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US Army Corps of Engineers Construction Engineering Research Laboratory

TECHNICAL REPORT P-85/07 June 1985

AD-A158 628

Alternative Construction and Acquisition Methods for Department of the Army Child Development Centers

by Richard L. Schneider

This report documents research conducted by the U.S. Army Construction Engineering Research Laboratory to reduce the Army's costs for building new child development centers. In comparison to proprietary facilities, Army centers allow more space per child, have much more conservative life safety standards, and use more expensive materials and equipment.

Construction and procurement costs can be reduced by using alternative construction methods that will provide a more usable, functional facility and often provide the Army with better value. Metal-frame modular construction, pre-engineered metal building systems, and metalframe components were found to be most responsive to Army requirements for building child care centers.

Guidance for implementing these strategies emphasizes adequate preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.



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Construction and procurement costs can be reduced by using alternative construction methods. These techniques will produce a facility that is usable, functional, and that will often provide the Army with better value, since it allows the contractor to be more innovative in areas such as energy efficiency.

Evaluation of various alternative construction technologies indicated that metalframe modular construction, pre-engineered metal building systems and metal-frame components are most responsive to Army requirements for building child care centers.

Guidance for implementing these strategies emphasizes adequate preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.

In comparing Army and proprietary facilities, the biggest differences were that the Army allows more space per child, has much more conservative life safety standards, and uses more expensive materials and equipment because Army buildings are constructed to have a much longer life than private facilities.

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FOREWORD

This research was performed for the Morale, Welfare, and Recreation Division, Personnel and Community Activities Support Directorate (DAAG-DPC), The Adjutant General's Office (TAGO), Department of the Army, and funded by TAGO under Intra-Army Order RMM 1-84, dated 7 May 1984. The TAGO Technical Monitor was LTC Lois Beck.

The work was conducted by the Facility Systems (FS) Division of the U.S. Army Construction Engineering Research Laboratory (USA-CERL). The USA-CERL Principal Investigator was Mr. Richard L. Schneider. Also contributing were Ms. Cynthia D. Boyd, Mr. Thomas R. Napier, Mr. L. Michael Golish, and Mr. Craig A. Butler.

Mr. E. A. Lotz is Chief of USA-CERL-FS. COL Paul J. Theuer is Commander and Director of USA-CERL, and Dr. L. R. Shaffer is Technical Director.

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ALTERNATIVE CONSTRUCTION AND ACQUISITION METHODS FOR DEPARTMENT OF THE ARMY CHILD DEVELOPMENT CENTERS

1 INTRODUCTION

Background

The Department of the Army (DA) has an extensive program starting in FY85 for constructing new child development centers. These facilities are required (1) to meet expanded child care needs in support of mission readiness and (2) to replace the many substandard facilities at Army installations that cannot be renovated to meet either current health and safety requirements or program requirements defined by DA Child Development Services (DACF-FSC).

Army child development facilities are designed and built in accordance with Army Regulation 608-10¹ and the draft joint services Design Guide 1110-3-143,² following conventional construction and Military Construction, Army (MCA) practices. However, the propriety of Army child care programs, construction standards, and acquisition procedures has recently been challenged by the Congress following reports of significant cost differences between Army and proprietary construction practices. During the FY85 budget review, the House Armed Services Committee (HASC) called for a 10 percent reduction in the budget request for child development centers; the Senate Armed Services Committee (SASC) required that "the Services seek to enter into a third party contract via the competitive bidding process with a private firm to build and operate" child development centers. This, along with strong recommendations the previous year that the Services consider various alternative construction methods for MCA projects, has led the Army to explore alternative means of acquiring child development facilities and services at reduced cost.

DA first identified a series of three studies to determine the best way to obtain child development facilities and/or services. These were to address four major areas: (1) Army experience with One-Step Procurement of child development facilities; (2) design and construction requirements for proprietary child development facilities; (3) alternative construction materials, standards, and acquisition methods; and (4) feasibility of and means by which Army facilities may be constructed and/or operated on contract with third parties. The results of these studies would help determine (1) the most appropriate design and construction standards (Army, proprietary, or a specific mix); (2) the most feasible and advantageous facility acquisition methodology (MCA or Turn-key); and (3) the feasibility of contracting with a third party for operation or both construction and operation of child development centers.

¹Army Regulation 608-10, Child Development Services (Department of the Army, October 1983).

²Design Guide 1110-3-143, Planning and Design of Child Support Services Facilities (Draft) (Office of the Chief of Engineers [UCE]).

The U.S. Army Construction Engineering Research Laboratory (USA-CERL) was requested to assess the feasibility of using alternative construction methods to obtain child development facilities and prepare procedural guidance on the use of alternative methods. The U.S. Army Engineer Division, Southwest, was asked to report on the Fort Irwin child development center One-Step Procurement experience. The third "study" to address the feasibility of contracting for child care service with a third party is being accomplished by an actual "test" solicitation for facilities and services.

Purpose

The purpose of this report is to document the USA-CERL phase of the study, which had the following objectives: (1) assessing the feasibility of using alternative construction technology and facility acquisition methods to reduce the acquisition costs of DA child development centers; (2) selecting the most appropriate alternative construction technologies and acquisition methods for obtaining DA child development centers; (3) developing guidance for DA personnel to implement and execute selected alternative strategies; and (4) comparing proprietary child care industry facilities' requirements, standards, construction and acquisition methods, and costs to Army requirements and facilities cost experience.

Approach

Information on generic alternative construction technologies and acquisition methods was assembled from in-house sources to assess their capability to respond to Army requirements for building child care centers. Guidance was then developed on alternative construction and acquisition methods currently available to the Corps of Engineers.

Information on proprietary child care facilities was gathered by phone and by written and direct surveys of proprietary care organization headquarters and center personnel. The information obtained was selected to correspond to key Army facility and program criteria. As a minimum, data were obtained that would define the types of services offered, the appropriate construction standards, the associated facilities acquisition costs, and the space and facilities required to accommodate the services provided. Information on license and life safety criteria was obtained from organization personnel or from state and local licensing and building code officials. Additional information was obtained where available to define any alternative construction and acquisition methods used by proprietary organizations. This information was compared with Army programs and facility requirements.

Scope

No survey of commercially available systems or alternative acquisition practices was made. The information assembled displays only the compatibility of generic alternative construction technologies with Army construction standards and the functional requirements of Army child development centers. Differences between Army and proprietary facility standards must be evaluated in more detail to determine if changes are warranted in Army criter.a.

Mode of Technology Transfer

It is recommended that the information in this report be used directly by DACF-FSC, installation, and Corps of Engineers personnel to carry out child development center construction projects. This information may eventually form the basis for revisions to AR 608-10 and/or Draft DG 1110-3-143.

2 DESCRIPTION AND EVALUATION OF ALTERNATIVE CONSTRUCTION TECHNOLOGY AND ACQUISITION METHODOLOGY

Procurement Approach

The use of alternative construction technologies and acquisition methodologies has been identified as a way to reduce the cost of acquiring DA child development centers. The Army has used these techniques with success in the past, mostly for family housing, but most recently for several test MCA projects. In these test projects, all executed over the past two years, three utilizing a Two-Step procurement approach and one using a One-Step procurement approach, facilities were designed and constructed at costs between 28 and 32 percent below the Government estimates. Furthermore, the majority of these facilities were delivered in 25 to 50 percent less time than anticipated. Similar results may be anticipated with the application of these approaches to the acquisition of DA child development centers.

The key to successful cost reduction is primarily in selecting and executing the appropriate methodology or procurement approach and only secondarily with the alternative construction technology itself. The procurement methodology will ultimately control project economies by maximizing cost competition and applicability of alternative technologies from the construction industry, while keeping enough control over the project to deliver a constructible, functional, and usable facility.

Two procurement methodologies for acquiring DA child development centers are alternatives to the conventional MCA project procedures: One-Step Competitive Negotiation and Two-Step Formal Advertising (abbreviated as One- and Two-Step). These methods differ from the conventional competitive bidding process in that each solicits proposals for executing the design and construction of a facility, rather than bids for constructing a single design solution.

One- and Two-Step are both "design/build" approaches which, through the use of performance-oriented procurement documents, allow the market to determine the most advantageous and economical construction approach. Both approaches allow alternative construction technologies to compete, enhance competition, provide the opportunity and incentives for design and technical innovation, and integrate design and construction responsibility with a single party, which experience has shown expedites construction. However, the One-Step approach provides greatest advantages. One-Step procedures base award on factors in addition to construction cost, such as design quality, technical performance, or energy efficiency. This approach rewards proposers for submitting designs that exceed the project minimum requirements for the best value to the Government.

It is anticipated that the Corps of Engineers will select a One-Step approach as a test case for acquiring DA child care centers. This is based on the current removal of restrictions governing the use of One-Step for projects other than family housing, discussions with the Architecture and Buildings Systems Branch of the Office of the Chief of Engineers (OCE) (DAEN-ECF A) on the FY85 Child Care Program, and the distinct advantages of One-Step in obtaining the best value. Both approaches will be defined in more detail below, but guidance will be presented only for a One-Step approach.

One-Step Competitive Negotiation

In a One-Step approach, the Government solicits design and bid proposals by issuing a Request for Proposal (RFP). The RFP contains standard contract forms, instructions and clauses; price proposal schedules; a description of the project conditions; site data; descriptive and performance specifications identifying the facility requirements; and comprehensive evaluation criteria and procedures. Definitive design and technical criteria are not prescribed. Proposers prepare and submit technical proposals and bids in response to the RFP. Proposals are reviewed for conformance to the RFP, and proposers are given a preliminary responsibility check. Nonconforming proposals and nonresponsible proposers may be disgualified; however, adjustments to the proposal may be allowed if they are determined to be in the Government's best interest. Conforming proposals are then evaluated and scored for technical performance following a preestablished point scheme reflecting a specific project's needs and priorities. Final scores are established for proposals based on all identified evaluation criteria, and a determination is made of the proposals within the competitive range. Negotiations, if conducted, are held with all proposers in the competitive range, followed by a request for best and final offers. Last, a selection and recommendation for award is made from proposals determined to be within the competitive range of the proposal that shows the cost/quality balance most advantageous to the Government. After contract award, the contractor completes final designs, engineering analyses, and construction documents, submits them for approval, and begins construction.

The Corps of Engineers' manual on Turnkey Family Housing³ is currently the only formal guidance published on the One-Step approach. Although developed for a different building type, it gives the basic methodology and instruction for executing a One-Step project. Alternatively, USA-CERL Technical Report P-132,⁴ although written to address Two-Step, provides guidance on project selection/initiation, development of technical/procurement documents, proposal evaluation, and construction administration that also applies equally to One-Step. USA-CERL is now developing other One-Step guidance to be issued by OCE as Architecture and Engineering Instructions for both MCA and Non-Appropriated Fund (NAF) projects.

Two-Step Formal Advertising

In a Two-Step approach, the Government solicits design and bid proposals by issuing a Request for Technical Proposal (RFTP). The RFTP contains standard contract forms, instructions and clauses, a description of the project conditions, site data, and descriptive and performance specifications identifying the facility requirements. Definitive design and technical criteria are not given.

Proposers prepare and submit technical proposals in response to the RFTP (Step 1). Proposers are given a preliminary responsibility check. Proposals are reviewed by the Government for design and technical adequacy and for conformance to RFTP requirements. Nonconforming proposals and nonresponsible proposers may be disqualified; however, if determined to be in the Government's best interest, adjustments to the proposal may be allowed.

³Procurement Procedure Manual for One-Step "Turnkey" Negotiated Contract for Army Family Housing (OCE, DAEN-ECE-A, June 1980).

⁴T. Napier and M. Golish, A Systems Approach to Military Construction, Technical Report P-132/ADA123382 (U.S. Army Construction Engineering Research Laboratory, 1982).

Proposers with technical proposals that are determined to be acceptable then submit bids on their own proposals (Step 2). Contract award is based on the lowest bid of the acceptable proposals, as for conventional formal advertising. After contract award, the contractor completes final designs, engineering analyses, and construction documents, submits them for approval, and begins construction.

Alternative Construction Technology Generic Descriptions

The following three primary and eight secondary "generic" descriptions of building construction technologies and methodologies are all available and could be used to acquire DA child development centers. These descriptions have been developed for this study based on current definitions used by the various manufactured or prefabricated building trade associations and other industry representatives, as well as previous USA-CERL studies. They are generic descriptions only. Building construction technologies available in the construction market place will vary slightly from the offered descriptions depending on the construction approach of the individual producer; many "hybrids" are possible. The descriptions are offered to assess the feasibility of these approaches for constructing Army facilities, and are definitions used throughout this report. Asterisked items are alternative technologies most compatible with the requirements for DA child development centers.

Conventional/Site Constructed Buildings Traditional Materials Innovative/Nontraditional Materials

Modular Building Systems Wood-Frame Modular Construction Metal-Frame Modular Construction Precast Concrete Modular Construction

Pre-engineered Building Systems Pre-engineered Metal Building System Precast Concrete Building System

Component Construction Wood-Frame Components Metal-Frame Components Precast/Prestressed Concrete Components

Conventional/Site Constructed Buildings

"Conventional Construction" refers to buildings that are built with basic or elementary construction materials and factory fabricated products and components. Assembly and coordination of materials and components is generally done on-site in response to specific building design and project conditions.

<u>Traditional Materials</u>, those that are widely accepted and used throughout the construction industry, are normally implied for use in conventional construction.

<u>Innovative/Nontraditional Materials</u> and methods may also be introduced into otherwise conventional construction processes. These are materials or methods that depart from commonly accepted practices in order to achieve improved results. Such

innovations may include the materials' composition, engineering and applications, or installation methods.

Modular Building Systems

"Modular Construction" refers to buildings constructed with volumetric sections designed to be factory-fabricated, transported to the site, and joined together with a minimum of site labor. Building modules are generally complete when they arrive at the site, with most structural, enclosure, and partitioning elements, interior finishes, and mechanical, plumbing, and electrical items installed.

<u>Wood-Frame Modular Construction</u> is the construction of buildings with volumetric elements that use dimensional lumber and forest products as the primary structural and construction materials. The most common examples are single-family and low-rise, multi-family residential buildings and small-scale commercial and institutional buildings.

<u>Metal-Frame Modular Construction</u> is the construction of buildings with volumetric elements that use light-gauge metal framing components as the primary structural materials. The most common examples are single-family and low-rise, multi-family residential buildings and small-scale commercial and institutional buildings.

<u>Precast Concrete Modular Construction</u> is the construction of buildings with volumetric elements that use precast or prestressed concrete elements as the primary structural material and, most often, as the enclosure materials. The most common examples of concrete modular construction are mid- and high-rise multi-family residential and small- to mid-scale commercial and institutional buildings.

Pre-Engineered Building Systems

Pre-engineered building systems refer to buildings constructed with prefabricated components that are designed, engineered, and produced as a coordinated assembly of elements within a prescribed set of parameters standard for that building system. These components most frequently include a building's superstructure, enclosure, and often many elements of interior space division. All components are designed, engineered, produced, and supplied from a single source.

<u>Pre-Engineered Metal Building Systems</u> use a steel superstructure or framing system along with coordinated metal roofing and exterior wall components. Interior construction components are often included in the building system. Frequently, conventional building materials are used in lieu of metal exterior wall components. The rest of the building is constructed by conventional means. The most common uses of preengineered metal building systems are for commercial, institutional, and industrial building types.

<u>Precast Concrete Building Systems</u> use prestressed or precast concrete as the main structural and construction material. A concrete building system most often consists of structural components (beams, columns, slabs, and load-bearing wall components), exterior wall panels, and other items such as stairs and architectural accessories. Interior partitions are normally included only where they function as load-bearing elements. The rest of the building is constructed by conventional means. The most common uses of precast concrete building systems are for mid- and high-rise multifamily housing, and for commercial, institutional, and industrial applications.

Component Construction

Component construction refers to buildings that use prefabricated components for some or many of their major elements. These components are generally not "preengineered" within a set of prescribed parameters, but are designed, engineered, and fabricated on a project-specific basis. Different components may be provided by different sources. Use of components within an otherwise conventionally constructed building is quite common.

<u>Wood-Frame Components</u> are prefabricated components that use dimensional lumber and forest products as their primary material. The most common wood-frame components are roof and floor trusses, wall panels, and other accessories, such as stairs. Wood-frame components are most often used in residential and small-scale commercial construction.

<u>Metal-Frame Components</u> are prefabricated components whose primary material is light-gauge metal-framing components. The most common metal-frame components are roof and floor trusses, wall panels, and other accessories, such as stairs. Metal-frame components are most often used in low- or mid-rise multi-family residential and smallscale commercial or institutional construction.

<u>Precast/Prestressed Concrete Components</u> are prefabricated components made up of mostly precast or prestressed concrete. The most common concrete components are beams, columns, roof and floor slabs, wall panels, and other accessories, such as stairs and architectural elements. Precast concrete components are used in nearly all building types, but are used infrequently in single-family residential construction.

Alternative Construction Technology Feasibility Assessment

The above-defined alternative construction technologies have been evaluated individually to determine their compatibility or responsiveness to Army requirements for building child development centers. Critical building characteristics were identified paralleling those used in evaluating proprietary child care facilities in Chapter 5 (Tables 1 through 5). Army requirements were identified and the responsiveness of the generic technology assessed for each building characteristic listed. Except for the wood-frame systems, all technologies identified should be responsive to Army requirements. Results of that assessment are summarized here by generic definition. Appendix A (Tables A1 through A3) gives the complete analyses of compatible technologies.

Wood-Frame Modular Construction

Due to the combustibility of the primary structural and building materials, no wood-frame system is or can be made to be responsive to current Army requirements. The Army requires the use of noncombustible construction equivalent to the Uniform Building Code (UBC) Type II-N. This construction type allows no combustible materials in any of the major building elements: structure, exterior wall bearing or nonbearing, interior wall bearing or nonbearing, roof, floor, and exterior doors and windows. The use of fire-retardant-treated wood in construction was considered; however, for Type II-N construction, UBC allows fire-retardant-treated wood to be used only in nonbearing interior partitions where they are fire-rated. Wood-framing members could therefore be used in areas of the building having rated walls and still meet the code requirements (e.g., hazard separation walls, corridor walls, child activity grouping separation walls, etc.); however, this would still not allow wood-frame modular systems to be responsive.

Such systems could be made responsive by changing the Army's required construction type from UBC Type II-N to UBC Type III-1 Hr, while not sacrificing occupants' safety. Such a system would correspond to most of the proprietary facilities that are built of combustible materials. Building and child care center licensing codes do not normally limit the construction type for one-story centers of the size that the Army anticipates, but specify the life-safety requirements for the type of construction selected.

In all other aspects, wood-frame modulars are identical in responsiveness to metalframe modular systems.

Metal-Frame Modular Construction

The main limitation in using any type of modular system is the dimensional compatibility of the volumetric modules with the space requirements of the facility to be constructed. DA child development centers require a wide range of spaces, from small spaces such as storage or toilet rooms, medium-sized enclosed spaces such as motor activity and music rooms, through large open or clear areas such as home bases. The typical modular systems available can be dimensionally responsive to these requirements.

Typical modules are 12 ft* wide and 60 ft long. They often have open-frame steel structural systems consisting of columns in combination with roof and floor decks; however, some combine open-frame with bearing-wall construction in key locations to accommodate lateral loads. Facilities are made up of combinations of modules selected and configured to satisfy the total space and functional requirements.

Metal-frame modular systems have no difficulty accommodating small interior spaces, since they are normally constructed by erecting nonbearing walls within the "construction module" or the dimensions of the basic volumetric unit. Mid-sized spaces, for which the minimum room dimension from Army requirements is 12 ft, may be harder to accommodate. They are often accommodated by partitions placed on the construction module lines, which would result in interior clear room dimensions of about 11 ft, 4 in. To achieve interior room dimensions of 12 ft, it is possible to prefabricate wider modules, which is less convenient, or alternatively, to erect the interior walls off the construction module lines. Another possibility would be to adjust the Army criteria for minimum room dimensions to more conveniently accommodate modular construction applications. Open areas are easily accommodated by placement of successive adjacent open-framed modules as required. This may cause some columns to intrude on interior spaces; however, Army design guidance does not indicate that this is a detriment if care is exercised in their placement. To the contrary, it states that columns can help in spatial definition by making spaces more interesting to the children.

Although interior finishes are typically provided complete with the modules, there should be no difficulty in meeting Army requirements. Finishes are normally specified by the users and provided to meet their requirements. Care should be taken in specifying and evaluating interior finishes to ensure acceptable materials and quality.

*Metric conversion factors are provided on p 99.

Precast Concrete Modular Construction

No concrete systems were considered due to their comparatively high cost. However, in most other aspects, the responsiveness of precast concrete modular construction would be identical to that of metal-frame modular systems.

For metal-frame modular systems, the main limitation is the dimensional compatibility of the volumetric modules with the space requirements of the facility to be constructed. Concrete modules are typically smaller due to span and shipping limitations, with dimensions of 8 to 11 ft wide by 24 to 32 ft long. They typically consist of concrete columns combined with precast concrete joist and beam roof and floor assemblies; however, some may combine this open frame with bearing wall construction to accommodate lateral loads. Facilities are made up of combinations of modules selected and configured to satisfy the total space and functional requirements.

