RECOMMENDATIONS FOR

CHILD CARE CENTERS

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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


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.


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


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 workplace 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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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.
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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:

- Recommendations on Child Play Areas (Criteria Document, 1979)
- Recommendations on Child Care Centers (Draft Design Guide, 1979)
Executive Summary

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.


- 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.
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- 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).
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- 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).
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- Indoor-outdoor connections, including the creation of favorable microclimates and extending the building into the community, are important to the free flow of children form 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).