

MIL-HDBK-1037/2
31 JANUARY 1989

MILITARY HANDBOOK

CHILD DEVELOPMENT CENTERS



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ABSTRACT

This military handbook is issued to provide design guidance on child development facilities at Department of Defense establishments worldwide for both new construction and all future major rehabilitation or improvement projects.

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FOREWORD

This handbook has been developed from an evaluation of facilities in the shore establishment, from surveys of the availability of new materials and construction methods, and from selection of the best design practices of the Department of Defense (DOD), other Government agencies, and the private sector. This handbook was prepared using, to the maximum extent feasible, national professional society, association, and institute standards. Deviations from this criteria, in the planning, engineering, design, and construction of: Naval shore facilities - cannot be made without prior approval of NAVFACENGCOMHQ Code 04; Army facilities - cannot be made without prior approval of HQUSACE, Attention CEEC-EA.

Design cannot remain static any more than can the functions it serves or the technologies it uses. Recommendations for improvement involving: Navy projects - shall be furnished to Commander, Naval Facilities Engineering Command, Code 04A6, 200 Stovall Street, Alexandria, VA. 22332, telephone (202) 325-0036; Army projects - shall be be furnished to Department of the Army, HQUSACE, Attn. CEEC-EA, 20 Massachusetts Ave. N.W., Washington, DC 20314-1000; with copies to U. S. Air Force Headquarters, USAF/LEEES, Building 516, Bolling Air Force Base, Washington, DC 20032.

THIS HANDBOOK SHALL NOT BE USED AS A REFERENCE DOCUMENT FOR PROCUREMENT OF FACILITIES CONSTRUCTION. IT IS TO BE USED IN THE PURCHASE OF FACILITIES ENGINEERING STUDIES AND DESIGN (FINAL PLANS, SPECIFICATIONS, AND COST ESTIMATES). DO NOT REFERENCE IT IN MILITARY OR FEDERAL SPECIFICATIONS OR OTHER PROCUREMENT DOCUMENTS.

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CRITERIA MANUALS

MANUAL NUMBER	TITLE	Preparing Activity
MIL-HDBK-1037/1	Swimming Pools (interim)	CHESDIV
MIL-HDBK-1037/2	Child Development Centers	HDQTRS
MIL-HDBK-1037/3	Outdoor Sports & Recreational Facilities	CHESDIV
MIL-HDBK-1037/4	Brigs and Detention Facilities (proposed)	CHESDIV
MIL-HDBK-1037/5	Family Service Centers	CHESDIV
MIL-HDBK-1037/6	Chapels & Religious Educational Facilities	CHESDIV
MIL-HDBK-1037/7	Officers, Non-Commissioned Officers Dining Facilities; Open Enlisted Dining Facilities	CHESDIV

Note: This handbook is issued to provide immediate guidance to the user. However, it does not conform to the requirements of MIL-HDBK-1006/3, and will be reissued in the correct format at a later date.

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CHAPTER I: OVERVIEW

I. PURPOSE. This document contains the basic criteria governing the design and construction of military child development facilities both new and renovated. It provides guidance for the development of facility concept designs and other general criteria for program activity and administrative spaces. All guidelines focus on developmentally appropriate, functional, and cost-effective facilities.

II. USERS. The primary users of the child development facilities are:

A. Children:

1. Infants (4 weeks - 18 months)
2. Toddlers (18 months - 3 years)
3. Preschool age (3 - 5 years)
4. School age (5 - 9 years)
5. School age (9 - 12 years)

B. Staff:

1. Directors/Managers/Coordinators
2. Assistant Directors/Managers/Program Directors
3. Teachers/Room or Group Leaders/Caregivers
4. Desk Clerks/Receptionists/Operations Clerks
5. Cook and Food Service Workers
6. Custodial Staff

III. PROGRAM OPERATIONS. Military child development centers should reflect the specific requirements for service of the installation. Services should include infant, toddler, preschool-age and school-age components with provisions for full-day, regularly scheduled part-day and hourly care programs. For planning purposes, a seven day operational period should be anticipated. Hours of operation will range from 0600 to 0100, with normal duty hours usually being 0630-1800 for full day services.

IV. STAFFING PATTERNS. Child development centers will be staffed and organized according to DOD staff/child ratios and group size. See Appendix 1. Numbers of staff to be within staff room, parking, toilet and support areas will vary according to scheduling patterns, e.g. staff overlap at noon for training purposes, type of appointment, e.g. part time, on call and availability of public transportation.

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V. DESIGN GUIDANCE.

A. All design and construction for military child development centers will conform to the criteria and guidance contained in this document.

B. Except as noted herein, facilities shall meet requirements of MIL-HDBK 1190, Facility Planning and Design Guide.

C. Child development facilities will meet the requirements of NFPA 101 except when more stringent Service guidance is specified to offset reduced DOD adult/child ratios.

D. Outdoor play areas will meet the requirements of Manuals, Planning and Design of Children's Outdoor Play Environments (Army TM-803-11, AFM 88-30) except as noted herein.

E. Services will issue additional design guidance/implementation instructions to meet individual Service requirements.

F. Host nation construction criteria or international agreement requirements will apply to projects in overseas locations when more stringent than MIL-HDBK 1190 or other criteria cited in this document.

G. The initial cost of construction and the cost of operation maintenance and janitorial services projected over a 25-year life cycle should be considered when evaluating building system alternatives during the design development process.

VI FUNDING.

A. See DOD funding policy on construction of child development centers.

B. Operational and Maintenance (O&M) funding is authorized for repairs or minor construction in accordance with 10 U.S.C. 2674.

VII. REFERENCES. See Appendix 2 for references necessary to understanding the function of child development centers and the procedures for planning and designing child development centers as part of military construction programs.

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CHAPTER II: GENERAL CRITERIA

I. PURPOSE. This chapter defines the architectural program with regard to site selection, facility size and scale, organization, space requirements, design for the physically handicapped and energy conservation.

II. MASTERPLANNING.

A. Evaluate total child care requirements for projected installation military populations and mission. See Appendix 3.

B. Select one or more sites to meet installation requirements based on the following factors:

1. If projected installation requirement exceeds 305 children, select a sufficient number of sites so that no site supports more than 305 children.

2. Select sites large enough to provide for the building, playgrounds, vehicular spaces, setbacks and buffer zones.

3. Site facilities within family housing areas or centrally locate within the community.

4. Ensure, whenever possible, that centers offering hourly care services are located near community facilities if more than one site is required.

5. Avoid sites located near hazards and nuisances such as industrial areas with obnoxious odors, heavy traffic, dust or pollution, railroads, golf courses, lakes, steam pipes, POL pipes or storage tanks, aircraft landing zones, etc. (See AIR Installations Compatibility Use Zones DODD 4165.57).

III. FACILITY SIZE.

A. No child development center shall accommodate less than 25 children.

B. No child development center shall accommodate more than 305 children. On large installations requiring extensive child care services, provide multiple facilities.

IV. SPACE REQUIREMENTS.

A. For programming purposes, the maximum allowances are: (see individual service planning manuals for modifications to maximum allowances).

1. 90 sq. ft. per child gross area for buildings accommodating 25 to 60 children.

2. 80 sq. ft. per child gross area for facilities housing 61-100 children.

3. 75 sq. ft. per child gross area for buildings accommodating more than 100 children.

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B. Gross area includes all space within the building's exterior dimensions plus one half of roofed porches and area walkways. Space (3-4% of gross area) required for mechanical and electrical equipment and boiler rooms is not included in the gross area.

C. Child activity program area includes all space encompassed by the walls of child activity program rooms. It does not include space for offices, corridors, central storage, isolation room, staff areas and other centralized functions. Within the child activity area allocation, provide a minimum of 35 net sq ft per child of usable activity space. Usable activity space includes only areas used exclusively for child activities and does not include areas dedicated for circulation, toilets, cot/mat storage/general storage, built-in furniture and cabinets, or cribs. An additional 25 sq ft per child is required in infant care room.

D. Provide space within each child activity room for sleeping and dining which also can double-function for other developmental activities. Separate, centralized sleeping and/or eating areas are not acceptable.

V. ORGANIZATION AND LAYOUT.

A. Organize buildings into age groups and/or program types, with individual playgrounds and protected passages between each element.

B. Minimize use of corridors to ensure adequate square footage within program areas.

C. Ensure modules or wings are clearly identifiable to children and parents. Design the circulation paths to be clear to the children, staff and parents. Use colors, textures and finish materials on the walls and/or floors to define traffic patterns. Use signs with words and symbols where appropriate.

D. Zone the building in terms of noise levels so that active spaces are grouped together but separated by distance and/or barriers from quiet spaces.

VI. ARCHITECTURAL STYLE AND SCALE.

A. Use an architectural style, materials and color selections that are compatible with the installation master plan and the adjacent exterior environment. The style should reflect a residential character using home scale doors, windows, roof forms, landscaping and pathways.

B. Limit finished ceiling heights to eight feet wherever feasible and to no more than 10 feet in child activity areas containing large motor exercise activities.