Concrete modular systems can easily accommodate small interior spaces, since they are normally built by erecting nonbearing walls within the "construction module" or the dimensions of the basic volumetric unit. Mid-sized spaces, whose minimum required room dimension is 12 ft, may be harder to accommodate. Often partitions are placed on the construction module lines, which produce interior clear-room dimensions of about 7 to 10 ft. To achieve interior room dimensions of 12 ft, it is possible to prefabricate wider modules; however, this is less convenient. For concrete modules, it would be more feasible not to limit the placement of interior walls to the construction module lines, but rather to place all interior nonbearing partitions where required within the construction module to meet space and functional requirements.

Concrete modular systems are usually provided with flat-roofed configurations, making them nonresponsive to Army requirements for a gabled-roofed residential appearance. Gabled roofs are possible by modifying the modules or by adding separate roofing systems on top of the modules; however, such solutions are not preferred.

Other aspects of concrete module responsiveness are identical to those of metalframe module systems.

Pre-Engineered Metal Building System

Pre-engineered metal building systems are the most adaptable to the special and functional requirements of DA child development centers because of the way they are designed; these systems use prefabricated components that are designed, engineered, and produced as a coordinated assembly of elements within a prescribed set of parameters. These components, although limited to predetermined dimensions and capabilities, are most like conventionally designed framing systems. Limitations are in the area of desired aesthetics when a standard pre-engineered metal building package is considered.

The Army indicates certain residential scales, configurations, and material selections as being the most appropriate for child development centers. Package metal building systems normally include the basic steel structural framing system, a preformed standing seam metal roofing system, and a preformed and finished metal exterior wall system. Normal roof slopes are low slope, with the highest slopes typically 4 in.:12 in. Interior partitions are normally excluded and separately site-erected to user requirements.

Pre-engineered metal building systems can accommodate a residential scale as easily as conventional construction by using low eave heights and smaller building masses. Most residential configurations can be provided, although roof slopes would be limited primarily to 4 in.:12 in. Although higher slopes are possible, they are not preferred. Residential-type wall finish selections, such as brick, clapboard siding, or stucco, are not normally part of a standard building package. Some producers provide standard metal panels with textured aggregate finishes similar in appearance to wood siding, and other similar options may be available; however, to achieve the desired exterior aesthetics, the exterior wall system or finishes may be separately site-erected to user requirements. Standing seam metal roofing can be compatible with a residential image if the color and rib spacings/panel profiles are selected carefully.

Precast Concrete Building System

As noted previously, concrete systems are not cost-competitive. In most other aspects, the responsiveness of precast concrete building systems, like the precast concrete module systems, would be identical to that of pre-engineered metal building systems.

Like pre-engineered metal building systems, the designs of precast concrete building systems allow them to adapt easily to the spatial and functional requirements of DA child development centers. Although limited to predetermined dimensions and capabilities, the pre-engineered components are most like those of conventionally designed framing systems. Limitations are in the area of desired aesthetics when a standard precast concrete building systems package is considered.

In terms of the Army's requirements for residential scales, configurations, and material selections, package concrete building systems normally include the basic concrete structural framing system, precast concrete roof structure and deck, and a precast exterior wall system. Normal roof slopes are flat or very low. Interior partitions are normally excluded and separately site-erected to user requirements.

Precast concrete building systems can achieve residential scale and configurations as easily as conventional construction through smaller building masses and low roof heights; however, most other aspects of the residential image are harder to attain. Most systems are limited to flat-roofed configurations which could be detailed to provide a residential appearance; however, it would be nonresponsive to Army requirements for gabled roof configurations. Residential-type wall finish selections, such as brick, clapboard siding, or stucco, are not normally provided as part of a standard building package, since most exterior walls are concrete-bearing walls incorporated into the basic structural system. Finishes would be limited mainly to aggregate or textured concrete surfaces in various configurations, selected and finished to achieve an appearance similar to that of a residence. To achieve the desired exterior aesthetic when the exterior wall is not an integral part of the structural system, the exterior wall system or finishes may be site-erected separately to user requirements.

Wood-Frame Components

As noted previously, the combustibility of wood-frame materials makes them nonresponsive to Army requirements. (See the section on Wood-Framed Modular Construction.) In all other aspects, the responsiveness of wood-frame components is identical to that of metal-frame components systems.

Metal-Frame Components

Component construction (construction using prefabricated components which are designed, engineered, and fabricated on a project-specific basis for some or many of a building's major elements) is, by definition, totally compatible with and responsive to Army requirements for constructing DA child development centers. There are no limitations inherent in the approach; a proposer would simply prepare a prefabrication plan to meet the specified project requirements. Establishment of requirements and concept designs should not preclude the use of a component approach.

Precast/Prestressed Concrete Components

In all aspects except cost-competitiveness with other systems, precast/prestressed concrete component construction is identical in responsiveness to metal-frame component construction.

3 GUIDANCE FOR IMPLEMENTING SELECTED STRATEGIES FOR CONSTRUCTING CHILD CARE CENTERS

DAAG-DPC should approach OCE for coordination and assistance in the selecting of an individual project or group of projects to test the procurement of a DA child development center using the One-Step process. Following project selection, the Child Development Coordinators and the DEHs/FEs of the appropriate installation should coordinate with the appropriate Corps District to prepare the procurement documentation and execute the procurement.

Basic One-Step Project Execution Process

The following steps make up the One-Step project execution process:

1. Evaluation of the DA child development center program and selection of a project or projects appropriate to a One-Step approach.

2. Assembly of project requirements, development of performance specifications, and production of the RFP by the Corps District or contracted Architect/Engineer (A/E).

3. Solicitation of proposals from the construction community by an RFP.

4. Development of designs, technical proposals, and bids by the proposers and their submittal to the District.

5. Evaluation of proposals on the basis of quality and cost.

6. Award of the construction contract to the proposal with the best cost/quality ratio or best overall point score (best value to the Government).

7. Completion of construction documents and commencement of construction by the successful proposer/contractor.

Project Initiation

Project initiation activities are simply initial steps in executing any project, and for One-Step, will differ little from conventional MCA projects; however, the One-Step approach requires more direct involvement by the user, and this starts during project initiation. For the DA child development centers, the users (the Installation Child Development Coordinators) and their installation engineering representative (FE/DEH) will coordinate with the appropriate Corps District to begin the project.

Once the design directive is received, the District will initiate project activities. These will involve: (1) gathering complete design criteria and data; (2) deciding to prepare RFP documentation in- or out of house (most often it will be done out of house by an A/E); (3) establishing preliminary project scheduling; and (4) advertising, selecting, negotiating, and awarding a contract with a selected A/E. It is important during this phase that the Child Development Coordinator (CDC) help the District gather and identify all project requirements to ensure their incorporation into the RFP package. The user is also normally invited to participate in the A/E selection process, and has a vote on the A/E Selection Board. Participation is recommended to ensure that user criteria for A/E capabilities and experience are incorporated into the selection process.

Request for Proposal (RFP) Development

The RFP is the bidding document used to solicit proposals for facility design and construction from the construction community in a One-Step procurement. The District, or normally an A/E firm under contract with the District, generates a facility design program and associated criteria instead of a conventional definitive design. The RFP normally consists of (1) contractual requirements, often referred to as "boiler plate," that explain the "rules of the game" to prospective proposers, (2) facility design and technical solutions, prepared by an A/E, that describe the product required, and (3) evaluation criteria, also normally prepared by an A/E, that explain the basis on which the proposals will be judged.

Once an A/E is under contract with the District and all predesign data gathered, the RFP may be developed. Major activities during this phase will include: (1) a predesign meeting between the District, the CDC, and the selected A/E; (2) preparation, review, and completion of the RFP and associated evaluation documentation; and (3) selection of an evaluation team and preparation for evaluation.

The user's responsibility during the RFP development phase is to confirm that all project requirements have been provided to the District for incorporation into the RFP package and that the facility concept designs and technical requirements contained in the RFP represent those requirements. More information must also be provided to identify the relative importance of the various project requirements which will be used to establish evaluation criteria, point scores, and weights. A predesign conference should be held when this phase begins to confirm agreement on project requirements and to ensure that all parties know their roles and responsibilities in the proposed procurement.

The District or contracted A/E will prepare the RFP and evaluation documents based mainly on project-specific functional requirements as specified by the users, the concept designs offered in the Draft DG 1110-1-143, requirements stated in AR 608-10, Engineering Instructions issued by OCE applicable to the particular program year, and other referenced documents. The RFP should be prepared and submitted in at least two phases: concept and final. User representatives should actively participate in any interim RFP and evaluation document reviews to confirm incorporation of project requirements.

User representatives should also participate in proposal evaluation. They will normally include, as a minimum, the installation CDC and a representative from the appropriate Army Major Command. Active participation by the CDC during the RFP development phases will help him/her understand user responsibilities and activities during the evaluation phase.

Proposal Development

During the proposal development phase, proposers develop technical solutions and bids in response to contractual requirements and technical and evaluation criteria identified in the RFP. Although the proposer will do most of the work during this phase, some activities may be done by the District and user to prepare for later phases.

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The main activities during this phase will include (1) issuance of the RFP, (2) holding of a preproposal conference with prospective proposers, District, and user representatives, and (3) receipt of the proposals.

A preproposal conference is held within a few weeks of the initial RFP advertisement. This will allow prospective proposers to meet with District and user representatives in order to better understand the project requirements and the procurement procedures. This meeting, which will offer a forum for the detailed explanation of project requirements, will reduce the amount of clarification required later. A pre-evaluation conference is also normally held during this phase to acquaint evaluation team members with the evaluation documentation, procedures, and project requirements. Proposals are submitted at the end of this phase.

Evaluation and Award

In the One-Step evaluation process, each proposal is examined to ensure its conformity to specified RFP requirements; its technical proposal and bid price are rated to establish its relative position against the other proposals, and based on the documented results, a selection and recommendation for award is then made. This process is critical to successful execution, because it is the only way to determine which proposal is most advantageous to the Government. It must be executed objectively and consistently to ensure fairness to all proposers in making a selection and to be justifiable in terms of procurement regulations that apply.

The evaluation process is normally divided into four areas: (1) general conformity, (2) proposer responsibility, (3) technical conformity, and (4) scoring evaluation. The reviews for technical conformity and proposer responsibility are normally done by the District's Procurement and Supply Division upon receipt of the proposals. The technical conformity review is normally done by staffing proposals to appropriate elements within the District's Engineering Division. The scoring evaluation should be done by a team of representatives from the using agency and the District. Participants may include representatives from the appropriate Major Command, OCE, the Corps Division, the District resident engineer, and the FE/DEH. If a pre-evaluation meeting has not been held during the proposal preparation period, it should normally be held just before the scoring evaluation.

The evaluation process is governed by an evaluation manual prepared at the outset of the project in conjunction with RFP preparation. This manual is intended primarily to (1) guide the evaluators through the evaluation process, (2) provide structure and organization to the process, and (3) document the evaluation proceedings. Evaluation manuals will typically include: (1) introductory information on the project, the procurement strategy, and the evaluation process, (2) specific instructions for carrying out each evaluation step and task, (3) complete evaluation criteria and associated possible quality points, and (4) the necessary evaluation forms and worksheets.

The actual scoring evaluation, structured by the manual and worksheets, is a straightforward process of checking and scoring elements of the proposals against the applicable evaluation criteria. User representatives normally review only their specific areas of expertise, scoring aesthetic or functional criteria. Point scores are then summarized and any comments or recommendations documented. Resulting scores will be provided along with comments to the selection board for review, and a cost/quality ratio set. The established ratios and all comments are reviewed, and a selection and recommendation for award forwarded to the District Contracting Officer for consideration.

If proposals are deemed insufficient as initially submitted, and the rejection of proposals would result in less than adequate competition, the Government may allow proposers to adjust their submissions. If this occurs, negotiations will be required with all proposers. Following negotiations, final adjustments are made to evaluation scores, cost/quality ratios, and a selection and recommendation for award forwarded to the District CO.

Contract Execution/Administration

Following contract award, the successful proposer or contractor may begin work. Final construction documents will be prepared by the contractor, and submitted for review by the District; following approval, construction may begin. It is recommended that the user participate in design/construction reviews. RFP technical submittals are primarily "Concept Designs," and may not be definite enough to ensure incorporation of all user requirements. This will be the final opportunity to effect changes in the design prior to construction. Except for preparation of the final construction documents, which are the contractor's responsibility, the construction phase of a One-Step procurement is much like that of conventional MCA. To expedite construction, completion of the final documents should be phased so that some portions of the work may begin before approval of final documents on later phases. The District should carry out the rest of the project activities, which include quality assurance and other construction contract administrative functions.

4 SURVEY OF PROPRIETARY CHILD CARE ORGANIZATIONS AND DATA DISPLAY PROCEDURES

Methodology

When the study began, DA needed information on the facility standards of proprietary child care organizations to support ongoing Congressional Committee testimony. Since this need was immediate, it was impossible to execute an extensive survey covering a wide range of child care organizations. Therefore, an informal limited telephone survey of headquarters personnel was taken at five of the most prominent national organizations of the child care industry. When the initial survey was completed, sufficient data had been obtained for only two organizations: Children's World and Kinder-Care. This information was provided to DA in a series of "information papers." Field visits were then made to one selected center of both Children's World and Kinder-Care and interviews conducted with their staffs. .]

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Following the initial survey, DA requested that more complete information on the facility standards of the initial five organizations be obtained through an expanded formal written survey. The survey would provide information about the facilities and their programs at the national level and was to be conducted at specific centers (not yet visited) to obtain information on actual cases. Based on input from DA, the initial survey was modified to place higher emphasis on life safety, building codes and standards, and facilities construction cost. More information was also needed on proprietary use of alternative construction and acquisition methods, so the Army could evaluate the use of similar techniques. Other minor modifications were made throughout the initial survey. Both a written headquarters survey and an oral center survey were developed.

The headquarters survey requested information from the national organizations to present their "general" or national average case and their facilities and programs preferences. (Appendix B provides survey content and format.) It requested information about the organization's basic background, its operational requirements, its typical facilities and program offerings, and its facilities construction costs. Detailed information on facilities standards and space allowances was also requested for comparison to Army facilities planning criteria.

The center survey, which was essentially identical to the headquarters survey, requested information from the specific center visited. This information was to substantiate and supplement the data provided by the national headquarters, and was also representative of the "best" or most current proprietary facilities. This survey requested information on the facility's life safety and licensing requirements and on points of contact with the appropriate approval authorities. The site visit also allowed facility floor and site plans to be measured.

The surveys were distributed and arrangements made for visits with center personnel after coordination with the proprietary organization headquarters. After the surveys, time was allowed for followup telephone contacts with appropriate organizational personnel to clear up any inconsistencies and questions and to complete entries where there were omissions. In most cases, center personnel could not answer detailed questions about facility costs, building construction code requirements, and actual construction details. These questions were referred to appropriate headquarters personnel for response, or state or local code authorities were contacted.

Information Display

Chapter 5 provides the information acquired on proprietary child care organizations and their facilities. For each organization, a brief verbal description summarizes the information obtained; Tables 1 through 5 and Figures 1 through 5 display detailed data for each organization (Appendix C shows the basic table format.) Tables display survey data in two primary columns: column 1 shows central headquarters/national data, and column 2 shows data on the specific center visited. Column 1, Headquarters/National Data, is normally subdivided into two areas: the average or general cases versus the preferred cases; column 2 displays statistics for the center visited. Comments are provided to the immediate right of many of the entries. The figures show site and floor plans and illustrate the character of the facilities' interior spaces and exterior images. The tables also show other data as described in the following:

1. <u>Central Headquarters/Selected Child Care Center</u>: Provides the headquarters and center addresses, principal points of contact, and dates of survey data. Footnotes identify additional personnel contacted.

2. Organizational Background: Identifies the scope of organizational operations.

Column 1: Lists the numbers of centers, new centers, and states in which centers are located. (Lists of centers and the states of operation were requested, but not always provided.)

Column 2: Identifies the date of center opening.

3. General Facility Characteristics: Generally identifies facility characteristics.

Column 1: Lists the approach to construction, typical center sizes, plan configuration, and capacities. Capacities are expressed in terms of the child care licensing capacities versus designed capacities for children. Facility capacity (adults and children) with respect to life safety requirements was also considered, and these factors far exceeded those for licensing capacities. There was generally no expressed preference for a specific facility size, with most organizations adjusting sizes to meet local licensing and market demands.

Column 2: Lists the same information as column 1; but is for the actual center. Capacities are expressed in terms of the actual enrollment on the day of the survey versus the child care licensing capacity.

4. Operational Requirements: Generally identifies the organization's program offerings.

Column 1: Lists the services offered, schedules, and population mix for the children served. Generally, no preference is identified for these items; most organizations adjust their programs to meet local market demands. Space provisions in Net and Gross Square Feet, the Age Group Definitions, Care-Giver Ratios, Group Sizes, and staffing are also listed, but are governed mostly by code. Age group definitions were obtained and compared as closely as possible with Army definitions. Care-Giver Ratios, Group Sizes, and Child Population mix are expressed by the organizations' age definitions. Some preferences are expressed where code-required provisions were very low. Column 2: Lists the same information is listed as column 1, but for the actual center. Net and Gross Square Footages per Child are based on the appropriate measured facility areas divided by the actual licensed capacity.

5. <u>Facilities Requirements</u>: Identifies life safety and building construction code criteria of the facilities' design/construction.

Column 1: Lists safety criteria paralleling Army requirements. Although preferences were requested, organizations generally indicated that designs conform to local code requirements.

Column 2: Lists the same information as for column 1, but for the actual center. When information was not available from center personnel, it was obtained from organizational headquarters, code and licensing officials, and actual codes that applied to the specific facility.

6. Facilities Costs: Identifies facilities costs broken out by building, site work, playground, site, and facility total. Items included in the cost groupings are identified. Costs are displayed as provided by the facility; no attempt was made to translate lump sum figures into costs per gross square foot. Back-up facility cost experience was requested but generally not provided.

7. <u>Alternative Construction and Acquisition Techniques</u>: Identifies the alternative construction and acquisition techniques currently used by the proprietary organizations.

8. Facility Functional Requirements: Identifies facility space provisions for program spaces, nonprogram spaces, and outdoor spaces. Spaces for which facility space provisions are listed correspond directly to Army-defined spaces in Draft DG 1110-3-143. Program space: are limited to secondary activity areas, since all organizations indicated that they provided the same primary activity spaces as the Army and that primary (net square feet/child) space provisions were as required by code.

Column 1: Lists criteria and space allowances. Although this information was requested from the headquarters, it was usually unavailable.

Column 2: Lists the same information as for column 1, but for the actual center.

9. Footnotes: Provides additional information as required to supplement information displayed in the tables. Typically, this includes additional organizational personnel contacted during the study, a listing of all the states and the numbers of child care centers/state, points of contact with code and licensing authorities responsible for the centers visited, and detailed facility cost experience, if provided.

5 PROPRIETARY CHILD CARE ORGANIZATIONS FACILITIES DATA

Children's World, Inc.

Children's World, founded in 1969, now has 140 operating centers in 20 states and is the fourth largest of the national organizations surveyed. Although Children's World is a mid-sized firm compared to Kinder-Care, the industry giant, it has placed corporate emphasis on quality education and has earned the respect of child care advocates. Its competitors refer to it as the "Cadillac" of the industry, in terms of both development programs and facilities. Children's World has proven that quality care can be profitable. Centers have maintained an occupany rate between 73 and 83 percent in an industry where 65 percent is considered the break-even point and 70 percent the level where profit starts.

Child centers are centrally operated from Children's World corporate offices in Evergreen, CO, through various regional offices. Centers are typically clustered around key metropolitan areas. Although centrally operated, Children's World allows its center operators to direct their own educational programs. The central organization seeks trained personnel with compatible educational philosophies and avoids program standardization.

Initially, Children's World operated out of leased facilities, all individually acquired and different. They began constructing their own facilities in 1980, using a number of approaches, but continue with a mix of lease and construction for facility acquisition and operation. Some centers are built by developer-owners, who construct facilities according to Children's World plans. For others, Children's World acts as a developer and arranges a sale-leaseback on the completed facility.

Children's World buildings are designed to standards refined through the organization's past experience. Emphasis is on serving the child's needs through appropriate design. Attention is given to scale, layout, and decor to stimulate the senses. Flexibility is built in to accommodate the individuality of educational practices. Design refinements have also led to some construction economies.

Design and construction practices are conventional. A conventional design-bidbuild practice is followed whether Children's World is acting as a developer or facilities are designed to its standards by a developer. Facilities are designed by an outside agent, one at a time, following established standards to meet the needs of a given/selected market.

The basic plan (see Figure 1) of a center is five classrooms wrapped around a central core of administration and support spaces. The entry and lobby/reception area are centrally situated on one side of the facility. The administration office and reception desk are straight ahead of the entry, with classrooms to the immediate left and right. A corridor, which wraps around the core spaces, leads to the other classrooms in an "L" configuration, avoiding the long tunnel effect of a double-loaded corridor. Two classrooms are directly adjacent to toilet facilities. The remainder must access the toilets through the corridor, but travel distance is only 4 to 10 ft. Each classroom has direct exits to the outside, most of which lead to their own designated fenced play areas. The mechanical space for the California facility was accessible to the outside and

Little same

was being used to store outdoor play equipment. Since the facility had no laundry, the mechanical space was also the planned location of future laundry equipment.

