for learning about nature. In addition to the play and learning possibilities, natural elements help relieve the monotony of flat, unbroken expanses of play areas.

Use of Home-Like Scale and Materials

The center should welcome the approaching adult and child by suggesting that this is a "homey place, but not a substitute for a home" (Community Design Workshop, 1974, p. 52). Children will be more comfortable approaching the building if the scale is not imposing, if it is compatible with the architecture of the surrounding community, and if it is home-like in appearance.

Research by Van Wegen (n.d., as cited in Prak, 1977) has shown that people react to wood as being warm and friendly, while concrete and steel are thought of as cold, ugly, unfriendly and institutional; glass and brick have intermediate positions.



Visual Relation of Activity Areas and the "Street".

Osmon (1971) reports that the primary source of communication for a child is not signs and symbols, but rather viewing of activities. Brown and Venturi (1968, as cited in Osmon, 1971) developed a "storefront" approach which allows children to see some of what is going on inside before they enter. They noted that passersby could glance in without obligation or go inside to see what the center could do for them, and children were able to see other children inside in pleasant surroundings. The idea of windows for view for approaching people to see in is treated in more detail in FRIENDLY FACES ENTRY SEQUENCE, BUILDING PERIMETER AS A CONTROLLED FILTER, and OBVIOUS ENTRY.

Another way for people to view activities is to turn the center inside-out, i.e., have the approach to the building be through play yards and have the play yards near the community path with movement (e.g., Pacific Oaks College Children's School, see Travel Report, 1978).

Expression of Newness and Careful Maintenance

The building should appear not as a partial renovation, but rather as a new building with a clear, clean image (as well as internal, structural, or organizational renovations which may contribute only indirectly to this image).

A renovated building may require new exterior cladding, and new, improved landscaping. An important aspect of the new look is the element of professional image which conveys competence and assurance, especially for adults. This might require treatment which is home-like yet not house-like characteristics. Contemporary architectural renovation styles are also effective tools in suggesting a new program and a new spirit in a renovated building.

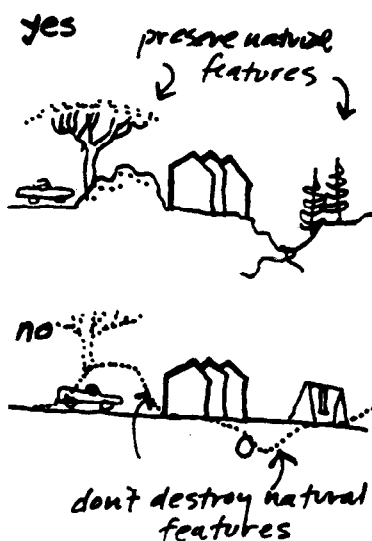
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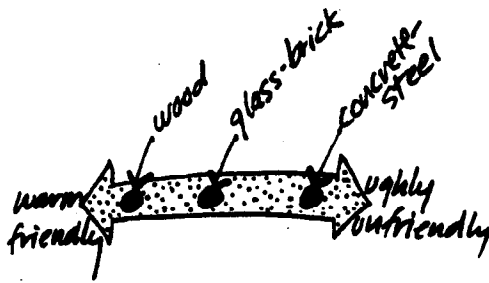
BUILDING AS A FRIEND

DEVELOP THE BUILDING AND THE SITE TO MAXIMIZE THE CENTER'S POTENTIAL AS AN INTEGRATED, RECOGNIZABLE PART OF THE COMMUNITY. MAKE PHYSICAL CONNECTIONS WHICH EMPHASIZE THIS INTEGRATION, YET DO NOT DESTROY ANY FRAGILE ON-SITE ECO-SYSTEMS. USE FAMILIAR, HOME-RELATED ELEMENTS AND SCALE, AN ABILITY TO VIEW SOME OF THE ACTIVITIES FROM THE OUTSIDE, WARM BUILDING MATERIALS, AND A NEW LOOK TO RENOVATED BUILDINGS TO HELP CREATE A CHILDREN'S HOUSE.

RECOMMENDATIONS

- Unless the adjacent environment is sterile, formal, large-scale, and unresponsive to the site, select an architectural style which responds to the image of the neighborhood.
- If possible, use outdoor space common with adjacent buildings (e.g., if a child-care facility is integrated into a housing complex).
- Create one-story buildings and pick up height cues along the street.
- Ensure access to the site from all children's activity spaces.
- Preserve all special natural site features. Incorporate these features into the outdoor play area to enable children to learn through hands-on experiences with nature.
- If the site is barren, special effort should be made to provide natural areas. Even very small natural areas will be intensively used by children for their investigations. Locate such spaces in sunny places with shade provided by trees or shrubs. Allow children to have an area in which they can plant and tend "natural things."
- Use home-like scale for doors, windows, roof forms, pathways, landscaping. Use "warm" materials such as wood, common brick, etc. in the exterior of the building.





- Allow passersby some glimpses of activities.
- Make renovations appear more than cosmetic with use of contemporary architectural elements which will help signal outside a big improvement in the program inside.
- Use easy maintenance materials to keep the "new" look fresh (e.g., stain wood, don't paint it).

RELATED ITEMS

CREATING FAVORABLE MICROCLIMATES

OBVIOUS ENTRY

FRIENDLY FACES ENTRY SEQUENCE

BUILDING PERIMETER AS A CONTROLLED FILTER

DEVELOPMENTALLY APPROPRIATE PLAY YARDS

NATURE STUDY AREAS

GROUND-FLOOR CENTERS

ISSUE

CHILDREN IN A CHILD-CARE CENTER WILL BE LEARNING TO CARE FOR THEMSELVES AND BECOME PROGRESSIVELY MORE INDEPENDENT. THE WAY THE BUILDING IS DESIGNED AND DETAILED CAN EITHER HINDER OR EXPEDITE THIS GROWTH.

JUSTIFICATION

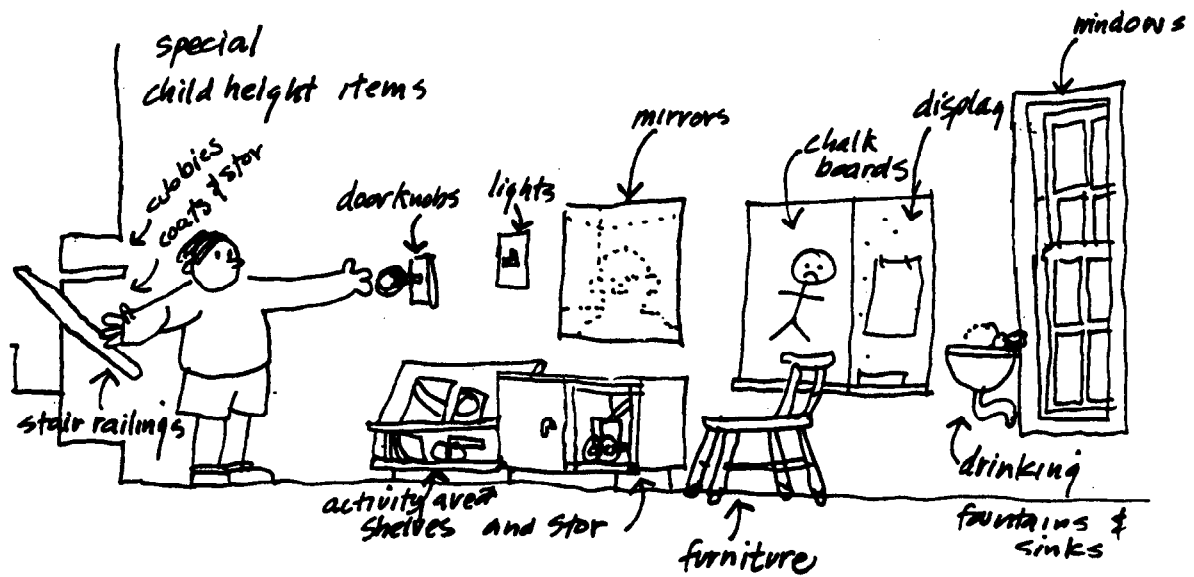
doing things for yourself



Children enjoy being able to take care of themselves. The day a child learns to put on clothing, tie shoes, etc., is very significant. When children can contribute to their own care a more positive self-image is developed; a child gains confidence in manipulating the environment, develops coordination and a sense of adequacy, and becomes more aware of concepts of order and space.

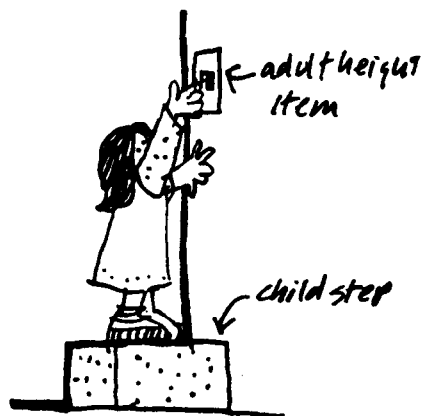
Though empirical evidence is lacking, some people have argued that children will not engage in genuine exploratory and discovery behaviors unless they first feel comfortable and secure in their physical surroundings (olds, 1978). To support the development of these processes, and thus mastery, a sense of adequacy and self-confidence, the argument continues, it is important that children's spaces be inviting, comfortable, and familiar to the child. One aspect of familiarity, quite obviously, is a familiar scale. Over-arousal may be engendered by vastness of a building and its spaces in relation to the size of the child.

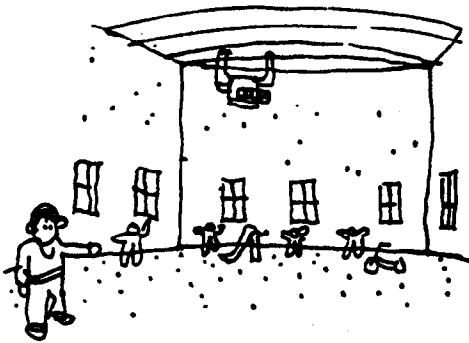




Involved in this aspect of child-scale are doorknobs, lockers, cubbies, drinking fountains, windows, sinks, toilets, mirrors, furniture, chalk-boards, stair rails, and light switches (Prescott and David, 1976). Elements used to personalize homes (such as pillows, plants, soft furniture, etc.) can contribute further to a feeling of a familiar scale (Olds, 1978).

There may be disagreements about how much of the building should be child-scaled. One problem is the difficulties care givers will have using child-height switches, knobs, etc. Another objection which may be raised involves the fact that most of a child's daily environment is adult-scaled and children must learn to cope with that environment. It appears that some parts of a child's environment should include both scales.





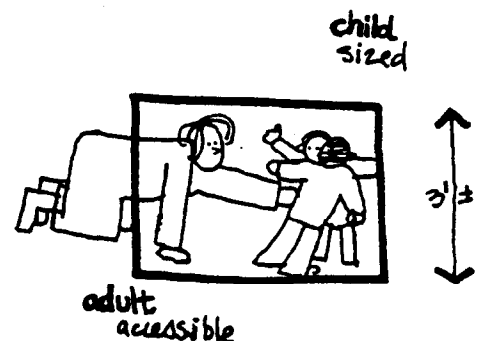
Another aspect of the child-scaled environment is the size and shape of the spaces themselves. All people, adults and children, feel somewhat intimidated by large, undifferentiated spaces. Without indications and elements which relate space to people, use will remain ambiguous and uncomfortable.

The shape of space, and in particular, the relation of size and ceiling height, are complicated by several factors. For children, a low ceiling height would be appropriate for most activity spaces. Small spaces for quiet activities could even be 4 feet high. But in a space where children and caregivers participate together, ceiling heights must obviously be at least 7 ft. high. However, Osmon (1971) argues that in a setting with such a low ceiling, the adults will appear even more dominant to the children as they occupy so much of the vertical space.

Esherick (as cited in Osmon, 1971) suggests a ceiling height which is not definitely perceived by children (i.e., 10-11').

It must be pointed out, nevertheless, that these are pure speculations--we are unaware of any empirical data on the issue of whether adults are perceived as giants in low spaces, though common wisdom expressed by many child-care people is that children are more aware of the scale of space relative to their own size than to adults' size.

Another scale-related manipulation is to provide some child-sized spaces where adults must kneel, some level changes where children can crawl up to be eye-to-eye with adults (Taylor and Vlastos, 1975). The result of this lack of environmental intimidation should be increased confidence in exploration and independence.



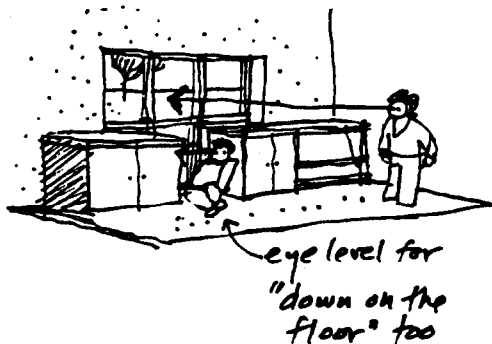
PATTERN

CHILD-SCALED ENVIRONMENT

THE SCALE AND SIZE OF BUILDING ELEMENTS SHOULD MAKE IT POSSIBLE FOR CHILDREN TO USE SPACES INDEPENDENTLY AS READINESS INDICATES. COMFORT FOR BOTH CHILDREN AND CAREGIVERS WILL REQUIRE SOME COMPROMISES BETWEEN CHILD-SCALE AND ADULT-SCALE. THE CONFIGURATION OF ACTIVITY SPACES SHOULD NOT ALLOW CHILDREN TO FEEL DOMINATED BY AN ADULT PRESENCE.

RECOMMENDATIONS

- The square footage of spaces should be child-scaled; this will occur by making spaces appropriate for only 2 to 5 children (see RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN).
- With only a few exceptions (like the MULTIPURPOSE-MOTOR ACTIVITIES SPACE; DEVELOPMENTALLY APPROPRIATE PLAY YARDS), the maximum size spaces should be is for 14-16 children, i.e., 490-800 sq. ft.
- Ceiling heights may vary between 4 ft. and 11 ft.
- In child activity spaces, scale items to fit children. Many things may also include adult-scaled equivalents. Consider the following:
 - doorknobs
 - lockers and cubbies
 - drinking fountains
 - windows
 - sinks
 - toilets
 - mirrors
 - furniture
 - chalk boards
 - stair rails
 - light switches
- Provide as many soft things in the environment as possible, e.g., floor cushions against window seats or lowered alcoves; grass, sand, and dirt, outdoors for sure, and likely indoors as well; animals in nature-study area, and soft material like soft chairs, clay and play dough and of course "laps."



- If things are not child-scaled, provide ways for children to use adult-height items (e.g., a step up in place for children).

RELATED ITEMS

RESOURCE-RICH ACTIVITY POCKETS FOR 2-5 CHILDREN
MULTIPURPOSE-MOTOR ACTIVITIES SPACE
DEVELOPMENTALLY APPROPRIATE PLAY YARDS
NATURE STUDY AREA
SAND PLAY AREA
WORKING WALLS
FLEXIBLE FURNISHINGS
CHILD-SCALED BUILDING MATERIALS
ACCESSIBLE AND OPERABLE HARDWARE

920 AN ENVIRONMENT THAT RESPONDS

ISSUE

THE CREATIVITY OF A STAFF MEMBER MAY BE USELESS IN AN ENVIRONMENT THAT IS OVER-DESIGNED OR SAYS "DON'T TOUCH ME." INNOVATIVE THINKING ABOUT SPACE USE WILL ALSO BE STUNTED.

JUSTIFICATION

Children's needs change from age to age, group to group. In order to best accommodate such changes, staff creative efforts should be channeled into program modifications and improvements rather than into fighting a building which is unresponsive.

Staff and children must have obvious, at-hand methods for altering the environment. Walls, ceilings, floors, columns, structural elements, lighting, furnishings, all can be designed to increase the ease of making such changes.

One of the most vocal advocates for responsive children's environments is Anne Taylor, a New Mexico designer and educational consultant (see Taylor and Vlastos, 1975). She argues that to encourage a variety of skill developments in children (e.g., psychomotor skill development), the overall character of the space should be able to be manipulated not only by the staff, but also by the children at a moment's notice. This can be achieved by having a large number of light, soft manipulables available which can be moved around (e.g., extremely large pillows, loose carpets, lightweight furniture, stretch fabric with a variety of places it can be hung from or stretched between, untraditional furniture like block and board furniture which can be used as furniture or as space-defining or bounding elements).

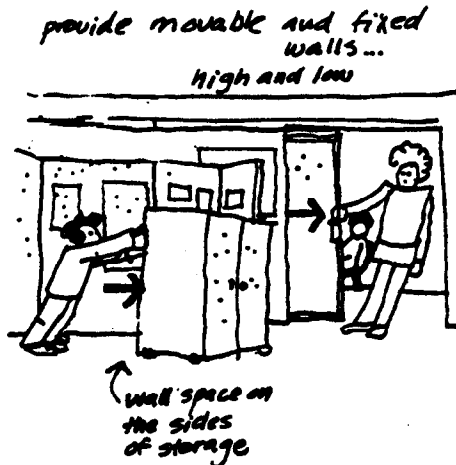


PATTERN

AN ENVIRONMENT THAT RESPONDS

WHEN PLANNING THE PHYSICAL ELEMENTS OF THE BUILDING, DESIGN IN WAYS THAT THE BUILDING CAN BE DYNAMIC RATHER THAN OVER-DESIGNING AN ENVIRONMENT WHICH IS "PERFECT" AND STATIC.

RECOMMENDATIONS



- Use structural elements and other cues to indicate space divisions rather than building solid walls which cannot be altered.
- Make floor level changes by means of movable platforms rather than concrete.
- Use movable walls and fixed walls as part of the program (see WORKING WALLS).
- Leave at least some walls and some columns or the structural members semi-finished to permit and encourage staff and children to paint them themselves, and even to be able to attach partitions or props against them (e.g., the multipurpose room at the Alameda Naval Air Station Child Care Center; see Travel Report, 1978).
- Use the ceiling as a storage and hanging place; furnishings, equipment, partitions, etc., can all be hung from the ceiling and lowered as needed; overhead rods can be provided from which staff can hang drapery, plants, and other space definers.
- Use furnishings which have many uses and can be easily moved by staff to help create activity areas (see FLEXIBLE FURNISHINGS).
- Provide a number of soft, movable parts, like overstuffed pillows which can be stacked to form a seating area.
- Task lighting which can be moved to follow activities and create highlights where needed (e.g., track lighting) makes more sense than fixed, ambient, general illumination.
- Storage can be anywhere. For suggestions see Taylor and Vlastos (1975).

RELATED ITEMS

SIMPLE STRUCTURAL SYSTEMS ON DISPLAY
 WORKING WALLS
 FLEXIBLE FURNISHINGS
 FLOOR FUNCTIONS WITHIN THE PROGRAM
 LIGHTING APPROPRIATE TO ACTIVITIES
 NEVER-TOO-MUCH CHILD-ACCESSIBLE STORAGE

921 MODIFICATIONS TO HOMES FOR FAMILY CHILD CARE

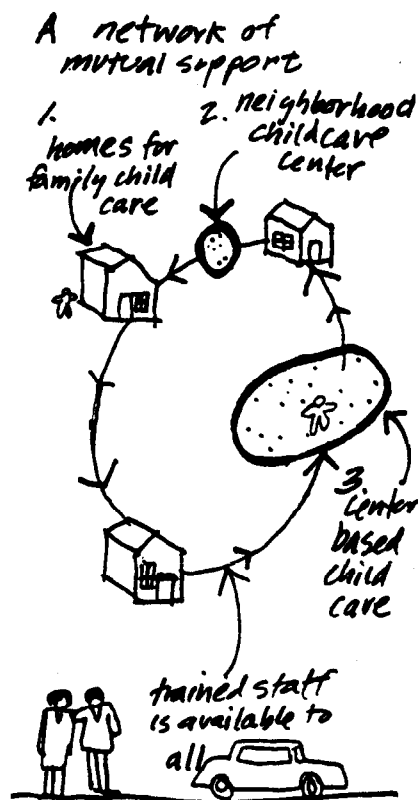
ISSUE

1975 NATIONAL ESTIMATES WERE THAT 40% OF CHILD CARE OCCURS IN FAMILY CHILD-CARE HOMES. HOMES PROVIDE A VIABLE AND NEEDED SUPPLEMENT TO CENTER CARE BUT REQUIRE MINOR MODIFICATIONS TO MAKE THEM BETTER PLACES FOR 6 CHILDREN.

JUSTIFICATION

Family-based child care has the advantage of keeping children of the same family and close neighbors together. As Cohen (1974) points out in a national HEW document on child care, the setting of family child-care homes is the most natural setting for young children. It is also possible to get trained staff members and the resources of a larger center if it is linked into a NETWORK OF CHILD-CARE FACILITIES.

On the other hand, to offer the best of developmentally oriented care, the home not only needs a qualified person (Abt Associates, 1979) but also requires a safe and developmentally appropriate facility. The homes of those who are prepared to offer this service may not meet these requirements.



1975 National data (National Child Care Consumer Study, 1975, reported in the U.S. Senate Committee on Finance, 1977) indicates that upwards of 40% of children receiving some form of child care are in family child-care homes operated by non-relative. Another 50% are being cared for either in their own home by a non-parent, non-sibling relative or in another home with a relative; the need for alternatives to center-based care is obviously very great.

AR608-1 allows for family child-care centers to provide for child-care activities with the approval of the installation commander. As mentioned above, if FAMILY CHILD-CARE HOMES (are integrated) IN THE NETWORK, the potential disadvantages of these alternatives (lack of control, lack of qualified care, lack of child-oriented resources, and lack of appropriate renovations and repairs to the facility) can be eliminated.

Since they are an element of the Child Support Services Program, recommendations need to be made for the modifications of homes within the confines of Army regulations which prohibit the use of appropriated and non-appropriated funded structural changes. Thus, simple inexpensive changes are required both within the building and surrounding yards to make the physical space better for child care and child development.

PATTERN

MODIFICATIONS TO HOMES FOR FAMILY CHILD CARE

MODIFY EXISTING HOMES FOR SAFETY, AND TO PROVIDE BETTER SETTINGS FOR CHILD CARE AND CHILD DEVELOPMENT IN ORDER TO MAKE THEM INTO DEVELOPMENTALLY APPROPRIATE FAMILY CHILD-CARE HOMES AS PART OF THE CHILD-CARE NETWORK.

RECOMMENDATIONS

For general safety, check for and correct the following:

- wiring and extension cords which are accessible to children
- loose rugs and flooring
- household chemicals and drugs in unlocked cabinets
- unscreened windows
- open stairways
- toxic paints
- curtain or blind cords hanging within child's reach
- doors (e.g., bathroom) which can be locked from inside
- electric appliances, heaters in reach of children
- uncovered radiators
- Seating for children at their scale may be crates, kegs, pillows, stools, etc.



- heavy objects, breakable objects, etc. within the reach of children. (Further information on safety may be obtained from Seefeldt and Dittman, 1973, pp. 28-30).

For Fire Safety:

- Family child-care homes will comply with the section on Group Day Care Homes in NFPA 101-9-5.4.



For each child's personal storage:

- unused kitchen cabinets
- cardboard boxes
- plastic dishpans (TOTE TRAYS)
- putting shelves in a closet
- all types of boxes, cans, milk cartons, etc. which can store loose objects for play on shelves
- wooden crates form nice shelving when stacked
- bricks and boards can be used for low shelving

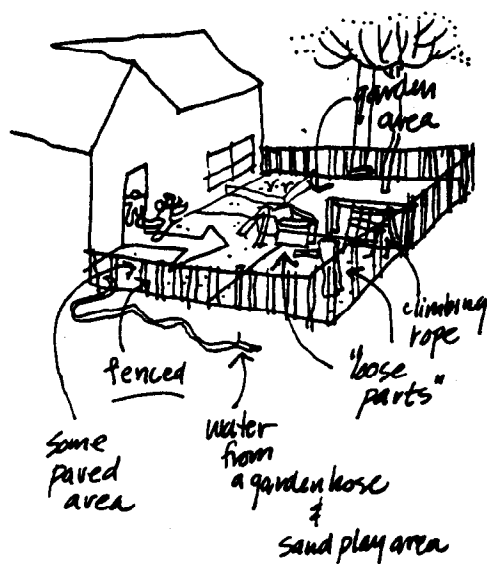
Indoor play space:

- Include some open space for movement, floor for movement, floor space for building toys, table space at child scale, and seating space at child scale.
- Provide one fairly large room with a furniture arrangement which can be easily moved out of the way to allow open space for circle games, dance, block building, etc.
- Existing table space can be adapted to children by protecting dining tables, coffee tables, etc. and adding lifts to seating with phone books, etc. An easier arrangement for children to reach might be a secured plank across 2 boxes, chair seats, kegs, etc.

- All home-made storage and furniture must be sturdy, splinter-free and without sharp edges--sand or cover rough wood; counter-sink nails; attach pieces with nails, screws, etc. rather than allowing them to rest loosely stacked.
- Use walls for pin-up space, drawing space, blackboard space, etc.
- Cork, painted Celotex, or other display backings can be easily attached to walls.
- A wall covered with clear Contac paper plus water-soluble markers will make a drawing place.

Outdoor play environment:

- The yard must be fenced and protected.
- The easiest and most effective play areas for homes will be those made of manipulables and "loose parts" rather than normal swing sets, etc. Examples:
 - sand and water and a place for sand and water play (from a garden hose into an old tire, etc. would be fine)
 - a rope hanging from a tree limb
 - garden plants children can help plant and cultivate
 - pieces of wood which can be "built" into play houses, etc.
 - a climbing net or steps, etc.



For further ideas on outdoor environments, see *DEVELOPMENTALLY APPROPRIATE PLAY YARDS and Recommendations for Child Play Areas* (1979).

RELATED ITEMS

NETWORK OF CHILD-CARE FACILITIES
 FAMILY CHILD CARE IN THE NETWORK
 DEVELOPMENTALLY APPROPRIATE PLAY YARDS
 FLEXIBLE FURNISHINGS
 ACTIVITY-APPROPRIATE TEXTURE AND COLOR CUES
 ACCESSIBLE AND OPERABLE HARDWARE
 WORKING WALLS

INDIVIDUAL SPACE CRITERIA

1000

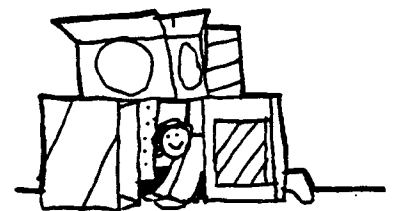
The following patterns are recommendations for particular types of activities which should be included in a comprehensive child care program. They also are recommendations for the necessary architectural qualities of spaces to support these activities. The overall organization of these spaces into a well-defined building is covered above in the patterns for Building as a Whole. The below patterns detail the design considerations and criteria for the design of constituent activity spaces within the overall envelope.

The design of a child care center should be influenced simultaneously by site considerations (see Site Design and Development), by overall organizational considerations (Building Organizing Principles), and by the demands of the activities being housed (the patterns below).

This chapter includes behaviorally-based patterns and functional, dimensional, relational, and technical criteria for each individual space in a child care facility.

See the matrices at the end of the guide for assistance in selecting which activity spaces and patterns to include in a child care center program based on developmental goals and program activities.

- 1001 Porte Cochere
- 1002 Porches and Decks as Activity Spaces
- 1003 Friendly Faces Entry Sequence
- 1004 Administration in the Mainstream
- 1005 Parent/Staff Corner
- 1006 Staff Back Stage
- 1007 Multi-use Social Service Area
- 1008 Resources at the Heart
- 1009 A Room Which Can Be Darkened
- 1010 Multipurpose/Motor Activities Area
- 1011 A Place for Building
- 1012 Block Play Area
- 1013 Indoor Sand Play
- 1014 Liquid Oasis
- 1015 Nature Study Area
- 1016 Reading/Listening Area
- 1017 Arts and Crafts Area
- 1018 Music Nook
- 1019 Special Place for After-School Drop-Ins
- 1020 Infant Circle of Activity
- 1021 Toddler Transitional Territory
- 1022 Separated Infant-Toddler Napping
- 1023 Preschooler Napping Places
- 1024 Intimate Diapering Area
- 1025 Learning Bathrooms
- 1026 Children in the Kitchen
- 1027 Eating Clusters
- 1028 Sick Bay
- 1029 Laundry Area
- 1030 Maintenance and Service Spaces
- 1031 Non-Interfering Mechanical and Electrical Space

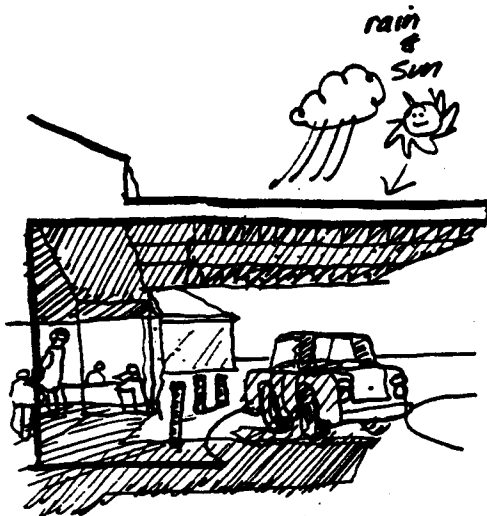


1001 PORTE COCHERE

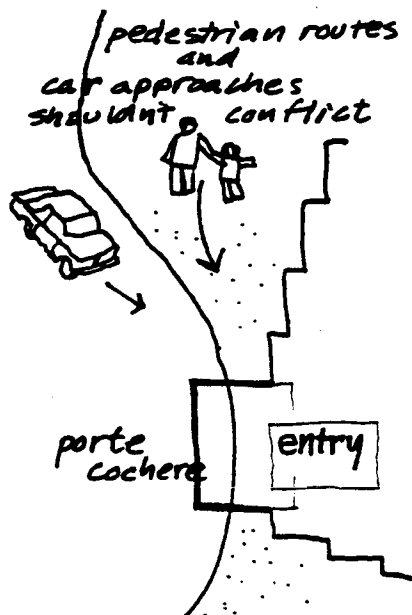
ISSUE

MANY PARENTS NEED TO GO TO WORK IN THE MORNING AND ONLY HAVE TIME ENOUGH TO QUICKLY DROP OFF THEIR CHILD(REN). DROP-OFF AND PICK-UP ALSO SOMETIMES HAPPEN IN INCLEMENT WEATHER.

JUSTIFICATION



Parents who must cope with strict schedules will find concern with the amount of time which is necessary to drop the child at the child-care facility and go on to work. No matter how much they may appreciate the quality and developmental relevancy of a child-care program, they will be unhappy if the design of the center makes dropping-off children complicated and inconvenient. As found from our site visits (Travel Report, 1978), parents should be easily able to approach the center, take the child in and leave, and, if possible, not even have to turn the car engine off.



The old "porte cochere" may provide a possible solution. It consisted of a roofed space where vehicles could stop for a few minutes directly in front of an entry door. Occupants were able to get from vehicle to building with minimum exposure to inclement weather. For parents and children this could work well as long as the porte cochere did not interfere with other vehicles entering or leaving the longer-term parking area.

Since parents must enter the facility with children, they must be able to leave their cars for a few minutes. This may imply that a porte cochere should actually allow 2-4 cars at a time to stay underneath it.

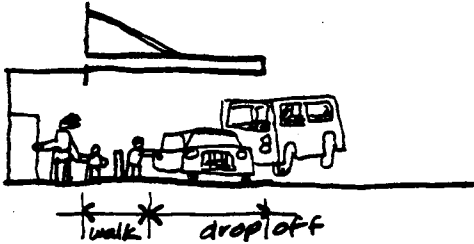
Further, a porte cochere cannot interfere with pedestrian access to the center since walking is intimate to the schema (see PROXIMITY TO HOME).

PATTERN

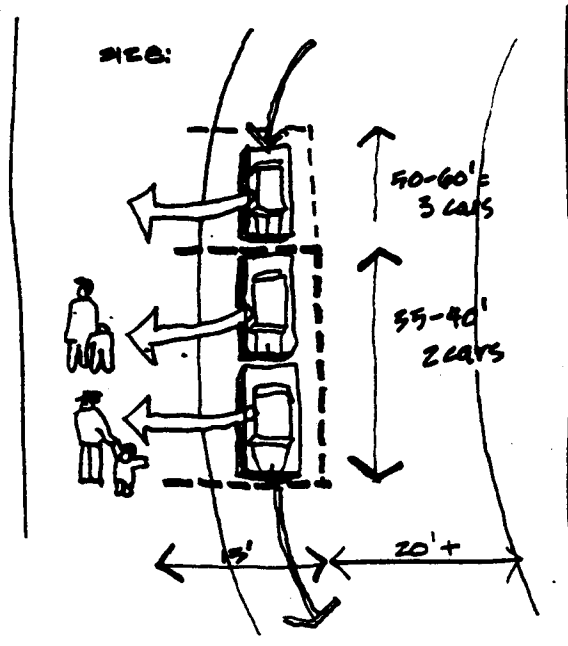
PORTE COCHERE

A ROOFED AREA SHOULD BE PROVIDED IN FRONT OF THE ENTRY WHERE 2-4 CARS CAN STOP FOR A FEW MINUTES WHILE PARENTS TAKE THEIR CHILDREN INTO THE FACILITY.

RECOMMENDATIONS



- The building design could include an extended roof in front of the entry which will allow both pedestrians and car passengers to reach the entry without being exposed to precipitation.
- Enough standing space should be provided under this roof for 2-4 cars.
- The car-waiting space cannot block either pedestrian access to the center or vehicular access to prolonged parking areas.



RELATED ITEMS

ACCESS AND SITE CIRCULATION
 PORCHES AND ACTIVITY SPACES
 OBVIOUS ENTRY
 CONTROLLED ACCESS

1002 PORCHES AND DECKS AS ACTIVITY SPACES

ISSUE

CHILDREN WILL USE OUTDOOR SPACE AS AN EXTENSION OF INDOOR ACTIVITY SPACE YEAR-ROUND IF PROTECTION IS PROVIDED. USABLE SPACE FOR SPECIFIC ACTIVITIES MAY THUS BE DOUBLED AT VERY LOW CONSTRUCTION COST.

JUSTIFICATION



Child development experts agree that time outdoors is important to children all year round. In British preschools, children spend a significant portion of each day outdoors even during the winter. If children are dressed properly they will enjoy outdoor activity in all but the most severe weather (Pollowy, 1977).

Properly sited and protected outdoor areas must be provided. In all areas of the U.S. visited, the research team found variations of porches, decks, or steps being heavily used by child-care facilities (Travel Report, 1978). From old-fashioned railing-ringed, raised porches on converted houses to wide overhangs on post-and-beam-built new facilities, sheltered outdoor environments provided important extensions of space for indoor activity areas.

Many activities seem, *prima facie*, to gravitate to outdoor-related space (e.g., sand and water play, arts and crafts, building and construction, cooking and picnicking, animal and nature areas, etc.). For these activity spaces, a corresponding outdoor space would be desirable.

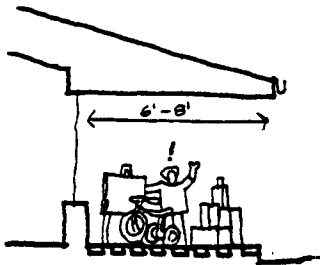
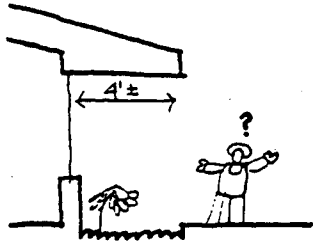
PATTERN



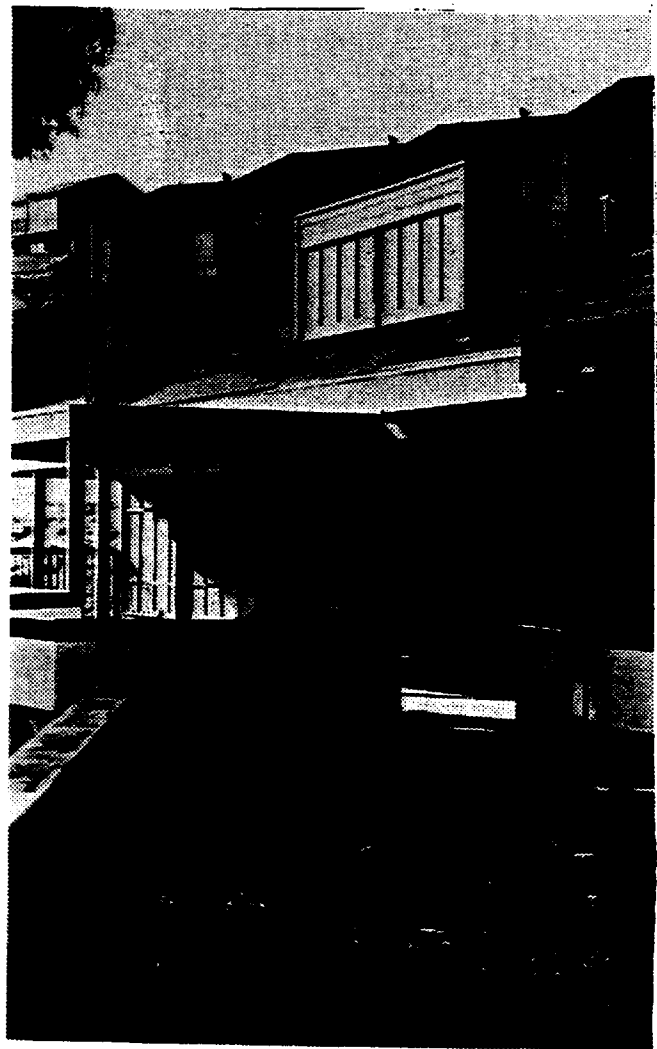
PORCHES AS ACTIVITY SPACES

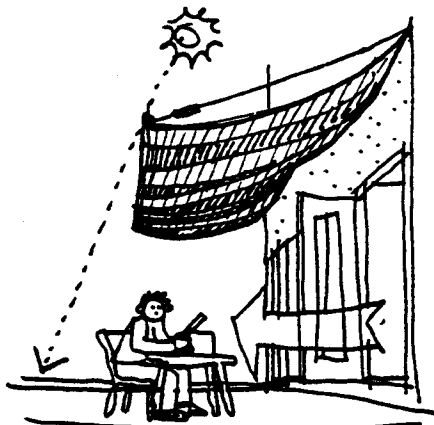
SHELTERED OUTDOOR ACTIVITY SPACES, ACCESSIBLE TO RELEVANT INDOOR SPACES, WILL INCREASE USABLE ACTIVITY SPACE, EXPAND CHILD-TIME OUTDOORS, INCREASE PLAY POTENTIAL OF OUTDOOR AREA, AND MAKE POSSIBLE NEW ACTIVITIES NOT USUALLY DONE INDOORS (E.G., COOKING OVER AN OPEN FIRE).