C. Use child-scaled furnishings and equipment in the program activity areas, toilets and other support spaces frequented by the children. These child-scaled elements include plumbing fixtures, mirrors, windows, drinking fountains, hardware, cubbies/lockers, furniture, chalk and bulletin boards. If adult-sized equipment must be used by children, make provisions to accommodate this use. See Appendix 4 for child anthropometric reference chart.

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VII. DESIGN FOR THE PHYSICALLY HANDICAPPED.

A. Design all child development centers to be barrier free and accessible to the physically handicapped in accordance with FED STD 795, April 1, 1988.

B. Design the site and the building to permit physically handicapped persons to act independently and pursue opportunities normally afforded able-bodied persons.

C. Minimize environmental barriers for handicapped children and staff by making movement easy and barrier-free, by locating objects within reach, and by designing the environment to be easily "read".

D. Ensure barrier free modifications will not pose a physical threat to non-physically handicapped children.

VIII. ENERGY CONSERVATION.

A. Design building to be energy efficient.

B. Consider the impact of the following factors: siting, orientation, outdoor design conditions, interior design conditions, ventilation and infiltration rates, solar screening, building envelopes, and insulation.

C. See Service amendment of ASHRAE/IES Standard 90A-1980.

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CHAPTER III: INTERIOR ADMINISTRATIVE AREAS/SUPPORT SPACES

I. PURPOSE. This chapter provides the criteria essential for the design of the administrative areas and support spaces within child development centers.

II. ENTRY. Major controlled access point for patrons.

A. Make the entrance to the building obvious to first time users through the use of such items as signs, overhangs, gates, paths, planting and colors.

B. Consider a covered entryway large enough to serve as an outdoor waiting area.

C. Provide views of activity areas for approaching children and parents whenever possible. Design the pedestrian approach to the building so that the pathway does not pass through any outdoor activity area.

D. Provide vestibule with two parallel sets of outward swinging double doors with closers and panic hardware to create an energy efficient barrier to drafts and temperature differences.

E. Design the entry to provide the receptionist with a clearly visible, controlled access point. Ensure receptionist is protected from entry drafts.

III. LOBBY/RECEPTION. Work space for receptionist/desk clerk; parent waiting area; and space for children's displays, program information, fee collection and parent education materials.

A. Provide bi-level receptionist counter/desk with a minimum of two electrical outlets to accommodate a microcomputer, cash register or cash drawer, telephone, typewriter, files and miscellaneous administrative equipment.

B. Provide parent waiting area with comfortable seating and space for a pay telephone. Ensure pay telephone space is adequate to accommodate requirements for handicapped.

C. Provide wall and floor display space for notices and art work, and shelf/display space for parent education/program materials.

D. Provide clear circulation to all child activity rooms

E. Provide task lighting of 50 fc over reception desk and ambient lighting of 30 fc elsewhere.

F. Ensure electrical outlets are available to support specified equipment, furnishings and functions.

G. Provide fire notification panel and fire alarm pull station in accordance with MIL-HDBK-1190 and most current edition of NFPA.

H. Ensure access to public toilet.

I. Select floor surfaces that are easily maintained.

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IV. ISOLATION. Area for isolating and observing sick children until released to parents.

A. Locate adjacent to reception area to allow reception desk personnel to supervise, observe and control access.

B. Install observation window in the wall connected to the reception area. Locate so patron viewing is minimized.

C. Size the room to accommodate one cot or crib.

D. Provide access to a toilet room with a water closet and a lavatory with hot and cold water, a soap-towel dispenser, and a floor drain.

E. Provide 30 fc illumination

F. Provide a minimum of 6 air changes per hour.

G. Provide storage per Service guidance for portable crib/cot/playpen.

H. Provide lockable storage cabinets for first aid supplies and extra linens.

I. Provide washable, seamless hard surface flooring.

V. DIRECTOR/MANAGER OFFICE. Work space for facility administrator(s).

A. Provide a minimum of 100 sq. ft. plus coat and storage closet.

B. Ensure office is visible and directly accessible to staff, parents and children from lobby or nearby corridor.

C. Consider use of glass to provide visual linkage with blinds or drapes to allow control of visual access.

D. Provide a window permitting the introduction of natural ventilation, if possible.

E. Provide a telephone jack and four standard electrical outlets.

F. Provide seating space for at least three adults for conferences, counseling or interviewing purposes.

G. Provide additional office space for coordinator, program managers or assistants in large facilities or in those facilities with more than one program.

VI. ADMINISTRATIVE SUPPORT SPACE. Shared work area for additional support personnel, including clerical, part time administrative staff and occasional personnel.

A. Assess program scope to determine space requirements.

B. Provide minimum of 60 sq. ft. per individual work station within area, to include space for files, book shelving, and desks with circulation between.

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C. Provide a window permitting the introduction of natural ventilation if possible.

D. Provide adequate telephone jacks and a duplex outlet for each staff member.

VII. STAFF ROOM. Space for work/lunch breaks, development of program materials, utilization of staff training resources.

A. Provide a minimum of 150 sq. ft. for work space, seating and storage. Increase size in centers with more than 20 employees.

B. Buffer visually and acoustically from child activity rooms and public view.

C. Locate near staff bathroom and central storage.

D. Provide window permitting the introduction of natural ventilation whenever possible.

E. Provide lighting dimmer and room darkening window treatments to allow for lighting flexibility.

F. Provide duplex receptacles every 12 feet to accommodate equipment such as time card machines, wall clock, small appliances, audiovisual equipment.

G. Provide a closet or lockers with hanging rod and shelf for outer garments and secured storage of valuables for staff.

H. Provide standard height work counter, with sufficient storage for supplies and electrical outlets appropriate to support equipment (duplicator, typewriter, and laminating machine).

I. Provide shelving and closet space for staff training resources, i.e. books, journals, and supplies for the development of program materials, i.e. poster boards, scissors.

J. Provide space for comfortable seating, work table and side chairs.

K. Consider provision of space for small kitchenette unit (refrigerator/sink/heating element).

L. Provide wall surfaces suitable for displays and employee notices.

VIII. CENTRAL STORAGE. Storage for shared program materials, audiovisual equipment and other resource materials located near staff/administrative area.

A. Size the storage area based on 4 cu. ft. per child, with a minimum size of 40 sq. ft.

B. Provide shelving appropriate for efficient organization of stored materials and equipment.

C. Ensure room is lockable with controlled access.

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XI. STAFF/PUBLIC TOILETS. Toilet facilities for staff, adult patrons and handicapped individuals.

A. Provide adult toilet facilities for the staff and the general public. Staff toilets in facilities with a staff of less than 15 persons need not be separated by sex. Staff and public toilet may serve a double function in centers with less than 15 staff but should be separated in large centers. Facility requirements for accommodating the physically handicapped will be incorporated into this space.

B. Provide a minimum of 35 net sq. ft. per toilet room. Additional space/locations may be required in large facilities having 25+ staff.

C. Locate near entry and administrative area if double functioned. If separate, locate staff toilet adjacent to staff lounge/workroom.

D. Provide mirrors, soap/towel/toilet paper/napkin dispensers, grab bars, and coat hooks.

E. Provide mechanical ventilation.

X. KITCHEN. Support space for children's food service to include areas for receiving, food storage, food preparation, distribution and clean-up.

A. Provide kitchen as a separate unit.

B. Locate kitchen adjacent to an exterior wall and service ramp/drive.

C. Size the kitchen area for center providing full meal service based on USDA Program Aid Food Service Equipment Guide for Child Care Institutions guidelines and/or Service guidelines.

D. Include the following work centers: receiving, food storage, food preparation, distribution and clean-up.

1. Receiving:

(a) Provide exterior food and trash service area.

(b) Screen vehicle service area from adjacent play grounds, pedestrian exposure and automotive vehicles.

(c) Ensure area security during periods when deliveries or pick-ups are not occurring.

(d) Provide telephone jack.

(e) Provide exterior 120V electrical outlet or equivalent host nation voltage.

(f) Provide work space for preparing and storing records connected with food service.

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(f) Provide work space for preparing and storing records connected with food service.

2. Food Storage:

(a) Design lockable, windowless dry food storage area with adequate ventilation and protection from rodent infestation.

(b) Ensure this area is not subjected to temperature extremes or dampness.

(c) Provide 45 sq. ft. of space with 75 LF of shelving for kitchens serving up to 76 children.

(d) Provide 60 sq. ft. of floor space with 150 LF of shelving for kitchens serving from 76 to 150 children

(e) Provide 80 sq. ft. of floor space with 225 LF of shelving for kitchens serving from 151 to 225 children.

(f) Provide 95 sq. ft. of floor space with 300 LF of shelving for kitchens serving from 226 to 305 children.

(g) Additional food storage space may be required when centers are enrolled in the USDA commodity program or when restocking period is lengthy, e.g. overseas areas.

(h) Use slotted, louvered or wire construction metal shelving to provide better air circulation and maintenance. All metal shelving shall have a rust preventative finish and be fabricated in accordance with National Sanitation Foundation Standards.

(i) Provide for relative humidity within a range of 20% to 50%.

(j) Provide dedicated electrical power outlet circuit for cold storage.