Facility capacity usually ranges from 80 to 140 children, depending on the market demands in a given area. Centers are residential in scale, configuration, and finishes to provide a home-like atmosphere for children. The center visited (located in Chino, CA) was made up of a series of intersecting shed-roofed elements which created a very pleasing residential scale and image. The facility was clad both in vertical wood siding and stucco, had wood trim around aluminum windows, and was roofed with asphalt shingles. Materials used were normally of residential or light commercial quality and durability. Walls were gypsum board over wood or metal studs throughout.

In classroom areas, Children's World has carried the carpet up the wall to form a wainscotting trimmed with a wood band. The wainscot, combined with carpeting over three-fourths of the classroom floor and acoustical suspended ceilings, makes the classroom environment very quiet compared to some centers visited. Toilet walls are protected by tile to about chest height and floors are also tiled. Except for the director's office, all other areas are floored in sheet vinyl.

Table 1 summarizes the data for the Children's World Organization.

Table 1

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Children's World, Inc., Data Summary

CENTRAL HEADQUARTERS		SELECTED CHILD CARE CENTER	
Evergreen Nurth Center P.O. Box 2:90 Evergreen, Coluradu 804.19		6010 Riverside Drive Chino, California 91710	
Mrs. Katie Geuin 303/674-6686 17 August 1984	-Additiunal personnel contacted (1)	Ms. Marian Shuck, Center Director 714/591-0473 or 0477 22 June 1984	
NATIONAL ONCANIZATION DATA (Average an	d Preterred)	CENTER DATA (Actual)	
ORCANIZATIONAL BACKCROUND			
-CENTERS IN OPERATION: 140 -New CENTERS IN 1984: 20 -STATES OF OPERATION: 20	-List attached (2)	DATE OF OPENINC: August 1983	
GENERAL FACILITY CHARACTERISTICS			
DESICN.CONSTRUCTION APPROACH: -STANDARDLUL)INDIVIDUAL DESIGNS		STANDARD	
SIZES: (Average / Preferred) -CENTER(SF) 5K-6K SF/ 5K-6K SF -PLAY YARD(SF) 15,000 SF / 15,000 SF -SITE(SF) 32,000 SF / 32,000 SF		(Actual) 7,200 18,400 54,000	
PLAN ARRAMGEMENTS PROVIDED: (Average / Preferred) -closed closed -single signy single story -childrens forffts		(Actual) CLOSED SINGLE STORY	
CENTRAL AND INDIVIDUAL/CENTRAL AND INDIVIDUAL CENTER CAPACITY:	-Toddlers individual	CENTRAL AND INDIVIDUAL -Sume tuilet ruoms classrooms, sume not.	adjacent to
-TAXITUR OCCUTANCI (Licensed / Design) -CHILIREN 80 - 140 / 80 - 140		(Actual / Licensed) 90 / 136	

OPERATIONAL REQUIREMENTS		
SERVICES: (Provided / ~ ut Prugram) -FULL DAY / NP -PART DAY - DECENSION OF / NP	(Provided / 2 of Program FULL DAY / 712 PART DAY PRESCHOOL AGE / 232	ш)
-TRESCHOOL / NP -AFTER SCHOOL / NP -DROP IN (HOURLY) / NP -WEEK END / NP	AFTER SCHOOL / 62 DROP IN (HOURLY) / 02	-Service provided but rarely used.
SCHEDULE: (Average / Freterred) -DAYS/WEEK Mon-Fri / Mun-Fri -HOURS/DAY	(Actual) Mon - Fri Varies / Varies	0630 - 1830
PARTICIPATE IN USDA FOOD PROCRAM		
(Average / Prelerred) NET SF/CHILD: 35-50 / 35-50	(Actual / Cude) 37 / 35	-Licensing Code: Title 22 California Statutes -POC: (3)
CROSS SF/CH: (Average / Preterred) -INDOORS Varies / Varies -OUTDOORS 70-75 / 70-75	(Actual / Code) 53 / NS 135 / 75	
AGE CROUPINGS: (befinition) -INFANT 6 wks - 1 yr -TODDLER 1 - 2 1/2 yrs -PRESCHOOL AGE 2 1/2 - 5 yrs	(Definition) 0 - 2 yrs 2 - 3 yrs 3 - 4 yrs	
-SCHOOL AGE 5 - 12 yrs	₹ + 7	
CARE CIVER RATIOS: (Average / Preferred) -INFANT Code / 1:3 -TODDLER Code / 1:5 -PRESCHOOL AGE Code / 1:7	(Actual / Code) 1:4 / 1:4 1:12 / 1:12 1:12 / 1:12 1:12 / 1:12	
-SCHOOL ACE Code / 1:5	1:12 / 1:12	

MAXIMUM GROUP SIZE:			
(Average /	kreterred)	(Actual / Cude)	
-INFANT Code	/ Cude	16 / NS	
-TODDLER Cude	/ Cude	36 / NS	
- PRESCHOOL ACE Code	/ Cude	36 / NS 36 / NS	
-SCHOOL AGE Cude	/ Code	12 / NS	
TALEN ALTON			
(Average & /	Preterred 2)	(Actual # / 2)	
-1NFAN1 102	/ 101	12 / 132	
-1005LEK 101	/ 101	24 / 272	
-PRESCHOUL AGE 052	/ 652	24 / 212 24 / 212	
-SCHOOL ACT 152	/ 152	6 / 62	
STAFF(\$): (Average /	Preterred)	(Actual)	
-DIRECTOR	/ 1	l	
-CLERICAL 1	/ 1	2	-Part Line
-CARE GIVERS 18-22	/ 18-22	12	-10 tull time/2 part time
-COOK 1	/ 1	1	
+JANIJUN CUNTRACE	/ Luntract	CONTRACT 1 CARDENER	
FACILITIES REQUIREMENTS			
LIFE SAFETI: (Minimum	(Criteria)	(Actual / Code Requi	rement)
-AREA LIMITS(SF)	Code	7,200 / 9,100 (TY	PE V), 13,500 (TYPE III)
-5X172-			
-#s/AREA	Cude	6 / 2	-"Actual" exits include one
-DIRECT FROM CLASSROOM	Code	5 / 0	remute exit and one in each
-EXIT ACCESS CORRIDON WID	JTH(FT) Code	5' / 6'	of 5 classrooms.

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nt) -11 iv exits directly from classrooms: Class 111 -Classrooms: Class 111 Corridors: Class 11; UBC Chapter 42	-besigned with 1-huur "cure" which includes walls around the kitchen, reception area, mechanical ruom, janitur closet, and exit access curridor.
<pre>(Actual / Code Requireme NA / NK NA / NA NA / NA NA / NA 1 / 1 NR / NR NR / NR (see note)/(see note)</pre>	
tinimuma Griteria) Cude Cude Cude Code Code Code Code Code	
-FIRE PROFECTION (M -STRUCTURE(HNS) -AREA SEFARATION(HNS) -AREA SEFARATION(HNS) -EXITMAYS(HNS) -MAZRU SEPARATION(HNS) -EXIT ACCESS CORRIDOR(HNS) -PARTITION(N-BEARING)(HNS) -AOOF (HNS) -INTERION FINISH(CLASS) -SPRINKLPH	

Code -Required by m codes	2 2
-ALARM SISIEM PROVIDED: -To F.R. Station -Inteamal	-MANUAL - AUTONATIC - SNOKF DETECT -code

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MARALSK FREF FRVIKONMENTS (Frovided Kot Adults / Children -politikts met Provided -amps Ramis

Actual / Code Requirement) Not Provided / NR INTERNAL/INTERNAL MANUAL/ NS AUTOMATIC / AUTOMATIC SMOKE DETECT / NS SMOKE DETECT / NS 1982 UBC San Bernardino County Bldg. Dept. 714/383-1417 (Actual / Code Requirement) -TYPE-V / NS

(Provided For Adults / Children)

RAMPS/RAMPS

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DELONAL CIRC	:rage / Preferred)	4,−0,, 7,−0,,	Jo" / Jo"
-ADDT CNAL CIRC/AL	(44	-CORR WIDTH(FT)	-DOOR WIDTH(IN)

(Actual) 5'-0" 36"

FACILITIES COSTS

/CROSS SF: BUILDING SITE WORK PLAY CROUND SITE -TOTAL FACIL	(Averade / Planning) \$50-70 / \$50-70 Varies / Varies Varies / Varies Varies / Varies Varies / Varies Varies / Varies	-backup dala requested was nut provided	(Actual) 257,000 96,000 18,000 170,000 541,000	-Lump Sum -Lump Sum -Lump Sum -Lump Sum aiproximation -Lump Sum
-INCLUDED IN -BUILDINC -FIXED FURNI -MOVEABLE FU	ABOVE BUILDING COST: Tuke & Equipment Rniture & Equipment		BUTLDING FIXED FURNITURE &	едитеме

-INCLUDED IN ABOVE SILE WORK COSIS: -CRADE WORK -OFF STREET IMPROVEMENTS -GUTTERS, CURBS -DRAINAGE RETENTION -INCLUDED IN ABOVE FLAY CROUND COSTS: -EQUIPMENI -GROUND COVERINGS

MASONRY PERIMETER WALL (\$17,000) CONSTRUCTION STAKING SITE DEMOLITION CURSS & GUTTERS PAVING (ASPHALT & CONCRETE) LANDSCAPING IRR.IGATION FENCING FLAG POLE

EQUI PMENT
Table 1 (Children's World, Inc., Cont'd)

ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES

TYPES OF CONTRACTS PROVIDED: -CONVENTIONAL DESIGN-BID-BUILD

CONVENTIONAL COMPETITIVE BID

ALTERNATIVE BUILDING CONSTRUCTION METHODS UTILIZED: (Nome Identified)

PREFABRICATED BUILDING COMPONENTS PROVIDED: (None Identified) BUILDINC ELEMENTS/MAIFKIALS PURCHASED IN VOLUME: (None Identified)

(None Identified)

CABINETRY ROOF TRUSSES (None Identified)

FACILITY FUNCTIONAL REQUIREMENTS

PROCKAM SPACES

-Proprietary child care organízations have indícated that they provide all Primary Activity Spaces as defined in Army guidance (DC 1110-3-143). NAPPING / Included CRIB / 16 @ 31.5 SF = 504 SF DIAPER STATION / 16 SF (Est.) TOILETS(CH) / 2 @ 160 SF - 320 SF CUBBIES / Included (/ Actual Space Provided) EATING / Included teacher area provided in -Additional storage of classroum. (/ Included in NET Space) or (if excluded / Space Allowance) SECONDARY ACTIVITY SPACES PROVIDED: PRIMARY ACTIVITY SPACES PROVIDED: ADMINISTRATION SPACES PROVIDED: Î -CLASSROOM RECEP/CARE -DIAPER STATION / NI' -NAPPING / Included -EATING / Included NON PROCRAM SPACES -TOILETS(CH) / NP -CRIB / Included -CUBBIES / NP

ADMINISTRATION SPACES PROVIDED: -WAITING-RECEPT NV -OFFICES / NV -STAFF LOUNCE / NV -CENTRAL STORACE NC

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-ISOLATION AREA -ADULT TOILETS

STAFF LOUNCE / 0 STAFF LOUNCE / 0 -Space in Director's Office ISOLATION AREA / 0 -Normally single unisex ADULT TOILFTS / 40 Sh toilet for AJulta/Staff.

(/ Actual Space Provided)
WAITING-RECEPT / 230 SH

OFFICES / 230 SF

Area provided at derector alter Space provided on the con-

Table 1 (Children's World, Inc., Cont'd)

SUPPORT SPACES PROVIDED AT UNAMED (7. State Attourted)

-KTCHEN , NP -LAUNDRY , NP -MATNT/JEALTOR / NF -MECH/ELECT / NP -PANTRY / NP OFHER NON ASSIGNABLY SPACE PROVIDED: (/ stace Allowance)

-CURREDORS / NP

OUTDOOK SPACES

PRIMARY ORTHOOR ACTIVITE SPACES PROVIDED: (/ Space Allowance) -PORCHES/DECKS / NP

-PLAY YARDS / NP -OUTDOOR STORAGE / NP SECONDARY OUTDOOR AREAS FROUTDED: (/ Space Allouance) -PORTE CHOCHERE / NP -PEDEST WALKS / NP -VEHIC CIRC / NP -SERVICE AREA & DRIVE / NP

Mr. Kenneth Ledderman, Architect, CA, 714/837-3977
 Mis. Susan Howell, Regional Director, CO, 303/792-3626
 Mrs. Ana Salameh, Regional Director, CA, 818/339-1281

t. Actual Spain for London Klachten i our Sp

MATNE JAN TUR - SS SF Mei te Eilfich / Lug Sf Fanifet - Gu Sf (/ Actual Space Privity of -CORRINS 390 SF CLASSRUOM STORACE 152 SF (/ Actual Space Fronduct) PORCHESZBECKS - 486 SF PLAY YARDS / 18,400 OUTDOOR STURACE - NE Space

NF Space available in actuance. room which is accessible from conside play area.

(/ Actual Space Provided)
PORTE CHOCHERE / 80 SF
PEDEST WALKS / As required
VEHIC CIRC / 18,600 est. -Includes pathing tor
SERVICE AREA & DRIVE / 30 cars.
(Incl. above) -Access wily through

(2)States of Operation and Number of Centers/State: CA-7, CO-27, DC-5, IL-8, MI-14, MN-19, OH-7, TX-20, WA-7. (These data trom old stockholders reports, 1982, do not reflect current situation. Current data not provided.)

(3)Deputy Director, Community Care Licensing Div., Dept. of Social Sciences, 744 P Street, Mail Station 17-17, Sacramento, CA 95814, 916/322-8538





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Figure 1. (Children's World, Inc., Cont'd)



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b. Site sketch.

Day-Bridge Learning Centers, Inc.

Day-Bridge, until recently known as National Child Care Centers, Inc., is headquartered in Houston, TX. It is the third largest of the child care organizations surveyed, having 152 centers operating in 12 states. It also has the third most aggressive expansion campaign, with 25 new centers anticipated in 1984.

Day-Bridge follows a conventional design-bid-build process using a standard design that has evolved from its construction experience. The design is modified to meet specific site and local code requirements. Construction contracts are normally competitively bid or negotiated with a selected contractor. Day-Bridge has experience with construction management techniques, having used them on some of its larger centers. In these cases, a construction management firm advertised and negotiated bids for subcontracts for building the centers and then managed/supervised the construction. No prefabrication techniques are used in the facilities except for roof trusses, joists, and cabinetry.

Day-Bridge's standard facility design (see Figure 2) is an approximate square closed plan of one story. Toilet, administration, and support areas are centrally located; this arrangement divides the facility into classroom areas in each of the four corners. The entry, reception/waiting, and administration areas are centered on one side of the square plan and separate two of the classroom areas; the kitchen is central to the square, and toilets separate the other classroom areas. Interior classroom spaces are subdivided by equipment and furnishings. Centers are normally flat-roofed with a false metal-clad mansard to screen rooftop mechanical equipment and provide an overhang for window shading and weather protection. The center entry has a roof extension which serves as a covered drive-up/drop-off area. Exterior materials are normally brick wall facings, with aluminum windows and entryway. The basic structure is normally wood-frame construction; however, light-gauge metal framing is substituted, if necessary, to meet local code requirements.

Facility interiors typically have materials, finishes, and equipment of light commercial or residential quality. Walls are gypsum board over wood or metal studs throughout. Toilet rooms have walls tiled to waist height and tiled floors. In the rest of the facility, floor finishes are about 50 percent sheet vinyl and 50 percent carpeted, with the vinyl placed in the shared activity/gross motor activity areas.

Table 2 summarizes the data obtained for Day-Bridge Learning Centers, Inc.

Table 2

(

Day-Bridge Learning Centers, Inc., Data Summary (Previously: National Child Care Centers, Inc.)

CENTRAL HEALQUARIFES

Houston, Texas 77094 15145 Katy Freeway

Ms. Lynn Mcservey, V.F. Gurpurate Bradquarters 6 September 1984 NATIONAL ONCANITALION DALA (Average and Preferred)

14032 Juhn Humphrey Drive Orland Park, IL 60462

SELECTED CHILD CARE CENTER

Ms. Paula Czupek, Center Director 213/349-4990 6 July 1984

-Additional personnel contart (1)

CENTER DATA (Actual)

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ORGANIZATIONAL BACKCROUND

52 12. -CENTERS IN OPERATION: -NEW CENTERS IN 19341 -STATES OF OPERALION:

DATE OF OPENING: 23 February 1984

дг-9, СО-11, СА-6, 11-18, КS-4, ММ-8, МО-10, ММ-1, ОК-9 1N-21, ГХ-50, VA-5

STANDARD DESIGN GENERAL FACILITY CHARACTERISTICS DESIGN/CONSTRUCTION APPROACH: -STANDARD DESIGNS

(Average / Prefetred) -SINCLE STORY/SINCLE STORY -CENTER(SF)

PLAN ARRANCEMENTS PROVIDED:

INDIVIDUAL/INDIVIDUAL -CHILDRENS TOILETS

2222

(Actual)

8,273 12,075 33,500

(Actual) CLOS'D SINCLE STORY

This is the standard to date. A newer similar plan has been developed which is 1200 SF smaller.

INDIVIDUAL

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(Licensed / Design) 152-200/160 -MAXIMUM OCCUPANCY CENTER CAPACITY: -CHILDREN

(Actual / Licensed) 69 / 130

(Provided / X of Program) FULL DAY / 45% PART DAY

-PRESCHOOL AGE / 132 -AFTER SCHOOL / 352 DROP IN (HOURLY) / 72

(Actual) Mon - Fri 0600 - 1830

-Since this is a new center, actual occupancy is expected increase significantly.

OPERATIONAL REQUIREMENTS

SERVICES: (Provided / % of Program) -FULL DAY 60% -DROP IN (HOURLY) / 102 -PRESCHOOL AGE / 102 -AFTER SCHOOL / 202 -FULL DAY -PART DAY

(Average / Preferred) Sun-Sat / Mun-Fri 0630-1830 / 0630-1830 SCHEDULE: -DAYS/NEEK -HOURS/DAY

PARTICIPATE IN USDA FOOD PROCRAM

(Average / Preterred) Cude / Code NET SF/CHILD: GROSS SF/CH: (Average / Preferrad) -INDOORS 25-35 / 35 -OUTDOORS Code / 75 - I NDOORS -OUT DOOR S

(Definition) 0-18m 2 yr - 5 yr 18m - 2 yr -PRESCHOOL ACE AGE CROUPINCS: -TODDLER - I NF ANT

5 yr - 12 yr

-SCHOOL ACE

6 weeks - 15 mos 15 mos - 2 yrs (Definition) yrs (3 yrs 4 yrs 5 yrs

-To accommodate at least 25% of licensed building capacity (code minimum). -Licensing Code: (2) -POC: (3)

(Actual / Code) 45 / 35

(Actual / Code)

93 93

NS 75

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KE GIVEK KALIG (A Nfant)S: Vverapie / Frederred) 1:5 1:4	(Actual / Cude) 1:4 / 1:4	
DLER	1:9 1:7		
SCHOOI AGE	1:15 / 1:10	1:6 / 1:8 1:10 / 1:10	
OUL AGE	1:26 - 1:15	1:10 / 1:10 1:20 / 1:20	
MUM CROUP SI	26:		
ANT (A	verage / Preterred) TX 25 / 12	(Actual / Code) - / 12	
DUER	1X 25 / 20	14 mix/ %	-14 tor mixed intants and toddlers
SCHOOL ACE	1X 72 / 10	8 / 8 20 / 20	
OOL AGE	UE 1 21 XT	20 / 20 25 / 25	
LATION MIX:			
ANT DLER	Average 1 / Preferred 2) NP/NP NP/NP	(Actual # / %) 3 / 5% 4 / 6%	
SCHOOL ACE P	redominant/Predominant	8 / 122 8 / 122	
IOOL ACE	dN/dN	17 / 27 X 24 / 38 X	
РЕ(#); КЕСТОН КЕ СТИРИS	(Average / Preterred) 1 / 1 25 / 25	(Actual) 1 0	
K I TOR	/ 1 / Cuntract	CONTRACT	-Also an aide listed above.
IST DIRECTOR DRIVER	2 / 2	-	

FACILITIES REQUIREMENTS	
LIFE SAFETY: (Minimum Criteria)	(Actual / Code Requirement) 7-200 / 21-600 -7vve 4, BOCA v/classrv
-AREA LIMIIS(SF) Code -Evite	direct exit
- An / ADSA Code	6 / 2 -"Actual" includes 1 re
- DIDETT EVAM FLASSHEYM]	5 / 1 and lineach of 5
	6'/ 6' classroums.
-FIRE PROTECTION	ND / NC
- STRUCTURE(HKS) 1 hr	
- AREA SEPARATION(HAS) NA	
-EXITUAYS(HRS) 1 hr	
-HAZARD SEPARATION(HKS) 1 hr	NP / 0 -w/classroom direct exi
	N / N
-PARTITION(N-BEAMING)(HAS) CODE	SN / dN
	NP / I.III -Exit corridors, Classi
- INTERIOR FINISHING AND -	(BOCA #920)
-c bb I NVT 60	Total Bldg/ NS -By being sprinkled, th
	facility goes beyond a
	requirements.
	(Actual / Code Requirement)
-TO FIRE STATION	TO FIRE STATION/ NR
- INTERNAL	INTERNAL/INTERNAL Maniai / NR
	AUTOMATIC/AUTOMATIC -Heat sensors in kitch
- SHOKE DETECT	SMOKE DETECT/SMOKE DETECT smoke detectors throu
-CODE UBC, Southern, BOCA	BOCA 1975, Orland Park Public Services, 312/349
-COMSTRUCTION TYPE PROVIDED:	(Actual / Code Requirement)
-Type-11 BOCA/UBC 11-1 hr - Noncombustible	TYPE IV (BOCA) / NS
BARRIER FREE ENVIRONMENT:	
{Provided For Adults / Children	(Provided For Adults / Children)
- TOI LE TS / TOI LE TS	TULLEIS/NGL Provided Pamps/Ramps
-RAMPS/RAMPS	(Actual)
(Average / Preferred) 6_16'6'6'_0'' / 6'-0''	61
-DOOK WIDTH(IN) 36" / 36"	36"

ALLERING LEVELS LAN

\$. CROSS SF: (Average / Plann)	ing) -Back-up cust data (4)	(Actual)	
-PUILDING \$38-47K / \$41.5	50	343,162	-Լսար Տստ
-SITE MORK \$70-104K / \$85.0	000 -\$2/SF average	92,482	-Lumb Sum
-PLAY CROUND S11-13K / S11.0	000	12,000	-l.umu Sum
-SITE S98-154K / \$100.	.000	108.850	-Lumb Sum
-TOTAL FACIL \$405-567K / \$540,	,450 -\$41.50 × 8300 SF Facil.	556,494	-Lump Sum
-INCLUDED IN ABOVE BUILDING COST	1:		
- BUTLDINC		BUILDING	
-FIXED FURNITURE & EQUIPMENT - PERMITS		LOAN COSTS	
-INCLUDED IN ABOVE SITE WORK COS	STS: NP		
- GRADING		UTILITIES	
-UTILITIES		PAVING	
- ENCINEERINC		LANDSCAPINC	
- PAVING		FENCINC	
- LANDSCAPING			
-INCLUDED IN ABOVE PLAY CHOUND (costs:		
- EQUI PMENT/MATERIALS		EQUIPMENT SURROUNDING RETAINERS	
ALTERNATIVE CONSTRUCTION & ACQU	II SI TI ON TECHNIQUES		
TYPES OF CONTRACTS PROVIDED:			
CONVENTIONAL, COMPETITIVE BIDS		CONSTRUCTION MANAGEMENT	-Construction Manager,
			Woodson Development, obtained subcontractore
			through competitive bid
			process. Not a predomi-
			light biorces biorconnic.