RECOMMENDATIONS



- The "porch" or otherwise sheltered outdoor space (e.g., a deck, a well-defined area which can be partially covered by an awning or tarp, or even wide steps with a large overhang) should be integral to building design.
- Minimum width of usable porch space should be 8-9 ft. (residential requirement for a balcony is 6 ft. wide, see Alexander, Ishikawa, and Silverstein (1977), Pattern 167, P. 781).
- Porches should be planned on the most sheltered side of the building (sunny side, away from prevailing winds in colder climates).





*indoor activities
extended out of
doors*

- The porch should relate directly to the appropriate indoor activity areas.
- The porch may be used for rainy-day play area, therefore it should drain easily and have a quick-dry surface.
- Close proximity to clean-up area (SHORT TROT TO THE POT) would be helpful.
- Progression of most sheltered area next to building to most open area farthest into outdoor play would make play space most usable--children can expand or retract their use of play areas as the weather dictates. This means that surfaces which dry most quickly should be nearest the building, and those which dry most slowly should be farthest away. Activities which provide some weather protection (e.g., play structures, covered sand, etc.) will be closest to porch.
- A wall-type shelter may sometimes be appropriate and may be accomplished by roll-down canvas at roof edges or other flexible-use wall system.

RELATED ITEMS

CONTROLLED ACCESS
INDOOR-OUTDOOR RELATION
ENTRY TRANSITION

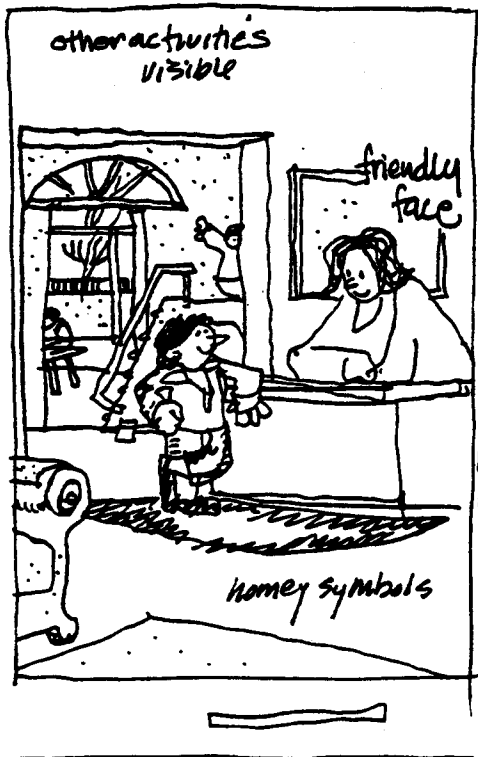


1003 FRIENDLY FACES ENTRY SEQUENCE

ISSUE

CHILDREN AND PARENTS COMING TO THE CENTER WILL BE PARTING FROM EACH OTHER IN WHAT COULD BE EITHER A WARM AND REASSURING SITUATION OR A FORMAL, INDIFFERENT AND POTENTIALLY UNHAPPY ATMOSPHERE.

JUSTIFICATION

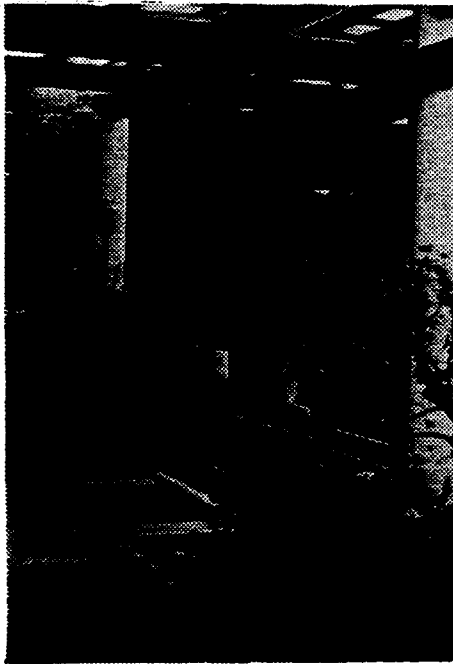


Attachment behavior emerges in most children during the sixth or seventh month and increases in intensity until twenty-four months. During this period, children have difficulty tolerating separation from "mother," any separation being a major cause of anxiety. Bowlby . . . reports that after their first birthday, children are more likely to be content in a familiar setting upon the departure of their "mother." . . . Attachment behavior is still strongly exhibited until the age of three years. After that point, the temporary absence of "mother" is better accepted if the child is secure in being able to resume contact and if familiar people are present. (Pollowy, 1977, pp. 9-15)

The key words for designers are obviously "familiar setting" and "familiar people." Entry-transition sequences between outdoors and indoors, between indoor circulation and activity spaces, and between with-parent areas and without-parent areas are thus very important design problems.

The most familiar setting to a child is, of course, home. The elements of home which may be transferable to a child-care center could be:

- "friendly entry"- first indoor space for both parent and child should complete the feeling of enclosure and protection. Use of homey elements such as carpet, warm colors, low light level, and sights of "familiar People" (administrative personnel) will help.



- "threshold" - Alexander (1966b) recommends that a "natural threshold" such as a railing, a few steps, or a gate, be provided as a definite place near the entrance to a child's place where children can part from their parents. Such spaces encourage children to form a positive image of the center as a safe, friendly place to be without their parents. This parting place will also provide some protection for goodbyes which a child may wish to say privately. This will also be the place where the child is greeted and welcomed by the substitute parent--the staff person.

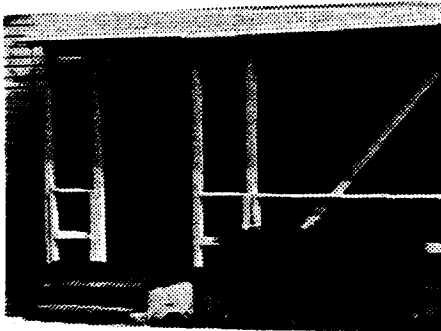
The whole sequence from yard to a child's own activity space should be a progressively more sheltered and pleasant experience, thus helping the child feel "at home," secure, and ready to part from the parent. During the whole experience, the child should see and be welcomed by familiar people.

PATTERN

FRIENDLY FACE ENTRY SEQUENCE

PROVIDE A FRIENDLY FACE TO APPROACHING AND ENTERING CHILDREN, COMPRISED ESPECIALLY OF ENTRY THROUGH A SMALL YARD, AND-OR A SEMI-ENCLOSED PORCH, ENTRY HIGHLIGHTED BY CLEAR VIEWS OF FRIENDLY STAFF PERSONNEL, AND A FRIENDLY "DOOR" TO THE CHILD'S PRINCIPAL ACTIVITY SPACES.

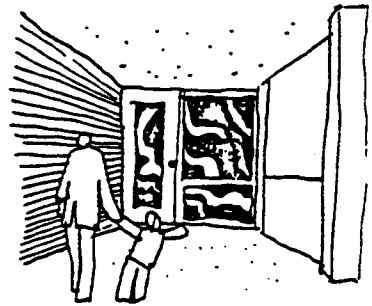
RECOMMENDATIONS



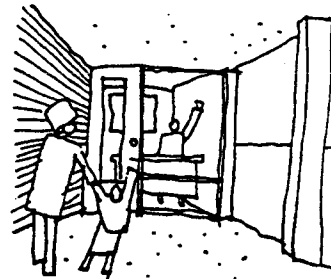
- Use the "front yard" and "front porch" as an integral part of the entire approach-entry sequence.
- Familiar Entry--the entry should have sightlines to administrative people and to child-activity areas. Entry and paths to activity areas should be warm and homey in colors, surface textures, and lighting (see also PARENT INVOLVEMENT; INTERIOR VISIBILITY).

- Threshold--a distinct threshold between parent-child and child activity areas should exist where children and parents can part and staff can welcome children in a somewhat private area. This threshold should not be a closed space, but a well-defined, private, open space defined by partial partitions, changes in level, changes in light quality, provision of TOTE TRAYS, CUBBIES, etc. Just off this threshold may be a private spot for staff-parent conferences.
- Glass--extraordinarily large expanses of glass may hinder vision by creating reflections, in addition to imposing on the privacy of those inside. Osmon (1971) has suggested an open but not traversable space 10-20 ft. in depth between the approaching path and the windows. At this distance, pedestrians can see in but occupants will not be made to feel uncomfortable under their watch.

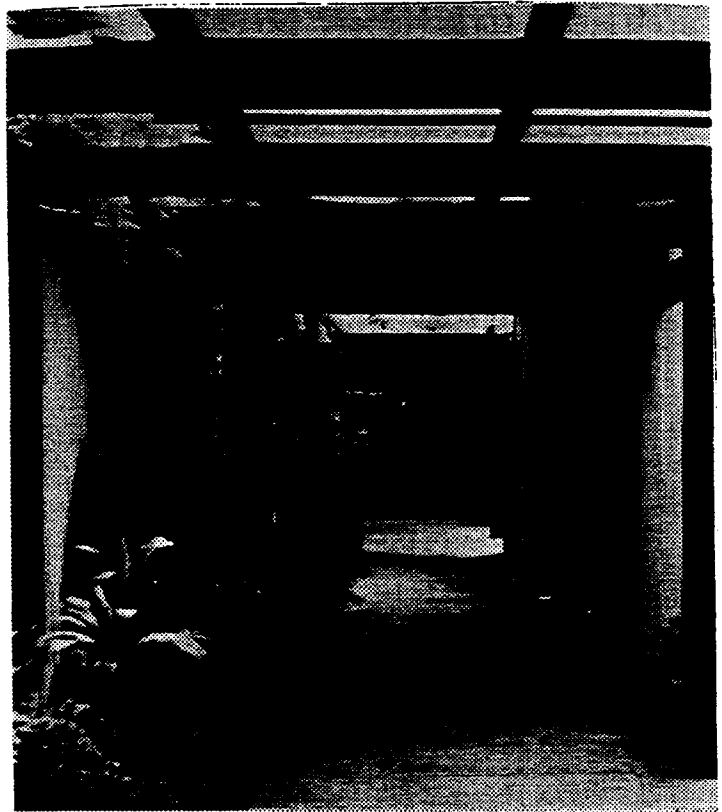
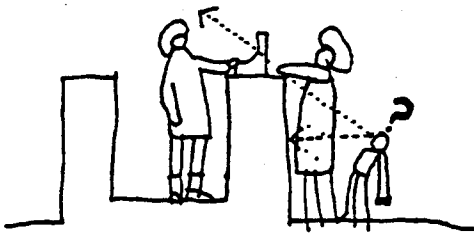
TINTED
GLASS
WORKS LIKE
A MIRROR

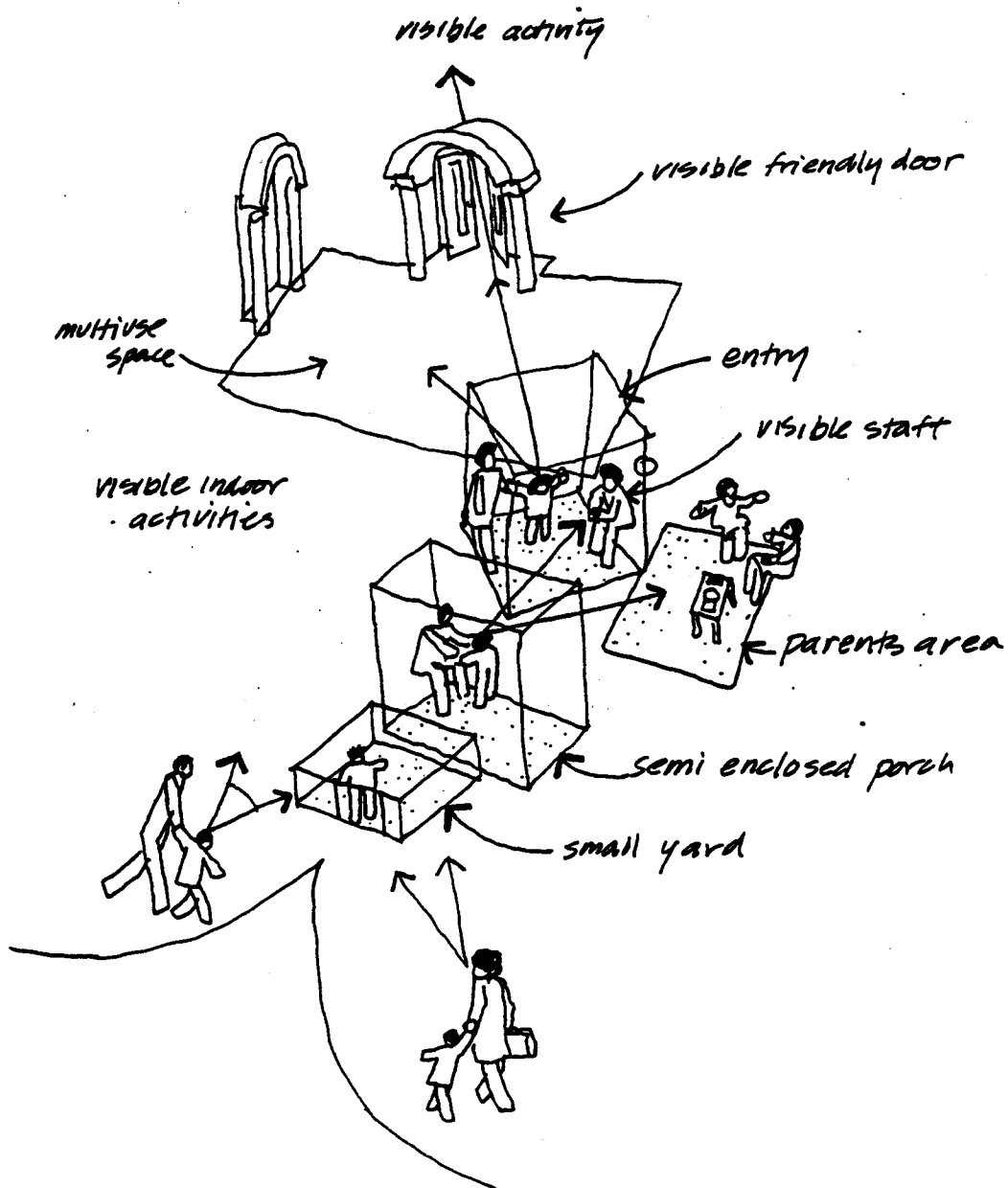


CLEAR GLASS
WOULD MAKE
ACTIVITIES
VISIBLE AND
LESS FOBODING



- **Pleasure Passage**--consider the possibilities of using level changes, colors, textures, slides, bridges, lights, windows, smells, and sounds to create a child-oriented passage from entry to activity spaces.
- **Reception Station**--the reception station should be at a child's scale. The tall, forbidding counter should not be the first view for the entering child. A friendly staff face or children's faces should be visible immediately upon entry. Similarly, the ever-present cash register in many current military child-care facilities will not contribute to the image of a school or home, which are the typical images directors would like to project for users and visitors.





RELATED ITEMS

ACCESS AND SITE CIRCULATION
 PORTE COCHERE
 CONTROLLED ACCESS
 OBVIOUS ENTRY
 PLEASURE PASSAGE
 PARENT-STAFF CORNER
 ADMINISTRATION IN THE MAINSTREAM
 PARENT INVOLVEMENT
 CUBBIES
 TOTE TRAYS
 OFF-TRACK WAITING PLACES

1004 ADMINISTRATION IN THE MAINSTREAM

ISSUE

BESIDES NORMAL OFFICE PAPER WORK, PLANNING, ORDERING, AND OTHER MANAGEMENT ACTIVITIES WHICH REQUIRE QUIET CONCENTRATION, A CENTER DIRECTOR AND OTHER ADMINISTRATIVE STAFF HAVE OTHER, POTENTIALLY CONFLICTING NEEDS. THESE INCLUDE THE DIRECTOR'S NEED TO BE IMMEDIATELY ACCESSIBLE TO STAFF, CHILDREN, AND PARENTS, TO PARTICIPATE DIRECTLY IN CHILD-CARE PROGRAMS, TO SUPERVISE AND OVERSEE ALL ACTIVITIES IN BOTH INDOOR AND OUTDOOR AREAS OF THE CENTER, TO MEET WITH GROUPS OF STAFF, PARENTS, AND SPECIAL CONSULTANTS, AND TO MAINTAIN VISUAL CONTROL OF THE ENTRY AREA.

JUSTIFICATION



First-time parents and children will be less confused and feel more secure if they can immediately see the administrative-reception area. It is also desirable for returning parents and children to be welcomed by the center director or administrative staff as they enter.

Educators would agree that an administrator involved in programs and accessible to parents, children, and staff is much more valuable than one who is shut away from the mainstream. In smaller centers this is not only desirable, it is unavoidable.

Since the administrator is responsible for all center activities, indoor and outdoor, it would be advantageous if visual contact with activity areas could be maintained even when the director must be in an office doing paperwork or conducting a meeting.

Purely functional reasons would indicate that administrative areas should have an acoustically separate work room for noisy equipment, acoustic buffering for typing, conference, and office spaces, and should be accessible to other staff areas.

If teachers have separate offices, these have sometimes been grouped in an administrative area. In child-care centers, it would seem more reasonable to place these within child-activity spaces so they can function as parent-staff and staff-child conference areas. They can also double-function as testing spaces, resource rooms, or other functions, as needed.

PATTERN

ADMINISTRATION IN THE MAINSTREAM

DIRECTOR'S OFFICE AND RELATED ADMINISTRATIVE AREAS SHOULD BE VISIBLE AND ACCESSIBLE TO THE PUBLIC, SHOULD PROVIDE VISUAL ACCESS TO THE ENTRY AREA, AND SHOULD MAINTAIN VISUAL CONTACT AND ACCESS TO MAIN ACTIVITY AREAS.

RECOMMENDATIONS



- Entry and administrative spaces should be visually linked. This would help provide familiar people in ENTRY AND TRANSITION SEQUENCE, and provide additional monitoring for CONTROLLED ACCESS.
- The warm colors, textures, and light of the entry should extend into the administrative space.
- The administrative spaces should be located where staff could see both indoor and outdoor major activity spaces. Use of glass could help provide acoustic buffering without loss of visual contact.
- Adult spaces should be planned in conjunction with administrative spaces to encourage interaction between staff, parents, and the director.
- Acoustic buffering between noisy equipment (e.g., duplicating machines, typewriters, etc.) and other office functions should be maintained.
- Provide conference space where administration, special consultants, staff, and parents can meet, separated visually and acoustically from all other spaces. This space may double-function with other adult spaces.
- Space requirements will vary with size and functions of staff, but rules of thumb are:
 - 80-110 sq. ft. per secretary
 - 100-140 sq. ft. per administrator's office (e.g., Director's space)
 - 260-380 sq. ft. total

- Include private OUT-OF-REACH STAFF STORAGE as a part of the caregiver staff's space at approximately 8 sq. ft. per full-time staff member (caregivers plus administrative staff).
- As there is never too much storage space in any children's center, extra general storage for instructional materials could be provided as a part of administrative spaces.
- Provide two adult washrooms of 40 sq. ft. (total 80 sq. ft.) in proximity to the PARENT-STAFF CORNER and ADMINISTRATION IN THE MAINSTREAM.

RELATED ITEMS

ENTRY AND TRANSITION SEQUENCE
PARENT-STAFF CORNER
CLEAR CIRCULATION WHICH OVERLOOKS
RESOURCES AT THE HEART
OUT-OF-REACH STAFF STORAGE
CONTROLLED ACCESS

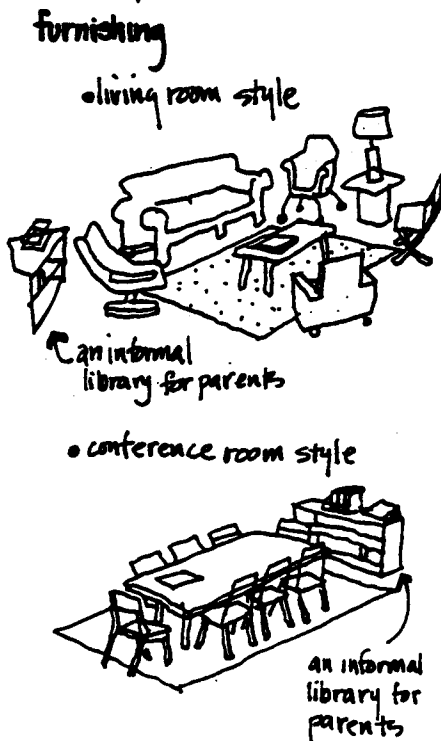
1005 PARENT/STAFF CORNER

ISSUE

INTERACTIONS BETWEEN PARENTS AND TEACHERS ARE BENEFICIAL TO THE PARENTS, TEACHERS, CHILDREN, AND HELP TO IMPROVE THE CENTER'S PROGRAM.

JUSTIFICATION

Parent-staff exchanges provide opportunities for parents to become acquainted with staff members, help parents understand the program, and heighten the parents' confidence in the center's program. It is important that areas provide a quiet and comfortable setting for both parents and teachers (Cohen, 1974).



Having a special place where conferences can be scheduled throughout the year enables staff and parents to share information and ideas which will enrich their understanding of the child. Parent-to-parent meetings give the parents a chance to exchange ideas with each other. Helping parents to get to know one another encourages them to become actively involved in the program, such as becoming volunteer aides (Cherry, 1973).

Ideally, a center would provide three separate but linked spaces to accommodate the special needs of staff members and parents. In addition to the "backstage area" for use only by staff members, another area would be provided for parent-staff use with the main focus on creating a relaxing, informal atmosphere where parents may feel free to seek out and meet with staff members and other parents, and peruse available child-development literature.

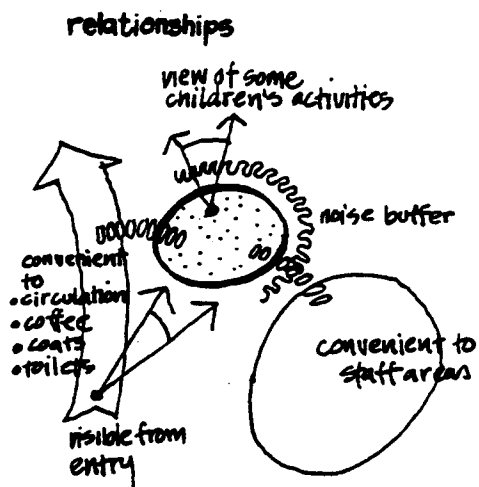
PATTERN

PARENT-STAFF CORNER

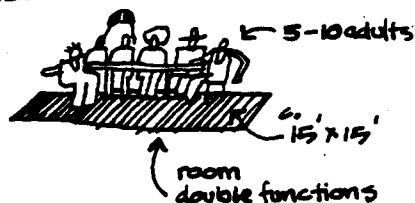
PROVIDE AN AREA FOR THE STAFF AND PARENTS TO HOLD CONFERENCES AND MEETINGS. IT SHOULD SEAT 5-7 ADULTS COMFORTABLY AND BE ADJACENT TO THE OFFICES AND AWAY FROM NOISY AREAS.

* The initial development of this pattern was due to John Hunter and the students of Architecture 420, University of Wisconsin-Milwaukee, Fall 1978.

RECOMMENDATIONS



size



- A parent-staff corner should be adjacent to staff offices and perhaps overlooking some children's activity spaces.
- Provide two adult washrooms of 40 sq. ft. (total 80 sq. ft.) in close proximity to the PARENT-STAFF CORNER and ADMINISTRATION IN THE MAINSTREAM.
- Because of the low frequency of this activity, parent-staff interaction area can be planned as a double-function space.
- Allocated area for this pattern should be 100-180 sq. ft.

RELATED ITEMS

PARENTS' PARTICIPATION
 STAFF BACKSTAGE
 MULTIPURPOSE-MOTOR ACTIVITIES AREA
 ADMINISTRATION IN THE MAINSTREAM
 MULTIUSE SOCIAL SERVICE AREA
 PLACES TO OBSERVE CHILDREN

1006 STAFF BACK STAGE

ISSUE

STAFF MEMBERS NEED SOME SPACES AND TIME AWAY FROM CHILDREN, PARENTS, AND ACTIVITY AREAS.

JUSTIFICATION



Because children are almost constantly demanding their attention, staff members seldom get the opportunity to be alone, or to conduct intimate conversation with other adults. Therefore, staff members need a "backstage area" (Goffman, 1971) which is physically, acoustically, and visually separate from the child's realm, and where they can be alone to think, plan, recuperate, and, for a moment, feel free of direct responsibility for child care.

Haase (1969) suggests that there be some overlapping of parent and staff spaces. Parents need to feel free and welcome to see and confer with staff members as well as other parents. Parents also need access to information on child development and child care. These needs suggests that parents' lounge spaces be located near staff spaces, conference rooms, and information storage areas.

A conflict area here may be parents interrupting staff members who need time alone. There may need to be some "staff only" area not accessible to parents.

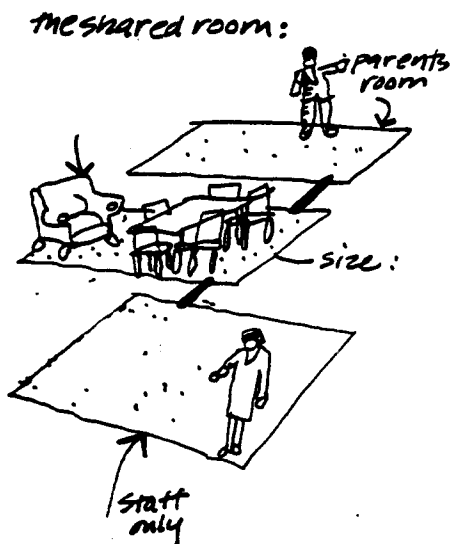
In general, to encourage staff-administration-parent contact, both staff and parent areas should be located along general circulation lines, preferably between entry and child-activity spaces if possible.

STAFF BACK STAGE

A COMFORTABLE, SEPARATED BUT NOT ISOLATED AREA SHOULD BE PROVIDED FOR STAFF'S ACTIVITIES WHICH REQUIRE PRIVACY, SOLITUDE, AND/OR QUIET.

RECOMMENDATIONS

- Provide staff with a visually and acoustically separate area for lounging, eating, meeting, planning, reading and researching, previewing, napping, and materials production.

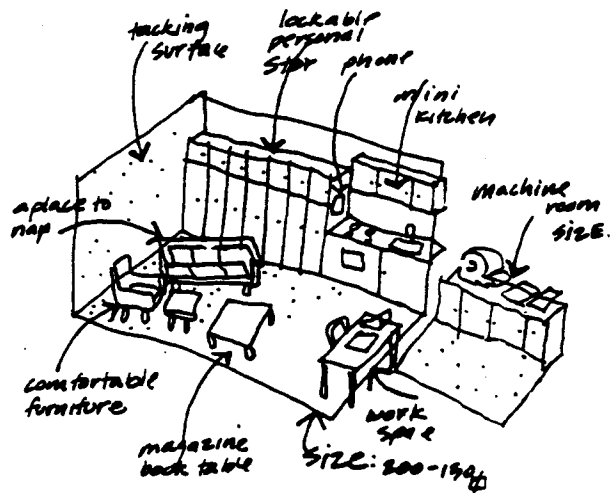


- Within this staff area, separate noisy machine spaces from relaxation area and acoustically buffer phone area.
- Locate staff spaces near circulation, near administrative spaces, near parent spaces.
- Create some shared areas between staff and parent spaces (conference and resource materials area especially).
- Provide storage for supplies, equipment, books and magazines, and lockable storage for personal belongings (including outdoor clothing in colder climates).

Staff spaces may include the following:

- screened nap area for staff members working an especially long "shift"
- comfortable seating for adult socialization and relaxation
- mini-kitchen facilities for staff food preparation, coffee making, etc.
- adult-scale wash rooms--all other washrooms in the building will probably be child-scale and not private
- tack-board space for notices, pertinent new articles, etc.
- adult-height work surfaces for planning, writing, reading, note-taking, typing, etc.
- shelves and display racks for journals, catalogs, and books on child development, etc.
- work counters and storage for using duplicating equipment, creating audio-visual materials, etc.

- lockable storage for staff's personal possessions
- table-type spaces large enough for pre-viewing films, filmstrips, records, tapes, videotapes, etc. before use with children
- telephones available to staff
- a view to the outside
- private conference space for meetings with parents and work meetings among staff



- Allocation of space for this pattern should be 150-165 sq. ft.
- As an example, for a center of 60-75 children, assume a space for a total of 12 full-time staff members (4 with 15 infants; 2 with 10 toddlers; 5 with 40 preschoolers (1 double-functioning for 10 after-school drop-ins and 1 double-functioning as Director); plus 1 full-time clerical staff member).
- Under tight constraints, STAFF BACK STAGE might have to double-function with PARENT-STAFF CORNER.

RELATED ITEMS

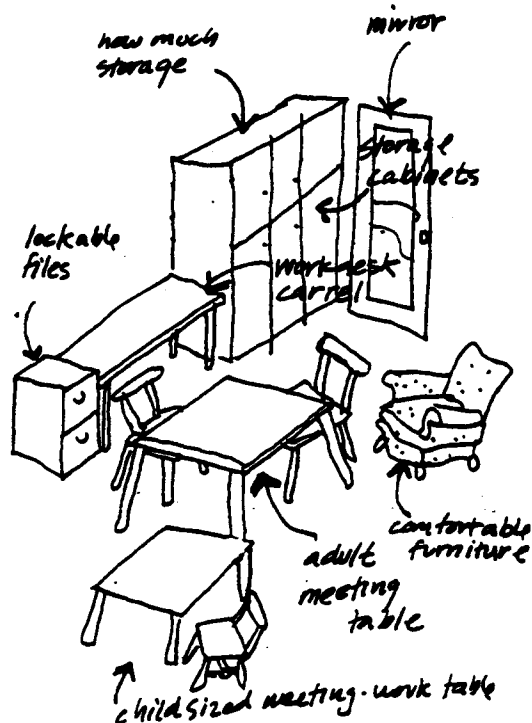
PARENT-STAFF CORNER
PLACES TO OBSERVE CHILDREN

1007 MULTIUSE SOCIAL SERVICE AREAS

ISSUE

SPECIALISTS MAY BE USED BY THE CHILD-CARE FACILITY. FREQUENTLY, THEY WILL BE ON A PART-TIME BASIS, BUT THEY WILL NEED OFFICE SPACE, FILING SPACES, AND MEETING SPACE, NONETHELESS.

JUSTIFICATION



All of these specialists can make valuable contributions to the child-care facility program. They will work with children, parents, and staff to help diagnose problems, develop individual programs for development, and help staff, parents, and children carry them through.

Since these special people usually work in a facility part-time, it will be very possible to coordinate their schedules to double- (or triple-) function the space involved.

A psychologist, social worker, and speech therapist each require two areas--an office area for paper work with lockable storage for confidential files, and a testing-observation-meeting room. Learning disability specialists may be present more often and will have many extra resources to use in testing and helping children. Learning disability specialists may spend several hours per week with individual children and will probably need a territory which can be permanently set up for them.

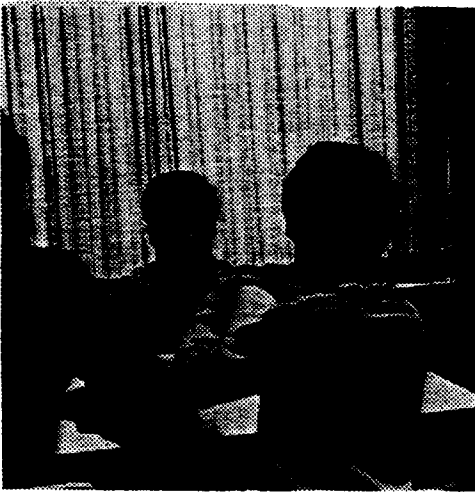
PATTERN

MULTIUSE SOCIAL SERVICE AREA

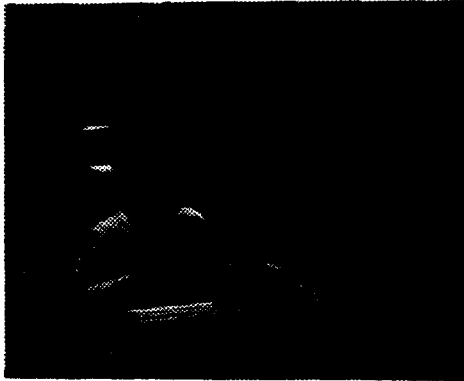
SPECIAL PEOPLE SUCH AS A CHILD PSYCHOLOGIST, SOCIAL WORKER, SPEECH THERAPIST, AND LEARNING DISABILITY SPECIALIST MAY BE PART OF STAFF IN A CHILD-CARE FACILITY AND SPECIAL SPACES SHOULD BE PROVIDED FOR THEM.

RECOMMENDATIONS

- Psychologists need an office area and an observation-testing area which provide the following:
 - lockable files
 - storage for test and therapy materials
 - possible closed-circuit TV



- method for unobtrusive observation
- both adult- and child-sized tables and chairs
- enclosed space, private, and away from other child spaces
- Speech therapist needs office space plus therapy room which provide the following:
 - lockable files
 - storage for test and therapy materials
 - many outlets for tape recorders (video tape possibly), and other electronic equipment
 - mirrors
 - method for unobtrusive observation
 - adult- and child-sized tables and chairs
- Social worker needs office space and a meeting room which provide the following:
 - lockable files
 - comfortable atmosphere for children and parents
 - privacy during meetings and interviews
- All three see both children and parents and should be easily accessible from child spaces and adult entry points.
- All three require privacy during meetings interviews, therapy, and testing.
- Learning disabilities specialists require office space which may be part of a "Learning disabilities room" which would provide the following:
 - storage for many resource materials needed in training
 - many electrical outlets for electronic equipment



- mirrors
 - floor mats for body training
 - privacy to cut down on distractions
 - very cheerful environment
 - tables, chairs, carrels that are child-sized
 - close proximity to child-activity areas so it is easy for children to find
- Consider that the above community service areas may also be used occasionally by ACS personnel working with parents, not just with children, e.g., a family nurse, nutrition consultant, family counselor, etc.
 - Recommended space allocation for this pattern is 100-165 sq. ft.

RELATED ITEMS

INTEGRATION OF CHILD CARE IN THE COMMUNITY
CENTER
STAFF BACK STAGE
SICK BAY

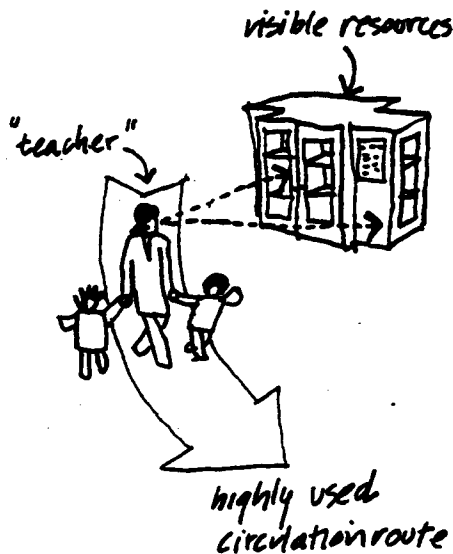
1008 RESOURCES AT THE HEART

ISSUE

IN A LARGE CENTER, SOME RESOURCES--BOOKS, RECORDINGS, FILMSTRIPS, ETC.--WILL BE USED BY SEVERAL DIFFERENT CHILD GROUPINGS. DUPLICATION OF THESE RESOURCES IN EACH GROUPING AREA WOULD BE WASTEFUL.

JUSTIFICATION

Most child-care facilities have limited budgets for purchase of resources. Expensive items which are only used by staff members with children (rather than by children alone) can most economically be used by being stored systematically in a central "library."



In larger facilities this will also solve the problem of staff members being unaware of resources actually available within the facility. Where no central resource area exists, some materials are purchased more than once and some materials are seldom used because their existence is not generally known by the staff.