(k) Provide floor drains in storage areas.

(l) Provide refrigerated storage. Consider walk-in refrigerated storage in large centers.

3. Food Preparation, Distribution and Clean-Up:

(a) Use commercial grade kitchen equipment sized in accordance with USDA guidelines in centers serving over 100 children.

(b) Fire prevention and exhaust systems will be provided for commercial equipment per NFPA.

(c) Provide a class B-C fire extinguisher.

(d) Dishwashing machines should be capable of heating or boosting temperature of water up to 180 degrees F.

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(e) See Service requirements for dishwashing sinks and hand washing facilities.

(f) Provide shelf or cabinet storage (separate from dry food storage) for paper products, clean-up supplies, cooking equipment and serving equipment.

(g) Provide space for trash receptacles.

(h) Provide space for food serving carts, trays and utensils.

(i) Provide slip resistant floor tile with floor drains and sloped floors.

(j) Provide a minimum of eight electrical outlets to support appliances, steam table, etc. and two 220V outlets or equivalent host nation voltage for stove and dishwasher.

XI. LAUNDRY ROOM. Space to house equipment, clean and soiled laundry and secured storage of laundry supplies.

A. Provide a separate laundry room convenient to the infant and toddler activity areas and also if possible to the food preparation area. Multiple rooms may be required in large facilities if laundry support is not provided on the installation.

B. Ensure area has adult-controlled access from main corridor system.

C. Provide minimum area for one commercial grade washer, dryer layout area, and laundry storage area per 100 children.

D. Provide a washer plumbing box with hot and cold water faucets and a standpipe for the washer.

E. Provide a vent with an easily accessible lint trap for the dryer.

F. Provide 120V and 220V electrical outlets or equivalent host nation's voltage for the washer and dryer, respectively and for power receptacles.

G. Provide appropriate connections for gas dryer if applicable.

H. Provide a single compartment laundry tub with hot and cold water.

I. Provide a laundry folding counter, secured storage for laundry supplies, and open storage for clean and dirty laundry.

J. Provide a floor drain and slope the floor to the drain.

XII. JANITOR CLOSET.

A. Provide janitor closets located along main circulation paths.

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B. Within each closet provide approximately 25-30 sq. ft. of shelf and cabinet storage of janitor's cart, mops, vacuum cleaners and brooms; and a slop sink with hot and cold water, adequate lighting and ventilation.

C. Provide keyed lockset on the janitor's closet door and on the cabinet doors.

D. Provide a floor drain with sloped floor to the drain.

E. Provide a floor drain basin with raised curb, i.e. mop sink.

XIII. MECHANICAL EQUIPMENT ROOM. Secured space to house mechanical system.

A. Provide up to 4% of the gross square footage for mechanical and electrical equipment. The total mechanical and electrical floor area is not calculated as part of the gross building allowance.

B. Ensure mechanical equipment room opens directly to the exterior of the building with no access into any interior spaces or children's outdoor play areas.

C. Provide outside air supply and exhaust openings of adequate capacity.

D. Provide space for electrical distribution panels.

E. If applicable, install sensors and controllers for the EMCs to monitor climate control and the operation of the mechanical equipment; connect to the base master control room equipment.

F. Ensure all fuel storage meets NFPA 30 requirements.

G. Limit the peak noise levels to 85 dbA within the mechanical room. Minimize vibration transmission to administration and child activity areas so as to limit noise in those areas to 30-40 dbA.

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CHAPTER IV: MECHANICAL

I. PURPOSE. This chapter provides the criteria essential for the design of heating, ventilation and air quality systems responsive to needs of children. These requirements are different from adult needs and vary according to the level and type of activity. Since children spend much time on and near the floor, the temperature and air quality must be considered at this level. Care must be taken with construction details to minimize infiltration and drafts. Criteria are also provided for the design of plumbing in child development facilities to support healthful and sanitary conditions, easy use by children, and low maintenance.

II. HEATING, VENTILATION, AIR CONDITIONING, AND COOLING.

A. Site and orient the building for passive energy conservation. Insulate in accordance with MIL-HDBK-1190, Chapter 8, and design for active solar energy supplementation where cost effective.

B. Install air conditioning, heating and ventilating duct work and related equipment in accordance with the applicable standard on Air Conditioning and Ventilating Systems, either NFPA 90A or 90B.

C. Standardize design temperatures in all rooms occupied by children at no less than 68 degrees in the winter and no less than 78 degrees in the summer where air conditioning is authorized, measured within 1 foot of the floor.

D. Zone active spaces for lower temperatures and quieter, sedentary spaces for higher temperatures.

E. Provide tamper proof temperature and air quality measuring/monitoring devices no more than 36 inches from the floor. The devices should be concealed whenever possible. If the devices cannot be concealed, they should be able to withstand abusive treatment. All thermostat control systems shall incorporate night and weekend capability.

F. Provide mechanical ventilation system or operable windows in all child activity rooms, offices and administrative areas.

G. Provide mechanical exhausts for all kitchens, toilets, laundries, and food preparation spaces.

H. Consider air purifiers in child activity spaces serving non-toilet trained children and in toilets when air circulation is limited.

I. Provide air conditioning and/or ventilation in accordance with MIL-HDBK 1190.

J. Design the heating system to provide a relative humidity in children's areas consistent with control of airborne bacteria and disease.

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K. Heating devices in child-accessible areas shall be protected to prevent children from contact with surfaces having temperatures in excess of 110 degrees F.

L. Open fireplaces, portable combustion space heaters, or electric heaters may not be used as a heat source.

III. PLUMBING. See Sections: Child Toilets, Adult Toilets, and Kitchen for specific requirements.

A. Provide individual shut-off valves for each fixture. Fixtures shall be sized for the population served.

B. Provide hot and cold water wash basins with pre-mixing faucet sets that may be set for a constant temperature in child activity spaces as required.

C. Provide recessed faucets in diaper unit sinks.

D. Faucets at diaper unit sinks should be knee/elbow activated or foot operated.

E. Faucets in child bathroom areas should be automatic shut-off type.

F. Provide "goose neck" faucets in toddler, preschool, and school age classroom sinks to facilitate filling water table inserts and cleaning art equipment, e.g. paint containers.

G. Provide floor drains in all toilets, laundries, janitor closets, kitchens, and water play areas to prevent flooding.

H. Provide deep seal traps in areas that do not normally stay wet.

I. Ensure maximum water temperature in child spaces is 110 degrees F.

J. Provide appropriate measures in all child-accessible areas to prevent children from being exposed to scalding water.

K. Ensure temperature of water used for dishwashing is 180 degrees F.

L. Provide water source for children in child activity spaces, e.g. child height drinking fountain or bubbler units with guarded angular stream drink heads attached to sinks.

M. Provide drinking fountains at child height in each playground serving children older than 18 months. Outside fountains should be mounted a maximum of 30 inches high and shall have a mouthguard and angled jet.

N. Provide water source outlet directly accessible to outside playgrounds.

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CHAPTER V: UTILITIES

I. PURPOSE. This chapter provides the design criteria for lighting and power sources within child development centers.

II. GAS. Install equipment utilizing gas and related gas piping in accordance with the National Fuel Gas Code, NFPA 54.

III. WATER.

A. Ensure water supplies are from approved sources per Service regulations.

B. Provide adequate water supply for installed Fire Suppression Systems per NFPA 13.

IV. POWER.

A. Install electrical wiring in accordance with the MIL-HDBK 1190 and the National Electrical Code, NFPA 70.

B. Provide sufficient electrical outlets inaccessible to children throughout all child activity and support spaces to provide for power and lighting needs.

C. Provide each child activity space with one 120V convenience outlet or equivalent OCONUS voltage every 12 linear feet along perimeter walls.

D. Ensure special power needs are provided for lobby/reception, staff and kitchen areas to support work equipment, i.e. appliances, office machines, micro-computer, fire notification panel, intercom, telephones.

E. Provide at least one duplex receptacle for each 20 linear feet of wall space in office, staff and general support space with 400 sq. ft. or less of floor area. In larger spaces, provide at least four duplex receptacles for the first 400 sq. ft. and at least two duplex receptacles for each additional 400 sq. ft. or fraction thereof.

F. Provide duplex receptacle in corridors where use of janitorial equipment or other portable appliances may be used.

G. Ensure all receptacles are the grounding type.

H. Provide ground-fault circuit-interrupter (GFCI) protection for all receptacles located in kitchen, laundry, toilet areas and exterior outlets.

I. Keep all outlets in spaces accessible to children at a minimum height of 54 inches above finished floor. In child accessible areas, the receptacles shall be a child safety type such as one that requires twisting the inner portion of the device to activate current and at the same time prevents a child from inserting any foreign object. Removable caps/plugs do not meet this requirement.

J. Provide for one clock in each office, child activity space, kitchen and lobby entrance.

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K. Provide an internal communication system which allows for individual room/area and communication. The intent of such a system is for two way emergency communication rather than music or general announcements. System remotes shall be located at adult height. PA systems will not be provided.

