BUILDING ORGANIZING PRINCIPLES

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
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).
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.
38-42 Square Feet of Secondary and Staff Activity Space per Child

When calculating square footage for secondary activity spaces, there are two things to consider: how many staff will be using the spaces and which activities to include.

In determining how many staff will be using the space, refer to the following chart which summarizes standard ratios of children to staff:

<table>
<thead>
<tr>
<th>RECOMMENDED CHILD CARE-GIVER RATIOS AND GROUP SIZES</th>
<th>AR 608-1</th>
<th>MANY STATE LICENSING REQUIREMENTS</th>
<th>FEDERAL INTERAGENCY DAY CARE REQUIREMENTS</th>
<th>NHW/ACF NATIONAL DAY CARE STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATIO</td>
<td>GROUP SIZE</td>
<td>RATIO</td>
<td>GROUP SIZE</td>
<td>RATIO</td>
</tr>
<tr>
<td>INFANTS GWRS. - 1 OR 1½ YEARS</td>
<td>5:1</td>
<td>3:4:1</td>
<td>6:8</td>
<td>4:1</td>
</tr>
<tr>
<td>TODDLERS 1 OR 1½ - 2½ OR 3 YRS.</td>
<td>8:1</td>
<td>6-8:1</td>
<td>12-16</td>
<td>4:1</td>
</tr>
<tr>
<td>PRESCHOOLERS 2½ OR 3 - 5 YRS.</td>
<td>10:1</td>
<td>10:12:1</td>
<td>20-24</td>
<td>5:1</td>
</tr>
<tr>
<td>AFTER SCHOOLERS 5 - 12 YRS.</td>
<td>15:1</td>
<td>14:1</td>
<td>32</td>
<td>18:1</td>
</tr>
</tbody>
</table>

*NO RECOMMENDATIONS MADE*
<table>
<thead>
<tr>
<th>RECOMMENDED SQUARE FOOTAGES FOR INDIVIDUAL ACTIVITY SPACES</th>
<th>ABSOLUTE MINIMUM</th>
<th>ADEQUATE/RECOMMENDED</th>
<th>GENEROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. INDOOR SPACE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Primary usable activity areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. All children/emphasis on preschoolers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(@35-50 s.f./c.; assume 40 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources at the Heart</td>
<td>100</td>
<td>120</td>
<td>140</td>
</tr>
<tr>
<td>Darkened Room</td>
<td>1</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>Multi-Purpose/Motor Activities</td>
<td>500</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Building Area</td>
<td>2</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Block Play</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Sand Play/Liquid Oasis</td>
<td>150</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td>Nature Study</td>
<td>200</td>
<td>210</td>
<td>240</td>
</tr>
<tr>
<td>Reading/Listening</td>
<td>175</td>
<td>210</td>
<td>240</td>
</tr>
<tr>
<td>Arts and Crafts</td>
<td>250</td>
<td>260</td>
<td>275</td>
</tr>
<tr>
<td>Music</td>
<td>150</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>Total preschooler activity</td>
<td>1,775</td>
<td>2,130</td>
<td>2,630</td>
</tr>
<tr>
<td>b. After-School Drop-Ins</td>
<td>350</td>
<td>420</td>
<td>500</td>
</tr>
<tr>
<td>(@35-50 s.f./c.; assume 10 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Infant Circle</td>
<td>300</td>
<td>360</td>
<td>525</td>
</tr>
<tr>
<td>(@20-35 s.f./c.; assume 15 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Toddler Territory</td>
<td>200</td>
<td>240</td>
<td>350</td>
</tr>
<tr>
<td>(@20-35 s.f./c.; assume 10 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total primary activity</td>
<td>2,625</td>
<td>3,150</td>
<td>3,750</td>
</tr>
<tr>
<td>2. Secondary activity spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant-Toddler Napping</td>
<td>150</td>
<td>190</td>
<td>220</td>
</tr>
<tr>
<td>Preschooler Napping</td>
<td>160</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Intimate Diapering</td>
<td>60</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>Learning Bathrooms</td>
<td>120</td>
<td>180</td>
<td>200</td>
</tr>
<tr>
<td>Kitchen</td>
<td>150</td>
<td>200</td>
<td>220</td>
</tr>
<tr>
<td>Eating Clusters</td>
<td>300</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Sick Bay</td>
<td>80</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>3. Caregiver Staff Spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>260</td>
<td>370</td>
<td>380</td>
</tr>
<tr>
<td>Parent/Staff Corner</td>
<td>100</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td>Staff Back Stage</td>
<td>4</td>
<td>150</td>
<td>165</td>
</tr>
<tr>
<td>Social Service</td>
<td>100</td>
<td>150</td>
<td>165</td>
</tr>
<tr>
<td>Laundry</td>
<td>50</td>
<td>75</td>
<td>85</td>
</tr>
<tr>
<td>4. Service Spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance and Service</td>
<td>20</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Mechanical and Electrical</td>
<td>325</td>
<td>450</td>
<td>540</td>
</tr>
<tr>
<td>Total other assignable space</td>
<td>1,875</td>
<td>2,850</td>
<td>3,150</td>
</tr>
<tr>
<td>Total net assignable space</td>
<td>4,500</td>
<td>6,000</td>
<td>6,900</td>
</tr>
<tr>
<td>5. Non-assignable space</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(@20%, 25%, and 33%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total indoor space</td>
<td>5,400</td>
<td>7,500</td>
<td>9,150</td>
</tr>
</tbody>
</table>
### RECOMMENDED SQUARE FOOTAGES (cont'd)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Absolute Minimum</th>
<th>Adequate/Recommended</th>
<th>Generous</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. OUTDOOR ACTIVITY SPACE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Primary activity areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Emphasis on preschoolers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(975-200 s.f./c.; assume 40 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Activity</td>
<td>1,500</td>
<td>2,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Intellectual Activity</td>
<td>750</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Social/Emotional Activity</td>
<td>750</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>b. After School Drop-Ins</td>
<td>5</td>
<td>5,000&lt;sup&gt;5&lt;/sup&gt;</td>
<td>81,000&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>c. Infants</td>
<td>525</td>
<td>750</td>
<td>1,500</td>
</tr>
<tr>
<td>(935-100 s.f./c.; assume 15 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Toddlers</td>
<td>350</td>
<td>500</td>
<td>1,000</td>
</tr>
<tr>
<td>(935-100 s.f./c.; assume 10 c.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total outdoor activity area</td>
<td>3,075</td>
<td>1,250</td>
<td>91,500</td>
</tr>
</tbody>
</table>