Materials which may be included in a central resource library are filmstrips, recordings, teacher resource books, expensive science equipment such as microscopes, telescopes, etc., and any other special equipment such as videotapes, calculators, systems 80, etc. Also, the equipment necessary for these special resources can be located centrally so that tape recorders, filmstrip viewers, etc., can be distributed by use rather than numerically.

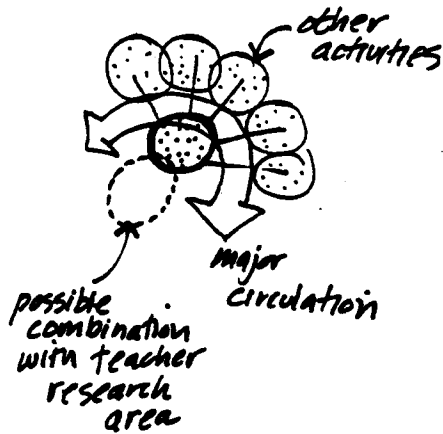
PATTERN

RESOURCES AT THE HEART

PROVIDE A CENTRAL GATHERING AREA FOR RESOURCES USED BY SEVERAL CHILD GROUPINGS WHERE THE RESOURCES AND EQUIPMENT CAN BE STORED AND PREVIEWED IN A SYSTEMATIC WAY.

RECOMMENDATIONS

- Locate resource area centrally in order to increase staff use.
- Combine resource area with teacher research/journal area where it seems logical (see SEPARATE STAFF SPACES).



- Storage for various audio-visual media should be combined with book shelving and equipment storage. If combined with teacher research/journal area, include adult seating and writing space.
- Provide space for staff previewing (e.g., wired carrel-type).
- Provide darkroom and soundproof booth if staff will be making slides, tapes, etc., with children.
- Allocate 2.5-4 sq. ft. per child for this area (example: 100-140 sq. ft. per 40 preschoolers).

RELATED ITEMS

A ROOM WHICH CAN BE DARKENED
STAFF BACKSTAGE
FLEXIBLE FURNISHINGS

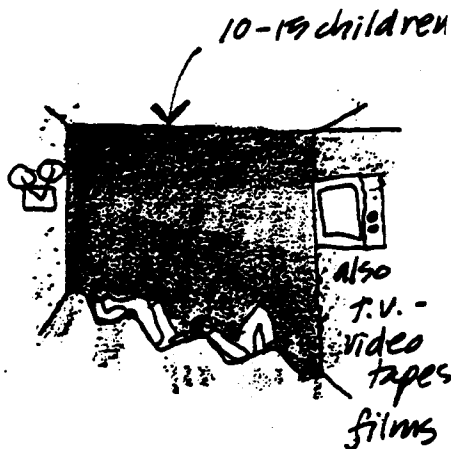
1009 A ROOM WHICH CAN BE DARKENED

ISSUE

SOMETIMES CHILDREN WILL WATCH FILMS, TV, VIDEOTAPES, ETC. INDIVIDUALLY OR AS A GROUP (10-15 CHILDREN). MOST PLACES IN A FACILITY CANNOT BE USED EASILY FOR THIS PURPOSE.

JUSTIFICATION

Small children may have short attention spans. An area darkened for film showing or TV viewing will cut down on distractions. Further, the noise from such viewing and listening should be acoustically separated from children pursuing other activities. Thus, a separate space which can be darkened is indicated.



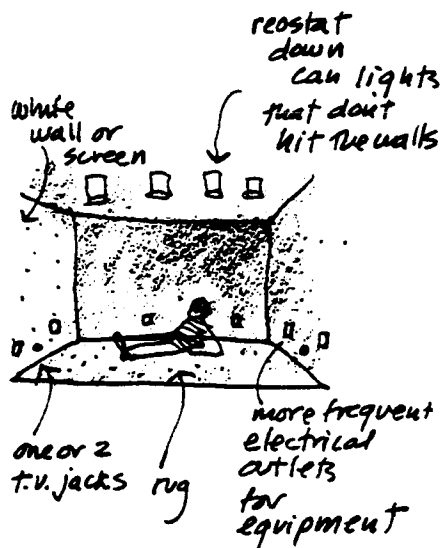
Another use for this space is as a central gathering of special equipment for child use. Such programs as Systems 80, simple calculators, mathiputers, etc., may be used by some preschoolers. This equipment is expensive and will be used by children of various age groups only as they become ready. Therefore, central location would be more appropriate rather than age-specific storage.

PATTERN

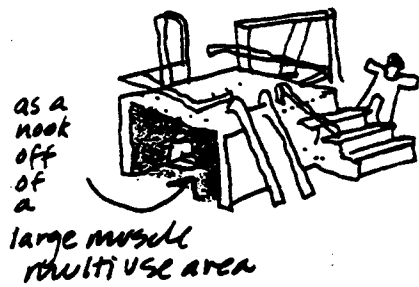
A "ROOM" WHICH CAN BE DARKENED

AN ACOUSTICALLY ISOLATED AREA WHICH CAN BE EASILY DARKENED FOR GROUP (10-15 CHILDREN) VIEWING AND LISTENING MAY ALSO INCLUDE SPECIAL EQUIPMENT FOR PROGRAMMED LEARNING.

RECOMMENDATIONS



- Provide an area with acoustic buffering for 10-15 children which is easy to darken for using audio-visual aids.
- Provide electrical outlets and a screen or white wall.
- Allocated area for this pattern should be up to 3 sq. ft. per child (e.g., up to 120 sq. ft. for 40 children).
- Provide antenna or cable hook-up for TV and a video-tape player.
- This area may double-function with other moderate-sized group activity space.



RELATED ITEMS

- Under very tight constraints, RESOURCES AT THE HEART can triple-function with A ROOM WHICH CAN BE DARKENED and a part of the READING-LISTENING AREA.

RESOURCES AT THE HEART
READING-LISTENING AREA

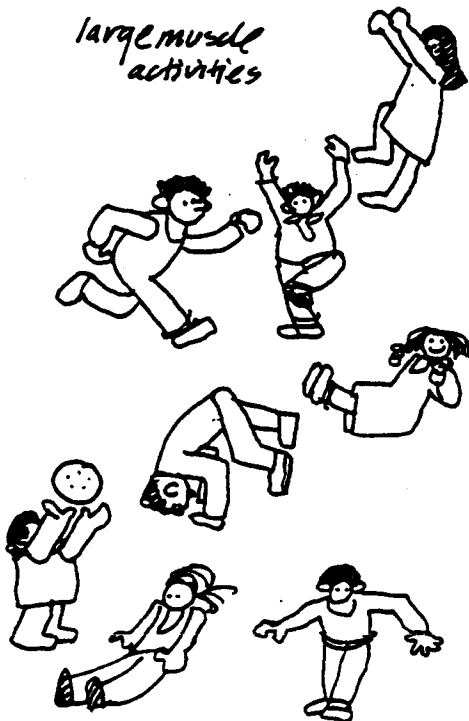
1010 MULTI-PURPOSE/MOTOR ACTIVITIES AREA

ISSUE

SOURCES ON THE PSYCHOLOGY OF PLAY (GARVEY, 1977; MILLER, 1968; CHERRY, 1976; ETC.) AGREE THAT PLAY IS AN ESSENTIAL FACTOR IN THE DEVELOPMENT OF EVERY CHILD NO MATTER WHAT OTHER FACTORS EXIST. NO CHILD CAN DEVELOP NORMALLY WITHOUT PLAY.

THE GROUP PLAY AREA FORMS THE NUCLEUS OF A CHILD-CARE CENTER. IF ORGANIZATION OF THIS SPACE IS INCOMPATIBLE WITH THE MANY TYPES OF PLAY AND LARGER GROUP ACTIVITIES WHICH OCCUR THERE, BOTH THE CHILDREN AND THEIR CAREGIVERS WILL BE FRUSTRATED IN THEIR ATTEMPTS TO USE IT.

JUSTIFICATION



Young children often find it difficult to play together because they have had relatively few social encounters. Actually, many children have their first experiences with play in large groups when they are enrolled in child-care centers. Group play offers opportunities for developing social skills such as sharing, cooperation, and consideration of others. Sanoff (1972) suggests that a sense of group solidarity among children evolves from these group play encounters.

Children must be able to play in ways which encourage developmental growth cognitively, socially, and physically.

Cognitive and social play are well represented in the other activity areas listed, but physical large-muscle play is equally important. Specific space where children can run, dance, climb, tumble, swing, slide, and balance are needed.

Some sources suggest both a large muscle-large group play area and another multi-purpose area, both separate from other activity spaces (e.g., Sanoff, Sanoff, and Hensley, 1972). Others, while suggesting two names for space, actually describe similar functions for each (Texas A & M University, 1969). A third approach is that a flexible space will accommodate a variety of activities (Osmon, 1971).

In a CENTER FOR 60 CHILDREN, one space for large-group activities which will adapt for large-muscle play, dance, singing, watching films and puppet shows, etc. seems most appropriate. In some facilities, this space may also be used for community-parent meetings (see PARENT-STAFF CORNER for smaller meetings of 5-7).

This space will be most usable if it is subdividable (e.g., shape of space, temporary barriers, different floor, ceiling treatments and levels, etc.).

Obviously, space which is used for some kind of climbing structure net or frame should have a soft landing surface underneath it.

Space which will be used for circle games, ball rolling, dancing, should have relatively smooth surface which can be vinyl, level carpet, etc.

Wheel toy use implies smooth, fairly hard flooring.

In all cases, noise generated in this area is likely to be greater than the general noise level in the rest of the facility and will necessitate more acoustical control.



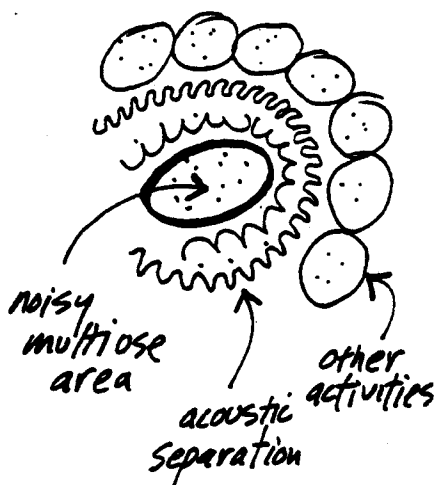
PATTERN

MULTIPURPOSE-MOTOR ACTIVITIES SPACE

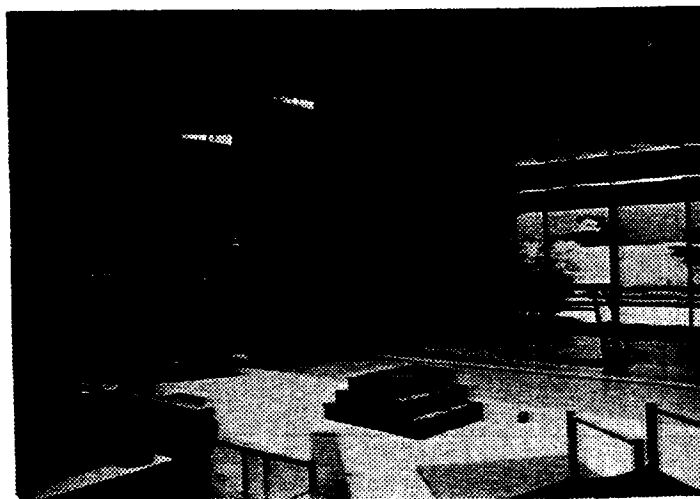
PROVIDE A SPACE SPECIFICALLY DESIGNED TO ENCOURAGE AND ADAPT TO A VARIETY OF LARGE-MUSCLE ACTIVITIES, WHICH CAN ALSO ACCOMMODATE GROUPS OF 12-16 CHILDREN DANCING OR PLAYING GROUP GAMES, AND WHICH WOULD (ON RARE OCCASIONS) ALLOW 40 SEATED CHILDREN TO VIEW A SPECIAL FILM OR SHOW.

RECOMMENDATIONS

- Allocated area for this pattern should be 12.5 - 15 sq. ft. per child (example: 500-600 sq. ft. for 40 preschoolers).
- In planning structures, platforms, climbing, swinging apparatus, etc., to encourage large-muscle play within the space, refer to Recommendations for Child Play Areas, 1979; DESIGNATED PLAY STRUCTURES.



- Use floor, ceiling, and walls as acoustic buffers and absorbers.
- Plan floor surfacing to fit activity expected and to help separate activities.
- Use other architectural devices to help subdivide space (e.g., ceiling height, floor levels, various finishes, column spacing, etc.). It may be useful to actually include temporary dividers.



- Proximity to other play areas, bathrooms, etc. is desirable. Some visual connection would also be desirable.
- Direct access to outdoor large-muscle play activities is appropriate.
- It is important that the large group space have a natural light source. Similarly it should be possible to darken the large group activity space.

RELATED ITEMS

INDOOR-OUTDOOR RELATIONSHIPS

PARENT-STAFF CORNER

OBJECTIVE AND NON-OBJECTIVE STAGES AND PROPS

MUSIC NOOK

A PLACE FOR BUILDING

RETREAT AND OBSERVATION POINTS

1011 A PLACE FOR BUILDING

ISSUE

CHILDREN LEARN SPONTANEOUSLY THROUGH ACTIVE INTERACTION WITH THE ENVIRONMENT AROUND THEM, YET SO MANY ENVIRONMENTS DESIGNED FOR CHILDREN ARE STATIC AND RIGID. ONE OF THE MOST IMPORTANT PARTS OF GROWING UP IS HAVING THE OPPORTUNITY TO EXPERIMENT ON THE WORLD, TO CHANGE IT, TO SEE THE RESULTS OF THESE CHANGES, AND LEARN FROM THE TOTAL EXPERIENCE. CHILDREN THEREFORE NEED TO BE ABLE TO MANIPULATE THE ENVIRONMENT AROUND THEM. USING TOOLS AND BUILDING MATERIALS SUCCESSFULLY IS A PRIME METHOD FOR CHILDREN TO ACCOMPLISH THIS MANIPULATION.

JUSTIFICATION

M. J. Ellis of the Motor Performance and Play Research Laboratory of the Children's Research Center, University of Illinois, writes:

1. *Children play for the stimulation they receive, not just to burn up energy.*
2. *Children need to indulge in activities that become increasingly complex with time.*
3. *As a by-product, children learn about their physical surroundings, and about their own roles in a social group.*

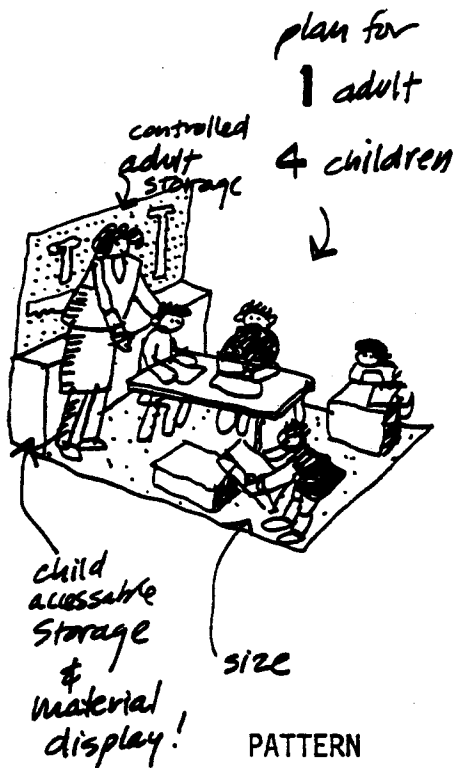
The essential characteristic for a playground is that it should elicit new responses from the child as he plays, and that their responses increase in complexity as play proceeds. (1972, p. 4)

Simon Nicholson (1971) states:

In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kinds of variables in it. (p. 30)



The experience of adventure playgrounds (see Recommendations for Child Play Areas, 1979), has shown that an extremely successful way of providing these variables is to give children raw materials (junk) and tools and allow them to build their own play items and



environment. This "junk" includes items such as wood, cloth, rope, rubber, egg crates, etc.

In addition to the psychological satisfaction of creating their own playthings and play environment, building activity also meets cognitive needs (learning about materials, tools, three-dimensional concepts, etc.) and physical needs (small and large muscle development, hand-eye coordination and visual acuity). Construction will also encourage social development as cooperative projects are attempted.

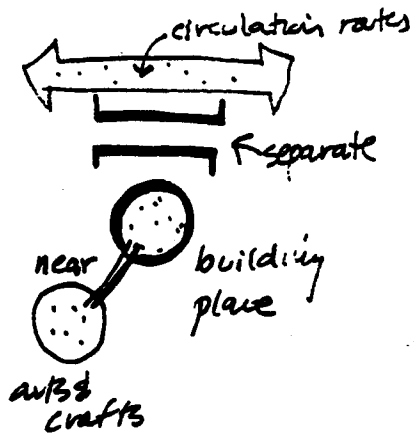
Preschools are well able to handle this activity with adult supervision. The very youngest (under three) will need to use play tools (wooden mallet instead of hammer), but for 3-5's, using real tools as tools rather than playthings will not compromise safety.

A PLACE FOR BUILDING

A SMALL-GROUP AREA WITH WORK SURFACES, CONSTRUCTION MATERIALS, TOOLS, STORAGE, AND DIRECT OR REMOTE ADULT SUPERVISION ARE THE REQUIREMENTS OF A PLACE FOR BUILDING.

RECOMMENDATIONS

- Allocated area for this pattern should be 3.75 - 4.5 sq. ft. per child (example: 150-180 sq. ft. per 40 preschoolers).
- Plan for a maximum of four children and one adult in the space at a time. This will reduce competition for tools and promote safety.
- Provide a very sturdy work bench with vise and easy-to-clean, non-damageable surface, at child height.
- Provide storage for extra materials, display for materials in use, and storage for tools.
- Provide storage for extra wood and other materials inaccessible to children because too many choices may be confusing.



- Provide a display rack at child height for many sizes and shapes of materials.
- Provide hanging storage for tools. A pegboard with outlines of tools would help in replacement. Perhaps color coding would also help.
- Separate the area acoustically from quiet areas. Use sound absorbers to reduce noise.
- Separate from circulation routes for safety.
- Under tight constraints, A PLACE FOR BUILDING might not be possible, or might have to double function with BLOCK PLAY AREA.

RELATED ITEMS

ZONING
ARTS AND CRAFTS AREAS

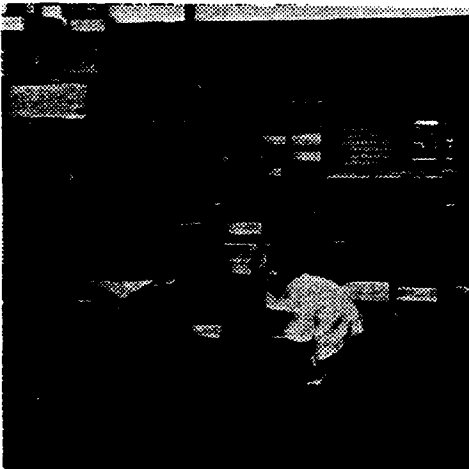
1012 BLOCK PLAY AREA

ISSUE

CHILDREN'S ABILITY TO BUILD AND MANIPULATE THEIR OWN ENVIRONMENTS AND TO DO SO IN COOPERATION WITH OTHER CHILDREN IS IMPORTANT TO ALL AREAS OF DEVELOPMENT.

JUSTIFICATION

The value to children of block play falls into all three developmental areas:



Physical Development

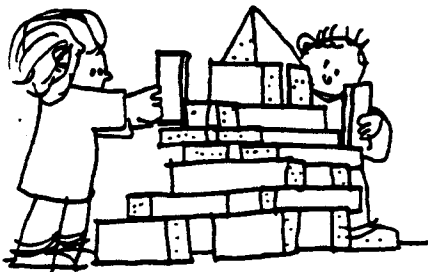
Block play facilitates development of muscular coordination, balance, visual acuity, and small and large muscle activity.

Cognitive Development

Block play allows children to discover weights, balance rules, construction techniques. Blocks also facilitate exploration and dramatic play; building the scenes of imaginary environments helps the child role-play, dramatize, and explore fantasies.

Social Development

Two possibly incompatible social values are associated with block play. One: blocks are a nonthreatening physical element which may be especially conducive to quiet retreat play by children who feel overwhelmed by other social situations (Osmon, 1971). Two: block play areas may be very active, aggressive areas with a high level of conflict. Since in block play the process is more important than the product, children may assert their possession and accomplishment in a structure by aggressively destroying it. This destruction may have very positive values for the children involved, but could be disturbing to a child using blocks as quiet retreat play. Other conflicts may arise from territoriality and possession of materials. These conflicts can be healthy, and cooperative behavior through compromise can be a positive outcome. But again, these conflicts can be very disturbing to a child who is unprepared to deal with them.



These two very different social values in block play suggest that some compartmentalization, or separation between block play areas would be useful.



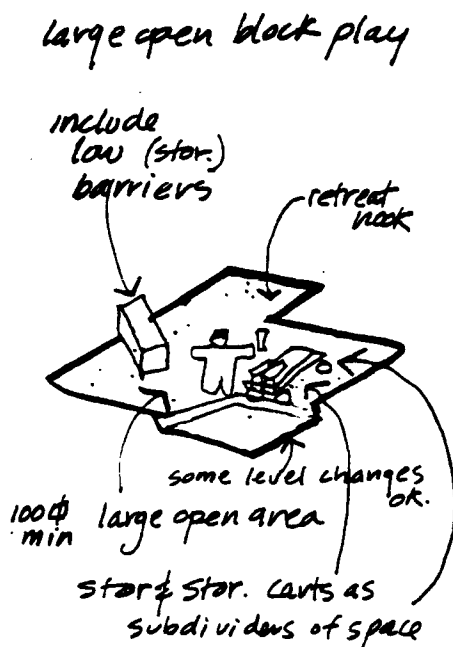
PATTERN

BLOCK PLAY AREAS

PROVIDE AREAS FOR BLOCK PLAY IN TWO WAYS:

1. IN A LARGER OPEN SPACE WITH ACOUSTIC PROTECTION FROM OTHER ACTIVITY SPACES (E.G., MULTIPURPOSE SPACE), AND 2. IN SMALLER, QUIETER AREAS WHERE ONE OR TWO CHILDREN CAN PLAY WITH SMALLER BLOCKS. BLOCK STORAGE SHOULD BE DISPERSED THROUGHOUT BLOCK AREAS RATHER THAN ALL BEING LOCATED IN ONE PLACE.

RECOMMENDATIONS



- Provide a large, flexible, open area. Using materials carts or storage units on wheels as dividers will help prevent conflicts over block supplies.
- Small block areas for retreat and breakaway play may be interspersed with other activity areas to protect them from large, more active block area. These could be around 50 sq. ft.
- Separation of block play from circulation and other activities may be aided by level changes, low height barriers (Osmon, 1971), raised platforms as work areas, changing floor surface materials, and other architectural indicators.
- Use of sound insulation and absorbers wherever possible in the area will help reduce noise levels.



RELATED ITEMS

- Easy-to-reach, dispersed block storage will help reduce conflicts.
- Block play may have natural affinities with arts and crafts areas, but should be separated from reading, library, animals, gardening, etc.
- If the MULTIPURPOSE SPACE is used for large block play, it should be adjacent to the smaller BLOCK PLAY AREA for storage of blocks.
- Allocated area for this pattern should be 5.6-6.25 sq. ft. per child (example: 225-250 sq. ft. per 40 preschoolers).

A PLACE FOR BUILDING
ZONING

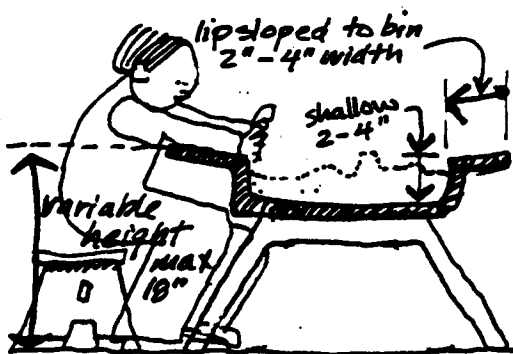
NEVER-TOO-MUCH CHILD-ACCESSIBLE STORAGE

1013 INDOOR SAND PLAY

ISSUE

CHILDREN DEVELOP COGNITIVE AND PHYSICAL SKILLS BY BEING ABLE TO MANIPULATE PARTS OF THEIR ENVIRONMENT. FURTHER, MORE EXPERIENCES WITH NATURAL ELEMENTS HELP CHILDREN UNDERSTAND THE WORLD AS IT EXISTS BEYOND THE BUILT ENVIRONMENT.

JUSTIFICATION



All sources on play recommend sand-dirt play (Allen, 1968; Bengtsson, 1970; Lederman & Trachsel, 1968). The mediums of sand and dirt allow children to shape and mold an environment in any manner they choose.

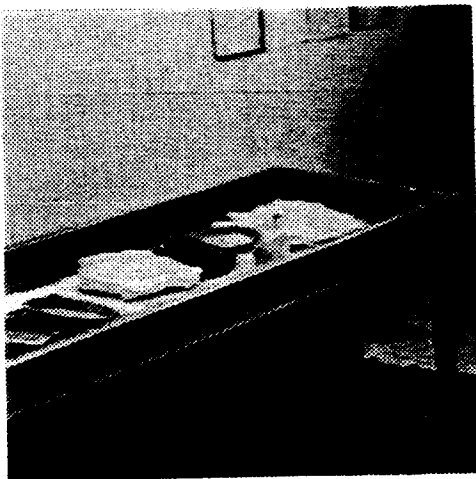
The role occupied by sand-dirt in play . . . lies principally in the fact that sand and dirt resemble nothing in the world but sand and dirt. Sand and dirt denote nothing not denoted by the kids except for its single inherent and self denoted ability to foster growth. (Wood, 1976)

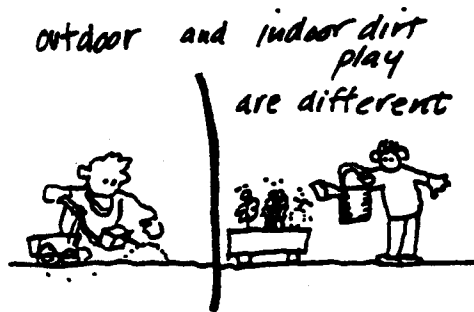
Therefore, sand and dirt are excellent "ambiguous props" for dramatic and imaginative play.

Sand play actually ranks very high on a list of children's preferred activities (Osmon, 1971).

Other values which may be inherent in sand play include:

- tactile experience with textures
- color experience with various mineral-rich sands and dirts
- manual dexterity experience
- creation of three-dimensional aesthetically pleasing objects
- development of mapping skills as children create a landscape of "places"
- building experience





PATTERN

- social development as children make imaginary environments together
- learning about erosion, wind action, etc. as other natural elements are used in conjunction with sand and dirt

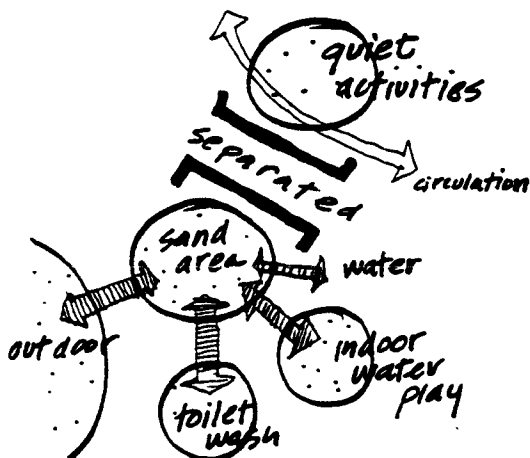
Therefore, in climates which do not allow outdoor sand play year round, indoor sand play is essential. Indoor dirt play would also be acceptable to children, but probably not to staff and parents. Indoor dirt play may be accomplished as "gardening" if window areas for growing plants are planned.

INDOOR SAND PLAY

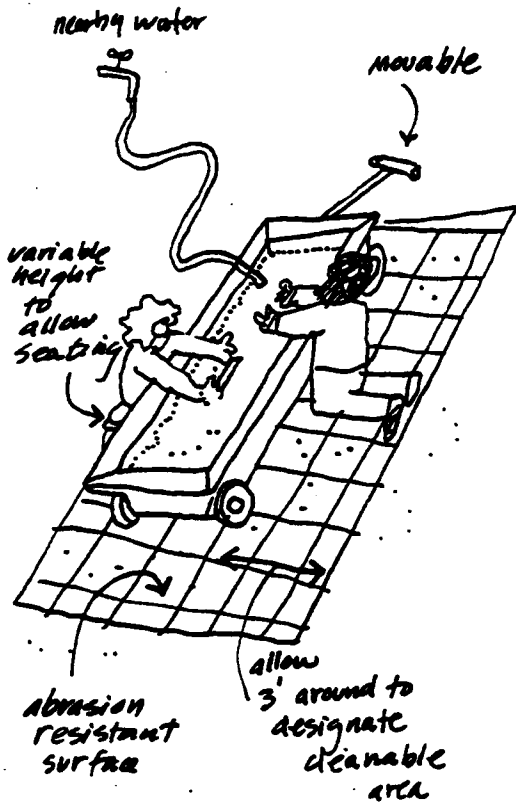
PROVIDE SAND PLAY INDOORS IN PROXIMITY TO WATER AND CLEAN-UP AREAS. PORTABLE SAND PLAY (E.G., SAND WAGONS) WILL PROBABLY BE MOST USEFUL.

RECOMMENDATIONS

relationships:



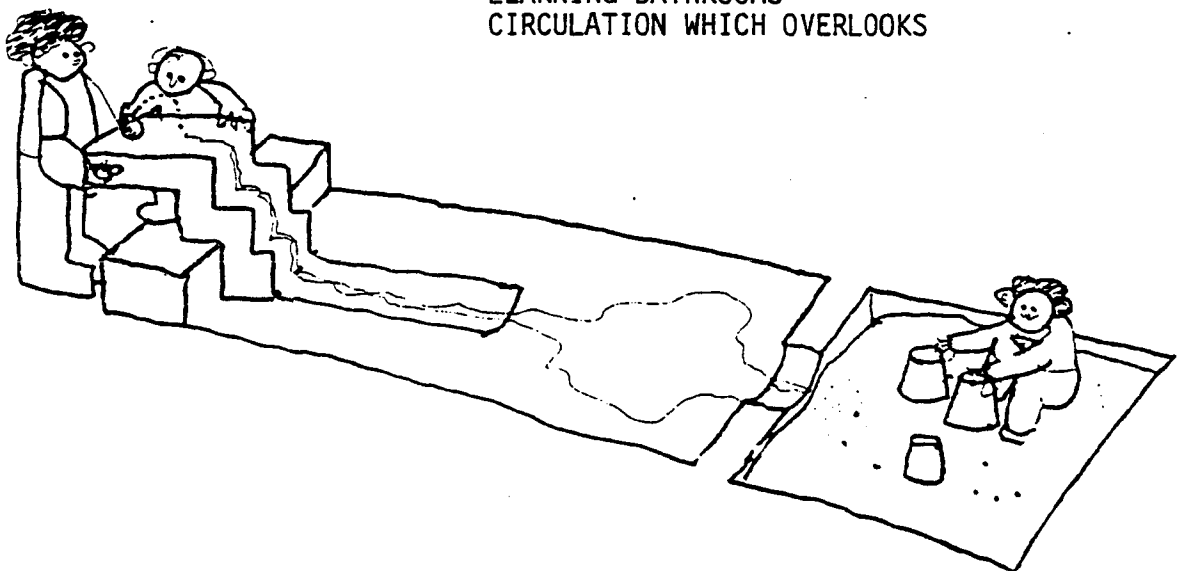
- Sand areas may be messy and noisy and should be separated from circulation and from quiet areas.
- Sand play areas should be near toilet-wash areas so clean-up is easy for children and doesn't require tracking sand through other spaces. An area with an "entry grate" for sand to fall through would keep sand from being tracked around.
- Sand play should have a water source near by since dry sand is difficult to build with. This suggests close proximity between sand and water play.
- Provide a 2" minimum lip gently sloped to dump sand back in the box.
- Locate sand areas near a window with direct sunlight to dry and purify sand.
- Provide portable sand areas or sand wagons-- they could be moved outdoors, pushed aside when not in use, drawn closer to water for play and demonstrations, etc., and drawn closer to door for refilling.



- Sand play areas should be high enough so children can stand or sit to play. They may need an adjustable-height table, or two or more tables of varying height.
- Shallow sand areas will be necessary if seated children are to get their knees under it (see recommendations in US (HUD), 1978). Shallow sand areas hold less sand, weigh less, and are more moveable.
- Size : provide a minimum area of one sq. ft. per child (preferably transportable)
- Design a long and narrow slope, 2 ft.-3 ft. wide maximum.
- Install surfaces in the area which are easy to clean, not susceptible to damage from sand, and as seamless as possible.
- INDOOR SAND PLAY area and LIQUID OASIS for water play should be immediately adjacent to each other (see chart in BUILDING GROSS SQUARE FOOTAGE).
- For space allocation, see LIQUID OASIS.

RELATED ITEMS

LIQUID OASIS
LEARNING BATHROOMS
CIRCULATION WHICH OVERLOOKS



1014 LIQUID OASIS

ISSUE

WATER PLAY OFFERS CHILDREN A WIDE VARIETY OF OPPORTUNITIES FOR EXPLORATION AND EXPERIMENTATION.

JUSTIFICATION



Children are attracted to water as to few other elements (Lyle, 1970; Moore, 1974; Travel Report, 1978). Lady Allen (1968) states that "water is one of the joys of childhood; its endless possibilities for play should be fully exploited." Cherry (1976) suggests that water is soothing, clean, and full of surprises and should be an integral part of the play program.

Besides its undeniable play value, use of water is also important for demonstrating such concepts as wave phenomena, volume displacement, flotation, wet vs. dry air, air-water mist (bubbles), gravity flow, and prismatic action (rainbows). Water-play areas must therefore be flexible and usable in many different ways.

PATTERN

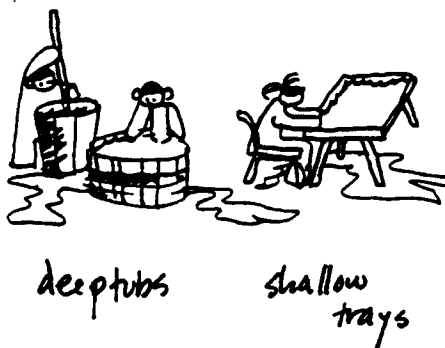
LIQUID OASIS

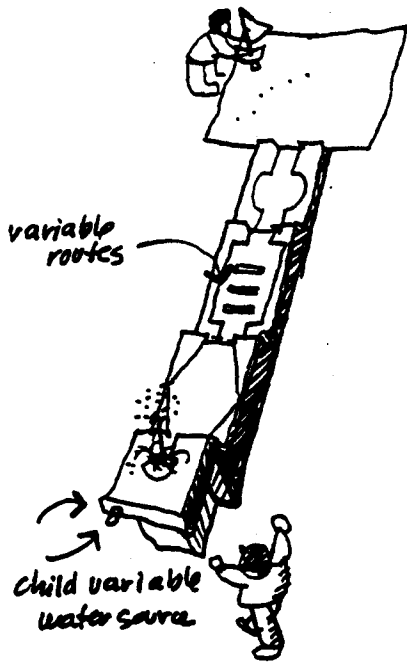
PROTECTED, NATURALLY-LIGHTED WATER-PLAY AREAS REQUIRE A VARIETY OF IMMERSABLE PROPS AND A GENEROUS WATER SURFACE. SURROUNDING WATER-PROOF WALL AND FLOOR MATERIALS MINIMIZE WATER CLEAN-UP AND SLIPPING.

RECOMMENDATIONS

- Children should have free access to water play year round.
- Indoor water-play areas should be easily cleaned, have floor drain, non-slip surfaces, impervious to water and dampness (e.g., wooden grid set into floor with drain below).
- Osmon (1971) recommends mobile tubs which can be pushed outdoors in warm weather.
- Water area should include a spray, flow from one height to another, pools 8" or so deep for floating objects, possibly a moveable light source (battery operated) and wind source (e.g., mounted fan out of reach of wet hands).

a variety of water play





RELATED ITEMS

- Locate water play conveniently to wash-rooms, towels, storage for water-play objects, outdoor play areas. Locate away from circulation and quiet areas (some enclosure may be necessary to protect other areas).
- Locate surface of water at child height.
- Natural light would enhance enjoyment and learning in water play.
- LIQUID OASIS and INDOOR SAND PLAY area should be immediately adjacent to each other (see chart in BUILDING GROSS SQUARE FOOTAGE).
- Allocated area for this pattern should be 3.75-4.5 sq. ft. per child (example: 150-180 sq. ft. per 40 preschoolers).

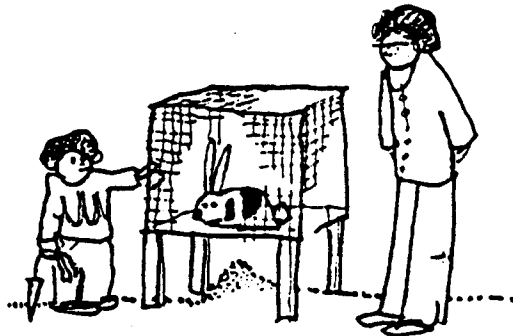
INDOOR SAND PLAY
 NATURE STUDY
 OBJECTIVE AND NON-OBJECTIVE
 STAGES AND PROPS
 LEARNING BATHROOMS

1015 NATURE STUDY AREA

ISSUE

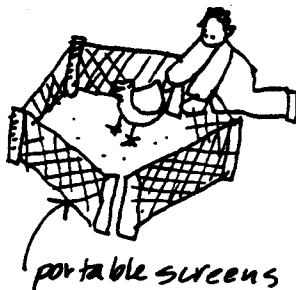
EXPERIENCES WITH NATURAL ENVIRONMENTS WHICH ENHANCE A CHILD'S INFORMATION-GATHERING SKILLS ARE MANDATORY IN A WELL-DESIGNED CHILD-CARE CENTER.