L. Provide for fire detection system as specified in Chapter VI, Fire Protection.

M. Provide pad-mounted exterior transformers in dead front enclosures where necessary.

N. Consider integrating lighting and electrical systems into floor or ceiling grids and movable working walls to provide future flexibility.

V. LIGHTING.

A. Provide lighting in accordance with the design criteria in MIL-HDBK 1190 and the Illuminating Engineering Society (IES) Lighting Handbook.

B. Provide a mix of natural and artificial (fluorescent and incandescent) light which can be adjusted by the staff to changing outside light levels and activities within the building. Where dimmer controls are used, provide lighting fixtures which will not oscillate visibly at low intensities.

C. Provide overhead lighting in child activity spaces.

D. Provide 50 fc of task lighting on all activities requiring perceptual acuity (reading, drawing, color and shape discrimination tasks, staff administration work, testing, etc.)

E. Provide 30 fc for background lighting and all other activities not requiring close perpetual acuity.

F. Use siting baffles, roof overhangs, shades, etc. to control the natural light brightness ratios.

G. Provide high shielding fluorescent lamps where fluorescent fixtures are required. Narrow spectrum fluorescent bulbs are not permitted.

H. Control lateral differences in illumination, especially those created by strong side natural lighting in an activity space. Use sun shades, light attenuation devices, etc., and orient activity areas, work surfaces and storage units so that lights come from behind most activities and children.

I. Provide sufficient controls over the natural and artificial lighting sources to give lighting flexibility by using a system such as any one of the following: multi-ballast switches, dimmer switches, track lighting, movable lights, etc..

J. Provide adequate lighting in entry spaces to permit gradual adaption to outdoor/indoor levels of light.

K. Provide 1/2 fc lighting for sidewalks and in parking areas.

L. Provide night security lighting within lobby and/or cash areas that are visible from outside.

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CHAPTER VI: FIRE PROTECTION

I. PURPOSE. This chapter provides the specific design criteria for fire protection systems and exit requirements unique to child development centers.

II. GENERAL CRITERIA.

A. Except as noted within this document, the requirements of NFPA 101 (latest edition) and MIL-HDBK-1190 shall be adhered to in the facility design. If a conflict occurs between NFPA 101, MIL-HDBK-1190, and this handbook, this handbook will govern. Child development centers are classified as educational occupancies, Child Day Care Centers, within NFPA 101.

B. Apply the fire protection requirements for the youngest age group when a facility or space houses more than one age group.

C. Locate all new child development centers on the ground floor regardless of building construction.

D. In existing construction, separate spaces for school age children (ages five and above) may be located above the ground level if special construction standards or automatic fire suppression systems are included in accordance with NFPA 101.

E. Provide fire resistive noncombustible facilities. Existing child care programs located in wood frame or ordinary construction with 1-hour fire barriers that separate program areas and age groups may continue to be used pending relocation to or replacement with noncombustible facilities.

F. Ensure occupancy load that exists will conform to NFPA 101.

G. Ensure location of at least one fire hydrant within 200 feet of the facility or per Service requirement.

III. FIRE PROTECTION SYSTEMS.

A. Provide a hard-wired automatic fire alarm and smoke detection system (FADS) in all child activity rooms, staff workroom, offices and corridors in accordance with NFPA 72E.

B. Provide an automatic sprinkler system and 1 hour fire separation construction in all hazardous areas, including kitchens, utility/boiler/mechanical rooms, janitor areas, laundry rooms and storage rooms over 40 sq. ft. in area.

C. Provide an unobstructed fire department connection (stand pipe or hose outlets) to support sprinkler system.

D. Equip commercial grade kitchen hood(s) with an automatic extinguishing system in accordance with NFPA 96.

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E. Provide capability for fire and evacuation alarm to be operational manually.

F. Ensure FADS will transmit a signal to the fire department or fire alarm control center serving the facility.

IV. FIRE AREA SEPARATION.

A. Ensure walls separating child activity rooms are fire-rated for one hour. This does not apply to interior partitions/dividers/walls within a child activity room.

B. Ensure walls separating child activity room from kitchen and hazard areas are fire-rated for one hour.

C. Ensure all doors in fire-rated walls are at least 36 inches in width and self-closing.

V. EXIT CRITERIA.

A. Provide at least two exits from each child activity space. At least one of these exits shall discharge directly to the outside play space. Neither exit will require travel through any other room or program area to reach the exit discharge. The exits shall be as remote from each other as possible. In existing construction, child activity spaces without an exterior wall shall be provided with an exit access remote from the other exit.

B. Ensure corridors used as fire exit paths in new construction are a minimum of six feet wide. No dead end corridors exceeding 20 feet shall be provided. Exits from dead end corridors shall not use adjacent rooms as means of egress.

C. Ensure travel distance to fire exits does not exceed 150 feet from any point in the building and 100 feet from any occupied room door. When facility is completely sprinklered, the maximum distance may be increased by 50 feet.

D. Ensure exits from infant program area are of sufficient width to accommodate a crib (a minimum of 36 inches).

1. Provide ramps with nonslip surfaces for exits opening above ground level.

2. Provide guard rails wherever ramps exceed one foot in height above ground level.

3. Ensure ramps are not less in width than the exit door leading to the ramp.

4. Provide sufficient ramp width at turns for maneuvering cribs.

5. Limit ramps to a maximum slope of one foot in twelve (1:12).

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6. Provide hold open devices on doors.

7. Ensure exits lead to hard level surface and lead to a safe distance from the building.

E. Provide panic hardware on fire exit doors and doors used for crib egress.

F. Ensure doors from occupied rooms and outside exit doors swing in the direction of exit travel.

G. Provide exit lights in all means of egress.

H. Provide emergency lighting in all corridors, and other key areas.

I. Ensure all fenced areas include gates which will permit occupant egress/removal to an open, safe area.

VI. FINISHES.

A. Interior finishing materials will conform to MIL-HDBK 1008A.

B. Thermal insulation will meet minimum flame spread and smoke ratings specified in MIL-HDBK 1008A.

C. Corridors will be constructed or lined with noncombustible material.

D. Carpeting shall comply with MIL-HDBK 1008A. Carpets used in the vertical position shall be considered an interior finishing material.

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CHAPTER VII: INTERIOR CHILD ACTIVITY SPACES

I. PURPOSE. This chapter provides the space criteria and functional program requirements necessary for activity rooms/spaces used by children ages 4 weeks - 12 years of age.

II. GENERAL CRITERIA.

A. In new construction provide activity spaces to support each child group. A child group is composed of two caregivers and the corresponding ratio of children assigned to their care.

<u>CHILDREN</u>	<u>MAXIMUM AGE GROUP SIZE</u>	<u>STAFF</u>
Infants (4 weeks - 18 months)	10	2
Toddlers (18 months - 3 years)	16	2
Preschool Age (3 - 5 years)	24	2
School Age (5 - 9 years)	30	2
School Age (9 - 12 years)	36	2

B. In existing construction, large rooms should be subdivided to accommodate each group of children. In centers serving a large infant population, a separate grouping for pretoddlers (12 - 18 months) should be considered.

C. Ensure design elements are scaled in accordance with child anthropometric references in Appendix 4.

D. Provide chalkboard and bulletin boards at child height in child activity rooms.

E. Provide enclosed storage for cot or sleeping mats within/between activity rooms.

F. Provide direct exterior access from interior activity room to appropriate age group playground/outdoor activity area.

III. INFANT PROGRAM AREA. Activity room used for children 4 weeks to 18 months of age which includes child activity areas for crawling, walking, table play, floor play, wheel toys, and functional support spaces, i.e. child reception/caregiver administration, diaper changing, feeding and sleeping areas.

A. Usable Space.

1. Size the infant area based on a minimum of 35 sq ft of usable space per child, exclusive of the space used for cribs, fixed equipment, closet storage and adult toilet. Provide a minimum of 25 additional sq. ft. per crib. Usable space includes enclosed crawl area, feeding area, open play area for walkers and wheel toys, spaces for rocking chairs and portable equipment, e.g. swings.

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2. Design with capability of allowing infants under 6 months to be separated from older infants.

3. Locate with easy access to laundry facilities.

4. Provide protected area for use by nursing mothers.

5. Provide appropriate storage within each child interest center/functional area.

6. See DOD Training Manual DOD 6060.1-M-7, Creating Environments for Infants and 6060.1-M-8, Creating Environments for Pretoddlers for additional guidance.

B. Child Reception/Caregiver Administrative Area. Space within child activity room for logging in child attendance, receiving child personal items, e.g. formula, diaper bags, toys; and storage of child records.

1. Size area at minimum of 40 sq. ft.

2. Include small counter for staff/parents.

3. Ensure room entry and interior space design facilitates interaction between staff and parent.

4. Provide display space for notices and parent communications.

5. Provide lockable closet storage for large equipment, i.e. swings, highchairs, wheel toys; and caregiver clothing/purses.

C. Crawl Area. Enclosed soft surface crawl area.

1. Size area for a minimum size of 60 sq. ft. per child group.

2. Locate play/crawl space near entry/reception area if possible, with easy staff access and supervision.

3. Provide 20-30-inch-high enclosure on sides of crawling area.

4. Provide 20-inch-high/walking rails or other support devices along open walls and inside crawl areas to stabilize infants walking efforts.