**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.
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

<table>
<thead>
<tr>
<th>Calculations for Gross Square Footage For Child Care Building and Site Under Minimum, Recommended, and Generous Conditions</th>
<th>Absolute Minimum</th>
<th>Adequate/Recommended</th>
<th>Generous</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facility Primary Activity Space</td>
<td>35 sf/c (Some state min; NFPA; AR 608-1)</td>
<td>42 sf/c (Evans; Francisco min)</td>
<td>50 sf/c (Francisco rec)</td>
</tr>
<tr>
<td>2. Facility Other Assignable Space</td>
<td>25 sf/c (Moore)</td>
<td>30 sf/c (Moore)</td>
<td>32 sf/c (Moore)</td>
</tr>
<tr>
<td>3. Facility Non-Assignable Space</td>
<td>20% of assignable 12 sf/c</td>
<td>25% of assignable 15 sf/c</td>
<td>35% of assignable 20 sf/c</td>
</tr>
<tr>
<td>4. Total Facility Size (1+2+3)</td>
<td>72 sf/c</td>
<td>100 sf/c</td>
<td>125 sf/c</td>
</tr>
<tr>
<td>5. Day Care Play Yard(s) Size</td>
<td>75 sf/c (Some state min; NFPA)</td>
<td>100 sf/c (AR 608-1; Evans; Croman)</td>
<td>120 sf/c (Francisco)</td>
</tr>
<tr>
<td>6. After-School Drop-In Play Area Fields</td>
<td>0</td>
<td>5,000 sf (TM 5-803-10)</td>
<td>81,000 sf (TM 5-803-10)</td>
</tr>
<tr>
<td>7. Total Outdoor Play Area (5+6)</td>
<td>75 sf/c</td>
<td>100 sf/c + 5,000 sf</td>
<td>225 sf/c + 81,000 sf</td>
</tr>
<tr>
<td>Type of Care</td>
<td>Facility</td>
<td>Play Yards</td>
<td>Vehicle</td>
</tr>
<tr>
<td>--------------</td>
<td>----------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>FAMILY CHILD CARE HOMES (6 Children)</td>
<td>Available Home &lt;sup&gt;*&lt;/sup&gt; ca. 2,000 S.F. 560 S.F. (590m&lt;sup&gt;2&lt;/sup&gt;) available 450 S.F. 42m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Available Drive</td>
<td>Available Drive</td>
</tr>
<tr>
<td>SMALL NEIGHBORHOOD CENTER (15 Children)</td>
<td>3250 S.F. 300 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3375 S.F. 315 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3600 S.F. 335 m&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>LARGE NEIGHBORHOOD OR WORK-BASED CENTER (75 Children)</td>
<td>5400 S.F. 500 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>5625 S.F. 525 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>5700 S.F. 545 m&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>VERY LARGE CENTER-BASED CHILD CARE CAMPUS (4 Modules @ 60 Children = 240 Children)</td>
<td>17,500 S.F. 1630 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>18,000 S.F. 1676 m&lt;sup&gt;2&lt;/sup&gt;</td>
<td>18,000 S.F. 1676 m&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>*</sup> 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-useable 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-useable 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
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.