JUSTIFICATION



Learning is enhanced by seeing the entire life cycle of plants and animals. Through plant and animal displays, children can be encouraged to develop an appreciation for the care and well being of living things. Miller (1972) and Lady Allen (1968) suggest that experiences with the natural environment provide opportunities for the development of social values, cooperation, and responsibility.

Osmon (1971) has noted however, that the interaction of plants, animals, and children is sometimes incompatible. For some children, their first exposure to animals comes in the day-care setting. Young children who have never been exposed to animals are often frightened of the movement or sounds that animals make. Animals tend to get injured when they are free to roam or when children try to catch the animal and put it in its cage.



Therefore, the nature study environment should be organized to clearly indicate to children which elements can be touched and handled and which should not be disturbed in their habitat.

PATTERN

NATURE STUDY AREAS

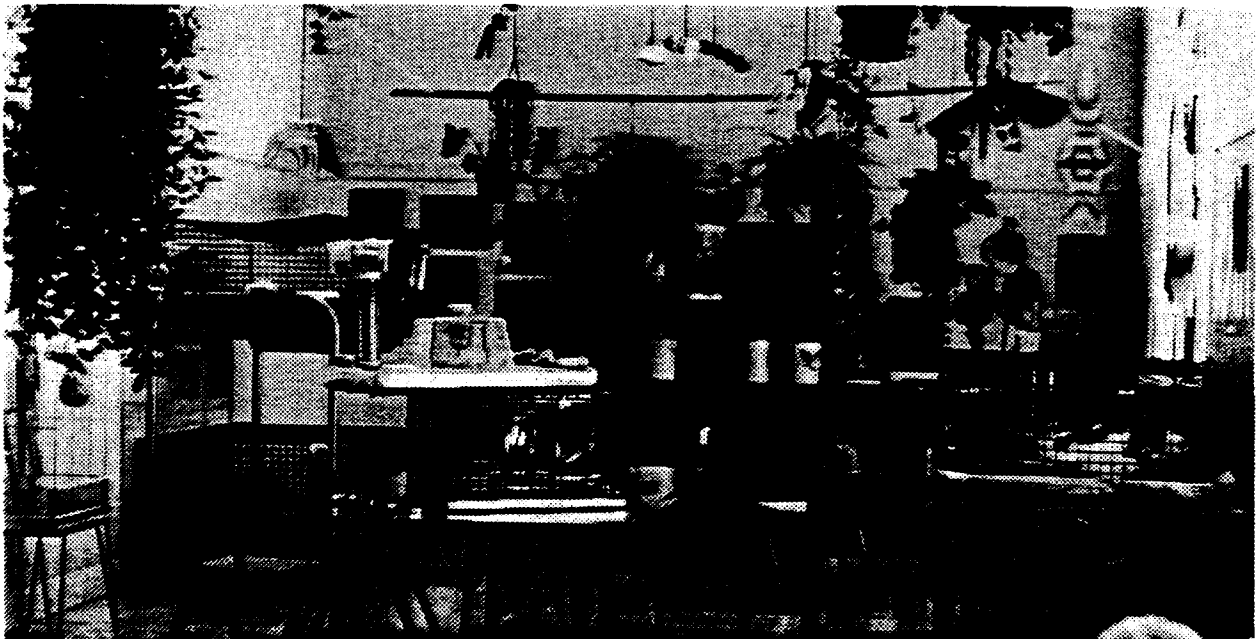
NATURE STUDY AREAS FOR 1-4 CHILDREN CONTAIN INDIVIDUALLY ORIENTED ACTIVITIES CONDUCIVE TO CONTEMPLATIVE AND PARTICIPATORY EXPERIENCES IN A NATURALLY LIGHTED, QUIET, PROTECTED SETTING.

RECOMMENDATIONS

- Many activities in the nature study area are individually oriented and require a quiet atmosphere. Therefore it should be separated from more active spaces.
- Materials should be easily accessible to children.



- Displays of plants and animals should have all-around viewing room. Osmon (p. 83) suggests that in addition to stand-up displays, seating areas and comfortable pillows around the displays encourage children to enjoy them with minimal disturbance.
- Osmon (p. 83) recommends placing animal cages and plant trays on 20" high counters for easy viewing by children.
- Portable screens placed on the floor can be used to contain animals so that children can pet them.
- Natural light is essential to nature study areas. To maintain a proper environment for plants and animals, the light source should be controlled by screens or shades.
- A sink and counter/work space with storage underneath should be provided to allow children to plant seeds and shoots, cultivate small indoor gardens and conduct experiments with scientific measuring equipment. Display walls and tables are useful in conjunction with this area for collections of rocks, leaves, or other elements of the natural environment.



- Allocated area for this pattern should be 5-6.5 sq. ft per child (example: 200-240 sq. ft. for 40 preschoolers).

RELATED ITEMS

INDOOR SAND PLAY
LIQUID OASIS
LEARNING BATHROOMS
PORCHES AND DECKS AS ACTIVITY SPACES
DEVELOPMENTALLY APPROPRIATE PLAY YARDS

1016 READING/LISTENING AREA

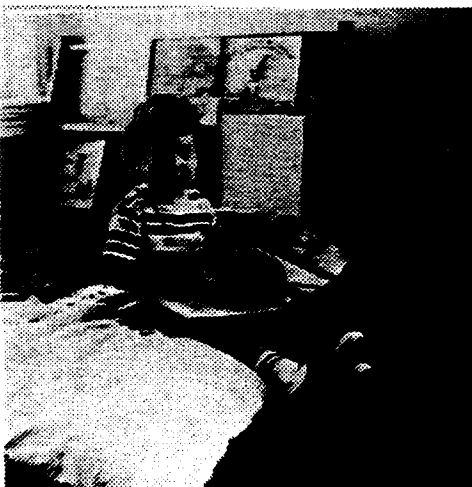
ISSUE

LANGUAGE IS THE EXTERNALIZATION OF THOUGHT. WRITTEN AND SPOKEN LANGUAGE IS THE BASIS OF COMMUNICATION AMONG ALL PEOPLES. LANGUAGE DEVELOPMENT, AND THE DEVELOPMENT OF ABILITIES TO LISTEN AND TO READ, EXPAND RAPIDLY DURING THE PRESCHOOL YEARS. ALL SUBSEQUENT COGNITIVE DEVELOPMENT AND EDUCATION ARE DEPENDENT UPON THEM.

JUSTIFICATION

Children cannot learn beyond a certain level until their listening, speaking, and reading abilities are well developed. Parents usually are the prime sources of stimulation in these areas. But two things alter this:

- In families where both parents work, and the child is therefore under the care of others for major portions of the day during the preschool years, this other form of care--child-care centers--must assume a major responsibility for language and reading development.
- In families with restricted vocabularies and highly focused areas of language usage it has been found that the language abilities of the children are likewise highly restricted, unless intervention occurs, especially during the early childhood years (Bernstein and Young, 1967).



A very important part of the function of a child-care center, therefore, is not only to nurture children's language and speaking skills, but also to introduce children to language in its written form. The child-care center must reinforce and further develop the listening, speaking, and reading abilities that children have learned from their parents, and in the case of many children, must make every effort to significantly extend the range of language usage available to the child.

Most authorities on child care agree that in order to ensure children's development of these cognitive skills, an area especially for reading must be included in all child-care centers (Sanoff, Sanoff, and Hensley, 1972; Deutsch, Ellis, Nimnitch, & Covert, n.d.; Osmon, 1971; Texas A & M University, 1969; Evans, Shub, & Weinstein, 1971).

While language and reading activities will be integral to all the RICH ACTIVITY-RESOURCE NODES, a special place which children associate specifically with reading enjoyment and being read to will be a useful focus.

PATTERN

READING-LISTENING AREA

A READING-LISTENING AREA SHOULD BE A COMFORTABLE AND INTIMATE SPACE PROVIDING SPACE FOR INDIVIDUAL ACTIVITIES IN A VARIETY OF SITTING AND RECLINING POSITIONS. THE AREA MUST ALSO BE FULLY STOCKED WITH A WIDE RANGE OF READING MATERIALS WHICH MUST ALL BE NOTICABLE AND ACCESSIBLE TO CHILDREN.

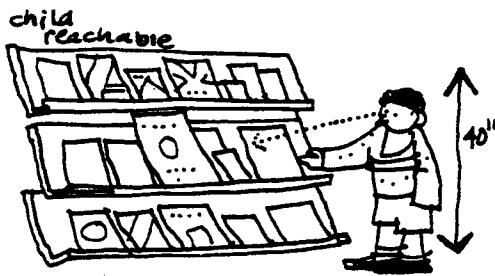
RECOMMENDATIONS



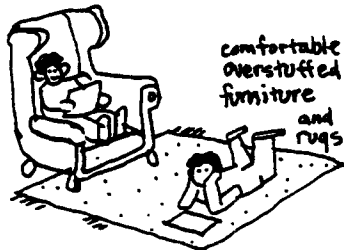
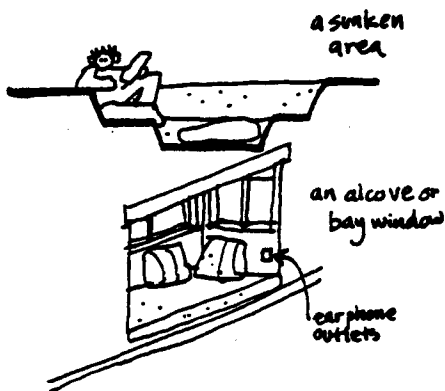
provide for a variety of postures



- Situate the area away from high activity and high-noise-producing areas, like block play areas, areas for arts and crafts, water and sand play areas, music and dance areas, and of course all gross-motor and large-group activity areas.
- Osmon (1971) has recommended a variety of configurations which work for READING-LISTENING AREAS, among them the following:
 - a quiet corner with tables, defined with storage units
 - a sunken pit or a raised area
 - a quiet alcove, defined by walls, storage units, sofas, etc.
 - a multipurpose bay, free-standing within the play environment
 - a built-in bay defined by walls on at least three sides, and with views to the outside
- Allocated area for this pattern should be 4.4 - 6.25 sq. ft. per child (example: 175 - 240 sq. ft. for 40 preschoolers).



furnishing



- For any of these alternatives, provide storage and display space for reading materials at child height (see CHILD-ACCESSIBLE STORAGE). For medium-sized centers (CENTERS FOR 60 CHILDREN), the reading area requires sufficient display space for showing the front covers of 20-25 books, i.e., 20-25 linear feet, plus 32 additional feet of book shelving.
- Adjacent tack-up and horizontal display space will be well used.
- Provide some open space for small-group reading-out-loud sessions (though larger sessions can happen in a MULTI-PURPOSE MOTOR ACTIVITIES AREA).
- Provide outlets for educational technology that can be individualized with the use of earphones, cartridges, etc.
- To create a quiet corner, sound insulation is necessary. Carpet in the area combined with draperies and of course the displayed books can reduce sound reverberation. Partial acoustic panels between other activity spaces and the READING-LISTENING AREA can reduce noise penetration.
- Provide local, task-oriented lighting in the READING-LISTENING AREA.
- For seating, use cushions, stuffed chairs, pillowed benches and window seats, raised and lowered platforms, and carpeting. Because children read in a remarkable variety of postures, and shift around from time to time, ensure that these seating-reclining facilities are loose and easily movable by the child.

RELATED ITEMS

RICH ACTIVITY POCKETS
 HIDING PLACES
 RETREAT AND OBSERVATION POINTS
 TIME OUT AND EMOTIONAL RELEASE AREAS
 CHILD-ACCESSIBLE STORAGE
 ACOUSTICS
 WORKING WALLS
 FLOOR FUNCTIONS WITHIN THE PROGRAM
 FLEXIBLE FURNISHINGS

1017 ARTS AND CRAFTS AREA

ISSUE

ARTS AND CRAFTS HAVE A VARIETY OF PURPOSES FOR THE DEVELOPING CHILD INCLUDING INTELLECTUAL, SOCIAL, AND EMOTIONAL GROWTH. INDEPENDENCE AND CREATIVE EXPRESSION WILL BE BEST ENHANCED BY WELL-DESIGNED AND EXTENSIVELY IMPLEMENTED AREAS.

JUSTIFICATION



Shure's (1963) finding that active social interchange is relatively low in art areas, and Houseman's (1972) finding that art areas are associated with low conflict levels have definite implications for planning art areas. The resultant assumption is that art areas are places for individual expression rather than intensive social interaction. Further, art areas may be places for children who wish to retreat from the social milieu for periods of time.

Some very positive values of art areas include opportunities for self-expression, intellectual development, communication, problem solving, improving self-image, gaining technical skills, developing small muscles and hand-eye coordination. Art areas therefore should be ready for use anytime and not be dependent on caregivers.

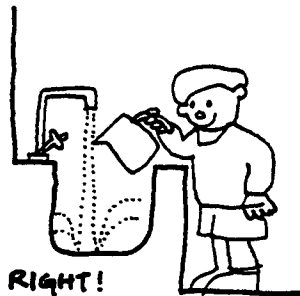
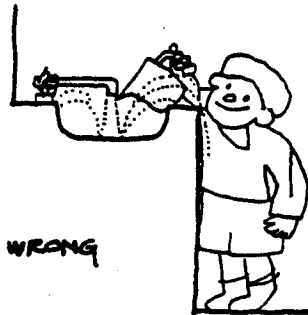
PRINCIPLE

AREAS FOR ARTS AND CRAFTS

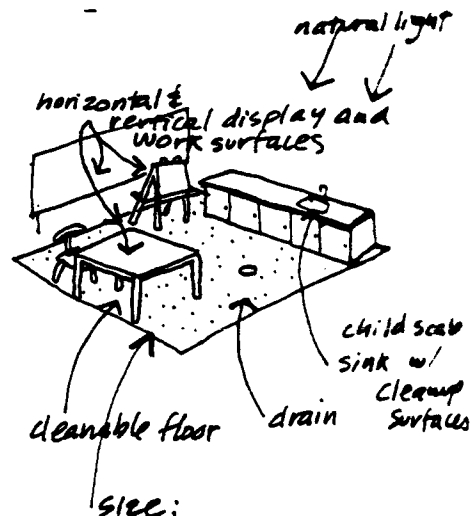
ART AREAS NEED NOT BE LARGE (FOR EXAMPLE, DOUBLE EASELS WITH A CHILD ON EACH SIDE NEED ONLY A 4 X 6 AREA). ART EXPERIENCES MAY BE ENHANCED BY AN ADJACENT OUTDOOR AREA PROTECTED FROM WIND, SUN, AND PRECIPITATION.



RECOMMENDATIONS



- Art Areas must be protected from circulation routes and other activities which will disturb individual involvement.
- Art areas should include:
 - both horizontal and vertical work surfaces for drawing and construction
 - storage for supplies, unfinished work (both 2- and 3-dimensional), and drying racks
 - floor and wall surfaces impervious to clay, paint, etc.
 - natural light
 - water source, sink, and counter space for easy clean-up
 - display space--tackboard and shelves
- Art storage should be accessible to children at all times.
- A sheltered outdoor area should be adjacent to the indoor art area to extend use.
- Allocated area for this pattern should be 6.25 - 7.75 sq. ft. per child (example: 250-275 sq. ft. for 40 preschoolers).



1018 MUSIC NOOK

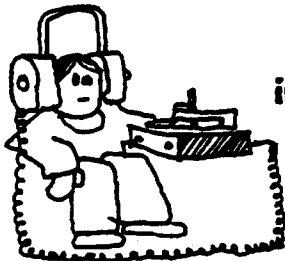
ISSUE

MUSICAL ACTIVITIES ARE AN IMPORTANT PART OF MOST CHILD-CARE PROGRAMS. MUSIC SHOULD BE ABLE TO BE BOTH A GROUP ACTIVITY AND A SPONTANEOUS EVENT INITIATED BY THE CHILD.

JUSTIFICATION

Hartley (1964, as cited in Osmon, 1971) noted that there seems to be little spontaneity in the music programs of most child-care centers, due perhaps to the lack of a "middle ground" between passive listening and skillful performance.

variety of
musical experiences

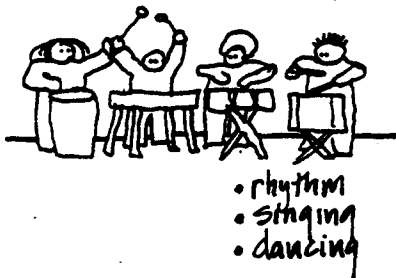


individual

By having a special music place available to them, children can not only participate with other children in group events but can also individually utilize the area for unselfconscious musical expression. Hartley suggests that such spontaneity, or the ability to "make music" whenever the child desires, may form the basis for a continuing musical appreciation.

A music nook can also serve as a get-away place where children go to escape from more active pursuits and other children to listen quietly to recordings by themselves.

group



- rhythm
- singing
- dancing

To maximize the learning potential, it is important to provide a variety of musical experiences. Activities generally include listening from individual headsets, group playing of musical and rhythm instruments, sing-alongs, and dancing to music. Music also creates a relaxing atmosphere to prepare children for nap-time.

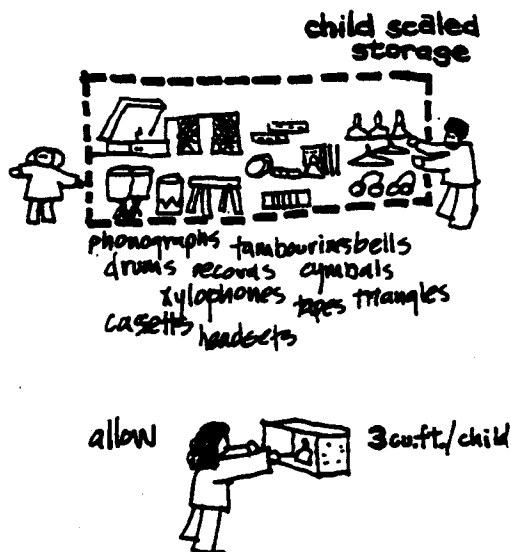
Storage in this area is important to accommodate the wide variety of shapes and sizes of musical instruments, such as bells, drums, cymbals, tambourines, triangles, xylophones, records, cassettes, tape recorders, and phonographs.

PATTERN

MUSIC NOOK

PROVIDE A MUSIC NOOK, ABOUT 100-180 SQ. FT. WITH SEATING FOR 4-5 CHILDREN, SHELVES FOR MUSICAL INSTRUMENTS, AND CARPETING TO ABSORB SOUNDS GENERATED IN THE AREA.

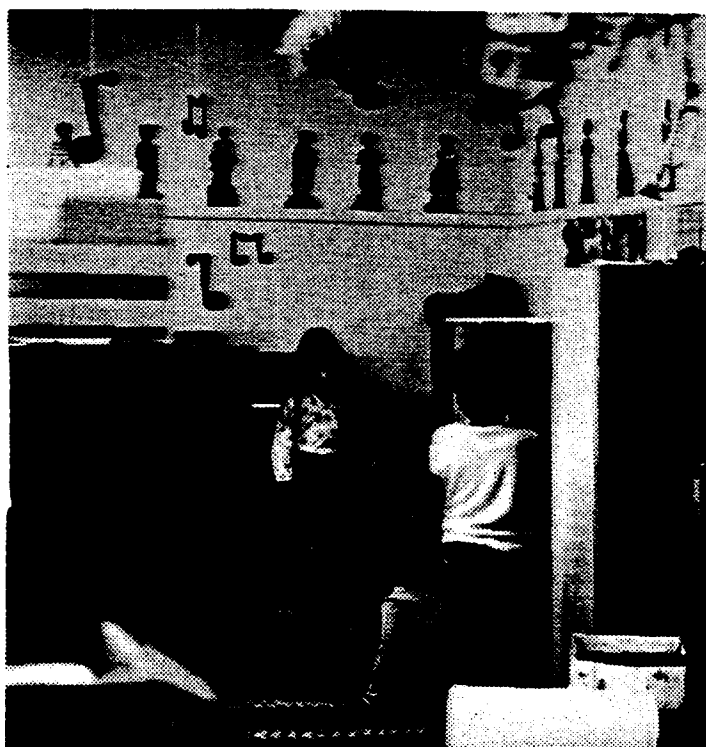
RECOMMENDATIONS



- Locate music nooks away from major circulation paths, but close to compatible areas, such as the MULTIPURPOSE-MOTOR ACTIVITIES AREA which might be expanded to accommodate combined music-dance activities.
- Carpeting will provide a soft surface for informal seating of small groups while absorbing sounds from instruments and children's voices.
- Storage for instruments, music, and electronic equipment (phonographs, headsets) should be child accessible with a small amount of teacher-only height.
- The music area should have child-proof electrical outlets within it.
- Allocated area for this pattern should be 3.75 - 5 sq. ft. per child (example: 150 - 180 sq. ft. for 40 preschoolers).

RELATED ITEMS

FLEXIBLE DANCE AREA
MULTIPURPOSE-MOTOR ACTIVITIES AREA



1019 SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS

ISSUE

OLDER CHILDREN WILL USE CHILD-CARE FACILITIES AFTER SCHOOL. BUT OLDER CHILDREN WILL NOT WANT TO COME TO A FACILITY THEY PERCEIVE AS A "BABY PLACE." FURTHER, OLDER CHILDREN WHO HAVE SPENT THE DAY IN SCHOOLS WITH STRUCTURED CURRICULAE WILL HAVE VERY DIFFERENT NEEDS AND WILL REQUIRE DIFFERENT TYPES OF ACTIVITIES THAN THE PRESCHOOL CHILDREN.

JUSTIFICATION



Being old enough to be in school is a very important milestone in a child's life. Children who have attended a child-care facility before reaching school age and then graduated to a "regular" school will resist returning unless great care is taken to make a special place, easily identifiable as more "grown-up" just for school-age children.

Goodman (1969) recommends that children have controlling participation in designing and running their own spaces. In the child-care facility context, this can mean an "unfinished" space which children can partition, decorate, and use as they wish. This is an indoor concept very similar to the outdoor adventure playground where children with a playleader as advisor use tools and "junk" to build their own environment (see ADVENTURE PLAY AREAS in Recommendations for Child Play Areas, 1979).

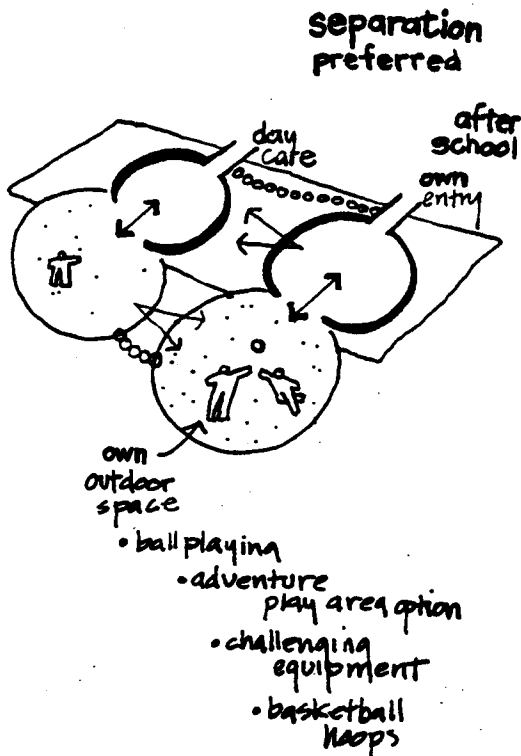
A strong connection with the outdoor space is required for older children. Their outdoor space will also be special and separate from young children's play space. They will require ball-play areas, basketball hoops, more challenging equipment, etc. It may also be appropriate to consider an adventure playground in conjunction with after-school drop-in care. Staff may then double-function as playleaders if it is appropriate.

PATTERN

SPECIAL PLACE FOR AFTER-SCHOOL DROP-INS

A SPECIAL AREA SHOULD BE PROVIDED FOR AFTER-SCHOOL DROP-INS WHICH HAS A STRONG CONNECTION WITH THE OUTDOORS, HAS ITS OWN ENTRY SEQUENCE, AND WHICH IS "UNFINISHED" AND "FLEXIBLE" SO CHILDREN CAN SHAPE IT IN THEIR OWN IMAGE.

RECOMMENDATIONS



- If a common main entrance is used for both preschool and after-school children, an immediate separation should occur at the entry. If separate entries can be used, special care should be used in designing the after-school entry to make it seem "grown-up."
- After-school children should be active designers and builders of their own environment. An "unfinished" space with easily adaptable surfaces, tools, materials (junk), workspace for building, clean-up, toilet-wash area at school-child scale, all will help in this process.
- Easy access to special outdoor spaces including more sophisticated equipment, game spaces, etc. will be helpful.
- A possible connection with an adventure playground would be appropriate. This would also provide a strong image of older-child use area.
- Some visual connections between pre-school and after-school indoor and outdoor areas will help make some cross-over possible. If older children have an attitude of "helping" with younger children, they will feel more comfortable about venturing into young-child areas. Conversely, if young children can see some activities in the older-child areas, they may become interested in working toward those as goals: "Some day I will be able to . . ."
- Allocated area for this pattern should be 35-50 sq. ft. per child (assuming 10 after-school drop-in children) and regardless of how few children, a minimum of 200 sq. ft.
- Multi-story facilities may be used for children age 5 or above if special construction standards or automatic fire extinguishing systems are incorporated (see AR608-1, # 8-18; National Fire Protection Association 101 (1976); DOD 4270.1-M).

RELATED ITEMS

APPROACH AND ENTRY SEQUENCE
 OUTDOOR PLAY YARDS
 A PLACE TO BUILD
 FLEXIBLE FURNISHINGS

ISSUE

DESPITE THE FACT THAT THERE A NUMBER OF
IMPORTANT DEVELOPMENTAL GOALS FOR INFANTS
UNDER THE AGE OF 18 MONTHS OR 2 YEARS, THE
DAILY CYCLE IS UNSTRUCTURED AND UNIQUE.
INFANT ACTIVITY PATTERNS DIFFER SIGNIFICANTLY
FROM THOSE OF OLDER CHILDREN.

JUSTIFICATION

The most important developmental goals for infants under the age of 18 months or 2 years are the following (Huntington, Provence, and Parker, 1971):

- encouraging language development
- stimulating and supporting cognitive development
- gross-motor development
- fine-motor development
- self awareness
- social responsiveness and mastery

To support and stimulate these developments, a variety of activities need to be provided for infants, among them the following (Huntington, et al., 1971):

- playing with visual and geometric objects with a staff member
- singing songs and playing games
- exploring shapes, textures, smells, and colors like bricks, grass, leaves, dog fur, geometric objects, sand paper, wool, oranges, etc.
- playing hide-and-seek-type games
- crawling, reaching, pulling up, standing, falling
- playing with crib-type toys, mobiles, busy boxes, etc.
- eating, trying to eat by him or herself



* With thanks to Elizabeth Kidera, Wendy Golden, Denelle Cole, and the students of Arch. 420, University of Wisconsin-Milwaukee, Fall 1978.

- cuddling, rolling with another, identifying body parts, playing with mirrors
- observation, watching, observational learning

A structured routine of each child's daily activities, including playing, learning, napping, eating, and toileting is not appropriate for maximum development. The infant's day flows from activity to activity with his or her own timetable.

*physical contact
in infant care is
critical*



According to Chase, Williams, Welcher, Fisher, and Gfeller (1974), human infants become attached to one or more principal caregivers during the first year of life. Their explorations are facilitated by direct contact and other reinforcing behaviors of caregivers. When the attachment process occurs in a normal way, infants become increasingly bold in their explorations of the surrounding physical environment (Rheingold and Echerman, 1970, as cited in Chase, et al., 1974).

The availability of objects appropriate to the exploratory behavior of infants may play an important role in the development of the organization of thinking and understanding. Chase, et al. further state that while exploratory and play behaviors do not have to be taught, their appearance does depend on having an appropriate supporting social environment and the availability of meaningful information.

Millar (1968) supports this notion by stating that when babies are awake and comfortable, they spend their time looking, listening, and responding as if they were "hungry" for stimuli.

Infant areas need a large, open, multi-textured space which contains a rich variety of manipulable objects which can be visually examined, thrown, dropped, and squeezed. In this area, infants can crawl about, and safely investigate their surroundings while under the watchful eye of caregivers. Furniture and other props also provide a variety of possibilities for developmental experiences.

Evans and Saia (1972) note that the beginning mastery of motor skills--sitting, standing, walking and climbing--can be encouraged by design features such as carpeted pits that form a safe, protective surrounding which toddlers can hold on to when learning to walk. Other devices such as padded steps and simple climbing structures allow infants to slide, climb, hide, and according to Evans and Saia, gain awareness of their bodies in space and the forces acting on them" (p. 113).

Because infants just learning to crawl and walk can be accidentally injured by older toddlers already climbing about, it is important to provide degrees of integration and separation between infants and toddlers as well as between infants-toddlers and older children. For example, shallow pits and low platforms enable infants and toddlers to see one another yet be separated in their activities. A series of padded, low platforms of varying heights also provides developmental challenges to toddlers who must learn to coordinate their muscles and balance in order to negotiate each level.

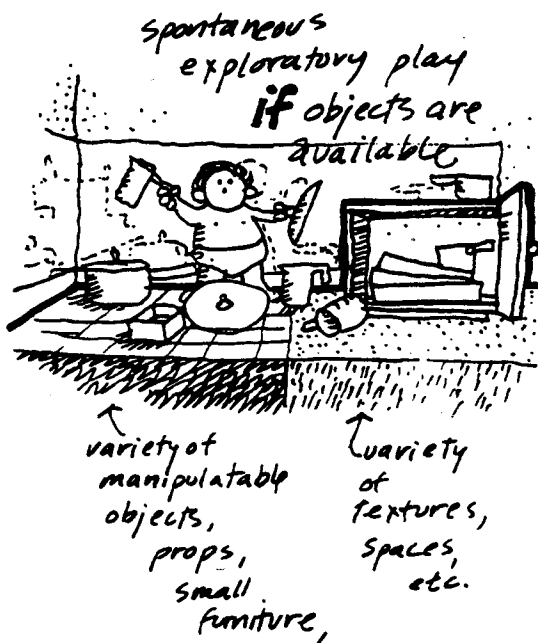
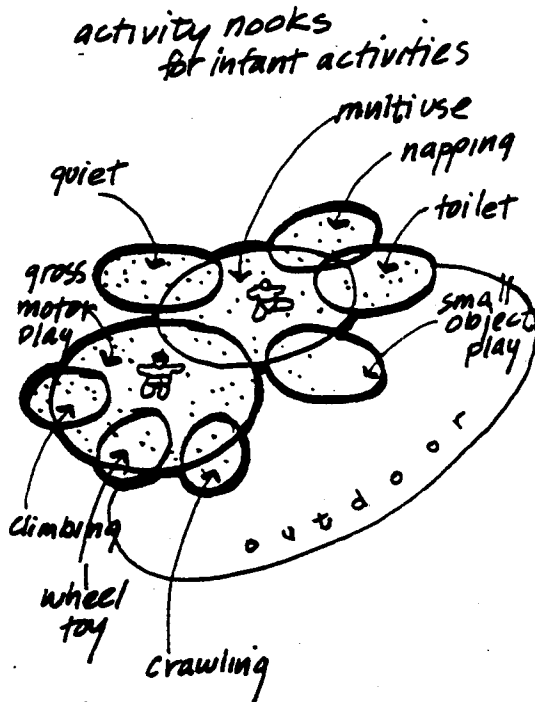
It is particularly important that each of these activity spaces be as barrier-free as possible and flow easily from one to another so that children are exposed to the widest possible range of daily experiences and so that staff may easily see all that is happening.

PATTERN

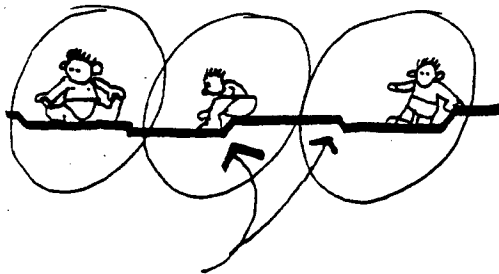
INFANT CIRCLE OF ACTIVITIES

CREATE A SPECIAL ENVIRONMENT FOR INFANTS, PARTIALLY INSULATED BUT NOT ISOLATED FROM TODDLERS AND PRESCHOOLERS. WITHIN THE ENVIRONMENT, ALLOW FOR THE VARYING FLOW OF ACTIVITIES BY INTERRELATING ALL ACTIVITY NOOKS. INFANT ACTIVITY AREAS SHOULD PROVIDE STIMULATING SENSORY INPUT, AND CONTAIN A LARGE VARIETY OF MANIPULABLE OBJECTS AND SHOULD CONTAIN TEXTURED CRAWLING SURFACES. ALL AREAS SHOULD BE VISUALLY INTERCONNECTED THOUGH PARTIALLY RESTRICTED SO INFANTS CANNOT WANDER OFF BY THEMSELVES. MOVEMENT SHOULD BE POSSIBLE FROM THE INFANT ENVIRONMENT TO OTHER AGE GROUPS' ENVIRONMENTS WITH ADULT ASSISTANCE.

RECOMMENDATIONS

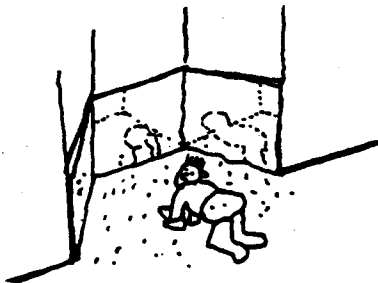


- Provide special infant activity spaces for each of the variety of major activities infants engage in, viz.: small object play; gross motor play including wheel toys and climbing area, exploration area, crawling area, quiet area for singing, cuddling, and being read to; and for caretaking activities like napping, eating, and toileting.
- Interrelate these activity spaces in an overall open plan for an infant area, with each activity being a partial nook or corner off a main multi-purpose space (see RETREAT AND OBSERVATION POINTS).
- As no child-care center should be exclusively indoors, infant areas too should have adjoining indoor and outdoor play areas.
- The designed environment and the equipment within it must be responsive to infants' changing scales and postures, which range from crawling with eye level at six inches above ground to standing at 20 inches.
- Provide a variety of manipulable objects suitable both for infants and toddlers. Play objects should provide experiences in a variety of sensory modes (touching, tasting, smelling, seeing).
- Multi-textured crawling spaces (wood, stone, bricks, carpet, tile) suggest the concepts of soft, warm, cool, hard, smooth, or rough.
- Because infants spend so much time on the floor, surfaces should be warm and without drafts. Soft, multi-textured crawling surfaces facilitate infants' graduation from crawling to walking. A tiled area provides a smooth surface for pushing toys and riding wheeled vehicles.
- Natural light creates a very pleasant environment if the light source can be controlled.
- Allocated area for this pattern should be 20-35 sq. ft. per infant (example: 300-525 sq. ft. for 15 infants) and no matter how few infants, no less than a total of 100 sq. ft.



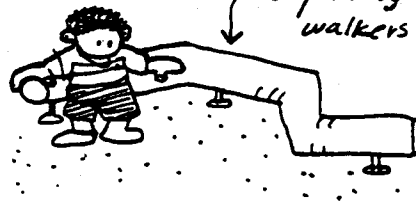
*small changes
produce very
clear spaces &
worlds
for the
very young*

*eye level mirrors
for infants*



- Infant spaces should be cheerful, homey, and child-scaled, with places where toddlers can seek stimulation or retreat to watch from a safe distance.
- Infant areas should be barrier-free to facilitate physical contact between caregivers and toddlers, and to make close visual supervision possible.
- Army Regulations (AR608-1) require at least 20 square feet of usable floor space for crawling for each infant (age 1½ and under). This will be an area segregated from the net usable play space provided for older children.
- Safe infant-toddler play areas can be created by physically separating them from those of older children, while maintaining the sounds of and views to older children's areas.
- Young children are usually fascinated with their mirror image; therefore a reflective surface which reflects the infants and their activities is an important addition to infant areas.

*"hold-ons"
for
beginning
walkers*



RELATED ITEMS

RETREAT AND OBSERVATION POINTS
CHILDREN IN THE KITCHEN
EATING CLUSTERS
INTIMATE DIAPERING AREA
SEPARATED INFANT NAPPING
TEXTURED CRAWLING LEVELS
TODDLER TRANSITIONAL TERRITORY

1021 TODDLER TRANSITIONAL TERRITORY

ISSUE

TODDLERS BETWEEN THE AGES OF ABOUT 18 MONTHS TO 3 YEARS ARE IN AN IMPORTANT TRANSITIONAL PERIOD--BETWEEN THE SECURITY NEEDS OF INFANCY AND THE EXPLORATORY AND SOCIAL DEVELOPMENTS OF PRESCHOOL.