5. Provide low open storage within crawl space for infant toys.

6. Provide unbreakable mirrors at infant crawling and standing levels.

7. Provide stain resistant soft surface floor covering.

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D. Feeding Area. Food preparation work counter with adjacent area for feeding children.

1. Provide area for food preparation including self-edged laminated plastic work counter with backsplash with the following amenities:

- a. Minimum four electric outlets and 50 fc task lighting above the counter.
- b. Space at counter height for small refrigerator, food warming equipment, and sink.
- c. Space for storage of food items in over-counter cabinets.

2. Provide open space for eating, to include space for highchairs, small tables/chairs, and adult rocking chairs.

3. Provide low maintenance hard surface flooring.

E. Sleeping/Crib Area. Space containing cribs and caregiver seating for feeding and holding children.

1. Provide space for infant cribs based upon Service specified child/crib ratios.

2. Provide not less than 25 sq. ft. per crib.

3. Provide space for adult size rocking chair within each crib area.

4. Provide minimum of 12 cu. ft. of closed storage for bedding per 4-5 cribs.

F. Diaper Changing Area. Space for cleaning and changing infants/storage of diaper bags.

1. Provide diaper changing unit per 10 infants accessible to crib/sleeping areas and play/crawl space. Ensure diaper changing unit is not located adjacent to food preparation area.

2. Provide 34-inch-high changing unit which includes 24-inch-wide area with a 3-inch minimum raised edge on open sides to prevent infants from falling. Changing surface should be a minimum of 3 feet in length.

a. Provide deep oversized sink with recessed faucets and hot and cold water to accommodate bathing infants.

(1) Ensure maximum water temperature of 110 degrees F.

(2) Ensure faucets are knee/elbow activated or foot operated.

b. Provide storage for diapers, towels, baby products, and extra clothing.

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c. Provide storage for individual child diaper/supply bags.

d. Provide space for foot operated container for storage of soiled disposable diapers and laundry.

3. Consider wall mounted dispensers for disposable paper sheets to cover changing areas and plastic bags for disposal of diapers.

4. Provide soap, hand lotion, and paper towel dispensers at adult height for caregiver use.

5. Provide bulletin board/counter space for record keeping materials.

6. Locate diaper changing unit so staff can clearly see/supervise child activity spaces.

7. Provide adult flush water closet within area.

G. Adult Toilet. Provide adult water closet with lavatory within area.

IV. TODDLER PROGRAM AREA. Activity room used for children 18 months to 3 years of age which includes child interest centers with appropriate storage; as well as functional support areas to include: child reception/caregiver administrative area, child cubbies, and toilets.

A. Usable Space. Use a minimum of 35 sq. ft. of usable space per child, exclusive of diapering area, toilets, closet storage, built-in furniture and cabinets, and circulation.

B. Diaper Changing Area.

1. See Infant Program Area, Section F.

2. Increase length of changing space in diaper unit to accommodate larger children.

C. Child Interest Centers. See Section VII.

D. Functional Support Areas. See Section VIII.

E. See DOD Training Manual 6060.1-M-9, Creating Environments for Toddlers for additional guidance.

V. PRESCHOOL-AGE PROGRAM AREA. Activity rooms used for children 3-5 years of age which include child interest centers with appropriate storage, as well as functional support areas to include: child reception/caregiver administration, child cubbies and toilets.

1. Use a minimum of 35 sq. ft. of usable space per child, exclusive of toilets, closet storage, built-in furniture and cabinets, and circulation.

2. Design part-day preschool age area for potential supplemental use with school-age children.

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A. Child Interest Centers/Areas. See Section VII.

B. Functional Support Areas. See Section VIII.

C. See DOD Training Manual 6060.1-M-10, Creating Environments for Preschoolers for additional guidance.

VI. SCHOOL-AGE PROGRAM AREA. Activity room used for children 5-12 years of age which include child learning centers with appropriate storage, as well as functional support areas to include: child reception/caregiver administration, child cubbies, and toilets.

A. Usable Space.

1. Use a minimum of 35 sq. ft. of usable space per child, exclusive of toilets, closet storage, built-in furniture and cabinets and circulation.

2. Design area for potential supplemental use by part-day preschool children.

3. Locate away from younger children's program areas when provided as a separate child activity room.

4. Provide separate entrance, if possible.

5. Provide protected area for studying, hobbies and table activities.

B. Child Interest Centers/Areas. See Section VII.

C. Functional Support Areas. See Section VIII.

D. See DOD Training Manual 6060.1-M-11, Creating Environments for School Age Children for additional guidance.

VII. CHILD INTEREST CENTERS/AREAS FOR TODDLER, PRESCHOOL AGE AND SCHOOL AGE CHILDREN. Activity rooms should include the following interest centers/areas: reading/listening, imaginative play, science, blocks, manipulative/table toys, arts and crafts, water/sand play, quiet area, music, large motor activity. The arts and crafts and manipulative/table toy areas should double function for eating. Additional eating space, if required, may be within science and reading and listening, and imaginative play areas. Consider room darkening capabilities when designating spaces within child interest/activity areas which will double function for napping period.

A. Reading and Listening. Quiet area within each activity room for children to engage in reading and listening activities.

1. Size area at a minimum of 60 sq. ft. per child group.

2. Provide space for table, chairs, pillows, book display unit, puppet stage, flannel board and listening center.

3. Provide power outlet for tape recorders/record players, etc.

4. Provide open child height storage for books, puppets, picture cards and other program materials.

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5. Provide soft surface flooring (carpeting/area rugs).

B. Imaginative Play. Space within each activity room for children to engage in housekeeping, dress-up and dramatic play.

1. Size area at a minimum of 60 sq. ft. per child group with space for portable child-sized housekeeping equipment.

2. Provide space for child table and chairs if area will double function for eating.

3. Install mirrors at child height.

4. Provide child accessible storage for props and dramatic play accessories.

5. Provide adult storage.

6. Provide a combination of hard and soft surface flooring.

C. Science. Space within each activity room for caged animals, plants and physical science material.

1. Size area for a minimum of 36 sq. ft. per child group.

2. Allow space for table/chairs if this space is also used for eating.

3. Supplement defined area with shelves at windows for plants and garden space in playground.

4. Locate near sinks for ease in watering plants and animals and cleaning cages and bowls.

5. Locate near natural light for plants.

6. Provide tack strip for display of pictures and other materials.

7. Provide child height shelves or counters as display and/or work space for plants, animal cages and science experiments.

8. Provide child-proof electrical outlets for aquariums, plant lights, and incubators, etc.

9. Provide floor surface impervious to stains.

D. Blocks/Construction Area. Area within each activity room for unit blocks, larger blocks, transportation toys and block accessories.

1. Size area at a minimum of 60 sq. ft. per child group.

2. Provide child height open storage for blocks and display of block accessories.

3. Provide soft surface flooring (carpeting/area rugs).

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E. Manipulative/Table Toys. Area within each activity room for table and floor manipulative and readiness toys and materials. This space should double function for eating.

1. Size area at a minimum of 60 sq. ft. per child group to include at least one table and 6-8 chairs.
2. Provide space for child table and side chairs.
3. Provide open storage at child height for puzzles, peg boards, box games, manipulative toys, etc.
4. Provide floor surface impervious to stains and heavy wear.

F. Arts and Crafts. Space within each activity room for art activities to include painting, crafts, clay, etc. This space should double function for eating.

1. Size area for minimum of 60 sq. ft. per child group.
2. Provide space for child tables and seating.
3. Include space for easels and child height drying racks for paintings.
4. Provide child height sink near area.
5. Provide open child storage and closed adult accessible storage for supplies.
6. Provide wide shelving to use at child height for art products to dry.
7. Provide tack strip for display of children's art products.
8. Provide wall hooks for aprons.
9. Select floor and wall surfaces impervious to clay, paint, etc.

G. Water/Sand Play. Space for indoor activities including water, sand, and sand alternatives (oatmeal, rice, beans, etc.) within each child activity room. This space may double function as the arts and crafts area.

1. Size area at a minimum of 60 sq. ft. per child group with sufficient space so that children can use all sides of equipment/work counter.
2. Locate near sink and out of circulation paths.
3. Provide space for sand/or water tables.
4. Provide wall hooks for aprons.

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5. Provide storage for plastic bottles, funnels, buckets, etc. to use with sensory materials; provide closed storage for props.

6. Provide a non-slip seamless floor surface impervious to water and dampness with water resistant wall coverings.

H. Quiet Area. Spaces for children to pursue individual quiet activities or to separate themselves from the group. This space may be within the Reading and Listening area.

1. Size to accommodate 1-3 children.

2. Ensure spaces are child-scaled; however, adults should be able to see and reach child for supervisory purposes.

3. Provide soft surface floor coverings (carpeting/area rugs).

4. Locate away from major circulation paths.

I. Music. Space to accommodate individual and group music action, i.e. singing, dancing, musical instruments. This space may double function as the Large Group Motor Area.