(None Identified)

ALTERNATIVE BUILDING CONSIGNCTION METHODS UTILIZED: (None Identified)

PREFABRICATED BUILDING COMPONENTS PROVIDED: -CABINETRY

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and success and seven see

CAB I NET'S

BUILDING ELEMENTS/MATERIALS FURCHASED IN VOLUME: -APPLIANCES -PLAYCROUND EQUIPMENT -CARPET -CABINETRY

FIXTURES CABINETS PLAYCROUND EQUIPMENT APPLIANCES

FACILITY FUNCTIONAL REQUIREMENTS

PROCRAM SPACES

PRIMARY ACTIVITY SPACES PROVIDED:

-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DG 1110-3-143).

SECONDARY ACTIVITY SPACES PROVIDED: (/ Included in NET Space) or (if excluded / Space Allowance) -EATING / Incl -NAPPING / Incl -CHIB / Incl -CHIB / Incl -CHIB / Incl -CHIB / Incl -CHIETS(CH) / NP

NON PROCRAM SPACES

-CLASSROON RECEP/CARE / NP

-CUBBIES / NP

ADMINISTRATION SPACES PROVIDED: (/ Space Allowance)

-WAITING-RECEPT / NP -OFFICES / NP -CENTRAL STOR / NP -ISOLATION AREA / NP -ADULT TOILETS SUPPORT SPACES PROVIDED:

-Staff/Unisex

(/ Space Allowance) -KITCHEN / NP -LANUDRY / NP

-LAUNDRY / NP -MAINT/JANITOR / NP -PANTRY / NP -MECH/ELECT / NP

(/ Actual Space Provided) EATING / Included NAPPING / Included CRIB / Included DIAPER STATION / Included TOILETS(CH) / 4 @ 58 + 1 @ 42 = 274 SF CUBBIES / Included CLASSROOM RECEP/CARE / Included (/ Actual Space Provided) WAITING-RECEPT / 195 SF OFFICE / 95 SF CENTRAL STOR / 93 SF ISOLATION AREA / 53 SF ADULT TOILETS / 36 SF -Statt/Unisex

(/ Actual Space Provided) KITCHEN / 155 SF

MAINT/JANITOR / 34 SF PANTRY / 38 SF MECH/ELECT / 54 SF and a state of the second state of the second

ULHEN NON ASSIGNABLE SPACE FRUVIDED: (1 Space Allowance) -CURRENURS / NP

UNITOUN SPACES

PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED: (/ Shace Allowance)

-PLAY VARUS / NP

(/ Space Allowance) SECONDARY OUTDOOR AREAS PROVIDED: -PORTE CHOCHERE / NP -PEDEST WALKS / NP -VEHIC CIKC / NP

(/ Actual Space Pruvided) CORRIDORS / 381 SF CLASSRM. STORAGE / 117 SF SPRINKLER CLOSET / 37 SF

-Concrete pads (unprotected) -lucludes above (/ Actual Space Provided) PORCHES/DECKS / 2,850 PLAY YARDS / 12,075

 Includes 19 parking spaces PEDEST WALKS / 405 SF VEHIC CIRC / 11,025 SF -includes 19 SERVICE AREA & DRIVE / Included above (/ Actual Space Provided) PORTE CHOCHERE / 315 SF

(1)Mr. Gerry Mazera, HQ, Dir, Ottice of Real Estate, TX, 713/578-4808.
 Wilson Thibodeaux, HQ, Keal Estate Div., TX, 713/578-4808
 Ms. Henrietta Stainbrook, HQ, Operations Div., TN, 901/761-4504
 Ms. Beverly Senese, District Manager, IL, 312/379-4990

(2)Licensing Standards for Day Care Centers, Part 401, Subchapter "e": Text of Adopted Rules.

(3)Chief ut Licensing, Division of Program Operations, Department of Children and Family Services, 1 N. Old State Capitul Plaza, Springtield, 11. 62706, 217/785-2598.

(4)See attached.

Uay-Bridge Facility Cost Experience - All Centers Opened August 1984

Total Cost	553,455 559,700 556,210 534,965 514,965 514,965 514,960 508,019 528,824 519,307	538, 384
Playground	11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000	11,000/22
Sile Development	97,719 96,084 114,539 113,500 100,834 85,314 85,314 91,172 91,172 96,908 88,706	95,961/182
Building Cost	314,521 321,616 314,561 314,561 325,851 325,851 318,785 318,793 318,793 319,916 319,634 319,634	320,728/59Z
SILE CUST	130,215 130,215 130,800 98,605 102,752 101,276 104,480 102,559 102,559 101,000 101,968 99,967	112,361/212
	#1507, Illinois #1503, Illinois #1517, Illinois #1520, Illinois #1801, Minnesota #1802, Minnesota #1809, Minnesota #1809, Minnesota #1810, Minnesota #1810, Minnesota	Average Cost/ Z of Total



DAY-BRIDGE LEARNING CENTERS, INC. Orland Park, IL Licensed Capacity: 130 Children

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Gross Square Footage

8,273 sq ft or 64 sq ft/child NOTE: Exterior dimensions exact. Critical major interior dimensions measured. Many minor dimensions/ spaces/sized/configured from sketches/pictures (+ 5% var.).

a. Floor plan.





b. Site sketch.



c. Typical classroom.



d. Rear elevation.

Figure 2. (Day-Bridge Learning Centers, Inc., Cont'd)

Gerber Children's Centers, Inc.

Gerber, having 57 centers operating in six states, is the smallest of the national organizations surveyed. It is a wholly owned subsidiary of Gerber Products Company, with headquarters in Fremont, MI. It has the least aggressive construction program, currently projecting fewer than 10 new centers in 1984, and seems to approach development in a very "relaxed" manner. Its program varies by facility, depending on the market demand; however, it does have a preference in program offerings. Its operations have commanded the respect of child care experts who are normally suspicious of "for profit" child care chains.

Gerber's approach to designing and constructing its facilities is a conventional design-bid-build approach. The volume of its construction program does not warrant its direct involvement in the design and construction process; also, no great cost advantages are gained from alternative facility construction approaches. It uses no facility prefabrication methods and does not volume-purchase building supplies or equipment. It has developed a standard plan based on previous construction experience which is modified to meet local requirements. A local designer modifies the standard plan for the local situation and prepares construction documentation. Construction contracts are advertised, bid, and awarded in the conventional manner. Any innovative construction methods used are solely the decision of the construction contractor.

The basic plan of a Gerber center (see Figure 3) is an equal-armed cross with classrooms at the ends of three arms and the administration support space at the end of the fourth arm, radially arranged around a "great room" or central large motor area. There are two large classroom spaces, which are dividable by operable partitions, and one smaller classroom. The "great room" is exclusive of the net square footage requirements of the licensing code, and serves for many joint uses other than classroom activities. Besides gross motor activities, the "great room" is used for napping, eating, and cubbies.

A Gerber center's capacity usually ranges from 100 to 120 children; however, 100 is the preferred capacity. Centers are residential in scale and finished to provide a more friendly environment for the children. Gabled roofs with a cross-shaped plan result in intersecting gables that emphasize the residential image and scale. Materials are residential or light commercial in quality and durability. The Florida center visited was a single-story structure with gabled roofs and vertical wood siding. Carpet is the predominant floor finish material, especially in the great room and classroom areas; sheet vinyl is used in wet areas. Walls are gypsum board on wood or light-gauge metal studs throughout. In activity spaces, walls are wainscotted to waist height with a durable plastic laminate. Most of the equipment is movable and provided separately; however, some play equipment is often built in. The Florida center had a large climbing and play structure built in to the "great room."

Table 3 summarizes data obtained for the Gerber centers.

Table 3

Gerber Children's Centers, Inc., Data Summary

SELECTED CHILD CARE CENTER

Jacksonville, FL 33204

2597 Oak Street

Ms. Evelyn Belcher Center Director 904/387-3136 13 July 1984

CENTRAL HEALQUARTERS

445 State Street Fremont, MI 49412

Director, Real Estate 616/928-2813 13 July 1984 Mr. Richard McKinnon

-Additional personnel contacted (1)

NATIONAL ORCANIZATION DATA (Average and Preteired)

CENTER DATA (Actual)

ORCANIZATIONAL BACKGROUND

-CENTERS IN OPERATION: 57 -NEW CENTERS IN 1984: 8 -STATES OF OPERATION: CA-16,0H-13 FL-12, MI-8, NY-5, IL-3

DATE OF OPENINC: November 1982

CENERAL FACILITY CHARACTERISTICS

DESIGN/CONSTRUCTION APPROACH: -STANDARD DESIGNS

(Average / Preferred) 6,242 / 4,820 10,650 / 7,500 32,670 / 32,670 -CENTER(SF) -PLAY YARD(SF) -SITE(SF) SIZES:

(Average / Preterred) PLAN ARRANCEMENTS PROVIDED: -CLOSED/CLUSED

-SINGLE STORY/SINGLE STORY -CHILDRENS TOILETS INDIVIDUAL/INDIVIDUAL

STANDARD DESIGN (Actual)

4,820 15,000 25,000

-This center shares parking and

reducing space requirements (sizes approximate) track w/adjacent hospital

> SINCLE STORY (Actual) CLOSED

INDIVIDUAL

-Shared; between

2 classrooms

program may be provided in the future. -Licensing Code: (2) -POC: (3) -Min. based on 50% of licensed capacity. -An atter school (Actual / Cude) 1:5 / 1:6 1:7 / 1:8 1:10 / 1:12 1:12 / 1:12 1:15 / 1:20 TODDLEK 1-2 yrs INTERMEDIATE I 2-3 yrs INTERMEDIATE II 3-4 yrs JUNIOR 4-5 yrs (Provided / % of Frogram) FULL DAY / 85% PRESCHOOL AGE / 141 DROP IN (HOURLY) / 11 (Actual / Licensed) 106 / 125 INFANT 6 ⊌ks-} yr (Actual / Code) 39 / NS 120 / 45 INTERMEDIATE II JUNIOR (Actual / Cude) 21 / 20 INTERMEDIATE I (Detimition) 0630-1800 (Actual) Mon-Fri PART DAY **FODDLER** I NFANT Preterred) 1:4-5 Sun-Sat / Mon-Fri 0630-1800 / 0630-1800 (Average / Preterred) Code / Code Preterred) (Average / Preferred) Code / 33-55 (Licensed / Design) 100-142 / 100 SERVICES: (Provided / 2 of Program) (Det mit ton) **cude** Code Cude . 75 -MAXIMUM OCCUPANCY (CHILDREN) Cude Code Code ملاين OPERATIONAL REQUIREMENTS Code -PRESCHOOL. ACE / Varies -AFTER SCHOOL / Varies -WEEK END / Varies (Averake Code (Average -FULL DAY / Varies CARE CIVER RATIOS: CENTER CAPACITY: -PRESCHOOL ACE -PRESCHOOL AGE AGE CROUPINCS: NET SF/CHILD: CROSS SF/CH: -SCHOOL ACE -DAYS/WEEK -HOURS/DAY -CHILDREN SCHEDULE: -OUTDOOKS -PART DAY -TODDLER -TODDLER - I NDOORS - I NFANT - I NF ANT

50

iode

-SCHOOL ACE

Cude Code

MAXIMUM CHOUP S	126:	
	(Average / Preterred)	INFANT 8 / NS
~ NE AN - TOODALED	Code / Code	TODDLER 16 / NS
- 1 UUULEN		INTERMEDIATE I 24 / NS
-PRESCHANT ACF	Cude / Cude	INTERMEDIATE 11 24 / NS
		JUNIOR 30 / NS
-SCHOOL ACE	Cude / Cude	
POPULATION MIX:		
2	Averake 2 / Preterred 2)	(ACCUAL # / 4)
- INFANT	12 / 12	INFANT 12 / 11%
	12 / 12	TODDLER 16 / 152
-1000164		INTERMEDIATE I 24 / 232
-PDESCHOOL ACF	P4 / P4	INTERMEDIATE II 24 / 232
	•	JUNIOR 30 / 282
-SCHOOL ACE	12 / 12	
. (#)	(anners) [Protocrad]	(Actual)
51 AF F(#):	AVELAKE / ILCICITEU/	
-DIRECTOR		-
-CLERICAL	Varies / 1/3 .	-
-CARE CIVERS	Cude / Code	. 16
-COOK	1/1	-
-JANITOR	Contract / Contract	Contract
FACILITIES REQU	ILREMENTS	

inimum Criteria	Code		Code	Code	FT) Code
LIFE SAFETY: (M	-AREA LIMITS(SF)	-EXITS	-#s/AREA	-DIRECT FROM CLASSROOM	-EXIT ACCESS CORRIDOR WIDTH(

Requirement)	-"Actu one d class
Cod <i>e</i> NS	2 NS NS
Actual 4820	¢ - ¢

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-FIRE PROTECTION	(Minimum Criteria)	(Actual / Code Requirement)	
-STRUCTURE(HKS)	Code	NP / NS	
- AREA SEPARATION (HKS)	Code	NA / NA	
- EXITWAYS(HRS)	Code	NA / NA	
-HAZARD SEPARATION(HRS)	Cude	NP / NS	
-EXIT ACCESS CORKIDOR (HKS	() Code	NP / NS	
- PARTITION(N-BEARING)(HKS	i) Cude	NP / NS	
-ROOF (HKS)	Code	NP / NS	
-: NTERION FINISH(CLASS)	Code	NP / A, B -M	teaks of cyress; A, B, ur C
-SPRINKLER	Cude	l Classroom/Required t	frughut tacility
		יי די די יי יי	
-A.AKM SYSTEM PROVIDED: -10 FIRE STATION -INTERNAL	נייק ג	(Actual / Code Requirences) INTERNAL/INTERNAL MANUAL/MANUAL	
- AUDMATIC -SNOKE DRIECT -CODE	BUCA, UBC & NFPA	AUTOMATIC/AUTOMATIC SMOKE DETECT/SMOKE DETECT Chapter 4A-36 of the Florid Min. Stds. for Life Satety Child Care Facilities	da Administrative Cude 6 Fire Prevention in
-CONSTRUCTION TYPE PROVIDE	:0:	(Actual / Code Requirement) NP / NS -A) Ail types bermitted for
- 11 PE - 11 1 - 11 PE - 11 1	- Preduminant		single-story conters, except intants are not approved for inprotected woud frame structures.
JARATER FREE ENVIRONMENT:	-HQ indicates handicapped access not provided at their centers.	(Provided for Adults/Childr TOLLETS/ Not Provided RAMPS/RAMPS	
		(Actual) b (Actual) 6'-0" 36"	adultapped access provided

36"

F

FACILITIES COSTS			
S/CROSS SF: (Average Plaining) -BUILDING 539-41 \$19-41 -stre Loak NF NF	-Backup cust data requested was not provided.	(Actual) NP NP	
		\$8,700	-Lump Sum -Situ Lasery art S26 060 -it .
-SILE NE NE NE NA -TOTAL FACIL NA -TOTAL FACIL		\$206,000	-Lump Sum -Runner inthir of Are to
-INCLUDED IN ABOVE EULINING COST: -BUILDING -FIXED FURNITURE & EQUINTENT	-Gerber has no loan costs since they have in-house financing.	BUILDING	righter initiated due to unforescen site conditians.
-INCLUDED IN ABOVE SITE WURK COSTS: -PAVINC -LANDSCAPING -STORM SEWERS		ASPHALT GRADING LANDSCAPING DEMOLITION	
-INCLUDED IN ABOVE PLAT CROUND COSTS -EQUIPMENT	ï	ЕQUIPMENT (\$7,200) Labor (\$1,500)	
ALTERNATIVE CONSTRUCTION & ACQUISITI	ION TECHNIQUES		
TYPES OF CONTRACTS PROVIDED: -CONVENTIONAL DESIGN BID-BUILD		NECOTIATED BID	
ALTERNATIVE BUILDING CONSIRUCTION M -COMPONENT CONSTRUCTION -WOOD FRAME	ETHODS UTILIZED:	COMPONENT CONSTRUCTION WOOD FRAME	
PREFABRICATED BUILDUMU COMPONENTS PR - ROOF TRUSSES - CABINETRI	(OVIDED: -Up to contractor	ROOF TRUSSES CABINETRY PANELLED WAINSCOATING	
BUILDING ELEMENIS MAREAIALS PURCHASE - APPLIANCES - PLAYCROUND EQUIEMENI	D IN VOLUME:	APPLI ANCES Equipment	

FACTLITY FUNCTIONAL REQUIREMENTS		
PROGRAM SPACES		
PRIMARY ACTIVITY SPACES PROVIDED:	-Pruprietary child care urgan Activity Spaces as defined i	jzations have indicated that they provide all Primary n Army guidance (DC 1110-3-143).
SECUNDARY ACTIVITY SPACES PRUVIDED: (/ Included in NET Space) or (it excluded / Space Allowance) -EATING / Included -NAPPING / Included -CKIB / Included -CKIB / Included -CKIB / Included -CKIB / Included -CKIB / Included -CLASSROUM RECEP/CAKE / NP -CLASSROUM RECEP/CAKE / NP -CLASSROUM RECEP/CAKE / NP	-Where code does not require additional space for intants, additional space is provided for cribs.	<pre>(/ Actual Space Provided) Ealing / Included NAPPING / Included NAPPING / Included CRIB / Included DIAPER STATION / 2 @ 16 SF = 3? SF DILETS(CH) / 2 @ 40.5 SF + 1 @ 2? SF TOILETS(CH) / 2 @ 40.5 SF + 1 @ 2? SF CUBBIES / Included CLASSROOM RECEP/CARE / Included CLASSROOM ACCEP/CARE / Included ACUEP/CARE / Included</pre>
ADMINISTRATION SPACES FROVIDED: (/ Space Allowance) -WALTING-RECEPT / NP		(/ Actual Space Províded) WAITING-RECEPT / 83 SF + 60 SF - 143 SF
-VESTIBULE / NP -UFFICES / NP -STAFF LOUNCE / NP -CENTRAL STURACE / NP -ISOLATION AREA / NP -ADULY TOTLETS / NP	-Normally single unisex toilet for staff and parents.	OFFICES / 161 SF (Center Director's) STAFF LOUNCE / 77 SF CENTRAL STOR / 44 SF ISOLATION AREA / (77 SF) -Combined wistaft lounge ADULT TOILETS / 22 SF -Single unisex toilet

		٩N	4N / 3	/ NP	dN ,	
N /	чP	ЮЕ /	URACE	AREA	ETS /	
TBULE	ES /	LOUN	AL ST	TION	LOI	
-VEST	UFF1C	STAFF	CENTR	A.1021	ADULT	

SUPPORT SPACES PROVIDED: (/ Space Allowance)

-KITCHEN / NP -LAUNDRY / NP -MAINT/JANITOR / NP -MECH/ELECT / NP -PANTRY / NP

(/ Actual Space Provided) KITCHEN / 108 SF LAUNDRY / 30 SF

ELECT / 7.5 SF Pantry / 36 SF

OTHER NON ASSIGNABLE SPACE PROVIDED: (/ Space Allowance)

-CORRIDORS / NP

OUTDOOR SPACES

PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED: (/ Space Allowance)

-PLAY YARDS / NP -OUTDOOR STORAGE / NP SECONDARY OUTDOOR AREAS PROVIDED: (/ Space Allowance) -PORTE CHOCHERE / NP -PEDEST WALKS / NP -VEHIC CIKC / NP

-SERVICE AREA & DRIVE / NP

(/ Actual Space Provided)
-CORRIDORS / 64 SF

(/ Actual Space Provided) PORCHES/DECKS / 1475 -Hard surface play adjacent PLAY YARDS / 15,000 SF to facility OUTDOOR STORACE / 58 SF

(/ Actual Space Provided) PORTE CHOCHERE / 875 SF PEDEST WALKS / 1400 SF VEHIC CIRC / NA -Shared w/Hospital SERVICE AREA & DRIVE/NA -Shared w/Hospital

(1)Mr. Allen Hale, St. Vincents Hospital, Jacksonville, FL, 904/387/7300

(2) Florida Administrative Code, Chapter 10M-12, Child Day Care Standards

(3)Day Care Consultant, Children, Youth, and Families Program Office, Department of Social and Rehabilitation Services, 1317 Winewood Blvd., Tallahassee, FL 32301, 904/488-1850.