JUSTIFICATION

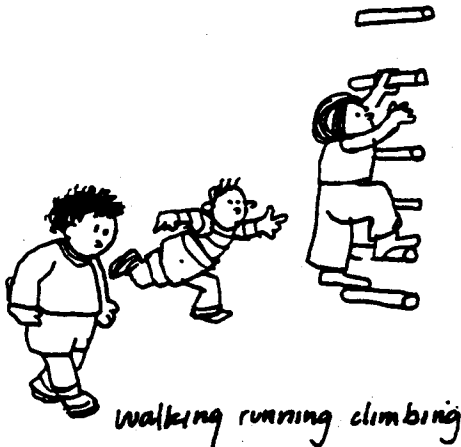
Quoting from the Department of the Army Staff Development Series, *Caring for Toddlers*:

A toddler usually refers to a child between the ages of two and three who has learned to walk or "toddle" with ease. Two year olds, or toddlers, have gained a lot of control over their bodies. Newly learned physical skills such as walking, climbing, and running and feelings of being a rather useful individual are the spark in an increased demand for independence. Now all of that energy can be directed at anything in sight. Toddlers are always on the go and love to explore and experiment with anything that catches their eye--wastebaskets, safety pins on the floor, faucets, bottles, other children. Everything is a source of possible adventure, for both the toddler and the caregiver. * (Scavo, Liddell, Diffendal, and Lake, 1979, p. 13)

The most important developments for the toddler are the following:

- continued motor development: walking, running, climbing, etc.
- beginning of socializing: decrease in time spent eating, sleeping, and dressing, and an increase in social experiences such as talking, trying to get attention and approval, etc.
- exploration of simple objects and tasks: qualities of things, smells, textures, etc.

* Toddlers should be determined by developmental growth rather than chronological age.





- language development: understanding simple words and sentences, and speaking some, including the development of simple conversations
- intellectual development: thinking, working out of ideas before acting, interests in creative activities such as drawing, block building, fantasy, pretend play, and interests in simple cause and effect chains, consequences, time

More information is given in Scavo, et al (1979) and in Huntington, Provence, and Parker (1971).

Whereas the infant is active, but constrained due to limitations of movement, the toddler is exploring the world actively and without bounds. The toddler is also beginning to move away from parents and significant others and is beginning to develop an all-important sense of individual independence, initiative, and self-confidence. But unlike the older preschooler—who is very capable with language, is totally potty-trained, and is very stable on his or her feet, the toddler is just that--toddling between independence and moments of needed security, toddling between using the bathroom like a real kid and having accidents, and toddling between mastery of the environment and times of hilarious attempts to accomplish tasks without any adult help (thank you!).

Thus the environment for a toddler must be a transitional territory between that of the infant and that of the older preschooler. Security places, observation places, little nooks and crannies are all necessary, but the multi-level crawling platforms appropriate for the infant are now architectural barriers to the freer flowing movement of the toddler.

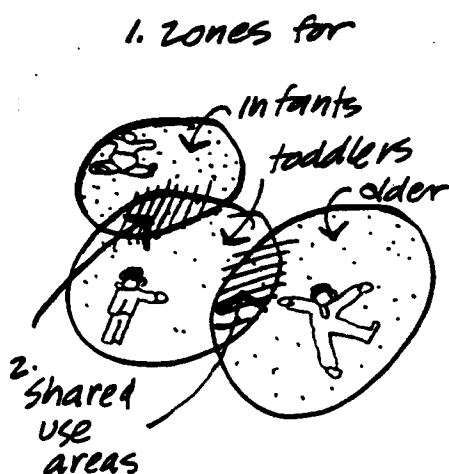
PATTERN

TODDLER TRANSITIONAL TERRITORY

PROVIDE A SPECIAL TODDLER ENVIRONMENT COMPRISED OF SEVERAL ACTIVITY POCKETS FOR 4-5 CHILDREN EACH AROUND A CENTRAL MOTOR ACTIVITY-MULTIPURPOSE SPACE. PLACE THE TODDLER AREA BETWEEN INFANT AND PRESCHOOLER AREAS WITH VISUAL AND MOVEMENT CONNECTIONS WITH BOTH AREAS.

RECOMMENDATIONS

- Provide a series of ACTIVITY POCKETS for various toddler activities; four pockets is a minimum.
- Provide one MOTOR ACTIVITY-MULTIPURPOSE SPACE at the center of the activity pockets.
- Provide another TODDLER TRANSITIONAL TERRITORY for every 10-12 toddlers, i.e., no more than 12 toddlers should be in one overall toddler space.
- Infants and toddlers can share LEARNING BATHROOMS, which might serve as an island in space helping to define INFANT CIRCLE OF ACTIVITY from TODDLER TRANSITIONAL TERRITORY.
- Infants and toddlers can also share other service areas like EATING CLUSTERS and CHILDREN IN THE KITCHEN, though of course infants and toddlers will require use of different, though possibly adjacent, pods for eating.
- Provide other physical amenities for the toddler area in accordance with patterns for preschoolers' spaces, e.g., NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE, as detailed below in RELATED ITEMS.
- Provide toddlers with their own outdoor play yards, visible, immediately accessible, and interconnected with infant and preschooler play areas.
- Allocations for space for this pattern are as follows:
 - minimum is 20 sq. ft. per toddler
 - recommended is 35 sq. ft. per toddler
 - total should be no less than 150 sq. ft.



RELATED ITEMS

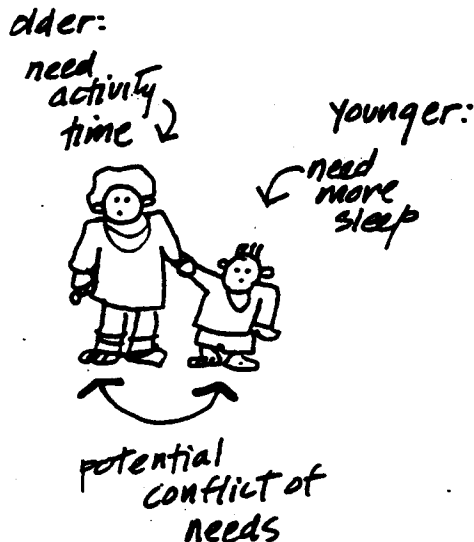
INFANT CIRCLE OF ACTIVITY
THE INFANT-TODDLER-PRESCHOOL CONNECTION
DEVELOPMENTALLY-APPROPRIATE PLAY YARDS
MULTIFUNCTIONAL HOUSES
OUTGOING BUILDING INFILTRATING OUTDOOR SPACES
MULTI-PURPOSE-MOTOR ACTIVITY SPACE
LEARNING BATHROOMS
EATING CLUSTERS
CHILDREN IN THE KITCHEN
READING-LISTENING AREA
BLOCK PLAY AREAS
AREAS FOR ARTS AND CRAFTS
NATURE STUDY AREAS
OBJECTIVE AND NON-OBJECTIVE STAGES AND PROPS
NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE
CUBBIES

1022 SEPARATED INFANT-TODDLER NAPPING

ISSUE

INFANTS AND TODDLERS NEED MORE SLEEP THAN OLDER CHILDREN. DUE TO THEIR PARTICULAR NEEDS, INFANTS AND TODDLERS REQUIRE NAP SPACES IN A SPECIALLY SHELTERED ENVIRONMENT.

JUSTIFICATION



Because they are often sleeping while older children are playing, infant and toddler sleeping areas must be removed from the mainstream of the center's activities. Prescott and David (1976) report a frequent complaint of caregivers is that older children often disturb infants and toddlers during nap time if acoustic separation is inadequate.

For their safety, infants and toddlers also require a more secure style of sleep furniture. Although cribs provide safe, enclosed spaces where infants can maneuver without harm, toddlers often endanger themselves by trying to climb over their cribs as they learn to walk. Therefore, visual supervision of this area and accessibility which permits quick caregiver intervention are primary concerns.

In addition to providing a quiet, safe atmosphere which is conducive to sleep, it is equally important that the nap area be a warm, comforting place where caregivers can give relaxed and personal attention to each infant. In this way, young children come to develop pleasant associations with the sleep experience.

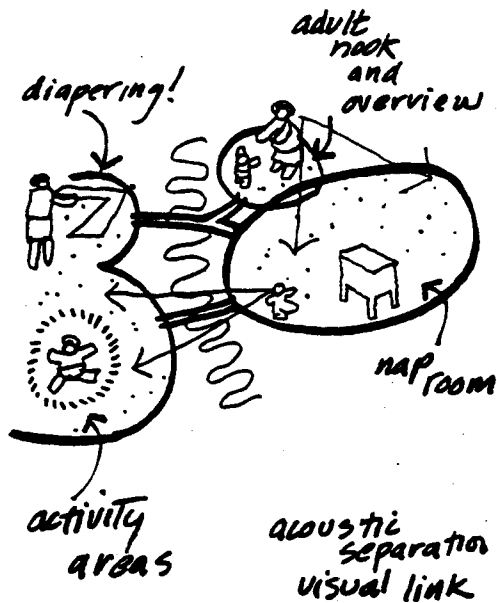
PATTERN

SEPARATED INFANT NAPPING

SHELTERED NAPPING AREAS FOR INFANTS AND TODDLERS SHOULD BE ACOUSTICALLY SEPARATED, VISUALLY CONNECTED, AND PHYSICALLY ACCESSIBLE FROM OTHER INFANT ACTIVITY AREAS. LIGHTING LEVELS SHOULD BE ADJUSTABLE AND THE SCALE OF THE SPACE SHOULD ACCOMMODATE SLEEP FURNITURE WITH ADEQUATE CIRCULATION AVAILABLE FOR THE CAREGIVER STAFF TO MOVE ABOUT EASILY.

RECOMMENDATIONS

- Acoustically isolate infant sleeping areas from the activities of older children. Visual connections with older children's activity spaces should be preserved, however.



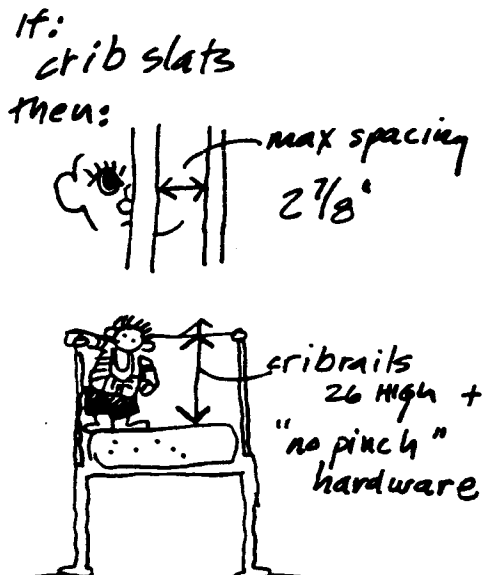
- Unless placed against a wall, minimum spacing between cribs is 3 ft. (AR 608-1). When planning infant nap areas, estimate 12 sq. ft. per child for 50% of the children. The scale of the sleeping area should be adequate to accommodate sleep furniture and for caregiver circulation. Spaces which contain rows of cribs or cots are impersonal and discourage formation of warm, relaxed relationships between caregivers and infants. Small groups of 3-4 cribs clustered near a diapering area allow caregivers to give more personal attention to infants in their care.

- A small nook or other semi-enclosed space next to the sleep area which is large enough for a caregiver and one child, creates a pleasant place where caregivers can hold, cuddle, and sing to infants, encouraging them to sleep.
- Evans and Saia (1972) suggest that infant-toddler sleep spaces contain both cribs and cots so that infants who begin walking can be located closer to the floor. They also advocate placing windows between the sleep areas and other infant spaces to facilitate quick crib checks.
- Natural lighting creates a pleasant atmosphere only if it is easily controlled. Darkening the sleep space is both comforting and suggestive of sleep.

- Provide adequate ventilation to the sleep area so that each space receives fresh air.

- Sleeping areas in centers housing children under 3 years of age shall be compartmented with partitions having a 3/4-hour fire resistance rating so there are not more than 6 children in each compartment. (National Fire Protection Association, 1976; 9-5.3. 3.6.2; stronger than recommendation in AR 608-1)

- Allocated space for this pattern should be 10-16.5 sq. ft. per child (15 sq. ft. is recommended), i.e., 150-220 sq. ft. for 15 infants.



- For stimulating infants, Evans and Saia (1972) recommend placing mobiles above cribs for infants to look at and reach for when they awaken.

RELATED ITEMS

NAPPING PLACES

1023 PRESCHOOLER NAPPING PLACES

ISSUE

PRESCHOOL CHILDREN IN CHILD-CARE SETTINGS ARE OFTEN RELUCTANT TO GIVE UP THEIR PLAYING LONG ENOUGH TO TAKE A NAP. FOR CHILDREN WHO HAVE DIFFICULTY SETTLING DOWN, NAP TIME BECOMES UNPLEASANT AS THEY FIGHT THE EXPERIENCE. IT CAN BE EQUALLY TRYING FOR CAREGIVERS WHO MUST COERCE THESE ACTIVE CHILDREN INTO LYING DOWN AND BEING QUIET WHILE OTHERS SLEEP.

JUSTIFICATION

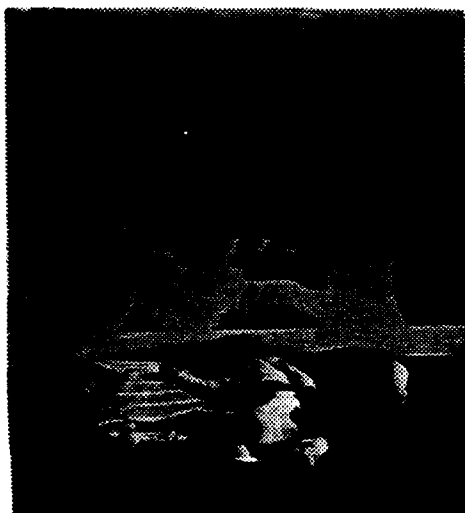
Even if they don't sleep, children need the opportunity to relax and unwind from their play experiences, particularly those children who receive full-day care. Prescott and David (1976) note that many states require children to be given rest periods, and that they be provided with their own sheet and blanket.

Most state licensing codes require that a rest period be provided, but most developmentally-oriented child-care programs treat napping on a flexible schedule, each child napping as necessary for his or her needs, activity level, and health (e.g., children with colds may require more rest).

There are two basic ways in which most good centers provide napping places: separate napping areas or in the group play environment.

A designated sleep area can be reassuring to children because the comfort and privacy of home conditions can be duplicated (Landreth and Moise, 1949). In separate sleep areas, cots, mats, or bunks are allowed to remain assembled and do not have to be taken down or pushed out of the way after each use. As Osmon (1971) notes, other activity spaces in the center can be easily reprogrammed or rearranged for new uses while the children rest, in a separate area. As children awaken they can then be sent back to the play areas without disturbing others who are still sleeping. Separate areas also provide for staggered rest periods which allow some children to nap while others can be playing in the group play space.

*Storage for cots
integrated with
multi level
play equip*



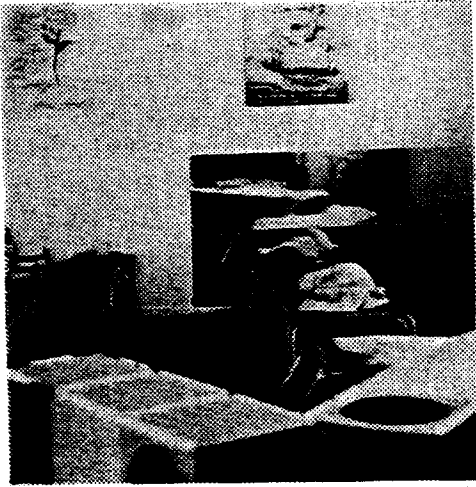
Some centers, however, prefer the economical double-functioning of a space for various uses, such as using a large group play environment for napping places. Lightweight folding cots and mats are easily stored away while not in use, yet can be quickly assembled and pushed into position. In addition, fewer staff members are required for observation of one space versus two separate areas. Texas A & M University (1969) suggests that napping in their own classrooms may be relaxing for children because of the familiarity of the atmosphere. In such open-plan, double-functioning centers, Twardosz, Cataldo, and Risely (1974, as cited in Prescott, 1976) found no adverse affect on the sleep patterns of young children.

A few centers such as the Eveline Lowe Primary School provide getaway places or "kivas" where children can go to read or sleep. (A "kiva" is a small, cozy room which is lower than the surrounding areas and whose entry is small and well defined--taken from the form of the sacred pit-rooms of the Native American Indians of the U.S. Southwest.) Conversely, but to the same purpose, at the Helen Owen Carey Center (see Travel Report, 1978), a quiet room is available where "can't nap" children are encouraged to go to play.

National child-care experts seem to feel that either napping pattern is acceptable--a separate area or double-functioning area. Cohen (1974) advises:

If space and money permit, a separate room where cots can remain set up is most convenient; if not, stakable cots can be distributed in the classroom or playroom. (p. 59-60)

Prescott and David (1976) even remark that most homes provide a crib or special bed for infants (see SEPARATE INFANT NAPPING) but often they spread a sheet or quilt over the bed of a family member for the nap time of older children. For child-care centers, Prescott and David "see no objection to this arrangement" (1976, p. 55).



PATTERN

Whether a separate area is provided, or an activity area double-functions for napping places, certain environmental criteria are critical. Noise and too intense light levels are the main potential problems. In either case, then, lighting and noise should be able to be controlled. Adjustable shades or curtains may be used for protection from glare and to promote a napping-place atmosphere any time of day (Child Welfare League, 1973).

If a corner is designated as a possible napping place, it should also have sufficient acoustic materials to deaden sounds: a partial acoustic barrier may also be used to partially separate it from more active areas.

NAPPING PLACES

PROVIDE A PLACE OR PLACES WHERE PRESCHOOL-AGE CHILDREN CAN SLEEP OR REST QUIETLY ANY TIME DURING THE DAY. EITHER PROVIDE A SEPARATE SLEEPING AREA, OR PROVIDE ACOUSTIC AND LIGHT CONTROL IN SOME OTHER, DOUBLE-FUNCTIONING SPACE LIKE A MULTI-PURPOSE OR LARGE GYM PLAY AREA, OR IN A CHILD RETREAT CORNER OR OTHER SMALLER ACTIVITY SPACES. INDIVIDUAL DIFFERENCES IN SLEEPING HABITS SHOULD BE RECOGNIZED AND PROVIDED FOR IN ALL NAPPING PLACES.

RECOMMENDATIONS

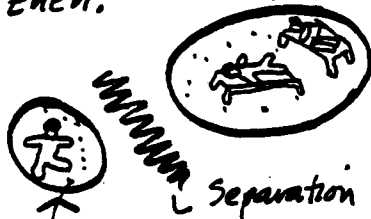


- Allocate 12-20 sq. ft. per child for a maximum of 1/3 of the children, e.g., 160-200 sq. ft. for 40 preschoolers.
- Two feet around each cot or mat has been recommended to allow adequate circulation space without disturbing other children (Evans, Saia, and Evans, 1974).
- Light and glare should be easily controlled and ventilation of each space should provide a fresh air supply to each sleeping area.
- If cots are taken down after each use, there should be storage space nearby. Similarly, there should be a blanket, sheet, and pillow storage which is easily accessible to children.

- non nappers

if: napping in activity space

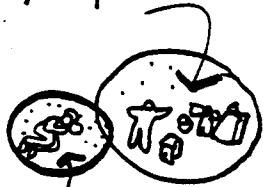
then:



then: provide separate quiet/play nooks for non nappers

- extra napping

if: napping in activity space



then: provide quiet napping nooks for those who need extra napping

- If napping and other activities are occurring simultaneously, some acoustical buffering and sufficient acoustic materials to deaden the space are desirable.
- Some provision is necessary for "can't nap" children such as quiet or "special" places where they can play without disturbing other children.
- If napping areas and other activity areas are double-functioned, some "get-away" space should be provided for children who wish to sleep at times other than a designated "nap time."
- Sleeping areas in centers housing children under 3 years of age shall be compartmented with partitions having a 3/4-hour fire resistance rating so there are not more than 6 children in each compartment. (National Fire Protection Association, 1976, 9-5.3.3.6.2)



RELATED ITEMS

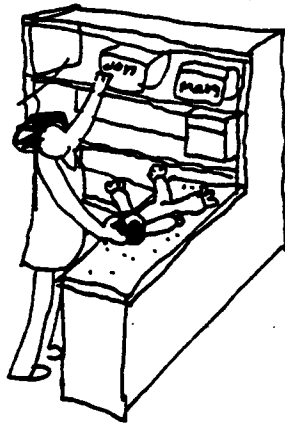
HIDING PLACES
SEPARATED INFANT NAPPING

1024 INTIMATE DIAPERING AREA

ISSUE

DIAPERING IS A MAJOR SOURCE OF INFANT-CAREGIVER INTERACTION, AND HAS BEEN THEORIZED TO BE IMPORTANT TO LANGUAGE DEVELOPMENT IN INFANTS. ONLY WHEN THE DIAPERING AREA IS EFFICIENTLY PLANNED AND SUPPLIES CONVENIENTLY LOCATED CAN CAREGIVERS GIVE CHILDREN THEIR COMPLETE ATTENTION.

JUSTIFICATION

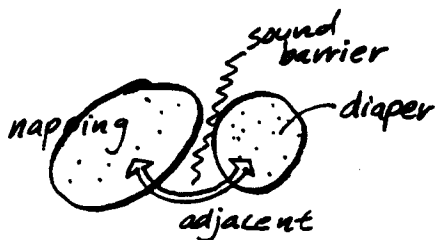


Caregivers are required to lift and carry infants many times each day. Until toilet training begins to take place, it is more convenient for caregivers to diaper infants at changing tables within infant spaces so that visual supervision is uninterrupted and unnecessary steps minimized.

The changing area can also be a place where caregivers can exercise infants' muscles, and linger for a few moments talking and cuddling the child. In addition to strengthening the relationship between the infant and his or her caregiver, this personal attention has been suggested as a basis for furthering language and cognitive development (Huntington, Parker, Provence, 1971).

Therefore, a convenient, efficiently arranged diapering area encourages relaxed exchanges between caregivers and infants.

PATTERN



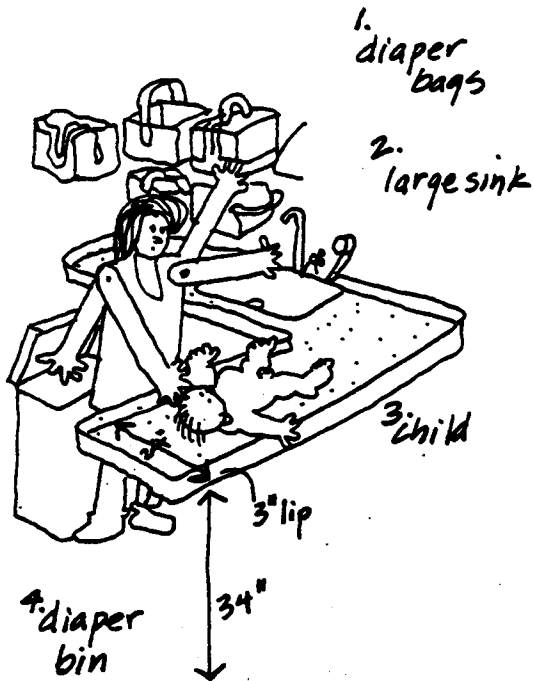
INTIMATE DIAPERING AREA

DIAPERING AREAS SHOULD BE QUIET, INTIMATE AREAS, EFFICIENTLY ARRANGED, PROTECTED FROM DRAFTS, AND INFANT SCALED. DIAPERING AREAS REQUIRE 34" HIGH BY 24" WIDE COUNTERS, A LARGE SINK, INDIVIDUAL STORAGE PLACES FOR INFANTS' PERSONAL SUPPLIES, AND LARGE AMOUNTS OF SURFACE AREA TO ACCOMMODATE DIAPER CHANGING ACTIVITIES.

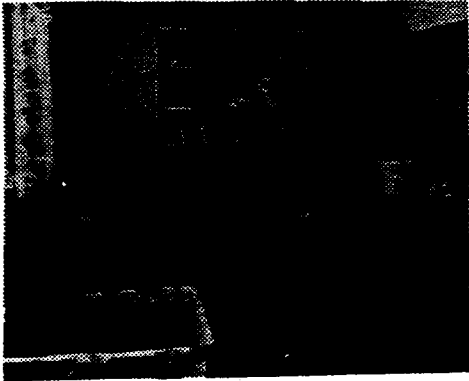
RECOMMENDATIONS

- The diapering area should be large enough for caregivers to easily move about, but intimate enough in scale to enhance the opportunity for exchanges between infants and caregivers.

• within reach at one time



- Wooden cabinets 34" high, 24" wide by any length are required to provide an adequate surface on which an infant can safely be placed when being changed. A raised edge on three sides prevents babies from accidentally slipping off.
- Surfaces should be non-skid, washable, and warm to the touch. All corners on furniture should be rounded to prevent injury.
- A sink large enough to bathe and wash off infants is necessary. Counter space next to the sink provides a convenient place to dry the infant and to place necessary supplies.
- Provide a higher-than-normal commode adjacent to the changing table for dumping out and flushing away the contents of cloth diapers and for flushing away the flushable part of paper diapers.
- Storage cubbies are useful for separating each infant's supplies. Additional storage space can be created by placing shelves under the changing table.
- Infant areas generate a large amount of soiled diapers each day. A large, lined container with a lid should be placed in a convenient location next to the changing table.
- Locate the diapering area adjacent to sleep areas but with acoustic separation so that sleeping infants are not disturbed.
- Provide shelves over the infant changing tables where small toys may be kept, and from which mobiles might be hung and pictures pasted onto.
- Protect all infant diapering areas from drafts.



- Temperatures should be approximately 2-4° greater than in other parts of the child care center (see HVAC MECHANICAL SYSTEMS).
- Allocation of space for this pattern should be 60-100 sq. ft. minimum per 20 infants.

RELATED ITEMS

PROTECTED NAPPING
HVAC MECHANICAL SYSTEMS

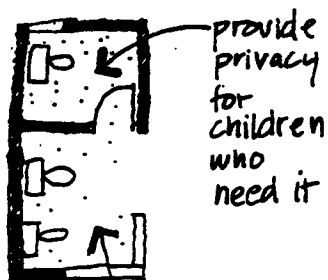
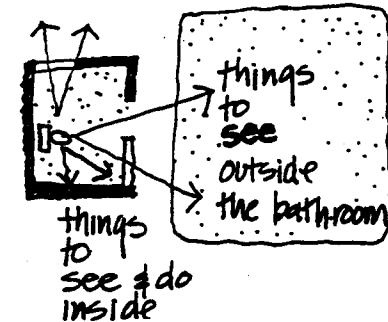
1025 LEARNING BATHROOMS

ISSUE

SINCE TOILET TRAINING IS ONE OF THE VERY BASIC AND IMPORTANT ACCOMPLISHMENTS FOR YOUNG CHILDREN, USE OF TOILETS AND WASH-BATH AREAS IN PRESCHOOLS SHOULD BE AS PLEASANT AND TROUBLE-FREE AS POSSIBLE. FURTHER, LOCATION OF TOILET AREAS IS VITAL SINCE CHILDREN OFTEN BECOME SO INVOLVED WHEN PLAYING THAT THEY WAIT UNTIL THE LAST POSSIBLE MINUTE BEFORE TRYING TO REACH THE TOILET.

JUSTIFICATION

kids spend
time in the
bathroom



Children who are learning to use bathrooms must spend time "sitting" at regular intervals. They may also be learning to wash themselves. If they can view bathroom time as special and the bathroom space as enjoyable, this training will be much less tedious.

Bathrooms which provide other things to do (seeing plants, writing on the walls, watching other activities going on) will seem less isolated from the rest of the activity spaces and reduce the anxiety and frustration which some children may feel at bathroom time.

An important design decision involves the relative openness or "closed-ness" of the toilet areas. The arguments which support the two opinions are based on these factors:

Closed:

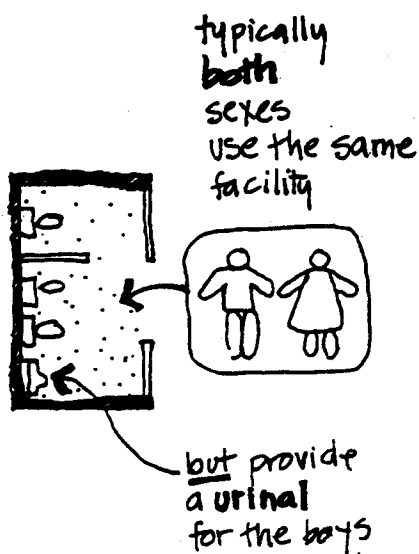
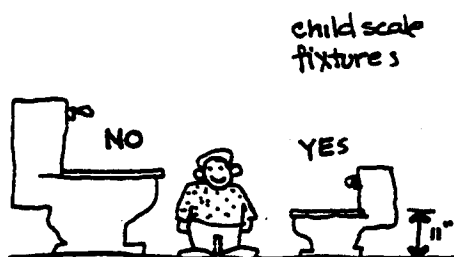
- privacy is provided for children who wish it
- a child's home conditioning may cause shyness about the toilet process

Open:

- helps the child develop a healthy attitude toward sexual differences
- minimizes isolation, demystifies the toilet process (Travel Report, 1978, p. 345)
- there is more room for caregiver to assist
- easy supervision of toilet area is possible

Location of toilet areas is of critical importance in child-care facilities. How quickly a child can reach the toilet may mean the difference between success and embarrassment in toilet training.

Osmon (1971) has suggested that if there are more than 40-50 children in a center, several dispersed toilet areas should be provided. This minimizes travel distances by allowing toilets to be located in several different areas. When selecting toilet locations it is also important to consider accessibility from outdoor play areas. Getting out of snowsuits and boots can be cumbersome and time consuming for children, particularly if they wait until the last minute to come in to use the toilet. Children should not have to travel halfway through the center on their way to the toilet area.



An important factor affecting toilet location is noise. Sound insulation is required along walls which accommodate soil pipes. In addition, the constant coming and going of children and caregivers from this area may disrupt nearby quiet activities.

Another decision involves the scale of fixtures. Children generally use adult-sized fixtures at home, but child-sized fixtures make use much easier for them. Child-scale fixtures promote independence and ease the fear some children have of falling into the toilet. While sources do not recommend segregation of the sexes at preschool levels, urinals for males are recommended to keep toilet seats and floors drier.

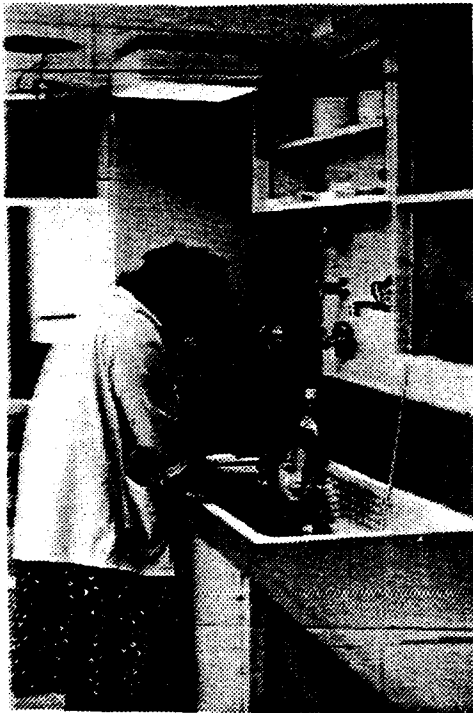
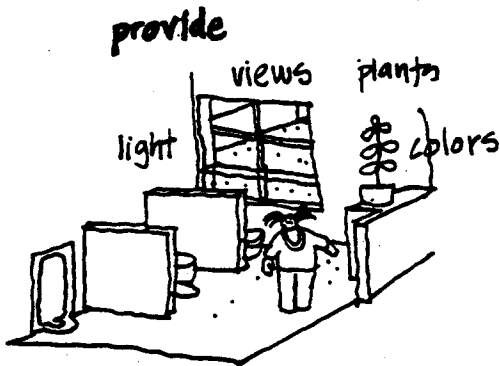
Finally, the selection of finishes should consider the ease of maintenance, pleasant qualities, and interest to children.

PATTERN

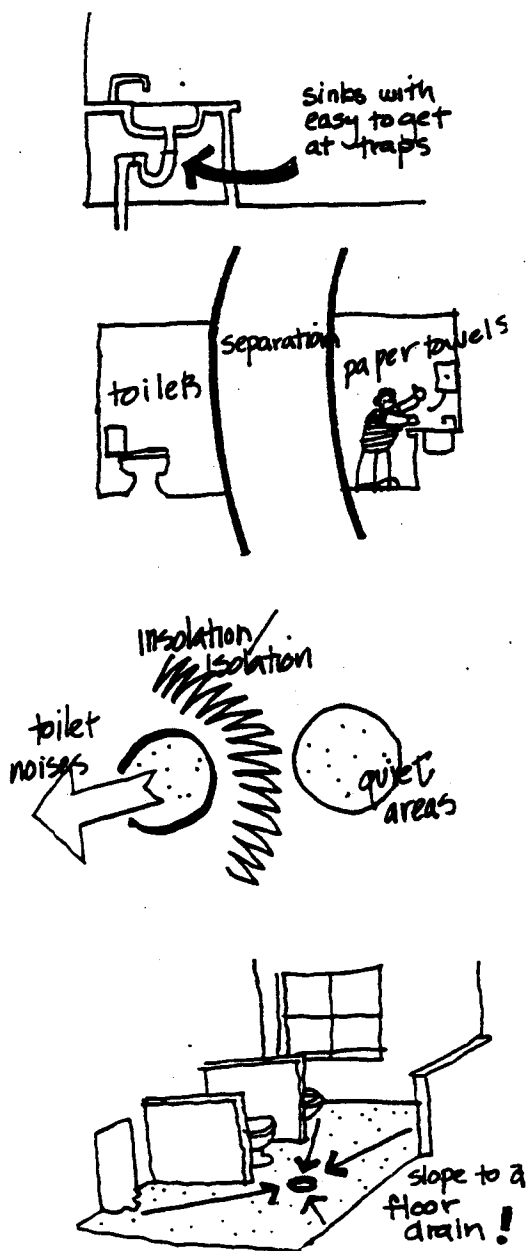
LEARNING BATHROOMS

BATHROOMS SHOULD BE EASILY ACCESSIBLE, FAIRLY OPEN, INCLUDE CHILD-SCALE FIXTURES OR EASY WAYS FOR CHILDREN TO USE ADULT FIXTURES. INCLUDE BATHING FACILITIES, AND CREATE A PLEASANT AND INTERESTING ENVIRONMENT.

RECOMMENDATIONS



- If toilet areas are divided, provide low partitions to make the child feel less enclosed than high ones would.
- Provide one toilet and washbasin for each 15 children age 3 years or older (AR 608-1).
- Disperse toilet areas in centers of over 40-50 children.
- Make toilet areas easily accessible from outdoor play spaces and locker-cubby spaces where children store outdoor clothes.
- Use of plants, natural light, and colors would make toileting and bathing more attractive to the child.
- Finish materials should be easily cleaned, seamless if possible, and provide interest to children (e.g., a write-on surface a child can reach while sitting on the toilet would be a real plus).
- Child-scale fixtures are best (i.e., seat 11" from the floor). If some compelling reason dictates adult-scale fixtures, stools and steps must be provided.
- Prescott and David (1976) recommend that washbasins resemble those at home rather than using industrial-type fixtures since children are assimilating cultural mores as well as washing.
- Bathing and water play are inseparable to small children. A large enough bathing space to permit benches (etc.) with natural light, pleasant, relaxed atmosphere will permit this type of water play.
- Infant bathing sinks should be at adult height (35-36") and include counter space adjacent for storage and dressing.
- Toddlers and older children may use regular tubs or other more imaginative bathing areas (e.g., a pool in the greenhouse with water squirters, a fountain basin, etc.). Ease of adult supervision and help, non-slip surfaces, no sharp corners, and no abrasive surfaces are essential.



- All bathing areas should include hooks for clothing, etc., and any equipment storage staff may require.
- Practical necessities which can't be neglected:
 - sinks with easy-to-get-at traps for removing toys, paper towels, etc.
 - paper towel racks away from toilet(s)
 - water temperature controlled so children can't be burned
 - sound isolation (insulation) so quiet areas aren't disturbed--windows from toilet areas to activity areas might cut down on visual isolation and noise at the same time
 - air-handling requirements as stated in local codes
 - floor drains!
- Centers with both day and night usage will need to bathe infants and children. These centers in particular must have bath areas included. These may easily be separated from toilet areas if care patterns make this desirable.
- See Chapter 5-4 of Military Construction Civil Works document EM-1110-1-103, "Design for the Physically Handicapped" for specific recommendations for the design of toilets accessible to handicapped persons.
- Army regulations require 1 toilet and 1 washbasin per 15 children. We recommend 1 toilet and 1 washbasin per 10 children in order to achieve state licensing in most states.
- Allocate 30-50 sq. ft. per toilet and washbasin unit (includes room for bath) (e.g., a total of 120-200 sq. ft. for 40 children).

RELATED ITEMS

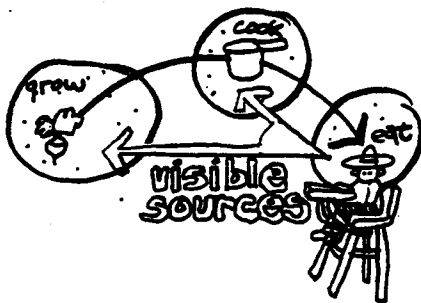
INTIMATE DIAPERING AREAS
LAUNDRY

ISSUE

VERY YOUNG CHILDREN EXPERIMENT UPON THE WORLD OF TASTE, TEXTURE, SIZE, AND TEMPERATURE BY PLACING OBJECTS IN THEIR MOUTHS. THROUGH THIS GENERAL MODE, THEY LEARN ABOUT THEIR ENVIRONMENT, AND EVENTUALLY AS THEY GET OLDER, ABOUT THE SPECIFIC TASK OF EATING.