1. Size area at a minimum of 200 sq. ft. per child group.

2. Separate from quiet activities and buffer from circulation.

3. Provide task lighting.

4. Provide child-proof electrical outlets 54 inches above floor for audiovisual equipment.

5. Provide soft-surface floor covering (carpeting/area rugs).

6. Provide closed storage for instruments, records, and electronic equipment (phonograph, headsets).

7. Consider use of pegboards for storage of instruments.

8. Provide room darkening capabilities.

J. Gross Motor Activity Area. Space to accommodate small and large group activities, including wheel toy play, exercise/gymnastic activities, obstacle courses, ball activities, group games.

1. Size room for a minimum of 150 sq. ft. if within child activity room and 200 sq. ft. if located as a separate room. Consider additional square feet if the room is to be used by two groups.

2. Provide an additional 100 sq. ft. in climates allowing limited outside play.

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3. Design space with few fixed features to allow maximum flexibility.
4. Provide closet storage for large pieces of equipment/water toys.
5. Provide a minimum of 2 electrical outlets 54 inches above the floor.
6. Select floor treatment to accommodate all functions. Hard surface flooring with mats/area rugs is recommended.
7. Reduce noise by using fabric or tile on walls, accoustical ceiling tile, partitions of sound-absorbing materials.

K. Wood Working Area. Space for woodworking and other tool activities for preschool age and school age children only.

1. Size to accommodate 1-3 children.
2. Provide space for a child height work bench with a vise.
3. Provide child accessible open storage for construction materials and lockable storage for tools.
4. Provide temporary hanging storage, e.g. pegboard for tools when in use.
5. Separate the area acoustically from quiet areas.
6. Provide task lighting.
7. Provide low maintenance hard surface flooring.

VIII. FUNCTIONAL SUPPORT AREAS WITHIN TODDLER, PRESCHOOL AND SCHOOL AGE ACTIVITY ROOMS.

A. Child Toilets.

1. Provide toilet within each child activity room or between activity rooms with accessibility to both indoor and outdoor activity areas.
2. Provide seamless flooring in toilet areas, extending at least six inches up the walls.
3. Use pre-mixing goose neck or bar type faucet sets that may be set for a constant temperature not to exceed 110 degrees F.
4. Provide water-resistant wall covering to a minimum level of 5 feet.
5. Provide safety mirrors, soap/towel/toilet paper dispensers at child height.

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6. Ensure following age group considerations are met:

a. Toddlers:

- (1) Provide 1 water closet and 1 lavatory per 8 toddlers.
- (2) Use common area for boys and girls.
- (3) Provide child sized fixtures located at a height appropriate for toddlers.
- (4) Provide open fixtures for ease of adult supervision.

b. Preschool-Age:

- (1) Use common area for boys and girls.
- (2) Provide 1 water closet and 1 lavatory per service age group ratio.
- (3) Provide child sized fixtures located at a height appropriate for preschool age children.
- (4) Consider use of open fixtures for ease of adult supervision where child users are under 5 years of age. Eliminate stall doors or limit height of doors to 42 inches if toilets are partitioned. Partitions should be no more than 6 inches from the floor. Scale to child height.

c. School-Age:

- (1) Provide separate rooms for boys and girls.
- (2) Provide 1 water closet and 1 lavatory per 15 school age children.
- (3) Provide toilet partitions and stall doors if more than one water closet is required in each toilet room.

6. See Chapter IV Mechanical for additional considerations.

B. Child Reception/Caregiver Area.

1. Provide child reception/work caregiver counter for logging in child attendance, receiving child's personal items, e.g. supplies, special instructions concerning care of child, and storage of child reports.

2. Size area at minimum of 40 sq. ft.

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3. Ensure room entry and interior space design facilitate interaction between staff and parent.

4. Provide display space for notices and parent communications.

5. Provide lockable closet storage for caregiver outer clothing/purses, supplies, materials, etc.

C. Cubbies/Child Lockers.

1. Provide contained areas of approximately 3 sq. ft. per child for storage of children's clothing and personal belongings or space for free child height standing units. Free standing units should be secured to prevent tipping.

2. Size area at approximate 3 sq. ft. per child.

3. Locate near child reception/caregiver administrative area.

4. Cluster cubbies to maximize space and limit congestion.

5. Provide waterproof, slip-proof, easily maintainable floor finishes.

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CHAPTER VIII: INTERIOR DESIGN

I. PURPOSE. This chapter contains the criteria for the selection of appropriate finishes and furnishings used within child development centers.

II. INTERIOR DESIGN REQUIREMENTS.

A. Ensure interior design package is compatible throughout facility and is supportive of functional requirements.

B. Ensure the interior design staff works with the building designer and users in selecting and coordinating structurally related items, i.e. wall finishes, carpet, etc.

III. FINISHES.

A. Ensure lead-based paint is not used. Test existing paint for lead content (either by direct read-out instrumentation or by chemical analysis of samples). In renovated facilities remove lead paint or enclose in new impervious construction.

B. Use wall treatments or 48" wainscotes which are soil-resistant and easily cleaned within child activity rooms, child toilets and child traffic areas, e.g. corridors. Vinyl wall coverings, laminated plastic paneling,, extension of hard surface floor covering or carpeting are examples of acceptable treatments. Do not use painted wall surfaces at child level.

C. Choose neutral/light colors for large background areas and walls used for display.

D. Use smaller areas/bands of bright/primary colors to highlight areas.

E. Emphasize expected activity levels or highlight a high-use object by using colors appropriate to the activity: red-orange-yellow hues for very active areas; blue-green-purple shades for more quiet areas.

F. Consider use of color coding to differentiate space for each age group or activity room.

G. Use color-texture graphics sparingly on the floor and on the walls. Avoid entire walls of graphics and designs which compete with children's work or display materials. Avoid cartoon and fairy tale characters.

H. Floors in child activity spaces should be a combination of both carpeting and hard surface flooring. Area rugs may be used over hard surface flooring in lieu of carpeting.

I. Ensure carpets comply with fire and sanitation requirements, are stain and soil resistant, anti-microbial, easily cleaned and fast drying. Underlying material shall be of synthetic or inorganic material.

1. Select carpets/rugs that minimize visual soil and damage.

2. Avoid large patterned designs, e.g. games, alphabet.
3. Select carpets/rugs that can withstand frequent shampooing.
4. Ensure area rugs have bound edges and are slip resistant.

J. Ensure hard surface flooring in child activity spaces and child toilets is seamless and non-textured.

1. Grouted surfaces may not be used in child toilet areas.
2. Select surfaces that minimize visual soil and damage.

K. Use textures to help cue children in activity areas. Soft textures tend to relax children while harder finishes and surfaces make a space noisier and livelier.

L. Consider use of acoustical materials above 48" for noise reduction in child activity spaces.

M. Provide display strips at various levels (child and adult) in corridors, offices, lobby, staff workroom, and child activity spaces.

IV. DOORS AND WINDOWS.

A. Locate some windows in child activity space at child-eye level. Provide platforms or window seats if appropriate. Avoid long expanse of glass which will provide glare.

B. Ensure that casement and other projecting types of windows are recessed or limited so that windows do not project beyond walls.

C. Ensure double-hung windows are counterbalanced to prevent finger or arm injuries. Window operations should be tamper-proof.

D. Ensure all windows used for ventilation are securely screened to prevent insects from entering. Screens in child activity spaces should be above child height.

E. Ensure sliding glass doors, low windows and glass walls are plainly marked at child and adult eye levels.

F. Ensure window treatments in child activity spaces.

1. Allow for room darkening capability.
2. Resist damage by children, e.g. can be raised above child height.

G. Avoid use of floor-length draperies and vertical blinds in child activity spaces. Consider use of mini-blinds, and blinds enclosed within window panels.

H. Provide see-through areas (child and adult height) in doors leading to child activity spaces.

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I. Avoid folding partitions or doors. When used, they should be located in door pockets when retracted and should have an adjustable lock position.

V. Hardware/Fixtures.

A. Ensure door and cabinet hardware in child activity rooms is:

1. Operable from either side.
2. Non-locking except for adult height controlled-access storage.
3. Free from dangerous protrusions.
4. Designed to prevent finger and hand hazards.

B. Install door locksets in accordance with anthropometric data provided in Appendix 4. NOTE: Exit door hardware in toddler activity spaces will be located above the reach of the children.

C. Locate paper towel dispenser in child toilet at child height away from water closets.

D. Install horizontal mirrors at child height directly abutting child sinks. Shelving over sinks is not required.

VI. Furnishings.

A. Ensure the furnishings within child activity rooms are of institutional quality, meet safety standards, are scaled for the age size and activities of the children served.

1. Use furnishings to define activity spaces and circulation paths.
2. Select furnishings and portable partitions which can be easily moved by staff to help define activity areas (e.g., storage units, display space units, bookcases, puppet stages, etc.)
3. Ensure size of furnishings is appropriate for the designated age group.
4. Select furnishings that do not have sharp corners or edges, will not splinter, do not have toxic surfaces, cannot be easily tipped over.
5. Use moveable platforms to make floor level changes.

B. Provide built-in and installed furnishings and equipment to support child activity, administrative and support areas. See Service Requirements.