NOTE: Exterior dimensions exact. Critical major interior dimensions measured. Many minor dimensions/spaces sized/configured from sketches/pictures (± 5% var.).

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a. Floor plan.

Figure 3. Gerber Children's Centers, Inc.











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e. Typical classroom.

Figure 3. (Gerber Children's Centers, Inc., Cont'd).

h. Kitchen.





F.

g. Diaper changing.

Kinder-Care Learning Centers, Inc.

Kinder-Care has been in business since 1969 and is the largest of all organizations evaluated, having 844 centers operating in 40 states. It has an aggressive construction program, with 125 facilities planned for this year.

All Kinder-Care operations are centrally controlled from the corporate headquarters in Montgomery, AL. The corporate offices control center operation, direct expansion operations, and manage existing properties. Control is provided through a hierarchy of regional and district offices. Regional offices provide management to the districts, which in turn supervise daily center operations. Regional offices are staffed with managers, training officers, property management personnel, and administrative technicians. Finance and accounting operations are centralized in the corporate headquarters, with accounting routed from the centers through the districts and regions to the home office.

The headquarters also directs design and construction of all Kinder-Care centers. Two divisions manage the construction activity. The Real Estate Division is responsible for market analysis and property acquisition. The Construction Division executes facility designs, initiates construction contracts, and controls the central volume purchase of most of the required construction materials and supplies. A national network of construction management offices under the Construction Division's control supervises construction contracts.

Kinder-Care currently constructs two standard designs. The first is an open plan configuration of about 4900 sq ft and a capacity of 90 to 100 children. This plan is not predominant, since, for operational reasons, the emphasis has been placed on closed plans; however, it is used when the local population requires a smaller center. Lockers and cabinets subdivide open classroom activity spaces into groups. Infant rooms are totally enclosed. The second design plan is a closed classroom facility which varies in size and capacity based on local licensing requirements and market demand; it is typically 6000 to 11,000 sq ft and serves 120 to 150 children. Classrooms are located symmetrically on a single-access corridor.

Compared to other organizations surveyed, Kinder-Care's approach to design and construction is unique. The high volume of construction has led it to reduce construction costs by creating standard designs, prefabricating the basic facility structural shell, and using volume purchase. Its problem has been to develop a design standard that is sufficiently "fixed" to employ prefabrication techniques while accommodating the varying space and facility requirements of local licensing codes.

Kinder-Care currently uses a design that is adaptable to local codes, but minimizes design changes and related impacts on prefabrication (Figure 4). The basic plan is rectangular, with the main entrance and playground access on opposite ends (short dimension) and connected by a central corridor. Entrance is to a lobby area, with administrative areas on the right and an infant room on the left. Classrooms, usually four, are symmetrically arranged on the central corridor. Classrooms are of two sizes with the two larger rooms subdividable by movable partitions. The basic facility capacity is fixed within a limited range, thus fixing the space allotted to administration and support areas. As a result, the activity spaces need to be changed to meet local codes; the plan is simply adjusted in the longitudinal dimension to meet these variances. This fixes all lateral dimensions and major facility elements. In the longitudinal dimension, the numbers of windows, doors, etc., need not vary; only the wall dimensions, amounts of materials, and prefabrication details must be changed. The construction

material used most often is dimensional lumber; however, where noncombustible construction is required by code, light-gauge steel members of the same dimension are substituted.

A fixed design and the high construction volume allow Kinder-Care to further reduce costs by prefabricating the facility structural elements and volume-purchasing the major construction materials. Basic structural elements of the bearing walls and roof trusses are prefabricated off-site. Kinder-Care deals with prefabricators in four regions; however, 80 percent of the wood structural components fabrication occurs in the Montgomery, AL, area, and light-gauge shell fabrication is done by a contractor in Ohio. Many materials are centrally purchased in volume by the headquarters and shipped to the various sites. Items include major elements such as cabinetry and appliances, but finishes such as carpet, floor tile, paint, etc., are also volume-purchased (see Table 4 for complete list). Except for the structural shell, the rest of the facility construction is conventionally site-erected, which helps accommodate other code requirement variations among sites.

Materials used throughout Kinder-Care facilities are mostly conventional and appropriate for residential or light commercial construction. Kitchen appliances are typically those used in residential units, and windows are double-hung aluminum with enamel finish, etc.; however, one material application stands out. Kinder-Care uses exclusively Alliance Wall in its facilities. This wall finish, purchased in volume, consists of gypsum panel with a factory-applied, baked-enamel finish. It was selected for all wall surfaces in the kitchens, toilets, and classrooms because it is durable, easy to wash, and flexible. In the kitchen/toilet areas, it is an acceptable substitute for tile; it is also a durable finish for corridors and classroom areas. Artwork can be taped to its surfaces and removed with no damage; it can be written on with markers, etc., for classroom activity, and it can withstand normal classroom abuse. Additional gypsum board layers can be added easily to increase fire resistance. Alliance Wall has one disadvantage in that its hard surface is acoustically nonabsorbent/reflective, resulting in a poor acoustical environment if it is the dominant wall finish material.

Table 4 summarizes the data obtained for Kinder-Care Centers.

With the second

Table 4

Kinder-Care Learning Centers, Inc., Data Summary

SELECTED CHILD CARE CENTER

2210 Kelly Springs Blvd. Carrellton, Texas 75006

CENTRAL HERDOURNIERS

4505 Executive Park Drive Muntgumery, Alabama Jol04

-Additional personnel contacted (1) Mrs. Ann Muscari National Public Kelations Director 205/277-5090 Extention 217 30 July 1984

Ms. Bounde Temple Carrollton Center Director 214/242-0999 16 April 1984

CENTER DATA (Actual)

NATIONAL OKUANIZATION DAIA (Average and Preterred)

ORCANIZATI UNAL BACKGRUUND

-List attached (2) 844 125 40 -CENTERS IN OPERATION: -NEW CENTERS IN 1984: -STATES OF OPERATION:

DATE OF OPENING: January 1984

GENERAL FACILITY CHARACTERISTICS

STANDARD DESIC	CTION APPROACH: SNS	STANDARD DESIGNS
(12ES: Center(SF)	(Averake / Preterred)	(Actual)
-OPEN PLAN	4900 / 4900	
-CLOSED PLAN	6-11K / 8-10K	7,993
PLAY YARD(SF)	8-15K / 12-14K	10,310
-SITE(SF)	23-4JK JUK	31,387
'LAN ARRANCEMEN	NTS PROVIDED:	
	(Average / Freterred)	(Actual)
OPEN & CLOSED	/CLOSED	CLOSED
SINCLE STORY S	SINCLE STURY	SINCLE STORY
CHILDRENS TOIL	LETS	
INDIVIDUAL/11	NDIVIDUAL.	INDIVIDUAL

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JARE CIVER RATI	:50)				
- I NFANT	(Average / CODE /	freterred) 1:4-6		2:12 / 1:5, 2:12	
-TODDLER	CODE /	8-7:1		2:18 / 1:9-10	
-PRESCHOOL AGE	CODE /	1:10		2:30 / 1:15-17 2:36 / 1:18-20	
-SCHOOL AGE	CODE /	1:12		2:44 / 1:22-24 2:52 / 1:26	
MAXIMUM GROUP :	S12E:	(hurred)		(Actual / Code)	
- I NF AN'F	CODE	/ 18 Max		NP / NS NP / NS	
- J ODDL ER	CODE	/ 20 Max		NP / 35 NP / 35	
-PRESCHOOL ACE	CODE	/ 30 Max		NP / 35 NP / 35	
-SCHOOL ACE	CODE	/ 45 Max		NP / 35 NP / 35	
POPULATION MIX	[: Averave: 2	/ Preterred 2)		(Actual # / %)	
- I NF ANT - TODDLER	152	/ Varies / Varies		13 / 8.5% 12 / 7.8% 36 / 23.5%	-() - 18 mus
-PRESCHOOL ACE	5 422	/ Varies		20 / 13.12 33 / 21.62	
-SCHOOL AGE	282	/ Varies		24 / 15.72 15 / 9.82	
STAFF(#): -DIRECTOR -CARE CIVERS -CONK -JANITOR -SST DIRECTOR	(Average 1 - 10 1 - 10 Cuntrac K 1 /	/ Preferred) / 1 / 1-10 / 1 1 //Cuntract	-Based on center size.	(Actual) 1 17 0 CONTRACT 2 part-time	-0ווה מצוארמון ארגאהא מצ רמטע

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rement)	PE V)	PE 111)		Lucal Cude: (4)	5'-0'' / 6'-0''									-Based on UBC ratings	Curridors: 11	Classrooms: ili	נ השהטון)	-Alarm system tied into com-	puter. Automatic wimariual	override.				rement)						/ Children)	P				
(Actual / Code Requi	7,993 / 9,100 (TY	13,500 (TY	8 / 2	6 / 0	actuality		NP / NK	NA / NA	NA / NA	1 / 1	1 / 1	1 / NR	NP / NR	"A" / 11, 111	0 / NR		(Actual / Code Reyui		INTERNAL/INTERNAL	MANUAL/ NR	AUTOMATIC/AUTOMATIC	SMOKE DETECT/ NR	UBC 1979	(Actual / Code Requi				·		(Provided For Adults	TOILETS/ Not provide	KAMPS/KAMPS	(Actual)	5'-0" 34''	00
eria)			-2 remote and one per	each classroom in	5'-0"																				-Noncombustible construction utilizes metal studs & roof	truss assemblies. 1 HR	partition walls and 2 HR	ceiling assemblies as minimu							
(Minimum Crit	Cude		2	-	JTH(FT) 5'0"		Cude	Cude	٦	Cude	(S) 1	(S) 1	Code	A	Code		Cude						C, SBC & NBC	JED:						/ Children			Preterred)	5'-0" "4"	00
LIPE SAFETY:	-AREA LIMITS.SP)	-EXITS	-#s/AREA	-DIRECT FROM CLASSROOM	-EXIT ACCESS CORRIDOR WIL	-FIRE PROTECTION	-STRUCTURE(HRS)	- AREA SEPARATION(HKS)	- EXITUAYS (HRS)	-HAZARD SEPARATION(HRS)	-EXIT ACCESS CORRIDOR (HE	- PARTITION(N-BEARING)(H	-ROOF (HKS)	-INTERIOR FINISH(CLASS)	-SPRINKLER		-ALARM SYSTEM PROVIDED:	-TO FIRE STATION	- I NT ERNAL	-MANUAL	- AUTOMATIC	-SMOKE DETECT	-CODE: NFPA 101-220, UB(-CONSTRUCTION TYPE PROVIL	- TYPE-1]	-TYPE-]]] -Predominant	-TYPE-1V	- TY PE-V	BARRIER FREE ENVIRONMENT:	(Provided For Adults /	-TOLLETS JULIETS	NAMES - NAMES	IAVETAGE /	-CORR MIDTH(FT) 5'-0" /	A DE ANTINATIM MONT-

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FACILITIES COSTS		•	
\$/GROSS SF: (Average * riaming) -BUILDING -OPEN PLAN \$26.80 / \$28	-hacility Cost Experience (4)	(Actual) - ClOSED	
-CLOSED PLAN \$29 / \$29 -SITE WORK \$30-130K / NP	-Lumt Sun	148,050	-Lunny Sunn.
-PLAY CROUND \$15-20K / NP	-Lump Sum	10.000	-tum, sum
-SITE \$100-300K / NP	-Lump Sum	141,000	-Lunte Suit
-TOTAL FACIL \$113-400K / \$330K	-եսաբ Տստ	358,170	-Lunt Sum
-INCLUDED IN ABOVE BUILDING COST:			
- BUILDING 1 YED - ETHNITIBE - EAATH-REAT			
- CARPE L		FIAEU FURN & EQUIP.	
-INCLUDED IN ABOVE SLIF. WORK CUSIS:			
- FARTRUCKK		- PAVING	
- PARKING TOT/PAVING - LANDSCAPINC		- PARKING	
- TKASH AKFA		- GRADING - SURVEYING - LANDSCAPING	
-INCLUDED IN ABOVE PLAY CROUND COSTS			
- EQUIPMENT		-EQUIP	
- 501)		-WADING POOL	
- PI.AY P115		-BARK PITS (PLAY)	
- SWIYMING POOL - PLAY ARFA COVERS			
ALTERNATIVE CONSTRUCTION & ACQUISITIO	ON TECHNIQUES		
TYPES OF CONTRACTS PROVEDED: -CONVENTIONAL DESIGN-BLD-BUILD		COMVENTIONAL DECLON-	-
ALTERNATIVE MULLINING CONSTRUCTION ME.	THONS ALTERT (2744).	BID-BUILD	-butti Negutiated and Cumpetitive Bid Contracts
-COMPONENT CONSTRUCTION -WOOD FRAME		COMPONENT CONSTRUCTION WOOD FRAME	

66

-METAL FRAME

BUILDING ELEMENTS/MATERIALS PURCHASED IN VOLUME: PREFABRICATED BUILDING COMPONENTS PROVIDED: -CONSTRUCTION MATERIALS -ROOF TRUSSES/FRAMING -LICHT FIXTURES -EXTERIOR WALLS -INTERIOR WALLS -WALL FINISHES -ALARM SYSTEMS -ROOF TRUSSES -FLOOR TILE -APPLIANCES -STUD WALLS -HVAC UNITS -CABINETRY -CABINETRY SHOGN IN-- CARPET -PAINT - DOORS

-INTERIOR WALLS -EXTERIOR WALLS -ROOF TRUSSES/FRAMING -CABINETRY -APPLIANCES -CABINETRY -HVAC UNITS -HOOF TRUSSES -STUD WALLS -STUD WALLS -ALARM SYSTEMS -ALARM SYSTEMS -ALARM SYSTEMS -FLOOR TILE -CARPET -LIGHT FIXTURES -WINDOWS -WINDOWS -PAINT -PAINT

FACILITY FUNCTIONAL REQUIREMENTS

PROCRAM SPACES

PRIMARY ACTIVITY SPACES PROVIDED:

SECONDARY ACTIVITY SPACES PROVIDED: (/ Included in NET Space) or (if excluded / Space Allowance) -EATING / Included -NAPPING / Included -NAPPING / Included or 31.5 SF/Grib -CIA '1ncluded or 31.5 SF/Grib -CIAFER STATION / 30 SF ea -TOILETS(CH) / 41-61 SF ea -CUBBIES , 1 SF ea -CLASSROOM RECEP/CARE / 28 SF ea

-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DG 1110-3-143).

-Where code does not require (a higher net allovance for infants, additional space N is planued tor cribs -Cubbies wall mounted Classroum reception includes care-giver locker & 20 SF additional circulation at classroom entrance -Size ot Loilet room varies with age served, fixtures/ room and sex separation.

(/ Actual Space Provided) EATING / Included NAPPING / Included CKIB / Included -Stured during "avake" hours DIAPER STATION / 16 SF TOILETS(CH) / 12 @ 41 SF = 492 SF CUBBIES / 172 @ 1 SF = 172 SF

NUN PROCRAM SPACES

-Single tuilet statt and -Converted to District Manager's Office. -Also used as staff lounge. parents MAINT/JANITOR / (incl. in laundry) STAFF LOUNCE / 1 @ 88 SF CENTRAL STOR / 1 @ 38 SF ISOLATION AREA / 1 @ 56 SF ADULT TOILETS / 1 @ 46 SF (/ Actual Space Provided) WAITING-RECEPT / 1 @ 250 SF (/ Actual Space Provided) (/ Actual Space Provided) CORRIDORS / 605 SF Maintenance January and laundry spaces are combined. PANTRY/MECH / 56 SF HUAC closets provided: ELEC. CLOSET / 25 SF I for admin/intant area MECH. / 12 SF I for each classroom pair, STORAGE / 25 SF OFFICES / 1 @ 85 SF KITCHEN / 150 SF LAUNDRY / 56 SF I for each classroom pair, normally 4 in center = 45 SF however length varies by facility. Includes alcove. -Corridor width tixed @ 5', -Sprinkler cluset provided -Pantry includes space for -HVAC closets provided: l for admin/intant area parents, separate Male/ Female CA only -Maintenance/Janitor and -Single totlet staff/ it code required. water heater. PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED: -WAITING-RECEPT / 100 SF OTHER NON ASSIGNABLE SPACE PROVIDED: (/ Space Allouance) ADMINISTRATION SPACES PROVIDED: (/ Space Ailuwance) -KITCHEN / 200 SF -LAUNDRY / 30 SF -OFFICE / 90 SF, Director -CENTRAL STORAGE / 56 SF -ISOLATION AREA / 40 SF -ADULT TOILETS / 61.75 SF -SPRINKLER CLOSET / 30 SF SUPPORT SPACES PROVIDED: -HVAC CLOSET / 15 SF ea sF -STAFF LOUNCE / 76 SF -MAINT/JANITOR / 30 -MECH/ELECT / 30 SF -PANTRY / 100 SF -VESTIBULE / 35 SF -CORRIDORS / 590 SF OUTDOOR SPACES

rwimary OUTDOUN ACTIVITY SPACES PROVIDED: -PORCHES/DECKS / IK-2K SF -PLAY YARDS / IZK-13K SF -OUTDOOR STORAGE / 50 SF -SWIMMING POOL / 630 SF -HARD WHEEL TOY SURFACE / 15K-16K SF -COVERED HARD SURFACE / 1K SF -COVERED HARD SURFACE / 1K SF

(/ Actual Space Provided) PORCHES/DECKS / 190 SF PLAY YARDS / 10,310 SF OUTDOOR STORAGE / 46.5 SF POOL EQUIP. STOR / 20 SF SWIMMING POOL / 200 SF
Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)

-Parking spaces local code regulated -SERVICE AREA & DRIVE / As Required (/ Space Alluwance) SECONDARY OUTDOOR AREAS PROVIDED: -PEDEST WALKS / As keywired -VEHIC CIRC / As Required -PORTE CHOCHERE / 90 SF

-Space for 15 cars, driveways, dumpster and dropp off. (/ Actual Space Provided) PORTE CHOCHERE / 88 SF VEHIC CIRC / NP SERVICE AREA & DAIVE/NP PEDEST WALKS / NP (Incl. above)

(1) Additional Personnel Cuntacted:

Mr. Pat Delevan, Directur, Real Estate Division, KC-HQ, AL, 205/217-5090 Mr. Terry Mount, Design, KC-HQ, AL, 205/277-5090

Mrs. Barbara Albert, Regional Manager, TX, 214/243-4814

Mrs. Beverly Rockvan, District Manager, TX, 214/245-0152 Mrs. Linda Blakely, Center Director, Carrollton, TX (Retired) Mrs. Bonnie Temple, Center Director, Carrollton, TX, 214/242-0999

(2)States of Operation and Number of Centers/State: AL-41, AZ-21, AR-10, CA-44, CO-16, CT-18, DE-2, FL-33, GA-77, 1L-33, in-20, IA-7, KS-17, KY-12, LA-7, ME-1, MD-9, MA-35, MI-17, MN-12, MS-13, MO-45, NE-9, NV-4, NH-2, NJ-13, NM-6, NC-39, OH-40, OK-13, OR-10, PA-16, R1-2, SC-266, TN-277, TX-10, UT-1, VA-30, WA-5, WI-1.

(3)Director of Licensing, Texas Department of Human Resources, P.O. Box 2960, Austin, TX 78769, (512) 441-3355.

Gary Hevback, City Building Department, Carrollton, TX, (114) 323-5055. (4)Code Administrator: (5) Facility Cost Experience (see attached).

Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)

Kinder-Care Facility Cost Experience

	S11 c Cost	Building Cost	Site <u>Development</u>	<u>Playground</u>	Total Cost	Opened
6 Thousand Oaks, CA	285,000	245,184	136,617	1,371	614,112	7 May 84
47 Las Vegas, NV	000'11	180,209	71,894	1,371	336,474	7 Nuv 83
# 896 Ft. Collins, CO	000,08	132,621	48,568	1,371	273,560	· 21 May 84
#902 Portland, UN	000,01	105,112	29,286	1,371	212,429	4 Jun 84
#8 87 Tampa, Fl.	0 00 . 00	96,405	12,760	116,1	226,536	3 Apr 84
#861 Chapel Hill, Nu	115,000	145, 796	42,685	115,1	313,852	2 Apr 84
● 864 San Antonio, 1X Timber Path	000,01	85,165	36,200	1,371	198,736	12 Mar 84
#854 Duwners Grove, 11.	028,18	128,451	60,498	1,371	278,160	1 Jan 84
#879 Culumbus, OH	000'66	96,358	48,600	1,371	245, 329	9 Jul 84
#805 Burke Lake Center,	000,011 AV	201,827	101,894	118,1	421,092	5 Mar 84
Ø BJO Sterling Heights. 15 Mile Rd.	000'05 IN	138,761	65,673	1,371	261,805	23 Jan 84
#830 Spokan, WA Mullen Rd.	68,0 00	129,813	29,105	7,371	234,289	9 Jan 84
Average Cust?	111,480/312	140,580/462	61,982/202	7,871/2%	<u>306,420</u>	



KINDER-CARE LEARNING CENTERS, INC Carrollton, TX, Center No. 801

Licensed Capacity: 170 Children Gross Square Footage: 7993 sq ft or 47 sq ft/child

NOTE: Exterior dimensions exact. Critical major interior dimensions measured. Many minor dimensions/spaces/sized/ configured from sketches/pictures (± 5% var.).

a. Floor plan, closed.

Pigure 4. Kinder-Care Learning Centers, Inc.







PARKING PARKING

b. Site sketch.



c. Entry perspective.





La Petite Academies

La Petite, headquartered in Kansas City, MO, is the second largest child care organization surveyed, having 370 centers operating in 21 states. La Petite is a wholly owned subsidiary of CenCor Corporation, also of Kansas City. It has the second most aggressive expansion program, with 60 new centers planned in 1984. It is the only major chain not belonging to the National Association for Child Development and Education, a proprietary child care trade association based in Washington, D.C.

La Petite follows a conventional design-bid-build process. It has a standard design, evolved from its construction experience, that is modified to meet specific site and local code requirements. Construction contracts are either competitively bid or negotiated with a selected contractor. Prefabrication techniques are not used to any major extent in the facilities except for roof trusses, joists, and cabinetry. Cabinetry, appliances, Alliance Wall panels, carpeting, and vinyl floor finishes are purchased in volume.

La Petite's standard facility design (see Figure 5) is a rectangular open plan of one story. Toilet areas are located at one end of the rectangle and kitchen/pantry areas at the other, much like "islands" surrounded by child activity space. The open spaces are broken somewhat by play equipment and furnishings. The infant area is in one corner of the facility and is either enclosed on three sides by full-height partitions and on the fourth side by a low wall and gate, or enclosed on all four sides by full-height partitions. The director's office and reception area are in another corner of the facility and are an extension of the basic rectangular configuration.

Centers are normally flat-roofed with a false-shingled mansard to screen rooftop mechanical equipment and provide an overhang for window shading and protection from weather. To accent the entry, the extension from the basic rectangle which provides the reception area is a shed roof configuration. Exterior materials are asphalt shingles, stucco or brick wall facings, and aluminum windows and entryway. The basic structure is wood or light-gauge metal frame construction, depending on local code requirements.

Facility interiors typically have materials, finishes, and equipment of light commercial or residential quality. Walls in child activity areas are Alliance Wall (see previous section for description), which are durable and resist damage. Toilet room walls are tiled to waist height. Remaining walls are gypsum board over wood or light-gauge metal studs. Floor finishes are about 50 percent sheet vinyl and 50 percent carpeted; vinyl is placed in the toilet rooms and in shared activity/gross motor activity areas.

Table 5 displays the data obtained for La Petite.

Table 5

La Petite Academy Data Summary

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NOUAK	
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CENTRAL.	

City Center Square, 10th & Baltimore P.O. Box 26610 Kansas City, Missouri 64196

-Additional personnel contacted (1) Mr. Jack Bruzman, President blb/474-4750

Ms. Claire Long, Center Director 904/781-2882 13 July 1984

CENTER DATA (Actual)

32221

8225 Normandy Blvd. Jacksonville, Florida

SELECTED CHILD CARE CENTER

15 August 1984

NATIONAL OKCANIZATION DATA (Average and Preterred)

ORCANIZATIONAL BACKCROUND

384 60 20 (4) -CENTERS IN OPERATION: -NEW CENTERS IN 1984: -STATES OF UPERATION:

DATE OF OPENINC: August 1979

GENERAL FACILITY CHARACTERISTICS

(Actual / Licensed) 95 / 120 (Actual) 4,660 11,494 29,779 (Actual) OPEN SINGLE STANDARD CENTRAL -With open plan, directly accessible from classroom. SIZES: (Average / Preterred) -CENTER(SF) 5K-7.4K / None -PLAY YARD(SF) 7.5K-13.5K / None -SITE(SF) 2.5K - 33K / None (Average / Preterred) (Licensed / Design) 100-200 / 100-200 DESIGN/CONSTRUCTION APPROACH: -STANDARD DESIGNS PLAN ARRANCEMENTS INCUTOED: -SINGLE STORY/SINGLE STORY -CHILDRENS TOILETS CENTER CAPACITY: -MAXIMUM OCCUPANCY CENTRAL/ CENTRAL -OPEN/OPEN

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- CHILDREN

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		-Assistant Director -7 tull-time, 4 part-time -Teacher of 2-yr olds -Once per week (caregivers do daily cleaning)	remeri) -100 persons/22" unit -No corridors exist in this facility. -Smoke barrier & 20 min, doors -Smoke barrier & 20 min, doors -Means of egress; A, B, or C throughout rement)	da Administrative Code, r Life Safety and Fire Care Facilities
S Z	il # / 1) / 72 / 122 / 122 / 172 / 482	() () [C1	II / Code Requi / / NS / / / NS / / / NS / / / NS / / / NS / / / / / NS / / / / / / / / / / / / / / / / / / /	DETECT/NR er 4A-36, Flori um Standards fo ition in Child
50	(Actua 7 111 15 16 16	(Actua 1 1 11 (1) (1) CONTRA	Actua 4,666 5 5 6 6 6 8 8 8 8 8 8 8 8 8 8 8 9 8 9 8 9 8	SMOKE Chapte Minimu Preven
		-Usually mix of teachers and aids. -Care givers do light vork, contractor does the rest.		
بطد	cterred 2) ne ne ne ne	sterred) L3 Dntract	Leria) Code Code Code Code Code Code Code Code	OCA, UBC, uired
Cude / C	X: Nuerabe Z / Pri 102 / Nu 152 / Nu E 502 / Nu 252 / Nu	(Average / Pr. 1 / 1 0 / 0 4-20 / 1 / 1 Contract / C	(Minimum Cri SF) CORRIDOR WINTH CORRIDOR WINTH RS) TION RATION(HRS) CORRIDOR(HKS) CORRIDOR(HKS) LION ISH(CLASS) ISH(CLASS) ISH(CLASS) TION	T NFPA 101, E SBC, As Key
-SCHOOL ACE	POPULATION MI (A -INFANT -TODDLER -PRESCHOOL AG -SCHOOL AG	STAFF(#): -DIRECTOR -CLERICAL CARE GIVENS -COOK -JANITOR -VAN DRIVEN	LIFE SAFETY: -AREA LIMITS(-EXITS -Bs/AREA -Direct FROM -EXIT ACCESS -EXIT ACCESS -EXITWAYS(HRE -ARACTORE(H -AZARD SEPARA -HAZARD SEPARA -ALAN SYSTEM -INTERIOR FIN -INTERIOR FIN -INTERIOR FIN -INTERIOR FIN -INTERIOR FIN -INTERIOR FIN -AUTOMATIC	- SMOKE DEFEC - CODE

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-CONSTRUCTION TYPE PROVIDED:		(Actual / Code Requireme NP / NS	ent) -All types permitted for single-story centers, except intants are not approved tor unprotected wood frame structures.
BARRIER FREE ENVIRONMENT: (Provided For Adults / Children -INDOOR FURN & EQUIP/ Nut Provided -OUTDOOR PLAY EQUIP/ Nut Provided -TOILETS/TOILETS -RAMPS/RAMPS		(Provided For Adults / (TOILETS/ Not Provided	Children)
(Average / Preterred) -CORR WIDTH(FT) NA / NA - open pl -DOOR WIDTH(IN) 36" / 36"	ilan, nu corridors	(Actual) NA 36''	-open plan, no corridors -The center does have one regular "drop-in" who has cerebral palsey and uses a walker.
FACILITIES COSTS			
\$/CROSS SF: (Average / Planning) -Backup -BUILDING \$28-32 / \$32 -Burbing -BUILDING \$28-52 / \$12 -Lump Si -SITE WORK \$20K-75K / 75K -Lump Si -PLAY CROUND \$38K-41K / 41K -Lump Si -PLAY CROUND \$35K - 225K / 225K -Lump Si -SITE \$35K - 225K / 200K -Lump Si	data (5) Sum Sum Sum	(Actual) \$130,000 Included above \$3,000 \$30,000 \$163,000	-lump Sum (5 yrs ago - Figure would be 180,000 in 1934) -lump Sum -lump Sum -lumi Sum
-INCLUDED IN ABOVE BUILDING COST: -BUILDING -FIXED FURNITURE & EQUIPMENT		BUILDING Fixed furniture & Equip	HENT
-LUAN CUSIS -INCLUDED IN ABOVE SITE WORK COSIS: -TRAVEL AND LANDSCAPING -CRADING -PAVING -CURBS AND GUTTERS -UTILITIES AND FEES		WALKWAYS PAVEMENT LANDSCAPING	
-INCLUDED IN ABOVE PLAY CROUND COSTS: -EQUIPMENT		EQUIPMENT FENCINC	
ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQ	JUES		
TYPES OF CONTRACTS PROVIDED: -CONVENTIONAL COMPETITIVE BIDS -CONVENTIONAL NECOTIATED BIDS -Predom	ninarit	CONVENTIONAL NEGOTIATED	D BID WITH SELECTED CONTRACTOR

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Table 5 (La Petite Academy, Cont'd)

ALTERNATIVE BUILDING CONSTRUCTION MET (Note Identified)	HODS UTILIZED:	(None Identitied)	
FREFABRICATED BUILDING COMPONENTS PRO ROOF JOISIS/TRUSSES CABINETS	V 1 DED:	WOOD TRUSSES	
BUILDING FLEMENTS/MATERTALS PUPCHASED WALL PANELS APPLIANCES CABINETS CARPET VINIL FLOOK	IN VOLUME: -Alliance Wall	EQUIPMENT CABINETS SIGNS	
FACILITY FUNCTIONAL REQUIREMENTS			
PROCRAM SPACES			
PRIMARY ACTIVITY SPACES PROVIDED:	-Proprietary child care (Activity Spaces as defi	organizations have indicated t ned in Army guidance (DC 1110-	hat they provide all Primary 3-143).
SECONDARY ACTIVITY SPACES PROVIDED: (/ included in NET Space) or (it excluded / Space Allowance) -EALING / included -NAPPING / included		(/ Actual Space Provided) EATINC / Included NAPPINC / Included	
-CKIB / Included -DIAPEK STATION / 13.54 SF ea -TOILETS(CH) / .36 SF/CH	-Where additional space for crib is not required by code,	CRIP / 0 SF DIAPER STATION / 17 SF TOILETS(CH) / 2 @ 41 SF	 No crib space was provided as no children under 1 yr old. 2 rooms w/3 toilets each
-CUBBLES / Included -CLASSROOM RECEP/CARE / Included	agailtonal space is provided exclusive of net.		
NON PROCKAM SPACES			
ADMINISTRATION SPACES PROVIDED: (/ Space Allowance) -WALTING-RECEPT / 137	Additional central storage to be provided	(/ Actual Space Provided) WAITING-RECEPT / 137 SF	
-OFFICES / 5/ SF -CENTRAL STORACE / 45 SF -ISOLATION AREA / 60 SF -ADULT TOLLETS / 27 SF	in cabinetry -New Plan -Staff male/temale	OFFICES / 57 SF CENTRAL STOR / 45 SF ISOLATION AREA / 0 ADULT TOILETS / 27 SF	-Use center directors office -Staff/unisex
SUPPORT SPACES PROVIDED: (/ Spare Allowance) -KIICHEN / 150 SF -MAINT/JAMITOR / 23 SF -PANTRY / 40 SF	-Incl hookups for washer/dryer -Mech/elect in maint/ janitor	(/ Actual Space Provided) KITCHEN / 208 SF MAINT/JANITOR / 23 SF	-Includes pantry space -Includes mech/elect

OTHER NON ASSIGNABLE SPACE PROVIDED: (/ Space Allowance)

OUTDOOR SPACES

PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED: (/ Space Allouance) -PORCHES/DECKS / SJO SF

-PLAY YARDS / 11,500 SF

-Normally incl. parking tor 14 cars. (/ Space Allowance) SECONDARY OUTDOOR AREAS PROVIDED: -SERVICE AREA & DRIVE / VARIES -PEDEST WALKS / Varies -VEHIC CIRC / Varies

(/ Actual Space Provided) -CLASSROOM CLOSETS / 33 SF

(/ Actual Space Provided)
PORCHES/DECKS / 1 @ 324 SF
+1 @ 400 SF = 724 SF
PLAY YARDS / 11,494 SF

concrete decks -Unprotected

(/ Actual Space Provided)
PEDEST WALKS / 1302 SF --Cunc. walk along perimeter.
VEHIC CIRC / 9,086 SF --Includes 11 parking spaces.
SERVICE AREA & DRIVE / Included in vehic. circ.

Mr. Thumas Loehr, HQ, Uesign Div. (MO), B16/474-4750
 Mr. Robert Rodrigas, HQ, VP Operations (MO), B16/474-4750
 Ms. Tammy Carver, Center Director (Retired), FL
 Ms. Claire Long, Center Director, FL, 904/781-2882

(2) Florida Administrative Cude, Chapter 10M-12, Child Day Care Standards

(3) Day Care Consultant, Children, Youth, and Families Program Office, Department of Social and Rehabilitation Services, 1317 Winewood Blvd., Tallahassee, FL 32301, (904) 488-1850.

(4)State of Operation and Numbers of Centers/State: AL-7, AR-5, AZ-4, CO-20, FL-56, GA-24, IL-8, IN-11, IA-4, KS-15, MO-21, MS-2, NE-5, NM-2, NC-15, OK-23, SC-22, TN-31, TX-98, and VA-11.

(5) Backup cost data: Average building and sile costs by state.

	Building (\$)	Site (\$)	<u>Total (\$)</u>		Building (\$)	Site (\$)	Tut al (5)
arizona California Culoradu Flurida Georgia	180,000 250,000 160,000 170,000 160,000	35,000 75,000 70,000 40,000	215,000 325,000 200,000 210,000	Missouri North Carolina South Carolina Texas Washington, DC	160,000 150,000 150,000 160,000 180,000	30,000 25,000 25,000 35,000 40,000	190,000 175,000 175,000 195,000 220,000
Indiana	165,000	30,000	000, 261	Average Cosι/ χ ∩f Total	171,364/812	39,545/192	208,182





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c. Entry perspective.



Figure 5. (La Petite Academy, Cont'd).

d. Typical classroom area.



b. Site sketch.

6 OVERVIEW OF DATA OBTAINED FROM PROPRIETARY CHILD CARE CENTERS

Summary of Proprietary Data

The proprietary child care organizations' programs and facilities investigated for this study, although centrally controlled and operated, usually varied among locations to meet local market requirements. However, there are some identifiable trends and ranges in what they offer. The following discussion corresponds to the data display format of Tables 1 through 5.

Organizational Background

Proprietary child care organizations ranged in size and scope of operation from as few as 57 centers in six states to as many as 844 centers in 40 states. Kinder-Care was by far the largest--more than twice the size of its nearest competitor--and had the largest construction program. Due to the small sample evaluated, the typical size of national child care organizations could not be established; however, since only the largest ones were addressed in this study, and the smallest had only 57 centers, most organizations could be assumed to have fewer than 100 centers.

General Facilities Characteristics

All organizations indicated that their facility construction followed standard designs; however, for the smaller organizations, the standards were limited mostly to identifying equipment and finishes, and adjusting a standard layout to meet local code and licensing requirements. Their "standard designs" had evolved over time as a result of their construction experience; however, they were preparing new design/construction documentation packages for each new facility. Kinder-Care, due primarily to the magnitude of its construction program, had the most advanced standard design package (see the discussion in the Alternative Construction and Acquisition Methods section below and in the proprietary data above).

Centers ranged in size from 4800 to 7400 gross sq ft, with a preferred average size of 6400 gross sq ft. All plans were single-story, and except for La Petite, all plans were "closed." Centers' design occupancies ranged from 80 to 200 with a preferred average occupancy of 130 children. This compares roughly to a mid-sized Army center. This average facility size allowed the proprietary facilities to stay well within the most restrictive fire area limitations of the building codes for all construction types, and helped to keep costs down. Size was assumed to be directly related to market demands and operational economies. For the user's convenience and to be more competitive, the preference appeared to be toward more centers distributed throughout the market area rather than large, central centers.

The biggest difference between Army and proprietary facilities is in the area of gross square footage per child. The net square footage per child for proprietary facilities is regulated by licensing code and is roughly equivalent to Army requirements. This net includes the primary and some secondary activity spaces. The gross includes all remaining space, or the administration, support, and some of the secondary activity spaces. Proprietary organizations tend to provide only the very minimum administrative and support space necessary, which is usually far below Army provisions and keeps their costs down. In addition, proprietary centers are often small or centrally planned minimizing circulation requirements. The ratio of net to gross square footage per child can indicate the efficiency of a facility design and/or the program/activity spaces versus all support requirements. For the proprietary facilities, these ratios ranged from 1:1.14 to 1:2.14, with the average ratio for centers visited being 1:1.55 versus a ratio of 1:2.14 for the Army, or a difference of about 38 percent. This is only an indication of where the differences between the Army and proprietary facilities occur, and does not mean that specified Army requirements are invalid.

Operational Requirements

The proprietary centers' program offerings were directly related to the market in a given location. Facilities were located strategically, based on market investigations, and were designed to provide a certain range of program offerings as determined by the home office. However, many of the centers visited were not operating at capacity nor were they providing the full range of programs identified by their headquarters as being available, since the local market would not support them. Most of the centers visited were new, and the market not yet fully developed. Almost without exception, operational requirements were controlled directly by licensing requirements. Local markets determined the programs, and licensing authorities specified the minimums to conduct those programs. Few centers were staffed in excess of minimums specified by the licensing authorities; however, where exceptions were made, they were to provide staffing that exceeded the codes for infants.

Facilities Requirements (Life Safety)

All facilities were individually designed to meet the local building code requirements, especially in areas of life safety; however, the requirements of those codes varied widely among states or municipalities. For single-story structures of the gross square footages used in the child care centers, all codes for the centers visited allowed all construction types. Therefore, most facilities were wood-framed. The headquarters indicated there were instances where they had to construct noncombustible facilities and where local code authorities modified even the licensing requirements to require it. In these cases they used light-gauge metal framing systems that were dimensionally identical to wood framing.

The most stringent fire separation indicated was 1 hour. The requirements for fire separation varied; however, most states/municipalities required a 1-hour fire separation only for hazard areas such as mechanical and kitchen spaces. Requirements for sprinklers also varied, but where required, were normally limited to hazard areas. Alarm systems were normally required to be internal only, having automatic heat and products of combustion detection. Some areas did require that alarms be linked to the local fire station.

Most codes allow variances in restrictions if occupant safety can be assured by other means. Some key examples are: (1) most codes allow area increases if facilities are fully sprinkled; (2) most codes allow increases in exit travel distance where facilities are fully or partially sprinkled; and (3) where facilities are designed with at least one classroom exit direct to the exterior, most codes allow both changes in egress requirements and reductions in exit access corridor resistance ratings (if required).

Facilities' Costs

Costs for the facilities visited ranged from \$27.17/gross sq ft to \$51.53/gross sq ft for the total facility, including the building, site work, and playground, or an average

cost of \$30.59/gross sq ft. These figures are for facilities erected in the past year, or in the case of the Florida La Petite facility, have been escalated to current levels; to facilitate comparison with Army requirements and experience, these amounts are exclusive of site costs. Comparison of the national organization headquarters experience yielded similar results, with a range of \$23.00/gross sq ft to \$70.00/gross sq ft for their planning costs, or an average of \$46.62/gross sq ft. Planning costs tend to be higher, since most organizations preferred to give conservative estimates.

Alternative Construction and Acquisition Methods

Except for Kinder-Care, all organizations surveyed follow conventional design and construction practices. Designers outside the organization, usually local A/Es, modify standard facility designs to meet the local code requirements and construction documentation packages. Construction packages are either bid, or in many cases, negotiated with contractors selected by the proprietary organization. With minor exceptions, construction is all conventional, site-built. Prefabricated components, such as roof trusses/joists and cabinetry, are used to varying extents, which is common construction practice. In most cases, either the organization itself or the hired A/E monitors construction, but sometimes construction management firms are used. Only the larger firms volume-purchase building materials, appliances, and equipment.