FOOD PREPARATION AND CONSUMPTION PLAY AN EXTREMELY IMPORTANT PART IN A CHILD'S PERCEPTION OF THE WORLD. BUT IN EDUCATIONAL INSTITUTIONS IN THE U.S., FOOD EXPERIENCES TEND TO BE LIMITED TO A 15-MINUTE REGIMENTED GOBBLING OF PREPROCESSED FOOD IN DISPOSABLE CONTAINERS.

JUSTIFICATION

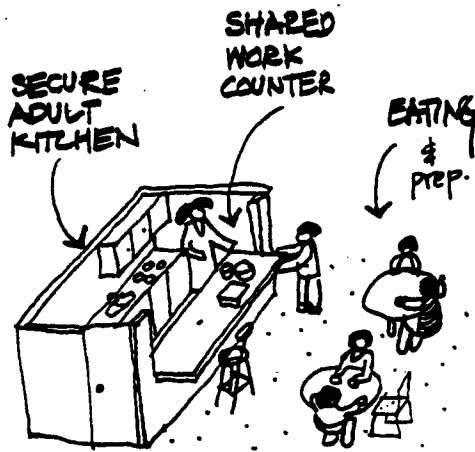


Piaget (1967) discusses children's confusion about where such necessary things such as wood to build shelters and homes, and food to eat come from. If children see food only in processed form, they are losing connections to the natural world and their place in the food chain. A whole area of cognitive development is closed to them. Kates, Katz, and the People of Elm Park Center (1976) came to similar findings about young children's lack of understanding of where tap water comes from.

In discussing Swedish preschools, Passantino (1971) describes a very different attitude:



All aspects of food, its growing, preparation and consumption are seen as learning experiences to be capitalized upon. The children themselves tend vegetable gardens and fruit-tree orchards located on-site; they are taught the nutritional values of the products by "educator-dieticians" and encouraged to participate in the cooking of their own meals. Electric ovens, many designed with a high platform on one side for the children, real sinks, and plate storage at child level, afford opportunity for the children to prepare their own mid-day snacks. The dining tables alongside these cooking areas are set daily with well-designed tableware, utensils, napkins and fresh flowers.
(p. 410)



PATTERN

Other values which children may gain from positive food experiences include developing eye-hand coordination in learning to handle silverware, identifying utensils and their uses, learning one-to-one correspondence necessary to set the table, learning to prepare food themselves, learning about eating habits by observation, taking responsibility for some preparation work, breaking down male-female stereotyped roles, enjoying a home-like atmosphere, and, finally, deriving aesthetic satisfaction through use of well-designed, attractive and colorful tableware and nicely displayed.

To realize the benefits described above, the food preparation areas and food consumption areas must be designed to facilitate child-use. Therefore, materials must be child-scale. Child-scale means table and chair height, certainly, but it also means group size be limited. When over 30 children eat in one space, noise and confusion result (Texas A & M University, 1969).

Evans and Saia (1972) note that children enjoy eating in small groups throughout the center, and that if five or six children eat at a table with an adult, the atmosphere will be more home-like, encourage conversation, not be too overwhelming for shyer children. Other sources suggest that group size for any activity should not exceed 12-18 children.

CHILDREN IN THE KITCHEN

WHETHER A CENTRAL KITCHEN WITH SATELLITE KITCHENS OR SEVERAL COMPLETE KITCHENS ARE MOST ECONOMICALLY FEASIBLE, CHILDREN SHOULD HAVE THE EXPERIENCE OF PREPARING AND SERVING THEIR OWN FOOD IN SMALL-SCALE KITCHENS WITH CONTROLLED ACCESS AND ADULT SUPERVISION.

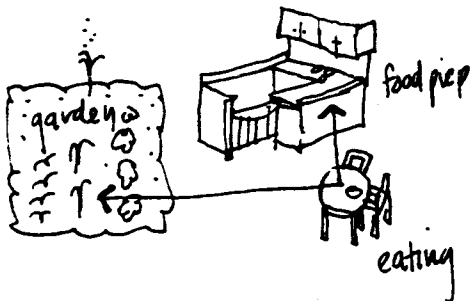
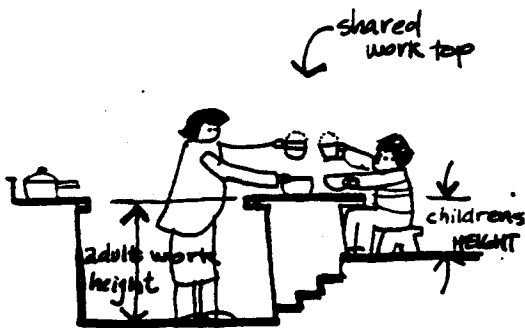
RECOMMENDATIONS

- Two options are open, depending on the size of the center and staffing patterns:
 - one central institutional kitchen for adult kitchen staff only, with satellite kitchens supplied with equipment for child-adult use, and eating areas to serve 12-16 children



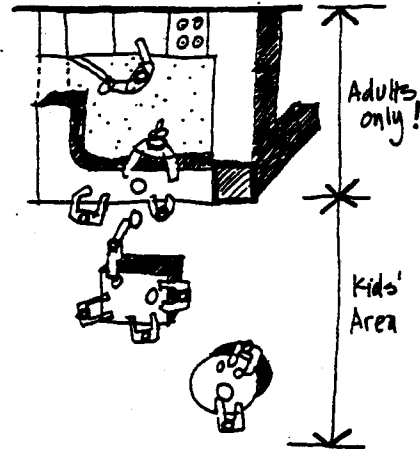
preparation
area
adults!

preparation
area
children!
(+ adults)



- several fairly complete kitchens scattered through the center--each one capable of being used by staff to prepare group meals (12-16 children) and to be used by children and staff together to prepare food--may actually serve two to three groups of 12-16 at different times if facility program permits shared use of space
- Food preparation areas should be planned for use by both adults and children, e.g., pull-out cooking surfaces at two heights, counter space with a series of steps up, etc. For safety, food preparation areas should be closed to children when no adults are present to supervise.
- Storage for dishes, glasses, silverware, etc., should be accessible to children and close to eating areas to allow table setting and clean-up by children.
- All utensils for eating and cooking should be both functional and aesthetically pleasing.
- For safety reasons, separate food preparation and eating areas, but maintain visual connections for supervision. Use a counter-space to separate areas (possibly with dish-utensil storage opening into the eating area side).
- Locate kitchens near greenhouse-outdoor garden areas where food is grown, to emphasize the connection between nature and nutrition.
- *Kitchens shall be separated from other parts of the building with construction having not less than a 1-hour fire resistance rating and all openings shall be protected with self-closing fire doors, or such area shall be provided with automatic sprinkler protection. (National Fire Protection Association, 1976, 9-5.3.3.5)*

- Allocated area for this pattern should be 150-220 Sq. ft.



PROGRAMMED USE OF
KITCHEN SPACE

RELATED ITEMS

EATING CLUSTERS
NATURE STUDY AREAS

1027 EATING CLUSTERS

ISSUE

FEEDING CHILDREN CAN BE SEEN AS A PRODUCTION LINE OPERATION OR A FAMILY-STYLE EXPERIENCE.

JUSTIFICATION

Children's early experience with food will definitely affect their later attitudes toward the social aspects of eating. A spirit of enjoyment, sharing, experimentation, and learning can be gained most readily by example. As has been mentioned in CHILDREN IN THE KITCHEN, experts recommend small groups of children (5-6) at a table with one adult (Evans and Saia, 1972).

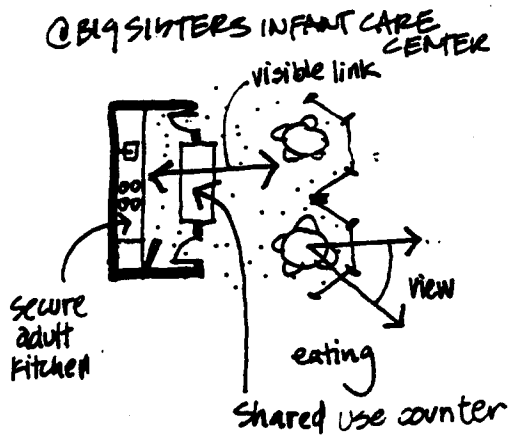
The goal is to make meals into attractive events with child-made centerpieces and/or flowers, nicely displayed food which children have helped prepare, and a leisurely atmosphere during which children can talk, learn how to handle silverware, etc.

The eating space can facilitate this atmosphere. Texas A & M University (1969) suggests that groupings of 30 children eating together is noisy and chaotic. An appropriate group size for other spaces is 12-16 children, however, several tables for 4-5 children and one adult would be best.

In order to make the eating experience most enjoyable for all children, some separation of children by physical development (e.g., hand-eye coordination) and social development (e.g., talking-nontalking) may be appropriate. If 12-16 children are using an eating area at one time, some moveable partitions may be necessary to keep flying food away from children who are ready to learn to use silverware.

Children up to 9 months require a quiet atmosphere and should be acoustically separated from older, noisier children (Frost and Kissinger, 1976; Cohen, 1974; Huntington, Parker, and Provence, 1971). Children between 9 and 18 months do not require as quiet an atmosphere. Their area can be included within a larger area, but should be distinct. They cannot always sit in a chair at this age; a high chair-table combination seating two infants and one staff works well (Mialaret, 1968; Frost and Kissinger, 1976). Children





PATTERN

from 18 to 30 months should have their own distinct area within the larger room. Chairs should be 11 inches from the floor and tables 16 inches from the floor (Mialaret, 1968). Children 30 to 60 months should also have a sub-area. Chairs should be 13 inches from the floor and tables 19 inches from the floor (Mialaret, 1968) (see ZONING).

Windows in the eating area would be most helpful if they could provide a view of the outdoor garden or greenhouse area where food is actually grown.

EATING CLUSTERS

EATING SPACES ADJACENT TO "CHILDREN IN THE KITCHEN" SHOULD ACCOMMODATE 12-16 CHILDREN AT SEPARATE TABLES FOR 4-5 CHILDREN AND ONE ADULT. THERE SHOULD BE STORAGE FOR DISHES, SILVERWARE, AND GLASSES BETWEEN FOOD PREPARATION AREA AND EATING AREA, AND WINDOWS WHICH PROVIDE PURPOSEFUL VIEWS.

RECOMMENDATIONS



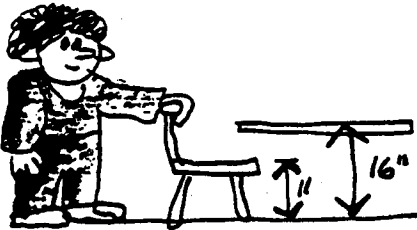
a space that emphasizes that a meal is an event!

- Eating clusters should be directly adjacent to food preparation areas (see CHILDREN IN THE KITCHEN).
- Dining tables and chairs should be child-scale and planned for 4-5 children and one adult. Typical cafeteria benches and long tables are unpleasant for small children.
- Provide an acoustically separate eating cluster for infants up to about nine months.
- Provide an eating cluster for 9-to-18-month-olds, one for 1½-2½-year-olds, and others for 2½-5-year-olds within a larger group of clusters; make each age cluster a distinct area, but provide visual connection.
- High-chair or high-chair/table combinations should be provided for infants and staff.

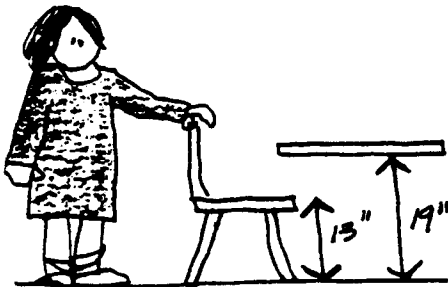
Infants



1½ - 2½ yrs



2½ - 5 yrs



- Low chairs and tables should be provided for older children--for toddlers 1½-2½, chairs should be 11 inches from the floor and tables 16 inches from the floor; for preschoolers 2½-5, chairs should be 13 inches high and tables 19 inches high.
- Storage for dishes, silverware, glasses, serving dishes, flower vases, etc. should be child-height, and be located between food preparation area and eating area.
- Windows should provide seated children with a view of the greenhouse or garden where food was grown.
- Allocated area for this pattern should be 150-220 sq. ft. per cluster; minimum two clusters per 60 children.



RELATED ITEMS

MULTIFUNCTIONING HOUSE
ZONING
CHILDREN IN THE KITCHEN
SPACES FOR 4-5 CHILDREN

1023 SICK BAY

ISSUE

WHEN CHILDREN BECOME ILL AT THE CENTER, THEIR PARENTS MAY NOT BE IMMEDIATELY AVAILABLE TO TAKE THEM HOME. THEREFORE, AN AREA IS NEEDED WHERE CHILDREN CAN REST UNDISTURBED WHEN THEY ARE SICK, OR WHEN THE CAREGIVER HAS REASON TO BELIEVE THEY ARE BECOMING ILL AND MAY BE INFECTING OTHER CHILDREN.

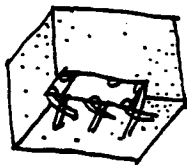
JUSTIFICATION

Prescott and David (1976) have noted that the provision of health-care areas is often more elaborate in description than in practice. Large centers may contain professionally staffed facilities for caring for a number of children, for giving first-aid and for administering health maintenance programs. Some smaller centers may contain only a cot in the director's office where the child can rest under adult supervision.

It is important to provide a health-care area where children do not feel cut-off from the mainstream of activities of the center. Kellogg (1949, as cited in Osmon, 1971) noted that germs can be isolated without isolating the child.

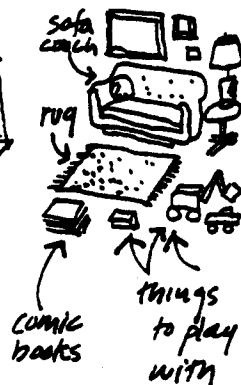
A cheerful, homey decor helps relieve children's anxiety and minimizes the sterile hospital environment which young children so often fear. Adjoining play space which contains a rug, table, and chairs, and some favorite toys can make staying in the health-care area much more pleasant and relaxing.

no
sterile
isolated



yes

homey
feeling



PATTERN

SICK BAY

PROVIDE A PLEASANT SPACE WHICH IS VISUALLY CONNECTED WITH ACTIVITY AREAS, AND EASILY SUPERVISED BY AVAILABLE STAFF FOR AILING CHILDREN WHO ARE WAITING TO BE PICKED UP.

RECOMMENDATIONS

no

scary
isolation

yes

visual and
symbolic
connection

symbolic
• things
to play
with
• homey

visual
same play
activities

- In large, full-day centers, Osmon (1971) recommends three beds per 30 children. Depending on the program requirements, 80-120 sq. ft. of medical first-aid space has been suggested (Texas A & M University, 1969).
- There should be locked storage cabinets to hold necessary first-aid supplies, extra blankets, and other miscellaneous supplies.
- Include a toilet in the health-care space or locate the area near the children's toilets to minimize accidents.
- Allow sick children to feel connected to the center's activities by providing a visual link to areas such as group play where other children can be seen.
- Locate the area where it is easily supervised by the director or other caregivers.

RELATED ITEMS

MULTIUSE SPECIAL SERVICE AREA

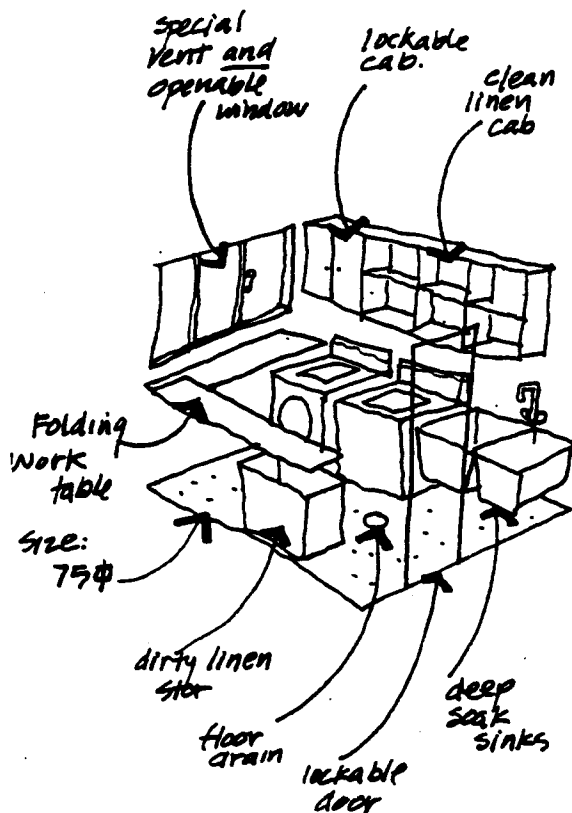
1029 LAUNDRY AREA

ISSUE

IN ANY CHILD-CARE FACILITY WHERE INFANTS ARE CARED FOR, WHERE SMALL CHILDREN ARE INVOLVED FOR MORE THAN ONE TO TWO HOURS AT A TIME, THERE WILL NECESSARILY BE A LOT OF CLEAN-UP OF CHILDREN, CLOTHES, PLAY ITEMS, SURFACES, ETC. A CENTER WHERE CHILDREN WERE EXPECTED TO STAY CLEAN CONSTANTLY WOULD BE A STERILE PLACE.

JUSTIFICATION

*typical laundry for
60 child center w/infants*



Children involved in any kind of quality child development program will not stay clean and dry. They will be painting, pasting, sculpting with many materials, building, molding, gardening, splashing, playing with animals, eating, cooking, crawling on the floor, and being otherwise excited and stimulated by any number of "messy" activities. These children will need to clean up themselves and the spaces they use, and will produce large numbers of dirty towels, wash cloths, and dirty clothes.

Further, children under three may have irregular toilet habits and will need clean-up for these "accidents."

Infant care requires quantities of clean linens daily. Diapers, crib sheets, wash cloths, blankets, clothing, etc. all need changing several times daily.

Since a linen service would be inadequate in cases of daily emergency, and useless for children's personal clothing, a laundry area within the center is needed.

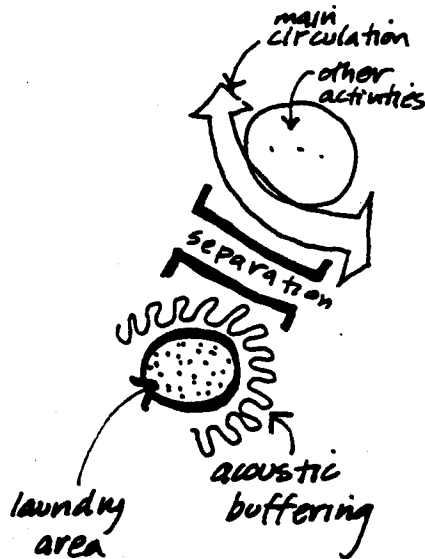
Anytime children's clothing or other washable textiles need to be cleaned, laundry facilities at the center are convenient.

PATTERN

LAUNDRY AREAS

PROVIDE AN EFFICIENTLY EQUIPPED AND ACOUSTICALLY BUFFERED LAUNDRY AREA CLOSE TO DIAPERING AREAS.

RECOMMENDATIONS



- The number of washers and dryers will be dependent on the size of the center. One large industrial-type washer and dryer will probably be sufficient for a small center (100 children). Since centers caring for infants usually wash everything that is washable daily to prevent germ spread, the infant area of a larger center may well need its own laundry.
- Laundry locations should be considered close to diapering areas for infants and toilet-wash-bath areas for older children.
- Laundry areas should be away from child-activity areas and circulation spaces and acoustically buffered. For safety, the laundry area should be able to be closed to children when an adult isn't present.
- Ventilation, washable surfaces, floor drain, flat surface at adult height for folding, laundry tubs with faucets for soaking, storage for dirty laundry, clean laundry and supplies, are all functional requirements.
- Allocated area for this pattern should be 50-85 sq. ft.

RELATED ITEMS

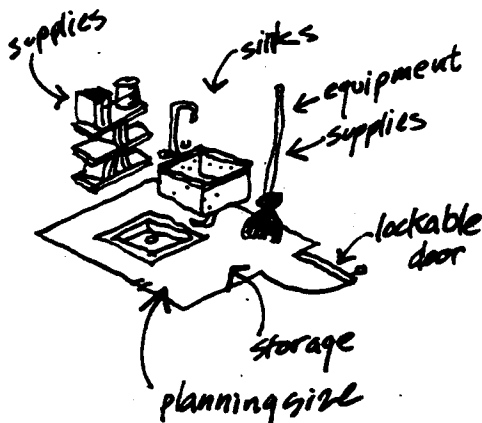
INTIMATE DIAPERING AREA
LEARNING BATHROOMS

1030 MAINTENANCE AND SERVICE SPACES

ISSUE

CONVENIENT, EFFICIENTLY DESIGNED MAINTENANCE AND UTILITY SPACES ARE OFTEN LEFT OUT WHEN PLANNING CHILD-CARE CENTERS.

JUSTIFICATION



Maintenance of a facility can be made considerably easier when supplies, sinks, and equipment are located near the area where they are used. Most centers are serviced commercially after hours, or by their own staff. Carpets are shampooed, floors vacuumed or mopped, trash removed, and kitchens and toilet areas scrubbed for the following day's use. Janitor's closets which service the activity areas contain a deep sink where wash water can be disposed of and usually provide space for pails, mops, vacuums, and related supplies. If trash is removed by wheeled carts, there must be aisles and doorways leading to the service entry which are wide enough to accommodate the carts without scratching or denting furniture and equipment.

Emergency supplies for daytime accidents would be most convenient if kept in the activity spaces.

In addition to the usual supply of equipment storage, it is useful to include a workshop area where toys and equipment can be painted and minor repairs made. Tools can be stored for routine building and grounds maintenance.

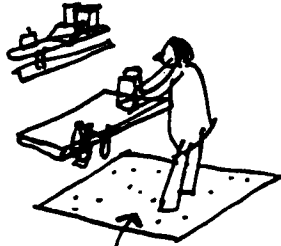
PATTERN

MAINTENANCE/SERVICE SPACES

PROVIDE SEVERAL SMALL MAINTENANCE AND SERVICE SPACES, ONE IN EACH MAJOR ACTIVITY AREA.

RECOMMENDATIONS

- Janitor's closets should be kept locked when children are around, to prevent them from coming in contact with cleaning solutions, and other potentially harmful supplies.
- Activity spaces need supplies for quick clean-ups which can't wait for the maintenance staff. These supplies should be kept in a locked cabinet in the activity area.



*small workshop
for toy repair
etc.
80-100 sq*

RELATED ITEMS

- Consider both a central storage and equipment area to service the entire facility or several areas where different types of equipment can be stored. Adequate shelving and floor surfaces will be necessary to accommodate the variety of maintenance-related tools and supplies.
- Service/utility spaces may be located near a workshop area (e.g., A PLACE FOR BUILDING).
- Maintenance "closets" should be 20-25 sq. ft. in each activity space.
- A workshop should be 80-100 square feet and may double-function with A PLACE FOR BUILDING.

A PLACE FOR BUILDING
MECHANICAL AND ELECTRICAL SPACE
PARKING AND SERVICE AWAY FROM PEDESTRIANS
AND PLAY

1031 NON-INTERFERING MECHANICAL AND ELECTRICAL SPACE

ISSUE	THE PROPER LOCATION OF MECHANICAL AND ELECTRICAL SPACE CAN INSURE EFFICIENT MECHANICAL AND ELECTRICAL LINES AND MEANWHILE NOT INTERFERE WITH THE DEVELOPMENTALLY MORE IMPORTANT PRIMARY AND SECONDARY ACTIVITY SPACES.
JUSTIFICATION	<p>It is difficult to estimate the actual space necessary for equipment. Climatic differences, types of equipment, use of solar technology, all will affect the amount of space needed.</p> <p>Location of equipment will be affected by factors such as noise levels generated, ease of service, and efficiency of operation.</p>
PATTERN	<p>NON-INTERFERING MECHANICAL AND ELECTRICAL SPACE</p> <p>PROVIDE SPACE AT APPROXIMATELY 1 SQUARE FOOT PER 15 SQUARE FEET OF BUILDING SPACE AT AN EFFICIENT LOCATION FOR THE SYSTEM, YET NOT INTERFERING WITH THE PRIMARY AND SECONDARY ACTIVITY SPACES.</p>
RECOMMENDATIONS	<ul style="list-style-type: none">● Locate the equipment centrally if possible to make it most efficient, yet not so it interferes with primary and secondary activity spaces.● Insulate mechanical space against noise transmission by use of vibration damping and insulating materials, flexible connections, and all other reasonable steps to reduce possible annoyance.● A rough rule of thumb will be to provide approximately 1 sq. ft. per 15 sq. ft. of building space (Texas A & M University, 1969).● Mechanical-electrical space should only open directly to the exterior of the building, not into any interior spaces.● Owing to the complexity of equipment for a very large center (i.e., 240 children), consideration should be given to installation of a central control panel to monitor climate control and mechanical equipment; such a panel should be located in the central mechanical room.

- Adequate space must be provided for electrical switchboards, distribution panels, and transformers as required in accordance with local and military building codes. As voltages generally in excess of 4,000 volts are being transformed into usable voltages for building and child equipment, the electrical panels must be securely isolated from children, and may be combined with the general mechanical space.
- The fan room or rooms which will vary with the type of climate control equipment used, must have direct access to the exterior for supply and exhaust.
- Boilers, a cooling tower, and stack may be necessary depending on heating system used (see Metropolitan Toronto School Board, 1968).
- Fuel storage, if required, must be provided in accordance with the requirements of the appropriate building and fire safety code requirements.

RELATED ITEMS

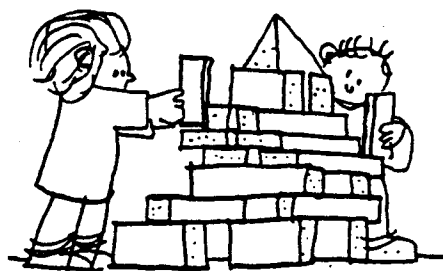
SEMI-OPEN SPACE
ZONING
PARKING AND SERVICE ACCESS AWAY FROM
PEDESTRIANS AND PLAY
SERVICE-UTILITY SPACES

DESIGN CONSIDERATIONS AFFECTING ALL ACTIVITY AREAS

1100

This chapter contains design criteria affecting several or all activity spaces. Rather than repeating the ideas and information under each space, it is collected here for ease of use (e.g., overall storage requirements for the center, little nooks and crannies for children to retreat to and watch the action from, etc.). These patterns should be used to complete and embellish the design of individual spaces.

- 1101 Non-Objective Stages and Props
- 1102 Retreat and Observation Points
- 1103 Time-Out and Emotional Release Areas
- 1104 Child Caves
- 1105 Textured Crawling Levels
- 1106 Never Too Much Child-Accessible Storage
- 1107 Cubbies
- 1108 Tote Trays
- 1109 Places to Observe Children.
- 1110 Out of Reach Staff Storage



1101 NON-OBJECTIVE STAGES AND PROPS

ISSUE

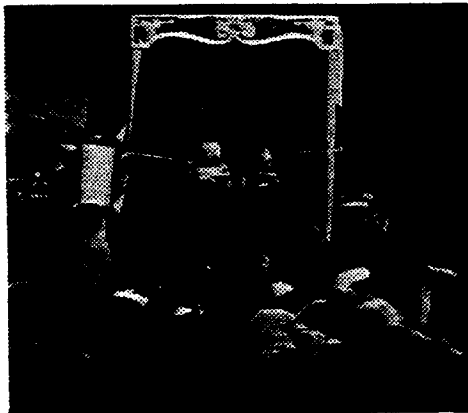
"MAKE BELIEVE PLAY IS AT ITS HEIGHT BETWEEN THE AGES OF ABOUT EIGHTEEN MONTHS TO SEVEN OR EIGHT YEARS," (MILLAR, 1968, P. 136). THIS PERIOD CORRESPONDS TO THE PERIOD OF MOST RAPID DEVELOPMENT OF SYMBOLIZATION THROUGH LANGUAGE. UNFORTUNATELY, MANY PEOPLE THINK OF FANTASY AND DRAMATIC PLAY AS ONLY HAPPENING IN WELL-DEFINED SETTINGS (DOLL HOUSES, CHILDREN'S KITCHENS, ETC.).

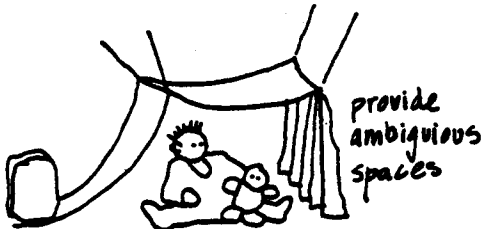
JUSTIFICATION

Formal dramatic play is preceeded in child development by spontaneous imaginative play, first by the child alone, and then in small groups. Child development experts (Garvey, 1977; Fein, n.d.) suggest that the type of objects in the environment can stimulate fantasy and dramatic play. In order to be most usable, many of these objects should be non-specific and admit many interpretations. For example, rather than a dollhouse with bedroom complete with wall paper, four-poster bed, and curtains, children may use hollow wooden cubes, rectangles, and blocks to create houses, stores, garages, etc., furnishing them with whatever bits and pieces suggest themselves. This imaginary environment can then be richer cognitively than a single designated-use object could be. Osmon (1971) warns that very specific props may support the status quo (including sex role stereotyping), and may only support a single set of experiences.

Alexander, Ishikawa, and Silverstein (1977) have already recognized that children love to create their own "housekeeping" areas, and often are much better at it than are adults.

Moore and Rose (1976) found in Australia that children's spontaneous fantasy games were stimulated by ambiguous spaces and props, while children engaged in formal dramatic play did seek out more specifically defined spaces. Shaw (in press) recommends non-objective objects and spaces for fantasy play.





PATTERN

RECOMMENDATIONS

On the other hand, a number of authorities also recommend the provision of a few objective spaces with familiar objects both for dramatic play and for playing adult roles. Deutsch, Ellis, Nimnicht, and Covert (n.d.) suggest that a "housekeeping" area may be very comforting to a child in a strange situation, may provide a link to home, can expand the child's concept of what a home can be, and can aid in learning daily family routines. Temporarily using stuffed animals and dolls as non-threatening "friends" may help a shy-- or a tired--child.

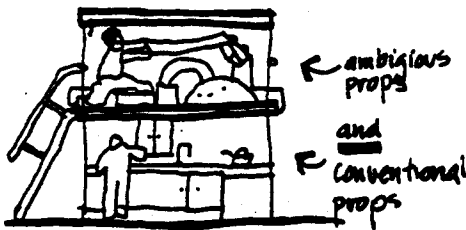
A center with both types of areas is the Harold E. Jones Child Study Center at the University of California, Berkeley, by Joseph Esherick and Associates (see Travel Report, 1978). In that center, an objective, well-defined fantasy play area with concrete props was situated immediately above a more ambiguous, non-objective space. The staff have noticed different types of imaginative and dramatic play in the two settings.

OBJECTIVE AND NON-OBJECTIVE STAGES AND PROPS

PROVIDE SOME OBJECTIVE, WELL-DEFINED SPACES AND PROPS AND A NUMBER OF NON-OBJECTIVE SPACES AND PROPS FOR FANTASY AND DRAMATIC PLAY. ALLOW SPACES AND OBJECTS TO RESEMBLE A VARIETY OF THINGS SO A CHILD CAN CHOOSE TO PLAY HOUSE, FORT, SERVICE STATION, AIRPLANE, WHATEVER. SETTINGS WHICH CAN ACTUALLY BE ALTERED BY THE CHILD TO SUIT A PARTICULAR GAME OF FANTASY ARE IDEAL, E.G., PLAY FRAMES WITH SLIDING OR REMOVABLE AND REPLACABLE PANELS.

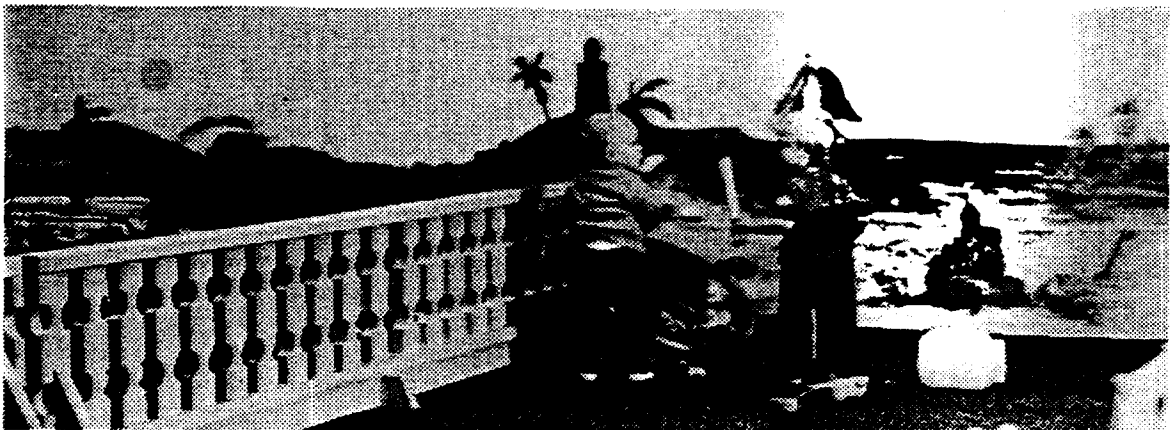
- Provide nooks away from circulation paths which can assume a "homey" character through texture, color, lighting, and a sense of enclosure.
- Provide methods for children to modify these nooks into their own ideas of home, to explore different ways of creating home, (e.g., by using modular steps, hanging textiles, pinning pictures on walls, putting up "walls" and doorways, etc.).

- Provide storage for props and play items at child height. Props should include both specific and non-specific items.
- Plan these nooks for small groups of 4-5 children. They may be very small--35-75 sq. ft. (Murphy and Leeper, 1973; Texas A & M University, 1969).
- Consider the possibility of building play frames with sliding panels (each with different cut-out shapes) and removable panels (each with different functional and fantasy possibilities, e.g., a roof on one, an opening and shelf to create a store counter on another, a window combination on another, etc.).
- Provide flexibility and novelty in the center wherever possible.
- Provide LOOSE PARTS (see Criteria Recommendations: Children's Play Areas). (See also BLOCK PLAY AREAS and A PLACE FOR BUILDING.)



RELATED ITEMS

BLOCK PLAY AREAS
A PLACE FOR BUILDING
AREAS FOR ARTS AND CRAFTS
INDOOR SAND PLAY
MUSIC NOOK



1102. RETREAT AND OBSERVATION POINTS

ISSUE

CHILDREN LEARN THROUGH DOING AND THROUGH OBSERVING OTHER CHILDREN DOING. SOMETIMES WHEN A CHILD IS OVERWHELMED, OR JUST TIRED, HE OR SHE MAY NEED TO RETREAT FROM DOING AND SIMPLY OBSERVE OTHER CHILDREN. OPPORTUNITIES AND PLACES FOR OBSERVATIONAL LEARNING ARE IMPORTANT FACTORS FOR OVERALL DEVELOPMENT.

JUSTIFICATION.

There are occasions when an individual or even a group need to get away from it all. The bustle of other people sometimes can crowd or frustrate a person. . . . An ideal retreat is neither too close nor too far from others and provides privacy and the opportunity for observing the behavior of peers and for imaginative or other quiet activity.

A more immediate need to escape can come from entering a too-challenging or unenjoyable activity. If the child wants to leave the activity and there is no way out other than completing the activity, panic or fear may overcome the child. A way out of ongoing activities which would maintain the child's positive self-concept is needed. (Moore, Cohen, Oertel, and van Ryzin, 1979, p. 82)

Vera Hole (1966) found on British playgrounds that the number of children observing play was equal to the number of those playing.

Bengtsson (1970) says of current playgrounds.

We are too concerned that every corner should be in full view, and this can make children go and play somewhere else. . . . Must we really know everything and control everything in a child's life? Nobody imposes anything like the same interference on the country child. They have haystacks, barns, woodlands and so on, and no one sees anything dangerous to society in that. (p. 154)

learning
through
observing

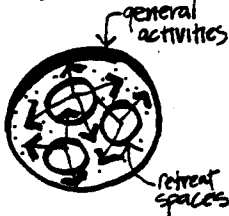


especially infants

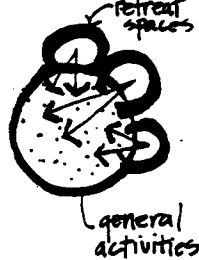


Use of space

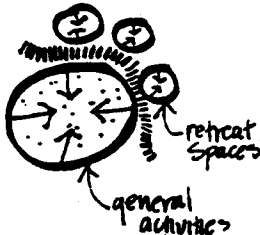
not



yes



not



An analogy to a large, old house with many nooks, crannies, stair and balcony overlooks is appropriate here. Indoor retreat points may also be "hidden."