C. Ensure appropriate portable furnishings, equipment and materials are provided for child activity and administrative and support spaces. See Service Requirements. Users must designate funding sources other than MILCON funds for these items.

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CHAPTER IX: OUTDOOR CHILD ACTIVITY SPACES

I. PURPOSE. This chapter provides the criteria necessary to plan separate outdoor playgrounds for infants/toddlers, preschool age and school age children.

II. GENERAL DESIGN GUIDELINES.

A. Provide outdoor playgrounds to support developmentally appropriate learning experiences for young children.

B. Provide separate activity spaces for infant/toddlers, preschool-age and school-age children.

C. Provide at least 100 sq. ft. per child using the outdoor playground during any period. For centers with a capacity of less than 100 children, size outdoor play space for 100% capacity at 100 sq. ft. per child. For centers with a capacity of 100 or more children, size at a minimum of 50% capability at 100 sq. ft. per child. (See Appendix 3).

D. Ensure indoor child activity spaces are immediately accessible to outdoor playgrounds.

E. Site the building to take full advantage of the orientation of the natural environment, e.g. the sun and the vegetation.

F. Site the outdoor play areas to permit adequate supervision from any single point in the playground.

G. Ensure clear circulation within and between age group playgrounds.

H. Scale the site and the play equipment appropriately for each child age group.

I. Organize outdoor play area to accommodate both group and individual play activities.

J. Provide soft, shock absorbing surfacing (grass, sand, artificial turf, double-shredded hardwood mulch, pea gravel, or other resilient materials) under and around all outdoor play area equipment.

K. Provide hard surfaced (paving, asphalt) circulation paths, wheel toy tracks and patio areas. Limit the use of these types of materials to these areas unless specified for age group.

L. Provide seating opportunities for adults only in the infant area.

M. Provide water source for each age group playground.

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N. Provide proper drainage on the site to extend the season of use and to allow outdoor play soon after inclement weather.

O. Enclose playground with fencing which provides some visual access by children.

1. Ensure fencing is minimum of 5 feet in height.

2. Avoid fencing types that encourage climbing, i.e. horizontal.

3. Consider combination of fencing materials, i.e. wood, chain link, brick to avoid an institutional or "animal pen" effect.

4. Provide exit gate with adult controlled securing device.

5. Ensure size of gate and playground design allows access of maintenance and emergency vehicles/equipment.

P. Ensure the same party responsible for the facility design shall design the playground equipment and support/foundations.

III. OUTDOOR PROGRAM EQUIPMENT AND MATERIALS.

A. Ensure play equipment conforms to the US Consumer Product Safety Commission Playground Safety Standards.

B. Ensure play equipment is the type and size recommended by manufacturer for the age of the children served.

C. Provide skill-oriented permanent equipment such as climbing structures, tire swings, and obstacle courses to support children's physical and perceptual development.

D. Do not use merry-go-round, narrow steep slides and hard-seat swings in infant/toddler and preschool age play areas.

E. Consider carefully prepared and recycled automotive shells (cars, buses, jeeps, etc.), rowboats, etc. and other alternatives to supplement traditional playground equipment in preschool and school age areas.

IV. PORCHES, PATIOS AND DECKS.

A. Consider the use of porches, patios and decks as part of outdoor activity spaces, especially in extremely warm or cold climates.

B. Ensure porches are large enough to accommodate child play activities or infant furnishings, i.e. walkers, swings. Calculate these areas at 50% their actual area. Uncovered areas shall not be included in building sq. ft. calculations for purposes of building gross square footage.

C. Locate porches on the most sheltered side of the building in hot climates; or on the sunny side, away from prevailing winds, in colder climates.

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- D. Relate the porch directly to the appropriate indoor activity room.
- E. Provide a minimum width of 7 feet for a porch or deck space.
- F. Ensure the flooring drains easily and has a quick-drying surface.
- G. Consider screening against insects.

V. OUTDOOR CHILD ACTIVITY AREAS.

A. Infant/Toddler Playground: Enclosed outdoor play area for children 4 weeks - 3 years.

- 1. Separate, but do not isolate this area from other age groups.
- 2. Provide direct access to infant/toddler indoor activity spaces avoiding the use of steps.
- 3. Create soft, multi-textured, crawling surfaces and play spaces which are appropriately scaled for use by infants and young toddlers.
- 4. Include small steps, slopes, ground beams, climbing ramps, slight barriers, and slides.
- 5. Provide a variety of surface materials such as wood and asphalt for push or ride toys, grass for crawling, sand play areas, and open grassy playing areas. Avoid use of ground materials which could cause choking, i.e. gravel.
- 6. Provide hard surface paths for use of strollers, wagons and carriages.
- 7. Provide easy access for strollers between indoor activity room and infant/toddler playground and strolling paths.
- 8. Provide a minimum of 200 cubic feet outdoor storage near child activity room entrance for large strollers, carriages, wagons, sand toys, infants wagon, and wheel toys.
- 9. Ensure storage is weather tight, vandal proof, and configured to provide easy access by adults.

B. Preschool Age Playground: Enclosed outdoor play area for preschool age children 3-5 years.

- 1. Provide a variety play area surfaces including grass, sand, hard surfaces.
 - a. Protected sand/dirt play area with accessible water source.
 - b. Provide open grassy areas for running.
 - c. Provide hard surface riding paths for wheel toys and tricycles.

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2. Provide areas to support social play and peer interaction, e.g. pads for table activities and configuration for quiet play.

3. Provide a minimum of 200 cubic feet of child-accessible, vandal-proof, and weathertight outdoor storage.

a. Locate the storage units adjacent to the play space to hold items needed for special activities, (e.g. sand and water equipment, wheel toys near trike paths, etc.)

b. Include provisions for "drive-in" storage of wheel toys and hanging storage for ballbags, etc.

C. School Age Playground: Enclosed outdoor play area for school age children 5-12 years.

1. Provide a variety of spaces and surfaces that offer challenge without extreme competitiveness, e.g. single basketball hoops rather than entire courts, small baseball and soccer areas, perimeter hard surface paths for bicycles, skateboards, scooters.

2. Consider areas for adventure play, gardening, supervised cooking, picnics, covered play pavilions, animal cages, and children's gardens.

3. Provide outdoor storage as appropriate for special activities, (i.e. wood working, gardening, arts and crafts, etc.). Ensure storage is accessible to school-aged children, lockable, weathertight and vandal-proof.

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CHAPTER X: EXTERIOR SITE CONSIDERATIONS/REQUIREMENTS

I. PURPOSE. This chapter provides the criteria for the design of exterior space required to support access to and use of child development centers.

II. WALKS.

A. Provide safe points of facility access for children and adults which are separate from automobile circulation.

B. Design drives and walks which preserve and utilize the natural landscape.

1. Consider a sheltered walkway leading directly into the building.

2. Site facility, parking and playgrounds so children and parents do not cross traffic lanes to enter the building.

3. Connect the building to the public sidewalk system and to parking with pedestrian walks having a minimum of 4 feet.

III. PARKING.

A. Parking area design and construction should comply with Army TM 5-803-5, Navy NAVFAC P-960, Air Force AFM 88-43 Installation Design.

B. Separate parking from play area and pedestrian paths.

C. Locate parking for parents and visitors near the building with a view to the entry. Staff and patron parking should be separated where feasible.

D. Keep distance from patron parking to building entry as short as possible.

E. Provide a minimum of one parent/visitor space per 12 children. However, the number of spaces provided should accommodate the pattern of child care use by patrons.

F. Provide handicapped parking spaces in accordance with FED-STD-795.

G. Provide parking spaces for 80% of the maximum number of staff on duty at any one time.

H. Allow 35 sq. yds. per car in parking areas.

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IV. ROADWAYS.

A. Provide vehicular access for patrons close to facility entrance.

1. Ensure turn-arounds have one-way flow so passenger door is on curb side. Consider turning radius of a school bus (43 feet).
2. Design two-way approach drives for 20 foot widths. Single lanes requires a 12 foot width.
3. Provide pick up and drop off lanes for school buses and vans.
4. Ensure that covered drives and porte-cocheres allow sufficient height to accommodate school buses.

B. Provide service access for four basic functions present in a typical child development facility: regular food deliveries to the storage and kitchen area; occasional supply deliveries (furniture, laundry, books, toys, etc.); mechanical room-related deliveries (fuel, maintenance equipment); and garbage pickup.

1. Provide service vehicle apron/access area to accommodate a large truck/delivery van.
2. Provide back-up spur for dead-end and service drives which exceed 100 feet in length.
3. Ensure close access to the service areas; i.e. kitchen, garbage storage (either indoor or outdoor), mechanical room, and service entry, if one is designated.
4. Screen the service area from public use areas with fences, depressions, plants, shrubs, trees and berms.
5. Ensure service access is not through playgrounds.
6. Provide physical barriers to separate outdoor child activity areas from all service areas.
7. Provide access to playgrounds for maintenance vehicles and emergency vehicles.