Kinder-Care's construction practices are also primarily conventional; however, it centrally prefabricates the basic structural system (the interior and exterior stud wall frames and all roof trusses) and ships them directly to the construction site. To accomplish such a high level of prefabrication, Kinder-Care has fine-tuned its standard plan to minimize changes required by variances in licensing and building code requirements (for a more complete description of how its plan is adaptable, see pp 60-61, It deals with a limited number of regionally located fabricators; however, 80 71). percent of its wood frame prefabrication is with firms local to Montgomery, AL. A fabricator in Ohio supplies its metal framed or noncombustible systems. All other construction work is conventionally site-built. Kinder-Care also buys more materials in volume than any other organization, not only purchasing cabinetry, and appliances, but also basic building materials, such as interior wall finishes, paint, floor and ceiling tile, carpet, heating and air-conditioning equipment, plumbing fixtures, and others. These materials are centrally ordered, warehoused, and directed to the appropriate site locations as required.

Facility Functional Requirements

In the initial limited survey, all organizations indicated that they provided the same primary activity spaces as the Army. Both primary and some secondary activity spaces are provided for in the facility net square footage, which for proprietary facilities, is regulated by licensing code and roughly equivalent to Army criteria. The main differences between Army and proprietary facilities were in the quantity of space provided for secondary activity spaces and nonprogram spaces. Tables 8 and 9 outline these differences, with the major ones discussed in the following sections.

<u>Crib</u>. Crib space was most often included in the facility's net space, because many of the codes required a higher net space allowance for infants. Where codes did not require additional space, some organizations added enough space to accommodate both the crib and circulation space around it. <u>Diaper Station</u>. Quoted allowances/space provisions for the diaper station were for the size of the counter space only. No extra circulation space was provided adjacent to or around the diaper station.

<u>Classroom Reception and Care.</u> Most organizations provided for the function of classroom reception and care, but did not allow additional space. Storage for caregivers' personal items was either in existing classroom storage or some other central location. The most recent facility standard design of Kinder-Care was the only one to provide additional space.

Offices. Office space was generally far less than that required by the Army. There was typically only one office for the director, averaging only 100 sq ft versus 350 sq ft for all office needs of a similar-sized Army facility. In one case, the director's office at a Children's World facility was 230 sq ft, but it also served as the isolation and staff lounge area.

<u>Staff Lounge</u>. Staff lounges were provided in less than half of the centers visited and were far smaller than the Army's, averaging only 83 sq ft and serving 20 to 25 staff members. Army criteria for similar-sized centers and staff would be 1200 to 1500 sq ft at 60 sq ft/staff member or 14 to 18 times that of the proprietary facilities.

<u>Kitchen</u>. Kitchen allowances ranged from 1.04 to 1.7 sq ft/child, or an average of 1.42 sq ft/child versus the Army allowance of 2.25 sq ft/child. For the typical center with a 130-child capacity, proprietary allowances would require a kitchen ranging from 135 to 221 sq ft versus Army criteria of 293 sq ft for an increase range of 33 to 117 percent over proprietary facilities.

<u>Maintenance/Janitor</u>. When provided as a separate space, proprietary allowances for maintenance and janitorial functions were similar to those of the Army; however, most facilities provided them as part of other spaces, typically a central storage, mechanical, or laundry space.

<u>Mechanical/Electric</u>. Mechanical and electric rooms and closets were usually only 17 percent of that allowed for Army facilities. Most heating and air-conditioning systems were small single-zone through the wall or roof-mounted systems to save on mechanical space. Interior mechanicals were limited to air-handling units, water heaters, and electrical closets. In some cases, where codes required sprinkler systems, sprinkler closets were provided but none were observed at the centers visited.

Comparison of Army and Proprietary Facilities

The following discussion focuses on the major differences noted when Army and proprietary methods were compared.

Tables 6 through 9 summarize key state licensing requirements, building construction code requirements, and facilities space allowances to compare them with Army requirements.

Construction Materials

The field investigations showed many differences between the Army and proprietary child care facilities, both in basic construction methods and in the materials and equipment used. These differences were more pronounced in some centers than in

others; however, most proprietary centers used much less costly materials and methods than Army centers. The proprietary centers were typically built with wood- or lightgauge steel structural systems, and used residential or light commercial quality building materials, equipment, mechanical systems, cabinetry, and finishes. It is assumed that selection of lesser-quality materials is directly related to the organizations' investment strategies. They are most likely depreciating their facilities over a 15-year investment period, because they know that the demographics in their facilities' locations will change, thus reducing demand for their services; as a result, they are not interested in a longer facility life. On the other hand, Army centers are normally built with more durable materials and equipment that emphasize a life-cycle cost based on permanent construction or a 30-year anticipated life.

Life Safety Code

Comparison of life-safety code requirements between the Army and proprietary facilities identified major differences. For proprietary child care facilities of the sizes and configurations investigated in this study, there were no code restrictions on the type of construction allowed. Life safety requirements were specified for each construction type, with proprietary organizations selecting the most economical construction method, then designing to meet the applicable local code requirements. Although these codes varied among locations, most were much less restrictive than the National Fire Protection Association (NFPA) requirements on which the Army's requirements are based.

The Army requires a specific construction type, Noncombustible (UBC Type II-N), and is also more restrictive in other areas as well than requirements of the NFPA. The Army has taken this conservative position on fire safety to make its facility requirements "equivalent" to NFPA requirements, since they do not, for operational purposes, meet the care-giver ratios on which the NFPA requirements are based. However, most of the proprietary facilities investigated also do not meet these ratios. This is usually because they are constructing to codes that are not based on NFPA criteria in which no care-giver ratios are specified. Instead they follow the ratios specified by state licensing codes. Where they have to meet NFPA requirements or codes based on NFPA, they have been granted construction and occupancy permits by local code and licensing agencies by other means of establishing "equivalency."

Table 6

Code Criteria Comparisons: State Licensing and Life Safety Code Requirements Vs. Army Requirements (For States of Selected Centers)

Criteria: We ket vesk(a) Jacoba Area (37) Jacoba Area (37) Jac	Agency:	Aray	California	Florida	Illinois	Техав
Michon Accol(3) 35 20 35,55 (1) 30 Deteor Accol(3) 100 73 55 75	Criteria:					
Actual Composition Actual	Min Net Area/CH Indoor Area (SF) Outdoor Area (SF)	35 100	35 25	20 45	35,55 (1) 75	30 80
Tolltes/Lavatories:Nge BatioBatioTolltes/Lavatories:Nge Ba-by1:1-141:1-151:1-151:1-151:1-151:1(Ratio Tolles/ 13-5y1:18-5y1:131:1-151:11-151:1-151:11:1Lava:Ohild)3-5y1:151:101:101:101:101:11-151:11-151:11-151:11-151:17Lava:Ohild)5-12y1:181:101:101:101:101:11-151:11-151:11-151:11-151:11-151:11-151:17Lava:Ohild)5-12y1:181:101:101:101:101:11-151:11-151:11-151:11-151:11-151:11-151:17Laratori5-12y1:181:101:101:101:101:111:11-151:11-151:11-151:11-151:11-151:17Laratorical5-12y1:18NNNNNNN1:11-151:17Life Safety:1:101:11NNNNNN1:111:17Life Safety:1:111:111:111:111:111:111:111:111:11Life Safety:1:121:121:121:121:121:121:121:12Life Safety:1:121:121:121:121:121:121:121:12Life Safety:1:121:121:121:121:121:121:121:12 <tr< td=""><td>Care Giver Ratio & Maximum Group Sizes: (Age Groups by Agency Definition)</td><td>Age Ratio Growi 6w-18m 1:5 10 18m-3y 1:8 16 3-5y 1:10 20 5-9y 1:18 36 9-12y 1:18 36 Mix (2)</td><td>P Age Ratio Group 0-2y 1:4 NS 2-12y 1:12(4) NS 3-4y 1:5(3) 15(3) 4-6y 1:10(3) 25(3) 6-14y 1:10(3) 25(3)</td><td>Age Ratio Group 17 1:6(5) NS 17 1:8(5) NS 27 1:12(5) NS 37 1:12(5) NS 47 1:20(5) NS 57 1:25(5) NS</td><td>Age Ratio Group 6w-15m 1:4(6) 12 6w-27 1:4 14 15m-27 1:4 15 15m-27 1:5 15 2 4y 1:8 16 2 4y 1:10 20 3 -5y 1:10 20 3 -5y 1:10 20 4 6y 1:10 20 6 on 1:20 30</td><td>Age Ratio Group 0-11a 1:5,2:12 35 12-17a 1:6,2:14 35 18m-27 1:9-10 35 27 1:11-13 35 37 1:15-17 35 47 1:18-20 35 57 0n 1:26 35 67 0n 1:26</td></tr<>	Care Giver Ratio & Maximum Group Sizes: (Age Groups by Agency Definition)	Age Ratio Growi 6w-18m 1:5 10 18m-3y 1:8 16 3-5y 1:10 20 5-9y 1:18 36 9-12y 1:18 36 Mix (2)	P Age Ratio Group 0-2y 1:4 NS 2-12y 1:12(4) NS 3-4y 1:5(3) 15(3) 4-6y 1:10(3) 25(3) 6-14y 1:10(3) 25(3)	Age Ratio Group 17 1:6(5) NS 17 1:8(5) NS 27 1:12(5) NS 37 1:12(5) NS 47 1:20(5) NS 57 1:25(5) NS	Age Ratio Group 6w-15m 1:4(6) 12 6w-27 1:4 14 15m-27 1:4 15 15m-27 1:5 15 2 4y 1:8 16 2 4y 1:10 20 3 -5y 1:10 20 3 -5y 1:10 20 4 6y 1:10 20 6 on 1:20 30	Age Ratio Group 0-11a 1:5,2:12 35 12-17a 1:6,2:14 35 18m-27 1:9-10 35 27 1:11-13 35 37 1:15-17 35 47 1:18-20 35 57 0n 1:26 35 67 0n 1:26
Barrier Free Environ:Accessible to Accessible toNSChildren (1)Life Safety:Children and AultsNSChildren (1)Life Safety:Children (2)State Fire Code)(9)(State Fire Code)(9)Life Safety:Single storySingle storySingle storyFloor Area Limits (Sr)13,500(8) (UBC II-N)-Life safety issues(State Fire Code)(9)(State Fire Code)(9)Floor Area Limits (Sr)Single storySingle storySingle storySingle storyFloor Area Limits (Sr)Single storySingle storySingle storySingle storyFloor Area Limits (Sr)Single storySingle storySingle storySingle storyFloor Area2 requiredRate LicensingNot storySingle storySingle storyFire ResiI requiredrequirementsLocal2 requiredA fit minFire Resistive RegtaI requirementI sequirementA fit min-kendirementFire Resistive Regta(UBC II-N)Not specifiedA fit min-kendirementFire Resistive RegtaNo requirementNot vypeNot vype-kequirementFire Resistive RegtaNo requirementNot vypeNot vype-kequirementFire Resistive RegtaNo requirementNo requirement-kequirement-kequirementFire Resistive RegtaNo requirementNo requirement-kequirement-kequirementFire Resistive RegtaNo requirementNo requirement-kequirement-kequirementRoof<	Foilets/Lavatories: (Ratio Toilets/ Lavs:Child)	Age Ratio 6w-18m 1 Adul 18m-3y 1:8 3-5y 1:15 5-12y 1:8	t :1-14 first 14 :10 thereafter	1:1-15 first 15 1:30 thereafter	1:1-10 first 10 1:11-15 next 15 1:25 thereafter	1:17
Life Safety:Life Safety issues(State Fire Code)(9)(State Fire Code)(9)Floor Area Limita (SF)13,500(8) (UBC II-M)-Life safety issues(State Fire Code)(9)(State Fire Code)(9)Height LimitationSingle storysingle storySingle storySingle storySingle storyHeight LimitationSingle storystorystorySingle storySingle storySingle storyHeight LimitationSingle storystorystorySingle storySingle storySingle storyFiltSingle storystorystorystorySingle storySingle storySingle storyFaltSingle storystorystorystorystorySingle storySingle storyFaltSingle storystorystorystorystorySingle storySingle storyFaltSingle storySingle storySingle storySingle storySingle storySingle storyFaltSingle storySingle storySingle storySingle storySingle storySingle storyFaltNot storeI requirementsLocalZ requirementI storySingle storySingle storyFileResistive RegtsNot storeI storySingle storySingle storySingle storySingle storyFileNot storeI storeStorySingle storyZ requirementI storeI storeFileResistive RegtsNot storeI storeI storeI storeI storeFile </td <td>Bartier Free Environ:</td> <td>Accessible to Children and Adults</td> <td>SN</td> <td>SN</td> <td>Children (7)</td> <td>SN</td>	Bartier Free Environ:	Accessible to Children and Adults	SN	SN	Children (7)	SN
Height LimitationSingle storynot specified in atate licenaingNo limit if Type ISingle storySingle storySingle storyExits2 requiredatate licenaing2 required2 required2 requiredExits1 requiredrequirements. local2 required2 required2 requiredFarlon6 frain6 frain2 requirements. local2 required2 requiredDirect from Class1 requiredrequirements. local2 exits required4 frainFarlon6 frain150 ft (+50 lf sprinkled)150 ft1 seuse noiExit Access150 ft (+50 lf sprinkled)150 ft1 seuse noiFaret100 ft (+50 lf sprinkled)150 ft1 seuse noiFaret100 requirement150 ft (+50 lf sprinkled)1 seuse1 n licenFaretNo requirementvary w/constructionvary w/construction1 ccal licenFaretNo requirementspecified.specified.1 n licenFaretNo requirementspecified.specified.1 n licenFoorsNo requirementspecified.specified.1 n licenFloorsNo requirementspecified.specified.1 n licenFloorsNo requirementspecified.specified.n codesFloorsNo requirementspecified.specified.n codesFloorsNo requirementspecified.specified.n codesFloorsNo requirementspecified.specified.n codes	Life Safety: Floor Area Limits (SF)	13,500(8) (UBC II-M)	-Life safety issues	(State fire Code)(9)	(State Fire Code)(9)	
ExitsState licenaingstate licenaingstate licenaing(3-struct#s/Floor Area2 requiredrequirements. Local2 required2 required2 required#s/Floor Area1 requiredrequirements. Local2 required2 required2 requiredMit Arevel Distance150 ft (+50 lf sprinkled)150 ft (+50 lf sprinkled)4 ft min-RemainingExit Travel Distance150 ft (+50 lf sprinkled)150 ft (+50 lf sprinkled)150 ft10 cmlFire Resistive RequirementNor requirementvary w/constructionvary w/constructionLocal lStructureNo requirementtype. No typeNo type.No typeCodeaInt. Walls-NonbearingNo requirementspecified.specified.codeaStructureNo requirementspecified.specified.codeaInt. Walls-NonbearingNo requirementspecified.specified.codeaStructureNo requirementspecified.specified.specified.RoofNo requirementspecified.specified.specified.	Height Limitation	Single story	not specified in	No limit if Type I	Single story	Single story, or approval
Direct from ClassI requiredrequirements apply.2 exits requiredNSExit Access Corr. Width6 ft ain6 ft ain-RemainingExit Travel Distance150 ft (+50 if sprinkled)150 ft150 ft190 es noiExit Travel Distance150 ft (+50 if sprinkled)150 ft10 es noi10 en orFire Resistive RequirementNot specified0 ft ain10 en or10 en orFire Resistive RequirementNo requirement-Requirements10 ft10 en orStructureNo requirementNo requirementLype. No type.No type.10 orRoofNo requirementspecified.specified.10 or10 orRoofNo requirementNo requirementspecified.10 or10 orFloorsNo requirementNo requirementspecified.10 or10 or	Exits #s/Floor Area	2 required	state licensing requirements. Local	2 required	2 required	(3-minute egress) 2 required
Exit Access Corr. Width6 ft ainNot specified4 ft ain-RemainingExit Travel Distance150 ft (+50 if sprinkled)150 ft150 ft150 ft150 ftExit Travel Distance150 ft (+50 if sprinkled)150 ft150 ft150 ft150 ftFire Resistive RequiNo requirement-Requirements100 is in the internation10 cmStructureNo requirementNo requirementIn the internationLocal is in the internationStructureNo requirementNo requirementspecified.0 codesRoofNo requirementspecified.specified.10 codesFloorsNo requirementNo requirementspecified.10 codesFloorsNo requirementspecified.10 codes10 codes	Direct from Class	l required	requirements apply.	2 exits required	NS	
Exact Travel Distance150 ft (+50 if sprinkled)150 ft150 ft190 stFire Resistive Reqts(UBC II-N)No ftNo ftNo ftNo ftNo ftNo ftStructureNo requirementNo requirementNo ftNo ftNoNo ftNoNo ftNoNo ftNo <td>Exit Access Corr. Width</td> <td>6 ft ain</td> <td></td> <td>Not specified</td> <td>4 ft min</td> <td>-Remaining life safety_</td>	Exit Access Corr. Width	6 ft ain		Not specified	4 ft min	-Remaining life safety_
The measure weges (upbuiltent) - requirements - requirement - require	Exit Travel Distance	150 ft (+50 if sprinkle	()	150 ft (+50 if sprinkled)	150 ft	istues not specified
Ext. Walls-Nonbearing No requirement type. No type type. No type codes Int. Walls-Nonbearing No requirement specified. specified. Roof No requirement No requirement floors No requirement for security no requirement for security of the specified.	Structure	No requirement		-Aequirements /	-kequirements vary w/construction	Local building
Int. Walis-Nonbearing No requirement specified. specified. specified. Roof No requirement No requirement Tloors No requirement Ext. Doors/Windows No requirement	Ext. Walls-Nonbearing	No requirement		type. No type	type. No type	codes apply
Roof No requirement Floors No requirement Ext. Doors/Windows No requirement	Int. Walls-Nonbearing	No requirement		specified.	specified.	
Floors No requirement Safet. Doors/Windows No requirement	Roof	No requirement				
Ext. Doors/Windows No requirement	Floors	No requirement				
	Ext. Doors/Windows	No requirement				

Table 6 (Cont'd)

Agency:	Aray	California	Florida	Illinots	Texas
Etre Censrarion (hrs)					
Area Separation			by local code	Not sourtflad	
Means of Egress] hr #10.	incorrection	
Hazard Separation			Not specified	45 minutes	
Exit Access Corr	Not req'd w/Dir Egress		Not specified	45 minutes	
Other	Classroom, 1 hr				
Interior Finish				(noncombinatible)	and any set of the set
Wall	Class A or B		Class A or B	Class NS	
Floor	Class I or II		by local code	CLAR NS	
Sprinkler	Required in hazard areas		Required in hazard areas	Optional	
Alarn System					
To Fire Station	Reguired		No requirement	Regulred (10)	
Internal Only	Excluded		Regutred	Small centers < 20	
Manual	Manual override		Regutred	Manual override	
Automatic	Required		Regulred	Reautred	
Smoke Detector	Required		Required	Reguired	
Construction Type	Noncombustible		All Types I-V 1f		
	UBC Type II-N		limited to l-story		

(1)Illinois requires additional space for infants to accommodate cribs.
(2)Army requires mixed ages to adhere to ratio/group sizes requirement of lowest age unless they constitute less than 20 percent of the group, then the next highest age requirements apply.

(3) California requirements if facilities are federally funded/assisted.

(4)Average for age group in entire center.

(5) Florida increases staff requirement by 50 percent if handicapped children are involved.

(6)Illinois requires a 1:4 ratio for "children of special need" when cared for in a group. (7)Illinois requires that "building and equipment be designed so that special need children can make maximum use of the facility" if they are accepted into Accessibility is not required. the program.

(8)UBC allows area an increase (2001) if a facility is sprinkled throughout. Army facilities are partially sprinkled in hazard areas only; however, this should allow a partial increase. The largest Army Center anticipated of approximately 300 children 77.5 gross SF/CH = 23,250 SF, would only require a 75 percent increase in allowable area to be within the area limitation vs. the 200 percent allowed for a totally sprinkled facility. Other increases are allowed for separation from adjacent facilities.

(9)Local codes may be more restrictive.

(10)Connection to fire station not required if facility is totally sprinkled. Manual system still required.

Most states do not specify life safety requirements except for certain minimum criteris, deferring instead to local jurisdiction They do, however, require adherence to local requirements as a prerequisite to licensing. General Note: requirements.