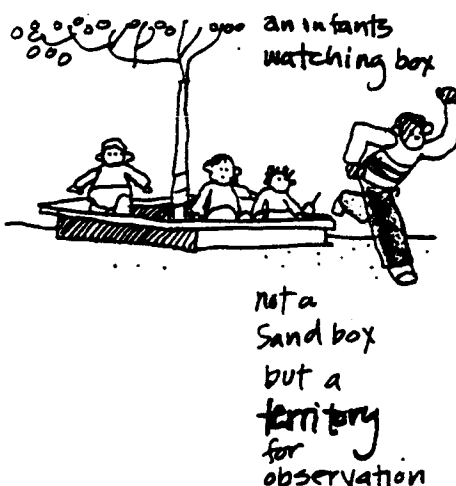
The provision of retreat areas is crucial to the development of self-concept and personal identity. When alone a child has to come to terms with self, how the "I" relates to a tree, space, or the self. Being alone is more conducive to imagination, adding hypothetical activity and meaning to a simpler situation. In opposition to retreat is the need for children to learn their role in society, but a child must sometimes retreat to solitude when confused or overwhelmed by society. Good breakaway points encourage greater exploration by providing face-saving exits from unfavorable situations. Moore, Cohen, Oertel, and van Ryzin, 1977, p. 83)

PATTERN

RETREAT AND OBSERVATION POINTS

PROVIDE PROTECTED, PRIVATE PLACES WHERE CHILDREN CAN OBSERVE OTHER CHILDREN. MAKE SOME OF THESE PLACES OVERLOOK AN ACTIVITY (A "CROW'S NEST") AND SOME LOOK HORIZONTALLY ON ACTIVITIES ("PEEP HOLES").

RECOMMENDATIONS



- Provide places which are connected to larger activity areas where a child can get away from the group.
- Places should provide the occasion for a child to withdraw into his or her own sheltered world.
- All parts of the built environment should have opportunities and places to break away if the activity becomes too strenuous or demanding (e.g., the same ladder might reach three platforms of different heights allowing the child to stop at any one).

- Accept watching by children as a legitimate activity and provide watching stations in child-scale overlooking activity areas-- not adult-type benches scaled down, but rather small window-seats, platforms, cubby-holes, stairs, etc.

RELATED ITEMS

TIME-OUT AND EMOTIONAL RELEASE AREAS
CHILD CAVES

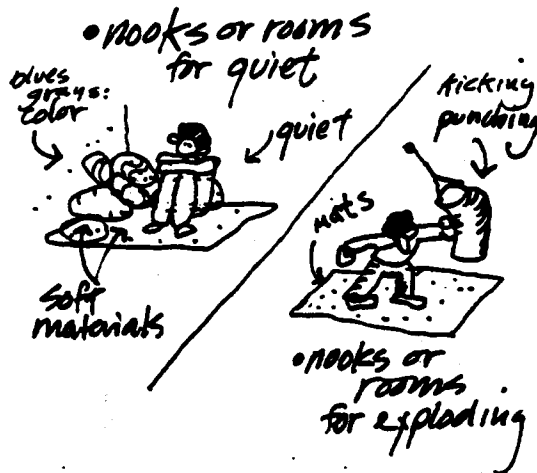


1103 TIME-OUT AND EMOTIONAL RELEASE AREAS

ISSUE

CHILDREN REQUIRE SETTINGS OR ACTIVITIES WHICH ALLOW THEM TO EXPRESS AND RELEASE EMOTIONAL ANXIETIES, SUCH AS ANGER, TENSION, OR FRUSTRATION WITH THEMSELVES, OTHERS, OR THE ENVIRONMENT, OR JUST TO WITHDRAW AND COOL OFF.

JUSTIFICATION



Children can become frustrated by their inability to function mentally or physically, e.g., inability to climb a ladder, to communicate successfully with others, or to cope with sensory overload.

Many elementary school psychologists and social workers actually keep punching bags, tumbling mats, etc. in their offices.

The release of tension and frustration is most crucial to emotional development. Social development follows as the child becomes mentally stronger in dealing with communication and emotional expression or in dealing with physical handicaps.

PATTERN

TIME-OUT AND EMOTIONAL RELEASE AREAS

PROVIDE PLACES FOR CHILDREN TO BE COAXED PASSIVELY WITH MUSIC OR COLOR, OR AREAS IN WHICH THEY CAN GET FRUSTRATIONS OUT OF THEIR SYSTEMS BY ACTING OUT A ROLE. ON THE MORE ACTIVE SIDE, PROVIDE THINGS TO BUILD, KNOCK DOWN, THROW, OR KICK; AND PLACES TO RUN, FALL, JUMP, AND LET OFF STEAM. ON THE MORE PASSIVE SIDE, PROVIDE TIME-OUT PLACES WHERE A CHILD CAN RETREAT TO COOL OFF.

RECOMMENDATIONS

- Provide areas where children can safely let loose.
- Provide active and passive color schemes: earthy reds and ochres are conducive to high activity; yellows are bright and cheery (Grey, 1969); light blues and grays are quieting and soothing.
- Provide secluded areas sheltered from sensory overload. (Note: some children also need to see others playing in order to let loose themselves.)



- Provide nature walks.
- Provide areas for role playing (see SPECIFIC AND AMBIGUOUS STAGES AND PROPS).
- Provide A PLACE FOR BUILDING where children can become involved in building, tearing down, and starting all over again.
- Provide soft areas where children can kick and punch away any violent agressions.

RELATED ITEMS

SPECIFIC AND AMBIGUOUS STAGES AND PROPS
A PLACE FOR BUILDING
CHILD RETREAT CORNERS
NAPPING PLACES

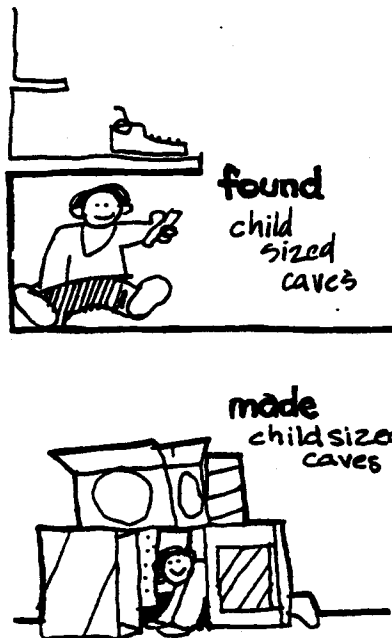
1104 CHILD CAVES *

ISSUE

CHILDREN ENJOY MAKING COZY GET-AWAY SPOTS FOR THEMSELVES WHERE THEY CAN PLAY WITH FRIENDS OR BRIEFLY ESCAPE FROM ADULTS, OTHER CHILDREN, OR DEMANDING PLAY SITUATIONS.

JUSTIFICATION

Adults often tend to view indoor spaces in terms of their efficiency of use, thereby overlooking the play possibilities children might see in these same spaces. Shelves and closets are frequently installed in left-over space while "useless" space under sinks and stairs is walled off.



Alexander, Ishikawa, and Silverstein (1977) have observed that children are forever trying to make special, cozy places for themselves and their friends. These special places often take the form of child-sized "caves" which, because of their size, exclude them from adult use or interference. Caves can be constructed from a variety of objects--crates, boxes, and tables, with canvas, blankets, and tablecloths for cover. In addition, natural left-over space (under stairs and counters, for example) is ideal and should be preserved exclusively for children's use. Alexander, Ishikawa, and Silverstein (1977) have suggested that natural "child caves" can also be purposely created by thickening walls, thus building the caves "right into the fabric of the walls" (p. 929).

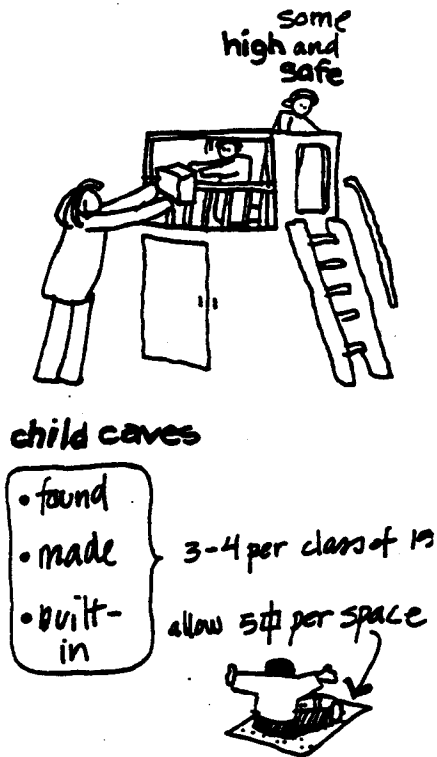
PATTERN

HIDING PLACES

ALLOW CHILDREN TO PERSONALIZE THE SMALL, NATURAL, LEFT-OVER SPACES AROUND THE CENTER. IN THESE SPACES, CREATE CEILINGS WITH HEIGHTS OF ABOUT THREE FEET, MAKE THE ENTRANCES SMALL, AND ALLOW ENOUGH ROOM FOR ONE TO FOUR CHILDREN.

* This pattern title is from Alexander, Ishikawa, and Silverstein (1977).

RECOMMENDATIONS



- Locate hiding places in quiet areas away from major circulation routes. Keep them child-scaled and outside the domain of adults. Adults should be able to reach hiding places to intervene if necessary, but these places should be clearly within the realm of the child.
- In addition to built-in places, children should be provided with materials for creating their own "caves" from such items as crates, cardboard boxes, tables, blankets, and rugs.
- Hiding places can be located in high places, too, with steps leading up to nooks at safe heights surrounded with protective edges and places for the child to peer out.
- For estimating space required, for "child caves" Alexander, Ishikawa, and Silverstein (1977) have recommended that children need about 5 sq. ft. each. Games and circulation space might add an additional 15 sq. ft.



RELATED ITEMS

NAPPING PLACES
TIME-OUT AND EMOTIONAL RELEASE AREAS
RETREAT AND OBSERVATION POINTS

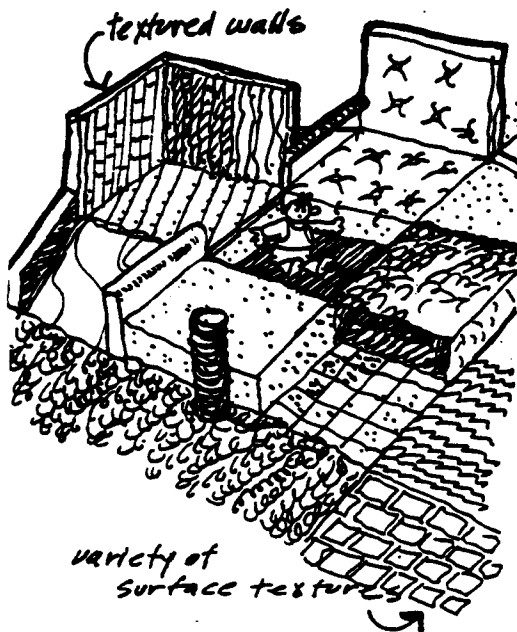
1105 TEXTURED CRAWLING LEVELS

ISSUE

ONE OF THE MAJOR CHALLENGES OF EARLY INFANCY IS THE CHALLENGE OF MOVING, OF EXPLORING, AND OF DISCOVERING.

JUSTIFICATION

An exciting infant environment has been created at the Pacific Oaks College Infant Day Care Center (see Travel Report, 1978). One of its remarkable features is the graded series of challenges provided for infants--grass areas which are completely safe to the smallest infant; sand areas which can only be reached after an infant has mastered crawling over very low wood blocks sunk into the ground, which coincides roughly with when infants are no longer putting everything in their mouths; slight ramps; and finally, steeper stairs and slides. The environment is created in a way that is not only challenging but is also supportive of the systematic course of motor development through which all children pass.



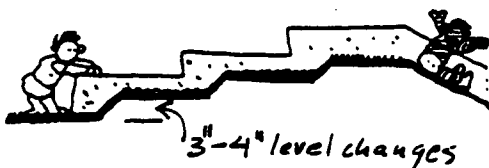
In addition to challenging series of spaces, surfaces should be provided which an infant can use to pull themselves up to a standing position and to help them to stabilize their walking (Caplan, 1973; Osmon, 1971). Children should have a variety of floor levels to crawl on and explore (Church, 1973; Osmon, 1971). Soft, cushioned spaces (Caplan, 1973) and a variety of textured floor coverings are appropriate for the developing infant (Evans and Saia, 1972; Gesell, 1943; University of Michigan, 1970).

PATTERN

TEXTURED CRAWLING LEVELS

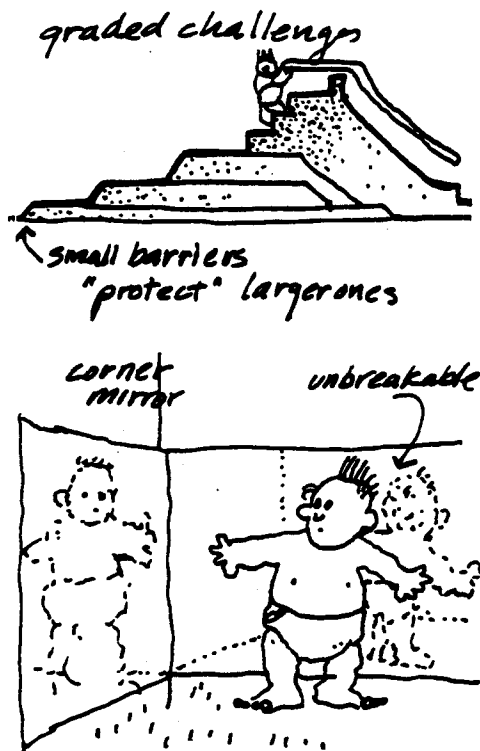
PROVIDE A DEVELOPMENTALLY-GRADED SERIES OF TEXTURED CRAWLING SPACES FOR INFANTS AT DIFFERENT LEVELS AND WITH DIFFERENT TEXTURES.

RECOMMENDATIONS



- Provide many floor levels and other surfaces for children to explore and crawl on, e.g., wood decks, carpets, beds, sand boxes, etc.
- 3-4 inch rises between levels are appropriate for infants learning to crawl and ultimately to walk.

* With thanks to the students of Architecture 420, University of Wisconsin-Milwaukee, Fall, 1977.



RELATED ITEMS

- Provide many different types of floor coverings, e.g., carpeting, indoor-outdoor surfaces, sand, sculptured surfaces, tile, wood, shag rugs, braided rugs, etc.
- Provide types of storage units which can be used by infants to pull themselves up.
- Provide railings along walls, etc. for stabilizing walking.
- Plan the challenges to lead to developmentally appropriate activities (e.g., infant must climb a small barrier in the floor before reaching higher steps. A study of the Pacific Oaks College Infant Day Care Center play area would be very useful to designers.)
- Consider the possibility of providing mirrors at the eye level of crawling infants and toddlers.

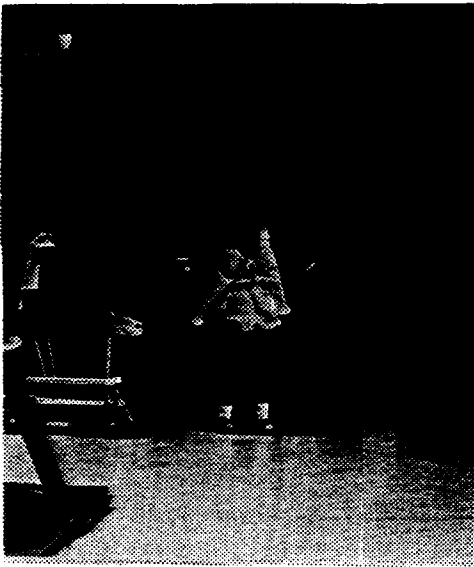
FLEXIBLE FURNISHINGS
INFANT-TODDLER CIRCLES OF ACTIVITY

1106 NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE

ISSUE

STORAGE SPACE AND STORAGE CONFIGURATIONS USUALLY RECEIVE LOW PRIORITY IN PLANNING CHILD-CARE FACILITIES. THE ORDER SUGGESTED BY THE DISPLAY AND STORAGE OF PLAY ITEMS CAN ENCOURAGE OR HINDER THE DEVELOPMENT OF CHILD INDEPENDENCE.

JUSTIFICATION



Plummer (1973, as cited in Prescott, 1976) suggests that certain types of order in the child-care environment facilitate learning. Prescott and David (1976) found that programs designed to give children choice in their activity selection usually used open storage. They suggest that closed storage offers little choice and probably not enough to do, while too much open storage prevents staff regulation of how much choice is to be given.

Visual and physical accessibility of materials and toys from a familiar spot allows children to find and select an item without asking caregivers for help. As Peller (1972, as cited in Prescott and David, 1976) noted, the layout of a space "enables a child to translate into action impulses which are vague and fleeting" (p. 43).

Peller suggests that, in addition to open storage, closed storage is necessary for keeping items which children should not handle, which are easily broken, eaten, or taken home, under caregivers' control. Things from locked cabinets have special appeal to children and closed doors give children the valuable experience of learning the concept of open, closed, and locked. In addition, children build self-confidence when they are trusted with "special" items from behind the doors.

Osmon (1971) notes that once an item is selected, conveniently located surfaces of varying heights suggest "beginnings" of play experiences. Such devices as "play pits," tables, and soft rugs provide a comfortable variety of surface heights.

A major finding in a University of Wisconsin-Milwaukee study (Rabinowitz, 1975) was that there never can be too much storage--no matter how much is provided in educational institutions, after some years, staff always seem to exceed it.



PATTERN

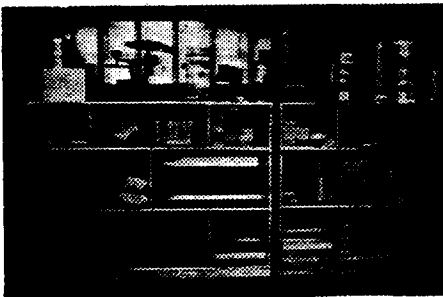
NEVER TOO MUCH CHILD-ACCESSIBLE STORAGE

CHILD-CARE FACILITIES NEED A VARIETY OF STORAGE PLACES WHICH ARE EASILY ACCESSIBLE TO CHILDREN.

RECOMMENDATIONS



- Storage should be provided in a variety of forms: shelves, toy bins, portable and semi-portable cabinets and with an array of heights which provide surfaces to play on as well as storage for toys and materials.
- Texas A & M University (1969) suggests 12-24 cubic feet per child for all open and closed shelving which receives everyday usage.
- Shelf heights of 2'-11" for 2-3 year olds, 3'-1" for 3-4 year olds, and 3'-3" for 4-5 year olds are recommended in Ramsey and Sleeper's Architectural Graphic Standards (6th edition). Osmon suggests 3'-0" for a program with mixed ages; with 22" for a storage unit that will act as a stand-up work surface.
- Osmon (1971) recommends 2-3 ft. for circulation space between the storage shelves and adjacent play surfaces.
- Adjacent tables, work pits, low shelves, or other surfaces allow children to take items to play with them when they have been removed from the storage area.
- The floor surface in front of open shelving should be inviting for sitting and kneeling while selecting items.
- Heavy items should be placed on low shelves to prevent tipping.



RELATED ITEMS

CUBBIES
TOTE TRAYS
BLOCK PLAY AREA
CHILD-SCALED ENVIRONMENT
READING-LISTENING AREA
MUSIC NOOK
NATURE STUDY AREA

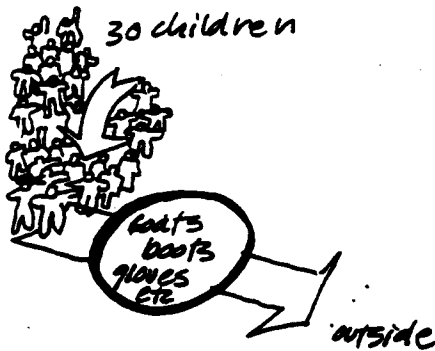
1107 CUBBIES

ISSUE

CHILDREN NEED A CONVENIENT LOCATION IN WHICH TO HANG UP THEIR COATS, TAKE OFF BOOTS, AND STORE HATS AND MITTENS.

JUSTIFICATION

the scale of the problem



Because up to 30 or more children may go outdoors at one time, it is important to make coat storage areas large and easily accessible. Coat and boot storage should be located near but not in the entry to the group play space and near toilets so that children in coats can get to the toilet with less chance for accidents.

Osmon (1971) suggests that coat storage also be located near the outdoor play yard entrance to minimize disturbance of activities taking place in indoor group play. It is helpful for the coat storage area to be under caregiver surveillance so that children can receive help when they need it.

A particular requirement of this area is that it be well ventilated so that wet coats, gloves, and boots dry out between uses.

PATTERN

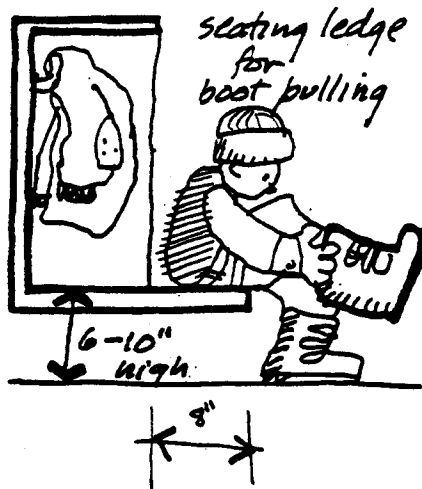
CUBBIES

CONVENIENT STORAGE OF COATS AND BOOTS NEAR THE ENTRY AND BATHROOMS ENABLES CHILDREN TO GET IN AND OUT OF THE CENTER WITH MINIMAL DISTURBANCE TO OTHER GROUPS OF CHILDREN.

RECOMMENDATIONS



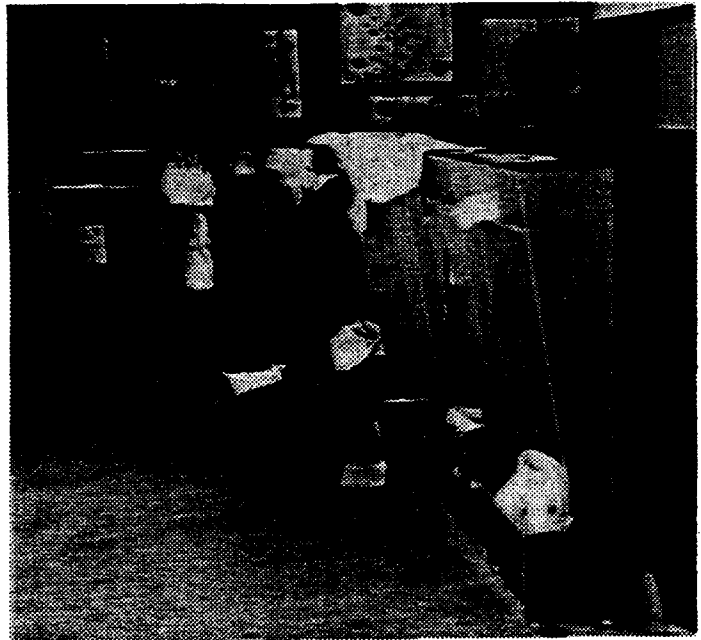
- Coat and boot storage areas should be easily accessible to children, child scaled, and located near, but not in, the entry. Thus, the entryway will not become a locker-filled corridor.
- Walls and floors need to be waterproof, easily cleaned, and slip-proof. Floor drains can be installed which allow water and sand to be shed without damaging interior surfaces.



RELATED ITEMS

- Osmon (1971) suggests configurations for both fixed and movable coat-storage areas. Some devices such as "trolley" lockers on movable metal frames, can be pushed against the wall when not in use. Of particular interest are those diagrams which combine cubbies and coat storage.
- A bench or ledge at 6 ft. 10 inches above the floor enables children to put on their boots more easily, and to not have to sit down on the wet floor to take their boots off.

TOTE TRAYS
FRIENDLY FACE ENTRY SEQUENCE



1108 TOTE TRAYS

ISSUE

CHILDREN OFTEN CARRY A VARIETY OF PERSONAL TREASURES TO THE CENTER IN THEIR POCKETS. HAVING CONTROL OVER THIS PERSONAL PROPERTY IS IMPORTANT TO CHILDREN.

JUSTIFICATION



Prescott and David (1976) note that it is considered standard operating practice in child care to provide each child with a personal storage place, or tote trays, to provide a certain amount of privacy and a piece of individual territory in settings where most things must be shared.

Cubby areas allow children to stow their pocket treasures, lunches, art work, and other personal items in an easily accessible basket or tray. Loeffler (1967 as cited in Osmon, 1971) suggests that this sense of personal property is important to young children, particularly those with few personal possessions outside the center.

According to Sanoff (1972), tote trays serve a mental function as well as a utilitarian function because children gain a feeling of self-importance when they see their name labelling a particular space.

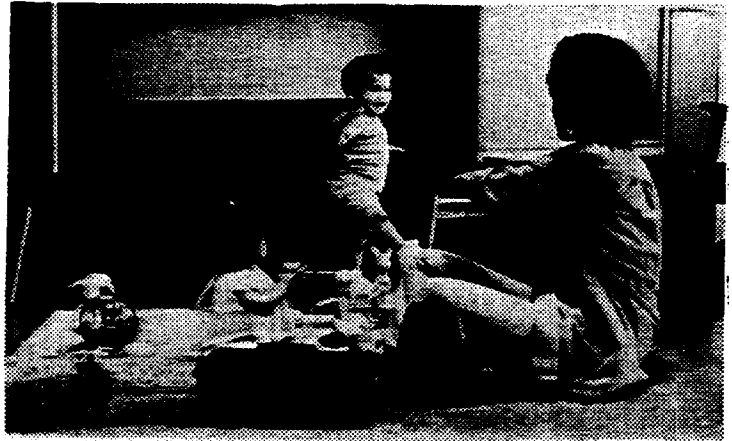
Most centers locate tote trays near activity spaces because children enjoy manipulating their tray or basket and the objects it contains, and they make several trips a day to the cubby area.

TOTE TRAYS

TOTE TRAYS ENABLE CHILDREN TO HAVE CONTROL OVER THE PERSONAL PROPERTY WHICH THEY BRING TO THE CENTER.

RECOMMENDATIONS

- Diverse elements such as plastic "tote" trays, "tote stools," rubber dishpans, empty 5-gallon icecream tubs, sturdy cardboard shoe boxes can all be adapted to serve as children's cubbies. Racks for storing these portable cubbies are readily available.



- Tote trays should be conveniently located near children's spaces and near the main entry either with garment storage or as a separate space.
- Tote trays can be either fixed, partitioned shelves or portable cupboards. They should not be too tall for a child's reach.
- Osmon (1971) diagrams a number of possible solutions which combine tote trays with clothing, blanket and pillow storage for economical use of space.
- A table or other work surface nearby gives children a place to set the tray down while they sort through the contents.

RELATED ITEMS

CUBBIES
FLEXIBLE FURNITURE

1109 PLACES TO OBSERVE CHILDREN

ISSUE

THERE MAY BE TIMES WHEN ADULTS WILL WISH TO OBSERVE THE CHILD OR ACTIVITY SITUATION. THESE OBSERVERS MAY BE PARENTS, STAFF MEMBERS, ADMINISTRATORS, BASE OFFICERS, STAFF-IN-TRAINING, TEACHER-TRAINING STUDENTS, SPECIAL CONSULTANTS SUCH AS PSYCHOLOGISTS, SOCIAL WORKERS, ETC. FOR ADULT PURPOSES, THE OBSERVER MAY NOT WISH TO BE OBVIOUS TO THE CHILD, BUT A "BIG-BROTHER-IS-WATCHING" FEELING IS ANTITHETICAL TO A GOOD CHILD DEVELOPMENT ATMOSPHERE. MANY PARENTS MAY FEEL THIS IS AN INVASION OF PRIVACY AND OBJECT TO OBSERVATION SPACES AT A CENTER WHERE THEIR CHILD IS IN ATTENDANCE.

JUSTIFICATION

Since children do behave differently when they know they are being observed, particularly by parents, it is necessary to have unobtrusive observers in order to get a true picture of a child's behavior.

Gesell (1949, as quoted in Osmon, 1971) says:

The simple intervention of the diaphanous barrier of the screen creates a new perspective, a wholesome shift toward psychological detachment and objectivity. Seeing is believing. The parent begins to see in a new light. This is an efficacious form of visual education and self-guidance. It reduces the necessity of verbal explanation and exhortation. (p. 94)

Opinions vary about "unobserved observers." Osmon (1971), for example, argues that the child has a right to privacy (p. 28, p. 94). Margaret Skutch, the Director of the Stamford Early Learning Center (see Kohn, 1970; Osmon, 1971), argues in favor of observers having to at least cross a corner of the child's activity space before entering any space which has a one-way mirror. Greta Fein of the Merrill-Palmer Institute for Child Development (personal communication) recommends that observers make themselves known to the head teacher and ask permission of her or him before commencing any observation.

On the other side of the picture, however, is the need to be able to observe children without influencing their behavior. The staff may need to show parents characteristic behaviors of a child, or may need to work with parents on parenting skills, a growing area of concern in some of the most progressive child development centers in the country (e.g., Big Sister League Colleagues' Infant Care Center; see Travel Report, 1978).

Children need to be able to follow through on their endeavors. At pick-up time the parents may not wish to hurry or disturb children who may be caught up in something of importance to them. At these times, the parents may choose to get involved themselves, or they may look for a place to wait out of the child's way.

It is the mystique of the "spying" observer which must be removed rather than the observer.

Older books on child-care centers seem to be happy to recommend one-way mirror rooms without addressing the ethical issue of the possible invasion of privacy. We feel issue is more complex, and that the two viewpoints must be resolved in all child-care centers.

Recognizing the importance of the issue, Osmon (1971) recommends three possible solutions, reflecting different views of child observation. We concur with this approach and recommend furthermore that the issue be discussed by staff and parents during the programming phase of new or renovated facilities.

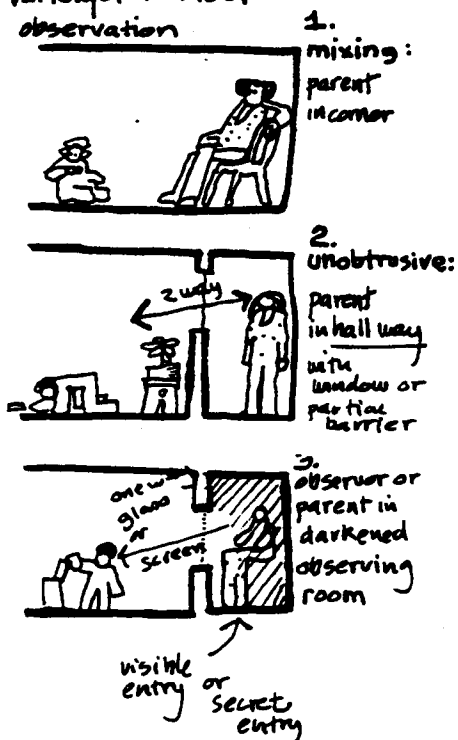
PATTERN

PLACES TO OBSERVE CHILDREN

THERE ARE THREE ALTERNATIVE WAYS OF HANDLING OBSERVATION OF CHILDREN: (1) NO SPECIAL PROVISION FOR OBSERVATION, THE PARENTS AND VISITORS BEING WELCOMED IN THE MIDST OF THE CHILDREN; (2) AN OBSERVATION AREA OBSERVABLE FROM THE CHILDREN'S ACTIVITY AREAS, I.E., AN AREA SEPARATED FROM PLAY SPACES BY DISTANCE AND/OR PARTIAL BARRIERS (TOTE TRAYS, PLANTS, PARTIAL WOODEN SCREENS, BALCONIES, QUIET PARENT'S CORNERS NEAR ACTIVITY SPACES, ETC.; AND (3) A ONE-WAY OBSERVATION AREA UNOBSERVED FROM CHILDREN'S SPACES, I.E., THE USE OF ONE-WAY MIRRORS AND SECRET ENTRANCES.

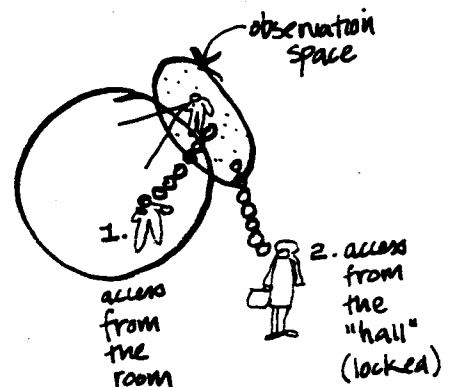
RECOMMENDATIONS

variety of kinds of observation



- Because there is an important ethical issue involved in observing children without their permission, it is strongly recommended that the issue of the selection among Alternatives 1, 2, and 3 be discussed openly and frankly among staff and parents during the programming of new facilities or the renovation of existing facilities.
- For the comfort of the child and parent, provide a place to wait off the activity area. This place may include things of interest to the parent such as children's art work, photographs, and information on child development and care. This place may double-function with either of the three observation alternatives.
- For Alternative 1 (mixing with the children), the provision of a few steps for sitting will encourage parents to be on the floor with their children.
- For Alternative 2 (observable observation), provide a variety of screens, e.g., made of a dense collection of plants, partial wooden screens, possibilities for leaning on the tops of CUBBIES and looking over, etc.
- For Alternative 3 (one-way unobtrusive observation), the following recommendations hold:
 - Observer spaces which children can enter if they wish to see "who's here today" may be less mysterious to the child.

- Observer spaces which children may use at times themselves may become matter-of-fact and therefore less threatening.
- For the situation where a parent must observe a child without the child knowing the parent has arrived (e.g., in parenting discussions with staff), observer spaces should be reachable from the entry without having to cross child-activity areas.
- A variety of heights relative to children should be provided, e.g., some space at ground level, some space lowered so adults' and children's eye levels will be on the same plane, and some raised to 1 to 2 ft. higher to permit overview observations to be easier. One-way glass is the usual method of concealing the observer.
- For study, a chair and writing surface at adult scale would be useful.
- - 60-100 sq. ft. is adequate.
- All observer space access should be controlled by staff so unauthorized observers are not permitted.



RELATED ITEMS

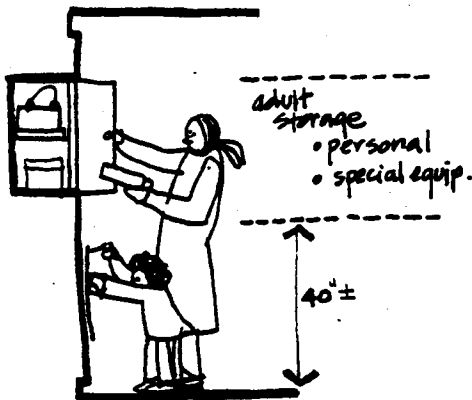
PARENT-STAFF CORNER
CIRCULATION WHICH OVERLOOKS

1110 OUT-OF-REACH STAFF STORAGE

ISSUE

WHILE THE MAJORITY OF EQUIPMENT STORAGE SHOULD BE ACCESSIBLE TO CHILDREN, STAFF MEMBERS REQUIRE STORAGE AREAS WHICH ARE INACCESSIBLE TO CHILDREN.

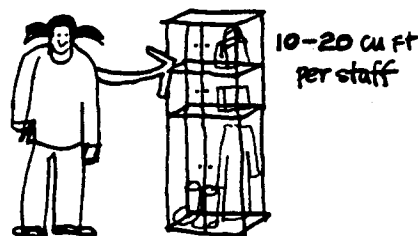
JUSTIFICATION



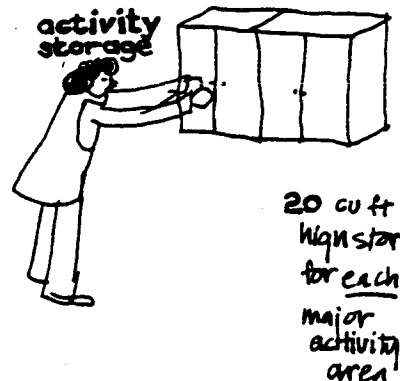
Every facility must have the right amount of the right types of storage in the right places. Many earlier books on child-care centers totally neglect the consideration of storage needs. But staff members in military and civilian facilities around the country asked for two basic types of staff-only storage:

- storage for personal belongings, coats, purses, etc. away from children
- storage of special equipment which would be used with children but only under staff supervision, e.g., fragile dolls or models, expensive tape recorders, a tape recorder brought from home, etc.

personal storage



activity storage



PATTERN

OUT-OF-REACH STAFF STORAGE

PROVIDE STORAGE FOR STAFF CLOTHES AND FOR SPECIAL EQUIPMENT OUT OF THE REACH OF CHILDREN. CLOTHES STORAGE SHOULD BE NEAR ENTRYWAYS, WHILE OTHER PRIVATE STORAGE SHOULD BE IN ACTIVITY AREAS.

RECOMMENDATIONS

- Provide 8 sq. ft. (16-24 cu. ft.) of storage per full-time staff member (caregivers plus administrative-clerical staff) for personal items, garments, etc.
- Provide a minimum of 20 cubic feet of lockable, out-of-reach storage per major activity space.

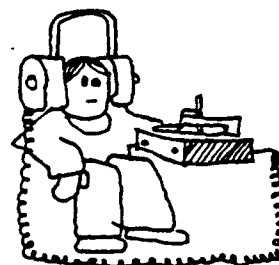
RELATED ITEMS

NEVER-TOO-MUCH CHILD-ACCESSIBLE STORAGE

BUILDING SUBSYSTEMS CRITERIA 1200

This chapter includes selected criteria which are applicable to the design of the building's structure, its mechanical system, interior finishes, and its fixed and semi-fixed features, such as built-in furnishings. These criteria do not attempt to cover standard and common information which can be found in popular texts such as Time Saver Standards. Rather, these criteria focus on building subsystem information as it relates to the unique needs of the developing child.