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APPENDIX I

DEPARTMENT OF DEFENSE MINIMUM STANDARDS FOR CHILD/STAFF
RATIOS AND GROUP SIZES*

1. Group Size. In a military child development center, the number of children assigned to one or more caregivers shall be limited. A military child development center shall meet the following group size requirements at all times of the day, except during arrival and departure times, naptime, and special activities such as field trips and playground activities.

<u>AGE OF CHILD</u>	<u>MAXIMUM GROUP SIZE</u>
6 weeks-18 months	10
18 months-3 years	16
3-5 years	24
5-9 years	30
9-12 years	36

For mixed age groups, a child development center shall meet the group size requirement for the age of the youngest child in the group, if the children in the youngest age group make up 20% or more of the group. If children in the youngest age category make up less than 20% of the group, the group size requirement for the next highest age category may be used.

If more than one group occupies a single room, each group must have its own clearly defined physical space.

2. Staff/Child Ratios. A military child development center shall meet the following staffing requirements:

<u>AGE OF CHILD</u>	<u>MAXIMUM NUMBER OF CHILDREN PER CAREGIVER</u>
6 weeks-18 months	5
18 months-3 years	8
3-5 years	12
5-9 years	15
9-12 years	18

A military child development center shall meet the staffing requirement for each group of children except during naptime. During naptime, staff/child ratios may be doubled if the staff required for the above ratios are in the building in which children are sleeping or resting and the staff not assigned to care for the children involved in staff or program development.

A military child development center shall meet the staffing requirements for the age of the youngest child in the group, if children in the youngest age category make up 20% or more of the group. If children in the youngest age category make up less than 20% of the group, the staff/child ratio requirement for the next highest age category may be used. At least one caregiver must be present with children at all times.

*Ref: DOD Action Plan (July 1982); GAO Report, "Military Child Care Programs: Progress Made, More Needed," June 1, 1982 (OSD Case #5929)

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APPENDIX 2

REFERENCES

The following references are important in understanding the function of child development centers and the procedures for planning and design of child development centers as part of military construction programs.

I. FUNCTIONAL REQUIREMENTS.

- Department of Defense Child Care Action Plan (Aug 1982)
- DOD 6060.1-M Training Manuals for Child Care Givers on DOD Installations (Child Environment Series)
- Army TM 5-803-11 Planning and Design of Children's Outdoor Play Environments
Air Force AFM 88-30
- United States Consumer Product Safety Commission Playground Safety Standards
- United States Department of Agriculture (USDA) Food Service Equipment Guide for Child Care Installations

II. PLANNING.

- DODD 4165.57 AIR Installations Compatibility Use Zones (P & L) 8 Nov 77
- MIL-HDBK 1190 Facility Planning and Design Guide, 1 Sep 87

III. DESIGN.

- Illuminating Engineering Society (IES) Lighting Handbook
- National Gas Code 54
- National Electrical Code NFPA 70
- National Fire Protection Association Codes (13) (30) (72) (90A) (90B) (96) (101)
- Installation Design - Army TM 5-803-5, Navy NAVFAC P-960, Air Force AFM-88-43
- Uniform Federal Accessibility Standards, FED STD 795, 1 April 1988

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APPENDIX 3

SPACE AND PLANNING CRITERIA FOR MILITARY
CHILD DEVELOPMENT CENTERS

For programming purposes, the maximum allowances are: (see individual service planning manuals for modifications to maximum allowances).

Child development centers may be established as required to provide child care for children ages 4 weeks to 12 years of age for full-day, part-day, and hourly care. Minimum size of facility shall accommodate no less than 25 children. Maximum facility size shall not exceed a capacity of 305. If projected installation requirement exceeds 305 children, a sufficient number of sites should be selected so that no site supports more than 305 children. Space allowance shall provide for infant, toddler, preschool age, school age activity rooms/spaces, isolation area, food service, storage, laundry, toilets, offices, lobby/reception, staff workroom, etc. Facility capacity shall be based on historical experience where applicable. Where no previous experience is available, the number of children anticipated shall be determined by one of the following methods: (1) the number of married military families receiving direct installation support, multiplied by 20% plus the number of children of single parent military families receiving direct installation support; or (2) a needs assessment that includes a survey of the installation population and an examination of installation demographics, to include historical data, i.e. waiting lists, unmet demand; projected installation population; changes in mission; and an extrapolation of eligible target users. Space criteria for child development centers are shown in Table 3.

TABLE 3 - SPACE CRITERIA FOR CHILD DEVELOPMENT CENTERS¹

<u>NUMBER OF CHILDREN</u>	<u>PER CHILD GROSS SQUARE FOOT AREA</u>
25 to 60	90
61-100	80
101+	75

¹ A minimum of 100 square feet of outdoor play area shall be provided per child using the playground during any period. This area shall be capable of supporting a minimum of 50% of the children in a center with a capacity of 100 or more children, and all the children in smaller centers.

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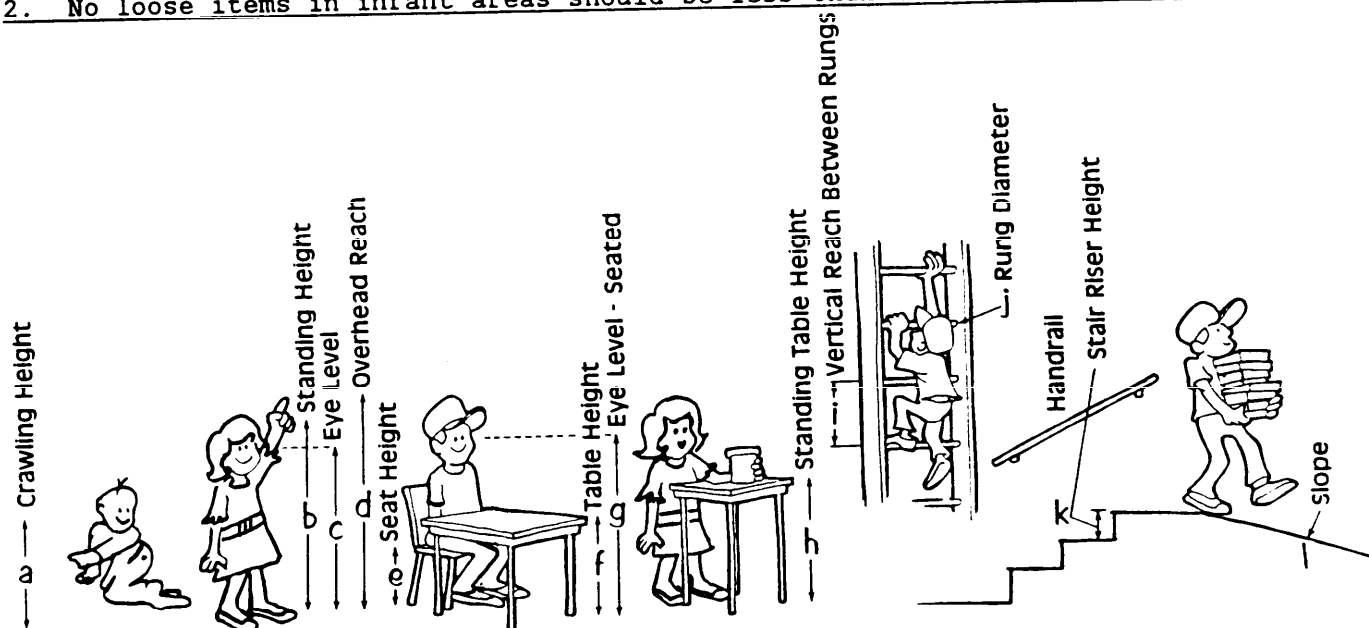
APPENDIX 4

Anthropomorphic Chart for a Child-scaled Environment'

Children's
Dimensions

	Preschool				
	Age 1	Age 2	Age 24	Age 6	Age 10
Dimensions in Inches					
a. Crawling height	13 3/4	16	19 1/2	21 1/2	24 1/2
b. Standing height	29	33 3/4	41	46	54 1/4
c. Eye level	25	30 1/2	36 1/2	41 1/2	43 3/4
d. Overhead reach	38	44 1/4	49 1/4	53 1/2	66
e. Seat height	20'	7 1/2	10	11	13
f. Table height (seated)	27'	14	17 1/2	18 1/2	22
g. Eye level (seated)	33	25	29 1/4	34 1/4	37 1/4
h. Table height (standing)	-	17	20	24	29
i. Vertical reach between rungs	-	11 1/2	16 1/2	24 1/4	23
j. Rung diameter	2	1 1/4	1 1/2	1 3/4	2 1/4
k. Stair rise	1-3	3	4	5	6
l. Slope	14°	14°	19°	25°	35°

1. Infant feeding chair seat height
2. No loose items in infant areas should be less than 1 1/2 inches in diameter



Critical Children's Dimensions

CUSTODIAN
ARMY - CE
NAVY - YD
AF - 04

PREPARING ACTIVITY
NAVY - YD
PROJECT NO.
FACR-0294

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-HDBK-1037/2		2. DOCUMENT TITLE CHILD DEVELOPMENT CENTERS	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR <input type="checkbox"/> EFD/PWO <input type="checkbox"/> USER <input type="checkbox"/> AE <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
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