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 de facto-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 200 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 APPOPRIATE 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
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
ACTIVITY SPACES AFFECT CHILDREN'S BEHAVIOR. SHAPES AND SIZES OF THESE AREAS SHOULD CORRESPOND TO THE DEMANDS OF THE ACTIVITY BEING HOUSED.

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.
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.

**ACTIVITY-SHAPED SPACES**

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

- 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.

**RELATED ITEMS**

**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 boundaried 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.

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 ARRANGE- MENT 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.
- In the general, modified open space play, provide quiet retreat places.

- 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.

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 story-telling 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)

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).
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.

- 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 Toddlers' 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
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.

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.
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.

RECOMMENDATIONS

- 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
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

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 recommendations 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, PRE-SCHOOLERS, 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 ensure 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
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 constrast 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
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 specific 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
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.

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.

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.
Zoning: Noisy-Quiet, Active-Passive

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
AMBIGUOUS CIRCULATION PATTERNS IMPEDE CHILDREN'S USE OF THE CENTER AND CREATE UNNECESSARY CHAOS AND DISORGANIZATION.

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- and student-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 Osmen, 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).

**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.

- 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
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 modules may be made especially rich.

- Use ramps instead of, or in conjunction with, steps for children in wheelchairs or with braces, crutches, etc.
- 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 wheel-
chairs, 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 transpor-
tation pick-up points.

- A berm, fence, or sign must be no higher that 48" if an adult in a wheelchair is to see over it. The height is reduced accord-
ingly 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 hand-
rails 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 preceding 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
RETIRED AND BREAKAWAY POINTS
IMAGEABILITY AND ORIENTATION
ORDERLINESS AND CONSISTENCY
EMOTIONAL RELEASE POINTS
REPETITION AND MULTIPLE CODING
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.

Osmun (1971) has a number of interesting design suggestions for dealing with these opposing forces, and much of what follows is based on his analysis.
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.

- 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

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

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 childcare 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.

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).
EXTENDED INDOOR-OUTDOOR RELATIONSHIPS

EXTEND THE INDOORS TO THE OUTDOORS, THE OUTDOORS TO THE INDOORS, AND BOTH TO THE COMMUNITY BY 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.

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
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.

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 "ten 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.
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 UNOBSCECTED TO A RANGE OF OTHER PARTS OF THE CENTER. COLORS, TEXTURES, AND LIGHTING SHOULD BE SOFT AND HOME-LIKE.

- 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.).
• 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
ISSUE

WHEN PARENTS BRING THEIR CHILDREN TO THE CENTER, THEY BECOME PARTICIPANTS IN IT (SANOFF, 1972). EXPECTED ACTIVITIES BY PARENTS IN CARE FACILITIES MAY INCLUDESOCIALIZING 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.
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.
Parent use of entry and circulation to child-activity spaces should be facilitated by clear circulation paths, highlighting 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.

**Related Items**

- FRIENDLY FACES ENTRY SEQUENCE
- PORTE COCHERE
- BUILDING PERIMETER AS A CONTROLLED FILTER
- PARENT-STAFF CORNER
- STAFF BACK SIAGE
- ADMINISTRATION IN THE MAINSTREAM
- VISIBILITY: WELCOME AT FIRST SIGHT
- FRONT YARD AND FRONT PORCH
- CLEAR CIRCULATION WHICH OVERLOOKS PLACES TO OBSERVE CHILDREN
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.

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:

- Compatibility 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

Compatibility With The Built Environment

Compatibility 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, leftover 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.
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

CREATE 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

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.
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."
919 Child-Scaled Environments

- 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
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.

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).

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
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.

**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).