- 1201 Simple Structural System on Display
- 1202 Floor Functions Within the Program
- 1203 Working Walls
- 1204 Accessible Plumbing Systems
- 1205 Accessible But Safe Electricity
- 1206 Child Scale Building Materials
- 1207 Child Comfort and Climate Control
- 1208 Acoustic Control
- 1209 Lighting Appropriate to Activities
- 1210 Activity-Appropriate Texture and Color-Cues
- 1211 Accessible and Operable Hardware
- 1212 Flexible Furnishings



1201 SIMPLE STRUCTURAL SYSTEM ON VIEW

ISSUE

MANY RECENT SCHOOL-TYPE BUILDINGS HAVE BEEN "SLICKED" ON THE INSIDE BY COVERING STRUCTURAL ELEMENTS WITH CEILING TILE AND CONCEALING THE SUPPORT COLUMNS WITHIN THE WALLS. BECAUSE OF THIS, CHILDREN ARE NOT ABLE TO HAVE A SENSE OF HOW THE BUILDING STANDS UP.

JUSTIFICATION



Most children (and most adults) accept the built environment around them without question. The use of lincoln logs, tinker toys, erector sets, etc. may provide children with some awareness of building, but unless an analogy to the actual built environment is shown to them, children are unlikely to make the connection themselves.

In addition to children's awareness of building construction, another advantage to exposed structural elements is that ductwork and piping can also be exposed. In Acorn School in New York City (and in other school buildings elsewhere), the exposed metal is color coded and labeled so children can see how they are kept warm, where the water supply lines come in and where conduit supplies the lights with electrical power. Some of the "magic" of technology which most of us do not understand or simply take for granted until it breaks down, is thus "demysticized" for children at an early age.

Exceptions to this principle should be noted: ceilings and other covers of structural elements do have important roles and should be used as appropriate. The functions of these elements are to serve as a control for noise, light reflection, heat loss, air return, and fire protection.

PATTERN

SIMPLE STRUCTURAL SYSTEM ON VIEW

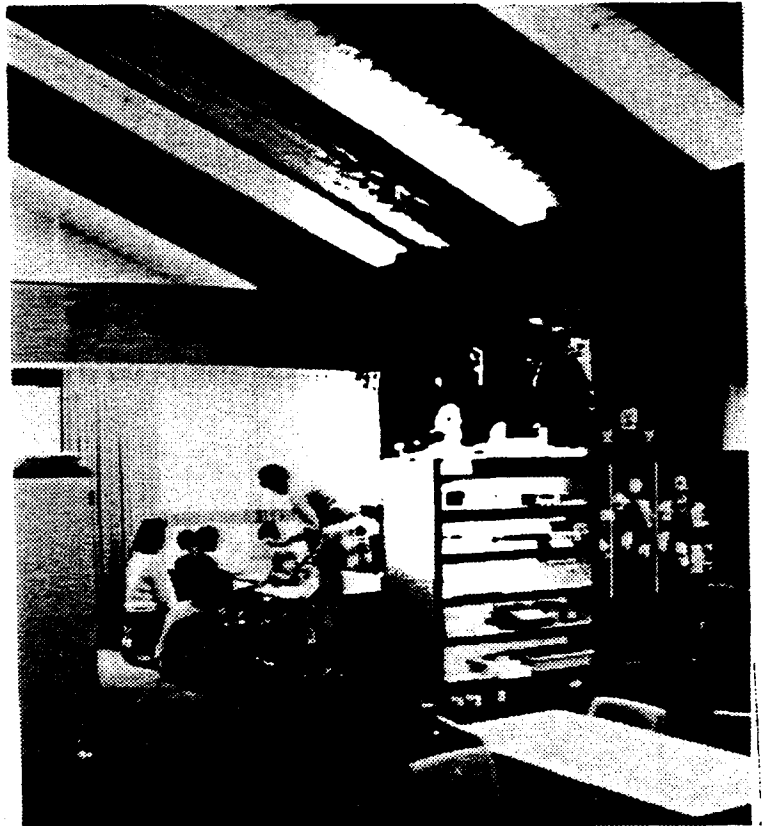
THE STRUCTURE AND RELATED BUILDING ELEMENTS SUCH AS BEAMS, AS WELL AS INTEGRATED MECHANICAL SYSTEMS, SHOULD BE EXPOSED AND ORGANIZED IN AN ORDERLY FASHION TO FACILITATE LEARNING AND UNDERSTANDING AS WELL AS UTILITARIAN FUNCTIONS.

RECOMMENDATIONS

- Coordinate the spacing of columns with activity areas so that exposed columns can be used as delineating elements and as starting points for dividers and movable partitions.
- Utilize exposed roof structures for hanging displays, furnishings, planters, bird cages, etc.
- Use simple structural systems for child-care facilities, e.g., geodesic domes. The key characteristic is consistency.

RELATED ITEMS

ACOUSTICAL CONTROL
CHILD COMFORT AND CLIMATE CONTROL
FLOOR FUNCTIONS WITHIN THE PROGRAM
WORKING WALLS
ACCESSIBLE BUT SAFE ELECTRICITY



1202 FLOOR FUNCTIONS WITHIN THE PROGRAM

ISSUE

THE FLOOR IN CHILDREN'S FACILITIES IS MORE THAN A CIRCULATION PLATFORM; IT ALSO FUNCTIONS AS A DEFINER OF SPACE, A WORK AND PLAY SURFACE, AS MULTIUSE FURNITURE, AND SHOULD BE DESIGNED TO ACCOMMODATE ALL THESE FUNCTIONS.

JUSTIFICATION

Osmon (1971) lists the following factors which have a bearing on floor design:

- a) *Children like to sit and play on the floor (Waechter and Waechter, 1951, p. 137).*
- b) *A playroom floor must accommodate an unusual amount of liquid, both from play activities and from uncontrolled bodily functions.*
- c) *Children's motor coordination is developing during the preschool period and they are accident prone (Landreth and Moise, 1949, p. 79).*
- d) *Teachers and parents are concerned about germs passing from one child to another through physical objects (Leeper, et al., 1968).*
- e) *Teachers do not want children getting colds from sitting on a cold, damp surface.*
- f) *An excessive amount of furniture can hinder the free flow of children (EFL, 1970B, p. 17).*
- g) *Noise from one activity can be disruptive to other activities in the group play environment. (p. 50)*

Other behaviors and tendencies related to floor usage noted in research are the following:

- *A floor can be a powerful organizer of traffic patterns (Prescott and David, 1976).*
- *Children use wheel toys indoors as well as outdoors (Evans, Saia, and Evans, 1974).*
- *Infants need varied surfaces for crawling. Different textures, colors, slight level changes with slopes help hold interest.*

PATTERN

FLOOR FUNCTIONS WITHIN THE PROGRAM

THROUGH LEVEL MANIPULATION, COLOR, TEXTURE, AND MATERIAL OF COVERING, THE FLOOR CAN FUNCTION AS AN ACTIVITY DEFINER, AND AS PART OF THE FURNISHINGS FOR BOTH WORK AND PLAY.

RECOMMENDATIONS

- *These tendencies imply the following design criteria for the flooring surface:*
 1. *It must be free of drafts and warm to the touch, to minimize the potential for colds and to maximize the child's comfort when playing on the floor.*
 2. *It should be easily maintained to minimize slipping hazards and to minimize germ retention.*
 3. *It should be resilient to minimize accidents from falls and to minimize the floor as a sound-producing element.*
 4. *It should be designed with a minimum of change of level along major circulation paths to eliminate places to stumble.*
 5. *It should be considered for its potential as work/play surface to minimize the clutter of furniture and maximize the number of play/work postures. (Osmon, 1971, p. 50)*
- Manipulate the floor plane to create ramps, steps, pits, and platforms.
- Choose floor covering which is appropriate for specific activity areas, e.g., hard surface for wheel-toy play.
- Choose floorings which resist moisture, e.g., vinyl, urethane, bucket carpet, etc.
- Minimize the types of flooring to make maintenance easier. However, carpet in three colors and five textures will still only be one type for maintenance equipment and supplies.



- Carpeting should comply with provisions of DOD 4270.1-M.
- Provide a variety of soft surfaces with slight level changes in infant crawling areas.
- Define activity areas and circulation through use of color, texture, and-or slight level changes.

RELATED ITEMS

CHILD COMFORT AND CLIMATE CONTROL
LIGHTING APPROPRIATE TO ACTIVITIES
CHILD-SCALE BUILDING MATERIALS
ACTIVITY-APPROPRIATE TEXTURE AND COLOR CUES

1203 WORKING WALLS

ISSUE

THE NEED FOR INTERIOR PARTITIONS MAY CHANGE AS PROGRAMS, TEACHERS, AND ADMINISTRATORS CHANGE. WITH POPULATION SHIFTS, SPACE MAY NEED TO BE REAPPORTIONED.

JUSTIFICATION

Whatever kind of partition system is being used within a facility, the walls must be a functional part of the child-care program to earn their existence. They should be used to create visual and aural privacy between different activities. They should also function as display space, chalkboard surface, include storage, shelves, coat hooks, pegboards, etc.

In order to stimulate touch and vision, walls may be muraled, carpeted, corked, bricked, etc. to provide color and tactile experiences. Half-walls may do most things a full wall does, but in addition, provide climbing, seating, plant area, puppet stage, etc. Glass walls may be considered where acoustic but not visual separation is required.

Surfaces of walls must be cleanable because areas which are not well-maintained invite further careless use, vandalism, and litter (Cooper, 1975; Allen, 1968).

PATTERN

WORKING WALLS

WALLS MUST WORK AS STORAGE, DISPLAY, SENSE EXPERIENCE, WRITE-ON SURFACE, AS WELL AS DIVIDE SPACE AND PROVIDE ACOUSTIC SEPARATION. FURTHER, INTERIOR PARTITIONS SHOULD BE AS FLEXIBLE AS POSSIBLE TO PERMIT THE REARRANGEMENT OF SPACES AS PROGRAMS AND POPULATIONS CHANGE.

RECOMMENDATIONS

- Use fixed interior partitions only where frequent changes in needs are not likely to occur (e.g., plumbing cores).
- Use of demountable partitions implies structural ceiling grid and flat ceiling in areas of use. If this is not desirable, use free-standing partitions instead.

- Use all interior partitions as part of the child-care program by providing colors (murals) and textures for sense experience, storage, seating, write-on surfaces, display, and acoustic separation.
- Provide display, write-on surfaces at child height (e.g., chalk boards or wipe-off plastic and water-color markers).
- Provide a wall to paint on near the ARTS AND CRAFTS AREA.
- Providing a sense of enclosure at child height may only require walls to be 2.5-3 ft. high. This will not interfere with the caregivers' view of the area. Half walls and low, free-standing partitions should be considered.
- Provide all interior walls and trims with easily cleaned surfaces (e.g., gloss or semi-gloss finish and dark colors on trim and doors).

RELATED ITEMS

CHILD-SCALE BUILDING MATERIALS
FLEXIBLE FURNISHINGS
LIGHTING APPROPRIATE TO ACTIVITIES

1204 ACCESSIBLE PLUMBING SYSTEMS

ISSUE

PLUMBING FIXTURES AND SYSTEMS IN A CHILD-CARE FACILITY WILL BE USED NOT ONLY IN ORDINARY WAYS, BUT MAY ALSO BE USED IN "EXPERIMENTAL" CHILD-EXPLORING WAYS.

JUSTIFICATION

Small children are not just learning how to use plumbing fixtures and systems; they are learning to wash in basins, and to use toilets. They may also be learning to clean their own utensils (e.g., paint brushes).

Thus, plumbing is a novelty, and not yet taken for granted. Children will want to experiment with the phenomenon of toilet flushing. For the sake of maintenance, it is therefore necessary that waste pipes in particular be easily reached; clean outs should be placed frequently in the line in order to remove towels, toys, etc., which have been flushed.

Plumbing cores are a sensible solution to plumbing problems. In a child-care facility, clean outs from each core would be helpful. But shut-off valves for supply lines should be provided fixture by fixture rather than core by core, since a temporary shut-off for repair could be disastrous for small children.

Floor drains in washroom, laundry, and bathing areas are necessary because drain-clogging and overflows can happen frequently.

Another addition for child-safety includes water temperature controls which automatically control water from becoming too hot to handle.

Plumbing noise should be acoustically separated from other activity areas. This may be accomplished in ways other than with solid walls and doors.

PATTERN

ACCESSIBLE PLUMBING SYSTEMS

PLUMBING IN CHILD-CARE FACILITIES SHOULD HAVE ACCESSIBLE CLEANOUTS; INDIVIDUAL SHUT-OFF VALVES FOR EACH FIXTURE; FLOOR DRAINS IN EACH AREA; AND WATER THERMOSTATS WHICH ONLY ALLOW TEMPERATE WATER.

RECOMMENDATIONS

- Provide frequent accessible clean-outs in drain line to control many clogging problems.
- Provide shut-off valves to each fixture, thus precluding shut-down for an entire plumbing core during repair.
- Provide floor drains in each washroom, bathing area, and laundry area to help prevent flooding.
- Provide temperature controls on hot water supply to prevent scalding water being fed to child areas. Maximum water temperature should be 110°F.
- Provide drinking fountains with mouthguard and angled jet. They should be sized for children, with at least half of the fountains mounted 30 inches from the floor.

RELATED ITEMS

CHILD COMFORT AND CLIMATE CONTROL
ACCESSIBLE AND OPERABLE HARDWARE
WORKING WALLS

1205 ACCESSIBLE BUT SAFE ELECTRICITY

ISSUE

EDUCATIONAL TECHNOLOGY--AND DEPENDENCE ON ELECTRICAL POWER--IS EXPANDING AND CHANGING SO RAPIDLY THAT ELECTRICAL NEEDS TODAY MAY BE VERY DIFFERENT FROM THOSE 10 YEARS FROM NOW.

JUSTIFICATION

Schools which do not have sufficient electrical outlets for all the demands made on them cannot function properly. Being able to plug in equipment in only one or two spots severely limits the variety of ways in which children and staff would otherwise use a space.

Putting sufficient electrical outlets in new construction or drastic remodeling will be less expensive than having wasted space and/or having to add outlets later.

This is also true for built-in sound and video systems. Providing for easy installation (maybe even at some future date) of a p.a. system, closed-circuit T.V., and stereo broadcasting systems is prudent since the lines are much less costly to put in during construction whether equipment is planned immediately or in the future.

The trend to use video-taping equipment in education is well established. Video tapes are used by children and teachers to see and hear themselves and to improve their own performance. Commercial video tapes are used for learning. Video taping of network T.V. shows (e.g., Sesame Street, Charlie Brown specials, etc.) is an inexpensive way of saving these special programs for use at appropriate times. At Oakland Army Base, observers saw teachers viewing special video tapes for inservice training.

Obviously, electrical systems in an open-plan child-care facility cannot rely on walls for sufficient outlets. Floor grids or ceiling grids must be considered.

Another aspect of the electrical system is the necessity for safety with small children. Outlets must either be out of reach or protected in some child-proof way. There are currently available covers for outlets which require special knowledge to open. This type of protection should be considered.

PATTERN

ENCLOSED ELECTRICITY EVERYWHERE

BUILDING OPERATIONAL FLEXIBILITY REQUIRES THAT SUFFICIENT ELECTRICAL OUTLETS BE AVAILABLE THROUGHOUT ALL SPACES TO PERMIT MULTIUSE. FUTURE CIRCUITRY NEEDS (E.G., CLOSED-CIRCUIT T.V., VIDEO-TAPING EQUIPMENT, ETC.) SHOULD BE PLANNED FOR AT THE BEGINNING.

RECOMMENDATIONS

- Double electrical outlets 12' O/C in large spaces would probably ensure sufficient electricity for flexible use (see Travel Report, 1978).
- Electrical outlets in smaller spaces should suit usage (e.g., office space will require extra outlets for type writers, adding machines, and other production equipment).
- All outlets must be out of children's reach or protected with child-proof covers.
- Provisions for easy installation of audio and video equipment should be made at the beginning.
- See TM5-811-2, "Electrical Design-Interior Electrical System" for recommendations on wiring systems.

RELATED ITEMS

WORKING WALLS
LIGHTING APPROPRIATE TO ACTIVITIES

1206 CHILD-SCALE BUILDING MATERIALS

ISSUE

CERTAIN BUILDING MATERIALS ARE APPLIED IN WAYS WHICH CREATE SURFACES AND SPATIAL IMPRESSIONS INCONGRUENT WITH CHILDREN'S SCALE.

JUSTIFICATION

Units of wood, masonry, glass, etc. can appear to a child to be something which could actually be handled (e.g., a single brick, a narrow grooved piece of wood, a small pane of glass, etc.), or they can be massive (e.g., an expanse of featureless white wall).

Because of children's size and activity patterns, they tend to stay closer to the floor than do adults. They are also more likely to be in closer contact with windows and walls, and are more occupied than are adults with activities which involve tactile and visual interaction with materials and surfaces around them.

Therefore, it is important that their environment consist of materials which are child scale and are more reassuring and inviting. The children may even be able to perceive a relationship between the building materials used and the elements of building toys with which they play (e.g., blocks, lincoln logs, etc.).

PATTERN

CHILD-SCALE BUILDING MATERIALS

CHOOSE MATERIALS WHICH INDIVIDUALLY COULD BE HANDLED BY A CHILD OR WHICH APPEAR TO BE OF A SIMILAR SIZE.

RECOMMENDATIONS

- Bricks, small concrete blocks, or textured masonry which look like small pieces (e.g., large concrete blocks scored to look like smaller units) are preferable to featureless poured concrete.
- Narrow grooved wood is preferable to wide planks.

- Relatively small panes of glass are more in keeping with child use than wide expanses of sheet glass.
- Walls without texture can be "re-scaled" with graphics, murals, tackboards, display shelves, etc.

RELATED ITEMS

SCALE: CHILDREN USE THE BUILDING INDEPENDENTLY
WORKING WALLS

1207 CHILD COMFORT AND CLIMATE CONTROL

ISSUE	SMALL CHILDREN'S NEEDS FOR CLIMATIC CONDITIONS MAY BE DIFFERENT FROM ADULT NEEDS, AND WILL ALSO VARY ACCORDING TO THE LEVEL AND TYPE OF ACTIVITY.
JUSTIFICATION	<p>Because children spend so much time on the floor and are naturally nearer the floor, the air quality at this lower-than-normal level must be considered.</p> <p>For this reason, it would seem logical to suggest radiant floor heat. But it was found at The Learning Place that radiant floor heat was so fatiguing for staff feet and legs that they had to rely on another peripheral heating system instead.</p> <p>Because optimal climate conditions will vary with age, health, activity level, and other factors, it is difficult to make specific recommendation on exact combinations of radiant temperature, air temperature, relative humidity, and air movement (Prescott and David, 1976).</p> <p>Prescott and David (1976) suggest that correct licensing procedures and state requirements will also help determine thermal requirements appropriate to each locality and situation.</p>
PATTERN	<p>CHILD COMFORT CLIMATE CONTROL</p> <p>PAYING PARTICULAR ATTENTION TO CONTROL AT CHILD LEVEL, THE HVAC SYSTEM MUST BE DESIGNED AND ZONED TO RESPOND TO A VARIETY OF THERMAL NEEDS.</p>
RECOMMENDATIONS	<ul style="list-style-type: none">● Temperatures in all rooms occupied by children should be between 68-72° Fahrenheit, measured within 1 foot of the floor.● Separate the climate control of very active areas and relatively quiet areas.● Tamper-proof thermostats should be provided and located at children's height and no more than 36 inches above the floor.

- A relative humidity of 50-55% should be maintained during the heating season.
- At least 5 cubic feet per minute of outdoor air for each occupant should be provided, based on the posted maximum occupancy of the facility.
- Toilets, lavatories, and kitchens should have adequate exhausts.
- Smoke detectors should be installed on the ceiling of each story in front of the doors to the stairways and at no greater than 30 feet spacing in the corridors of all floors containing the center. Detectors shall also be installed in lounges and recreation areas in centers. The detectors may be single-station units with an integral alarm having a decibel rating of at least 85.
- Infants will require special conditions and zoning of HVAC systems should reflect this.
- Air conditioning is recommended in hot climates.
- Locate any equipment (room heaters, fans, etc.) out of children's reach or screened from touch.
- Provide warm floors through a combination of heating methods, floor construction, and floor coverings.
- If facilities are used part time rather than all day, a system which can alter conditions rapidly would be advisable.
- Provide siting for thermal requirements, heavy insulation and planning for solar gain as a necessary part of thermal system design.

RELATED ITEMS

FLOOR FUNCTIONS WITHIN THE PROGRAM
ACCESSIBLE AND OPERABLE HARDWARE

1208 ACOUSTIC CONTROL

ISSUE

CERTAIN SOUNDS ARE COMFORTING AND INTERESTING TO CHILDREN WHILE OTHERS PRODUCE IRRITATION, DISTRACTION, AND FATIGUE.

JUSTIFICATION

Sound can be used to heighten interest in activities and to relate activities to space, e.g., a quiet space for resting, an acoustically alive space for physical activity.



The level of constant background noise which is usually acceptable is defined as that level which allows one to hear normal speech easily. Continuous, featureless noise at low levels appears to have little effect on performance, while intermittent or irregular sounds can be more annoying and distracting than steady sounds.

Extreme quiet does not necessarily provide an appropriate environment for many learning activities. Familiar noise is less annoying than strange or unnecessary sound and high-pitched noise is more fatiguing than low-pitched noise.

Therefore, an examination must be made of noise relationships between activity areas (see ZONING) and appropriate acoustic protection must be provided where needed.

It would, of course, be most effective to double-function chalkboards, pin-up surfaces, storage, etc., as acoustic barriers and absorbers.

PATTERN

ACOUSTIC CONTROL

WHEN ZONING ACTIVITY AREAS, GROUP QUIET AND NOISY AREAS SEPARATELY. USE SOUND INSULATORS OR SOUND ABSORBERS TO PROTECT QUIET ACTIVITY SPACES. THE NEED IS TO PROVIDE AN ENVIRONMENT IN WHICH WANTED SOUNDS CAN BE COMFORTABLY AND EFFECTIVELY HEARD, AND UNWANTED SOUNDS CAN BE CONTROLLED, DISSIPATED, AND ABSORBED.

RECOMMENDATIONS

- If noise around the site is unavoidable, sound intercepting materials should be placed in exterior walls and landscaping should be arranged to provide insulation from the noise source.
- Sound barriers must be airtight. Even the smallest cracks or open joints greatly reduce sound insulating value of walls.
- Back-to-back wall outlets, air ducts, location of plumbing facilities can create openings through which sound can escape.
- Group noisy activities together and separate from quiet spaces.
- Open plans do not necessarily produce a high noise level, but rather produce a background hum which is adjusted to by users.
- Hard flooring can be expected to produce high noise levels.
- Treat either the floor or ceiling acoustically, but not both because of the possible deadening effect.
- Floor treatment stops sound where it starts while a hard ceiling reflects sounds where they are wanted.
- Double-function chalk boards, dividers, tack boards, storage units, etc. by placing sound absorbing materials on the appropriate side.

RELATED ITEMS

SIMPLE STRUCTURAL SYSTEMS ON DISPLAY
WORKING WALLS

1209 LIGHTING APPROPRIATE TO ACTIVITIES

ISSUE

PROPER LIGHTING DESIGN HAS THE POTENTIAL TO PROVIDE NOT ONLY THE REQUIRED LIGHT LEVEL FOR THE TASK, BUT ALSO TO CONTRIBUTE TO THE SPIRIT OF THE ACTIVITY.

JUSTIFICATION

Teachers and others who spend time with children have long recognized the powerful effect light levels have on the behavior of children. Many teachers use light to cue children to expected behavior (turning down the lights when it is "quiet time," etc.).

It is also accepted that light levels affect attention spans; children (and adults) tend to focus on that which is most highly illuminated. Uniform background lighting actually makes distractions more likely. For these reasons, Alexander, Ishikawa, and Silverstein (1977) recommend "pools of light" which help define activity and group areas.

Osmon (1971) and others recommend daylight from windows and skylights because light from a window falls horizontally and makes a useful contribution to softening the effect of down-lighting. A view through a window also helps to avoid an oppressive sense of enclosure as it provides a link with the constantly changing out-of-doors.

Art display areas have a special need of the total light spectrum for color definition. This can be provided by natural daylight and-or supplementary incandescent lighting.

There is also evidence that fluorescent lighting can induce or exacerbate hyperactivity in children because of the type of radiation it emits (Ott, 1975; see also Painter, 1976, for preliminary empirical research). Because of the nature of alternating current, electricity passing through a tube fixture causes the gas to emit 120 flashes of light per second. Although this is too many flashes to be perceived by the naked eye, the physiology of the people in the room is undeniably affected.

PATTERN

ACTIVITY-APPROPRIATE LIGHTING

WITH THE EFFECT ON CHILDREN'S BEHAVIOR IN MIND, COMBINE NATURAL AND MANUFACTURED LIGHT TO CREATE ACTIVITY-APPROPRIATE LIGHTING DESIGNS.

RECOMMENDATIONS

- In general, use low illumination levels for less-active areas and higher illumination for more-active areas.
- Create "pools of light" as appropriate to activity areas. In an open program, these "pools" may need to move, so changing light patterns must be possible (e.g., with mobile track lights, fixed lights with separate dimmer switches, movable luminaries, etc.).
- Use siting baffles, roof overhangs, shades, etc., to control natural light so that brightness ratios are not too disparate.
- Use natural light and supplementary incandescent light to give the full color spectrum viewing in art areas.
- Consider maintenance operations and costs when designing lighting.
- Highlighting of activity areas, displays, and objects will work only if other light levels are low by comparison.
- See NFPA 101 Life Safety Code (1976; Section 5-9) for emergency lighting requirements
- Illumination levels and recommendations for lighting design are made in DOD 4270.1-M and the IES Lighting Handbook.
- If because of its relative cheapness, fluorescent lighting is unavoidable, supplement it with incandescent and natural lighting. This will lessen the effect of the 120 flashes per second emitted from fluorescent tube fixtures.

RELATED ITEMS

ACCESSIBLE BUT SAFE ELECTRICITY

1210 ACTIVITY-APPROPRIATE TEXTURE AND COLOR CUES

ISSUE

COLOR IS KNOWN TO STIMULATE VERY INTENSIVE REACTIONS IN YOUNG CHILDREN. INAPPROPRIATE COLOR USAGE CAN ACTUALLY PRODUCE UNINTENDED BEHAVIOR AND USE OF FACILITIES.

JUSTIFICATION

Research indicates that perception of color dominates over form in early childhood. (Texas A & M University, 1969). Therefore, the usual architectural clues which indicate entry, activity area, etc. may actually be imperceptible to small children and will certainly be superceded by color stimuli. Using color to indicate expected activity intensity, to guide children within the center through use of graphics, may be abhorrent to parents who would prefer to use form, but the reality is that color will be a stronger visual cue.

To be effective, color cues must be at least partially at child level--the floor and wall up to 3 feet. Large expanses of very vivid colors are probably not appropriate. Neutral colors for large blocks with smaller areas of bright color to highlight entry areas, special activities, even special objects, would be more useful.

A band of color in the floor or lower wall could actually guide children and draw them on. Particularly if the band is a special texture, fun to touch, a child could be directed to the yellow activity area and left to get there by following the band. This would be especially useful for children who "drop in" but do not attend regularly.

Textures will also help cue children in activity areas. Taylor and Vlastos (1975) found that soft textures helped children to feel relaxed and quiet. Harder finishes and surfaces will help make a space noisier and livelier. Textures can emphasize activity space boundaries (e.g., carpet and harder flooring edges). Different carpet textures can even be used as boundaries since children spend so much time on the floor.

In choosing colors, the generally accepted interpretation is that the red-orange-yellow part of the spectrum stimulates excitement, tension, and a feeling of warmth, while the purple-blue-green hues result in a feeling of calm, coolness, and reduced anxiety (Prescott and David, 1976). Obviously, high activity areas will be more likely to use warm colors, while napping, reading, etc. areas would require cooler colors.

A problem which must be considered when color is an important element in design, is maintenance. When repainting (or other "redecorating") is necessary, some provision must be made to ensure that original, clear, bright colors are not repainted with duller, less vivid colors simply because the duller colors are easier to get.

PATTERN

ACTIVITY-APPROPRIATE TEXTURE AND COLOR CUES

USE SMALLER AREAS OF VIVID COLOR APPROPRIATE TO ACTIVITY WITHIN THE AREA, WHILE USING MORE NEUTRAL COLORS (WHITE, PALE GRAY, ETC) FOR LARGE EXPANSES WHERE CHILD ART WORK, ETC., WILL BE DISPLAYED. USE COLOR GRAPHICS ON THE FLOOR AND WALLS AS GUIDANCE CUES IF APPROPRIATE TO DESIGN. USE A VARIETY OF TEXTURES TO HELP CHILDREN DISTINGUISH QUIET AND ACTIVE SPACES.

RECOMMENDATIONS

- For large background areas and walls which will be used for display, choose neutral colors (white, cream, pale gray, etc.)
- For smaller areas where color can emphasize expected activity level or can highlight a high-use object (e.g., a climbing frame), use bright, vivid colors appropriate to activity: red-orange-yellow hues for very active areas; blue-green-purple shades for more quiet areas.

- Use softer textures in quiet areas, some harder surfaces in active areas to help cue children to anticipated use. Since textures are so important in learning (Montessori), use as many kinds of surfaces as can be made consistent with design.
- If appropriate to design, use color-texture graphics on floor and walls (no higher than 3 feet) to guide children through the center. Color will probably be the single most powerful visual cue the designer can give to small children.
- Army Regulations (AR 608-1) prohibit the use of lead-based paint in child-care facilities. In renovated facilities, existing paint is to be tested for lead content either by direct read-out instrumentation or by chemical analysis of samples. If lead paint is found, the lead paint must be removed or the lead painted construction enclosed in new impervious construction.

RELATED ITEMS

WORKING WALLS
FLOOR FUNCTIONS WITHIN THE PROGRAM

1211 ACCESSIBLE AND OPERABLE HARDWARE

ISSUE

CHILDREN NEED TO OPERATE MOST HARDWARE IN A CHILD-CARE FACILITY. BUT THERE MAY BE SELECTED STORAGE AREAS (E.G., FIRST AID) WHICH ADULTS DO NOT WISH TO BE ACCESSIBLE TO CHILDREN FOR SAFETY AND OTHER REASONS.

JUSTIFICATION

Children must be able to reach and operate most hardware. Latches, doorknobs (if there are doors), handrails, etc., all must be within child height and operable by child-size hand and strength.

In areas where children should not have access, locks and bolts should be placed out of children's reach.

Since small children can lock themselves in (accidentally or not), hardware for children should be openable from either side and non-locking.

Latches or other hardware may also be a source of experimentation for children. Learning how latches work may be a child's goal. Hardware should then be as simple and as easy to repair as possible.

Hardware can be a source of danger if it has sharp edges or protrusions. Children do not yet have full control of body movements and can fall against or run into surfaces easily. Sharp or protruding hardware can be very hazardous to small children.

PATTERN

ACCESSIBLE AND OPERABLE HARDWARE

HARDWARE INTENDED FOR CHILDREN SHOULD BE AT CHILD HEIGHT, EASY FOR SMALL HANDS TO OPERATE, AND FREE OF DANGER. HARDWARE NOT INTENDED FOR CHILDREN SHOULD BE OUT OF CHILDREN'S REACH.

RECOMMENDATIONS

- Hardware for children should not be higher than approximately 2-2½ feet.
- Hardware for children should have knobs, railings, or handles small enough for children's hands.
- Hardware for children should operate from either side (so a small child cannot be shut in a cabinet and unable to get out, etc.).
- Hardware for children should be free of sharp edges and dangerous protrusions.
- Hardware for children should be simple and easy to repair and maintain.
- Hardware not intended for children should be placed out of children's reach.
- Hardware not intended for children should still be operable from either side (just in case of accident).

RELATED ITEMS

FLEXIBLE FURNISHINGS
CHILD-SCALE BUILDING MATERIALS

1212 FLEXIBLE FURNISHINGS

ISSUE

FURNISHINGS IN A CHILD-CARE FACILITY CAN EITHER SUPPORT OR INHIBIT VARIETY OF PLAY-WORK EXPERIENCES. THEY CAN HELP CREATE A WARM, HOMEY FEELING, OR EMPHASIZE AN INSTITUTIONAL ATMOSPHERE.

JUSTIFICATION

Inappropriate furnishings can be counterproductive even in the most carefully planned space. Some obvious points should be made:

- Furnishings which cannot be moved easily will limit the flexibility of use of any space.
- Both adults and children will use the facility and furnishings must be sized to be comfortable for each user group. Therefore a variety of seating, play, and work positions should be possible.
- Very few children spend much time sitting in a straight chair at a table or desk. Not many adults prefer this position for extended time periods either.
- For safety, furnishings which can be easily tipped, which have sharp corners or edges or splinters, or which have possibly toxic finishes are not suitable in a child-care facility (Texas A & M University, 1969).

Beyond these rudimentary requirements, furnishings may be examined to determine their positive contributions to child-care facility programs. Examples of these would be furnishings which are mobile enough to push out of the way; which can help define activity areas and circulation while also providing storage, writing surfaces, cubbies, display space, informal napping space, and becoming puppet stages, back-drops for dramatic play, etc., when needed. A stackable table-top stool which can be used to stand on, sit on, draw on, etc., is another example of truly flexible furniture.

Since children spend a majority of time on the floor, level changes, soft floor areas, roll-up mats, floor cushions, etc. may provide a majority of necessary seating space. For a "homey" atmosphere some soft, comfortable seating that adults and children can share together and a few rocking chairs for lap-

sitting would encourage pleasant adult-child relationships.



Since research has shown that a child's interest span is directly related to the variety of environmental elements and choices available, furnishings should help provide that variety. Further, the ability of a child to affect and change the environment to suit immediate needs is developmentally important and should be considered when planning furnishings.

However, if everything is changeable by children, stability will be lacking and adults and children will be confused and disoriented. So, major furnishings such as large storage pieces, bookshelves, etc., should have lockable casters or some other method of preventing random movement so that adults will be the ones to move them.

Finally, furnishing in a child-care facility should be planned recognizing that there are indeed three dimensions and that the space between three feet and the ceiling is usually wasted. Displays can be hung from the ceiling, even seating (i.e., basket chairs, hammocks, etc.) can be hung and then pulled out of the way when necessary.

PATTERN

FLEXIBLE FURNISHINGS

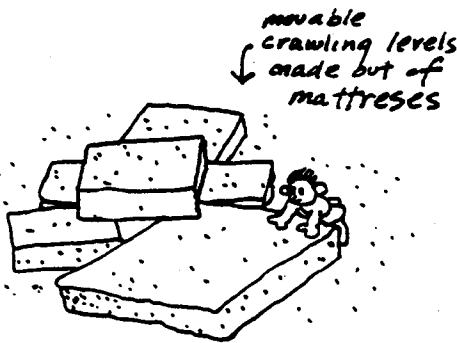
FURNISHINGS SHOULD BE EXAMINED FOR VARIETY, SAFETY, STURDINESS, ANTHROPOMETRIC SUITABILITY AND FLEXIBILITY. FURNISHINGS SHOULD BE CHOSEN FOR THE POSITIVE CONTRIBUTION THEY CAN MAKE TO CHILD-CARE FACILITY PROGRAMS.

THE BUILDING MAY INCLUDE BUILT-IN FURNITURE THROUGH USE OF LEVEL CHANGES, SOFT FLOORINGS, DISPLAY WALLS, ETC. WHILE MUCH OF THE FURNISHINGS WILL BE MOVEABLE, LARGE PIECES USED TO DEFINE SPACES SHOULD BE MOVEABLE ONLY BY ADULTS.

RECOMMENDATIONS

- Almost all furnishings should be easily moved by one adult. Most furnishings should be movable by children, but incorporate methods of fixing them (e.g., lockable casters).

- Furnishings should be adaptable, adjustable, or through duplication, provide for the scales of both child and adult.
- Furnishings should be flexible, multi-use.
- Furnishings should be sturdy but should provide texture, color, softness, reminiscent of home.
- Furnishings should not be easily tipable, have sharp corners or edges, have splinters, or have possibly toxic surfaces.
- Use of floor as furniture will be enhanced by level changes (e.g., a seating pit), soft flooring, floor cushions, etc.
- Use of walls as furniture may be enhanced by display surface, built-in shelves, storage, and window seats.
- The third dimension may be used with furnishings that stack and furnishings that hang from the ceiling (e.g., hanging chairs, hammocks, display, etc.).
- Insure that there are plenty of soft objects which can be used by children, especially the very young ones, both for sensual-tactile stimulation, for comfort, and for the creation of privacy. Examples include: large rug or full carpeting; child-adult cozy furniture; rockers, couches.
- Beds, cots, cribs, and playpens should be provided for children appropriate to age and size and should be placed at least three feet apart on all sides unless placed against a wall. In conformation with FDA recommendations, spaces between crib slats should not be greater than $2 \frac{3}{8}$ inches to prevent infants from strangling. (AR 608-1).



RELATED ITEMS

FLOOR FUNCTIONS WITHIN THE PROGRAM
WORKING WALLS