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Table 7

Code Criteria Comparison: Local Life Safety Code Requirements Vs. Army Requirements (For Locations of Selected Centers)

	ATTER (CONUS/OCONUS)	California (Chino)	Florida (Jacksonville)	Illinois (Orland Park)	Texas (Carollton)
Reind .					
Criteria:					
Life Safety:		Not anerified	Not specified	Varies w/const type	Varies w/const type
Floor Area Limit (SF)	Cinal atory	Varies w/const type	Varies w/const type	Varies w/const type	Single story
Exite		fer froe C	2 redutred	2 required	2 required
#s/Floor Area	2 required	Not regulad	2 exits required	I required	Not required
Direct from Classroom	l required	ter da	Not enertied	6 ft min.	6 ft min.
Exit Access Corr. Width	6 ft min.	150 65 (450 46 and about 150 5	150 fr (+50 1f mprinkled)	150 ft (+50 if sprinkled)	150 ft (+50 if sprinkled)
Exit Travel Distance	1) 50 ff (+50 ff Bprinkled)	Varias w/const two	Varies w/const type	Varies w/const type	
Fire Resistive Reque					No requirement
Structure					No requirement
Ext. Walls-Nonbearing	No reductement				No requirement
Int. Walls-Nonbearing	No requirement				No requirement
Roof	No requirement				No requirement
Floors	No requirement				Allowed w/10 ft sep.
Ext. Doors/Windows	No requirement				
Fire Separation (Hrs)		u-1 k- III_4 kra	Not specified	Not specified	V-1 hr, III-4 hrs
Area Separation	2 Nr8		1 hr ata.	l hr sin.	l hr ain.
Means of Egress			Wet and frahla	l hr	l hr
Hazard Separation	14		Not apparents	Ohr if direct exit	l hr
Exit Access Corr.	No req'd w/Dir Egress	JU I	NOL BUTTCHUTC		
Other	Classroom, I hr				
Interior Finish		11 22 111 (JIBC)	Class A. B. OF C	I of 111 (BOCA 920)	11 or 111 (UBC)
Wall		Not enertited	Not specified		Not specified
Floor	Class t or 11	Not realized	Pequitred hazard areas	Not specified	Not required
Sprinkler	Kedulted, hazard areas	wor vedation			
Alara System		Not regulted	Not required	Not recuired	Not regulred
To Fire Station	Paliti Para	Regulted	Required	Required	Reguired
Internal Only		Not reputred	Regulred	Not required	Not required
Ranual		Dadiil rad	Regulred	Required	Reguired
Automatic	national f	Not regulad	Regulred	Required	Not required
Smoke Detector	vedutied	Not anotified	Whr apart fled	Not specified	Not specified
Construction Type	Noncombustible	nationade 160			
		-	-		

(1)UBC allows an area increase (200%) if a facility is sprinkled throughout. Army facilities are sprinkled in hazard areas only; however, this should allow a partial increase. The largest Army Center anticipated of approximately 300 children @ 77.5 gross SF/CH = 23,250, would only require a 75 percent increase in allowable area to be within the area limitation vs. the 200 percent increase allowed for a totally sprinkled facility. Other increases are allowed for separation from adjacent facilities.

Table 8

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Planning Criteria Comparison: Proprietary Organization Vs. Army Requirements (Headquarters provided average experience and planning allowances)

Agency:	Aray	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
Criteria:						
General						
Center Size (SF)	5, 500-23, 000 GR SF	5,000-6,000 GR SF	7,300-8,300 GR SF	4,820 GR SF	8,000-10,000 GR SF	5,000-7,400 GR SF
Net SF/CH	20 SF < 1.5 yrs	35-50	Code 25-35	Code (30 ave)	Code (30 ave)	35
Cesso SE/CU	35 SF > 1.5 yrs					
-Indoors SF/CH	78 SF	Varies	50 SF	33-35 SF	53-57 SP	¢ 0
-Puttoors CE/CU	95 SF (Sml Ctrs)	70-75 CP	15 00	75 CF	70_60 CF	8
-unidoors or/ un	100-200 Recom.	JE C/-0/	10 (1	10 C/	10-00 St	8
Net/Gross SF/CH Ratio	I:2.I4 Normal	1:1.4-2.14	1:1.43-1:2.00	1:1.73	1:1.77-1.9	1:1.14
Barrier-Free Envir.	Mult/Ch Access	Adult Access	Adult/CH Access	Not provided	Adult/CH Access	Adult/CH Access
\$Gross/SF (4)	\$80	\$50-70 Bidg Only (3)	\$65-74 (1)	\$39-41 (1) (3)	\$23-28 (2)	\$47-55 (3)
Allowances-SF		-Allowances	-Allowances	-Allowances		
		not provided	not provided	not provided		
Secondary Activity	Tan tan	by Children's	by Day Bridge	by Gerber		Tank to ant
	Incl. in net		neaoquarters	neacquarters	Tucl. in net	Incl. in met
-crib	28.6 SF/cr1b	₽- 			Incl. or 31.5 SF/crib	Incl. in net
-Diaper Station	40 SF ea				30 SF ea	13.54 SF ea
-Toilets	2-2.75 SF/CH				.2141 SF/CH	. 36 SF/CH
-Cubbles	1-2.5 SF/CH				1 SP ea	Incl. in net
-Classroom Recept/Care	64 SF/Home Base				28 SF ea	Incl. in met
Administration Spaces						
-Waiting/Recept	100-160 SF				100 SF	137 SF
-Utilces -Director	4S 001				45 06	43 24
-Staff	1 100 SF/100 CH				Not provided	Not provided
-CDC Coordinator	100 SF				Not provided	Not provided
-Staff Lounge	150 SF min.				76 SF	Not provided
	or 60 SF/Staff				or 5.85 SF/Staff	
-Central Storage	40 SF min.				56 SF	
-leolation	or .) sr/un			~	01 .203/ 3F/CH	01 ,34-,00 31/UN Kn SF
-Adult Tollets	80 SF min.				62 SF	27 SP
-Other					38 SF Vestibule	
Support Spaces						
-Kitchen	· 25 SP/CH		1		1-1.33 SF/CH	.75-1.5 SF/CH
-Kecelving	HO AS CO				Incl. In Kitchen	Incl. In Kitchen
-Cook/Cleaning	35 SP atn.				Incl. in kitchen	Incl. in kitchen
	or .5 SP/CH					

Table 8 (Cont'd)

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Agency:	Aray	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite	1
-Cook/Cleaning	35 SF min. or .5 SF/CH	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	
-Laundry	35 SF min. or .4 SF/CH	Not provided	Not provided	30 SF or .24 SF/CH	38 SF or .22 SF/CH	Not provided	
-Maintenance/Janitor	32 SF min. + 70-100 SF 1f facil > 7,000 SF	35 SF	34 SF	Not provided	18 SF	23 SF	i
-Mechanical/Electrical	3.3% facil GR or 2.5 SF/CH	100 SF (1% GR SF) or .74 SF/CH	91 SF (12 GR SF) or .7 SF/CH	7.5 SF (.2% GR SF) or .06 SP/CH	65 SP (.8% GR SF) or .38 SF/CH	Incl. in Maint/Jan (roof top system)	1
Primary Outdoor -Porches/Decks	50 SF min. or 1 SF/CH	486 SF or 3.57 SF/CH	2,850 SF or 22 SF/CH	1,475 SP or 12 SP/CH	190 SF or 1.12 SF/CH	324 SF 2.7 SF/CH	
-Play Yards	500-2,000 SF or 50-100 SF/CH	18,400 SF or 135 SF/CH	12,075 SF or 93 SF/CR	15,000 SF or 120 SF/CH	10,310 SF or 61 SF/CH	11,494 SF or 96 SP/CH	;
Seconary Outdoor -Porte Chochere	300 SF min. 600-750 SF recom.	80 SP	315 SP	875 SF	88 SP	Not provided	
-Pedestrian Walks -Vehicular Circulation	Varies	Not available Not available	405 SF 11.025 SF	I, 400 SP NA	Not available Not available	1,302 SF 9.086 SP	
-Service Areas/Drives	Varies	Not available	Incl. in above	VN	Not available	Incl. in above	1

•••

NA - Not applicable. Not provided - Element not provided in child center. Not available - Information not available from site survey.

(1)Licensed capacity, actual occupancies experienced averaged 75 percent of maximum.
(2)Available net + licensed capacity (operating net due to operation at less than maximum capacity, if higher)

(3)Gross SF + licensed capacity.
(4)Play Yard SF + licensed capacity.
(5)Licensed capacity [actual capacity].
(6)Actual capacity [actual capacity].
(7)Based on 35 net: 78 gross.
(8)All facility costs: building, site work and playground, exclusive site cost.

Table 9

Planning Criteria Comparison: Proprietary Organization Vs. Army Requirements (Actual Centers' Experience)

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Agency:	Aray	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
Criteria:						
General						
Center Size (SF)	5, 500-23,000 GR SF	7,200 GR SF	8,273 GR SP	4,820 GR SF	7,993 GR SF	4,660 GR SF
Capacity-7 Children (1) Net SF/CH (2)	60-303 20 5F < 1.5 yrs	<u>35 [35] (6)</u>	130 [69] (5) 45 [35]	125 [106] (5) 21 [20] (6)	<u>170 [153] (5)</u> 33 [30] (6)	120 [95] (5) 27 [20] (6)
Črose čŕ/čů	35 SF > 1.5 yrs					
-Indoors SF/CH (3)	78 SP	53 SF	64	39	47	39
-Outdoors SF/CH (4)	95 SF (Sml Ctra) 50-100 SF min.	135 SF		120		
	100-200 recom.				•	
Net/Gross SF/CH Ratio	1:2.23 (7)	1:1.43	1:1.42	1:1.86	1:1.42	1:1.63
Barrier-Free Envir.	Adult/CH access	Not provided	Adults est 11	Adulta ek2 is	Adults	Adul t/CH access
SULUES/ SL (0)	200¢	<i></i>	11.464	C1.64¢	\$115	\$C.82\$
Allowances						
Secondary Activity						
-Eating	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net
-Napping	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net
-UID -Maner Station	40.0 57/UTU	31.3 Sr ea	Tacl in net	10 11 · Tout		No intants
Tollets	2-2.75 SP/CH	2.35 SF/CH	2.11 SF/CH	22 SP/CH	7.89 SF/CH	L SF CH
-Cubbles	1-2.5 SF/CH	Incl. in net	Incl. in net	Incl. in net	I SF/CH	I SF/CH
-Classroom Recept/Care	64 SF/Home Bs	Not provided	Incl. in net	Incl. in net 6.72 SF/CH Grt Rum	Not provided	Not provided
Administration Spaces					-	
-Waiting/Recept	100-160 SF	230 SF	195 SF	143 SF	250 SF	137 SF
-Director	100 SF	230 SF	95 SF	161 SF	85 SF	57 SF
-Staff	HU 001/45 001	Not provided	Not provided	Not provided	Not provided	Not provided
-CDC Coordinator	100 SF	Not provided	Not provided	Not provided	Not provided	Not provided
-Statt Lounge	I DU SF min. or 60 SP/Sraff	Space in Dir. Off.	Not provided	AL SP	45 88 45 4 74 - 14	Not provided
-Central Storage	40 SF min.	140 SF	93 SF	44 SP	39 SF	45 SF
	or .5 SP/CH	or 1.03 SF/CH	or .72 SP/CH	or .35 SF/CH	or .22 SF/CH	or .57 SF/CH
-Isolation	50 SF min.	Space in Dir. Off.	53 SF 12 cF	In Staff Lounge	56 SF 24 cr	Space in Dir. Off.
-Other		5		58 SF Outdoor Stor	25 SF Outdoor Stor	
Support Spaces	nu/as sc	1 41 CB/CH	1 10 65/20	nu/a3 70	11.7 ao ao	nJ) 33 CL 1
-Receiving	.5 SF/CH	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen
-Cold/Dry Storage	1 SF/CH	.29 SF/CH	. 29 SF/CH	. 29 SF/CH	. IK SF/CH	Incl. in kitchen

-	AD-A15	8 628	ALTI DEPI RESI CERI	ERNATI ARTMEN EARCH L-TR-P	VE CON T OF 1 LAB (F -85/07	ISTRUC THE AR ARMY>	TION A (V) Champa	ND ACC CONSTR IGN II	RUISIT RUCTIO R L	ION NE N ENGI Schne	THODS NEERII IDER F/G	FOR Ng Jun 85 5/1	2/ NL	2
								END					ļ	
								DTIC						
							•							



MICROCOPY RESOLUTION TEST CHART NATIONAL BUREAU OF STANDARDS - 1963 - A Table 9 (Cont'd)

Agency:	Aray	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite	1
-Laundry	35 SF main. or .4 SF/CH				30 SF or .152 SP/CH	12.5 SF or .0613 SF/CH	1
-Haintenance/Janitor	32 SF min. + 70-100 SF 1f fact1 > 7,000 SF				30 SF	23 SF	· •
-Mechanical/Electric	3.3% facil GR or 2.5 SF/CH				120 SF (1-1.5% GR) or .68 SF/CH	Incl. in Maint/Jen	1
Primary Outdoor -Porches/Decks	50 SF win. or 1 SF/CH				1,000-2,000 SF or 5-13 SF/CR	. 860 SF 4-8 SF/CH	{
-Play Vards	500-2,000 SF or 50-100 SF/CH				12,000-13,000 SF or 60-87 SP/CH	11,500 SF 58-115 SP/CH	
Secondary Dutdoor -Porte Chochere	300 SF min. 600-750 SF recom.				% SF	Not provided	1
-Pedestrian Walks	Varies				Varies	Varies	1
-Service Area/Drives	Varies				Varies	Varies	ſ

(1)Quoted cost for planning purposes.
 (2)Based on quoted lump sum cost of \$330,000 total facility less 31 percent average site cost from backup cost data divided by preferred facility size range.
 (3)No backup cost data provided.
 (4)Ail costs excluding site unless otherwise noted.

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Functional Design Criteria

Functional design requirements and criteria used by proprietary facilities were compared to those of the Army, and showed major differences in the areas of secondary and nonprogram spaces. Proprietary organizations were mostly very conservative in allowances for secondary or nonprogram space, providing only the net activity space required by the licensing codes and the minimum amount of additional space needed to make a functional facility.

7 CONCLUSIONS AND RECOMMENDATIONS

Use of alternative construction technologies and acquisition methods is one way to reduce the cost of building new child care centers. Selection of the best method will produce a facility that is easy to build, functional, and usable. One-Step Competitive Negotiation is the best procurement method to use for DA Child Care Centers, because it offers the advantage of basing contractor selection on factors other than construction costs. This method will often provide facilities that exceed design standards and provide the best value to the Government.

The construction technologies and acquisition methods deemed to be most feasible for building DA Child Care Centers are metal-frame modular construction, preengineered metal building systems, and metal-frame components because they are the most responsive to most Army requirements.

Guidance for implementing and executing the various alternative construction strategies emphasizes good preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.

Comparison of Army and proprietary facilities has led to the following conclusions and recommendations:

The biggest difference between Army and proprietary facilities is the gross square footage allowed per child, with the Army allowing more space. National standards prepared by the Department of Health and Human Services are expected to address and standardize SF criteria during FY 85.

Most Army functional and space requirements which exceed provisions of the private sector are valid due to differing program requirements, but there are areas where provisions may be considered excessive. It is therefore recommended that the differences identified in this report be evaluated to confirm or recommend changes in Army criteria.

Private centers have a shorter facility investment period and therefore use less costly materials and equipment than the Army. This investigation did not gather detailed data on or evaluate the differences in construction materials and costs between Army and proprietary facility construction. Therefore, it is recommended that these differences be further studied to determine where the differences occur, the cost ramifications, and whether the less expensive materials and methods used by the proprietary facilities meet life-cycle cost criteria for Army construction and are therefore a better value.

Army Life Safety Standards are much more conservative than those of private facilities. Further study is recommended to (1) verify NFPA requirements as the valid level of life safety for constructing DA child development centers by comparing them to the predominant safety level provided for private facilities, (2) determine whether the Army's current means of establishing "equivalency" to NFPA requirements are valid compared to those used in the private sector, and (3) determine whether there are other, more economical construction types (for example UBC type Type III-1 Hr) equally capable of ensuring safety, while providing a better value to the Government. The Office of the Chief of Engineers will be selecting one DA child development center from the FY85 or FY86 program to demonstrate acquisition via a One-Step procurement approach. It is therefore recommended that (1) a prototype RFP package complete with the necessary performance specifications and evaluation criteria be developed and (2) that the procurement process itself be monitored and complete "lessons learned" compiled.

The volume purchase of required furnishings and basic expendable materials is practiced by all private centers to achieve operation cost savings. Often, this practice extends to materials required for new centers such as basic construction materials, interior finishes, appliances, mechanical equipment, and other items. Although the Army is a major purchaser in all the above areas, volume purchase cost savings on building materials are normally only accrued through the competitive bidding process within the scope of a single project. Therefore, it is recommended that the Army as a minimum utilize volume purchase practices to obtain basic furnishings, materials, and equipment necessary to operate their centers, including required appliances, all of which can be separated from individual project costs and obtained through General Services Administration (GSA) contracts. Many of these items would be applicable to existing centers and other facility types or other Services requirements. In addition, the Army should pursue volume purchase of construction materials either across project bounds or through the consolidation of required facilities in a single project.

METRIC CONVERSION PACTORS

1 sq ft	=	.09 m ²
l ft	=	.3 m
1 in.	=	25.4 mm
1 lb/sq ft	=	4.88 kg/m^2
1 mph	=	1.6 km/hr

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APPENDIX A:

U.S. ARMY CHILD DEVELOPMENT SERVICES FACILITIES, ALTERNATIVE CONSTRUCTION METHOD ANALYSIS

Generic building construction technologies and methodologies were evaluated to determine their responsiveness to Army requirements. Critical Army building characteristics were listed which parallelled those identified for evaluation of proprietary organization facilities, and Army requirements for each characteristic were then identified. The capabilities of each alternative construction method were identified and its responsiveness to the Army requirement determined. The following building construction technologies and methodologies were considered (for complete definitions, see Chapter 2):

- 1. Modular Building Systems
 - a. Wood-Frame Modular Construction
 - b. Metal-Frame Modular Construction, Table A1
 - c. Precast Concrete Modular Construction
- 2. Pre-engineered Building Systems
 - a. Pre-engineered Metal Building Systems, Table A2
 - b. Precast Concrete Building Systems
- 3. Component Construction
 - a. Wood-Frame Components
 - b. Metal-Frame Components, Table A3
 - c. Precast/Prestressed Concrete Components

Tables A1, A2, and A3 display evaluations of alternatives determined to be most feasible for DA child development centers. Other evaluations have been excluded for the following reasons:

1. Wood-frame systems (modular or component) do not meet current Army life safety criteria and have therefore been excluded from analysis. The Army currently requires noncombustible construction equivalent to the Uniform Building Code Construction (UBC) Type II-N. This code allows no combustible materials in any of the major building elements: structure, exterior wall bearing or nonbearing, interior wall bearing or nonbearing, roof, floor, and exterior doors and windows. Wood-frame systems could not be made responsive; however, wood-framing materials could be used for some building elements and still meet the code. UBC allows the use of fire-retardant-treated lumber in nonbearing interior partitions where those partitions are fire-rated (UBC Types II-FR and II-1HR). Except for their combustibility, characteristics of wood-frame systems would be identical to those displayed in Tables A1 and A3 for metal-frame systems.

2. Concrete systems (modular, pre-engineered, or components) are excluded due to their cost. They would not be competitive with the other systems and are therefore deemed nonresponsive.
| | Responsiveness to
U.S. Army Requirements | | Should be responsive. | Should be responsive. | | Can be responsive to 12 ft
minimum room dimensions;
11 ft-4 in. would be more
convenient and economical. | Should be responsive. | Should be responsive. |
|--|---|---------------|---|---|--------------------------------|--|---|---|
| Table A1
Metal-Frame Modular Construction | Alternative Construction
Method Capabilities | | Rectilinear configurations typical;
rectangles, staggered rectangles,
T's, L's, etc. | Enclosed spaces are typically by parti-
tioning within modules. Open areas
are typically with adjacent opensides
modules. | | Typical modules are 12 ft wide
with interior clear dimensions
of 11 ft-4 in. Wider room
dimensions possible but less
convenient. | Open areas are achieved with
adjacent open-sided modules.
Widths up to 60 ft are typical,
possibly with columns. | No inherent limitations on loca-
tion of partitions; most convenient
to place on module line. |
| | ny Requirements | Architectural | a. <u>Building Configuration</u> : "Effi-
cient design" for economical con-
struction; typically rectilinear. | b. Interior Spaces: Enclosed
age group activity modules and
offices; open activity areas;
food preparation and building
service cores (toilets, custo-
dial, mechanical). 8-ft plan-
ning grid preferred. | c. Clear Span/Area Dimensions: | (1) Enclosed space: about
290 sq ft with minimum
room dimension of 12 ft. | (2) Open areas: no designated
open area square footage. Columns are tolerable within
open areas. All minimum dimen-
sions within open areas are
12 ft or less. | d. <u>Partitioning</u> : throughout
building. |

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Table A1 (Cont'd)

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Alt U.S	kernative Construction & Army Requirements	Responsiveness to Method Capabilities	U.S. Army Requirements	
	e. Ceiling Height: 8-ft maximum throughout building.	7 ft-6 in. and 8-ft ceilings typical.	Should be responsive.	
	f. Number of Stories: Une.	One- and two-story buildings typical.	Should be responsive.	
	g. Accommodation of Plan Features:			
	(1) Building entrances: any location at building perimeter.	No inherent limitations on location or type of entrance.	Should be responsive.	
	(2) Emergency cgress: throughout building perimeter.	No inherent limitations on location or type of emergency exits.	Should be responsive.	
	 Windows: throughout building perimeter. 	No inherent limitations on location or type of windows.	Should be responsive.	
	(4) Food preparation area: central location.	No inherent limitations on location of food preparation or other "wet" areas. Preferable to cluster plumb- ing and building utilities.	Should be responsive.	
	(5) Toilet facilities: various locations within building.	No inherent limitations on location of toilet areas. Preferable to cluster plumbing and building utilities.	Should be responsive.	
	(6) Mechanical: any location at building perimeter; access to exterior only.	No inherent limitations on location of mechanical space.	Should be responsive.	

h. <u>Aesthetics</u>: "harmonious with the existing permanent structures."

	Table A1 (Cont'd)	
Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
 Building form, propor- tions: typically rectangular; gable, hip, or shed roof lines. 	Typically residential in scale and proportions; rectilinear building form. Gable, hip, or shed roof lines common.	Should be responsive.
(2) Exterior materials: typically brick, stucco, siding.	Typically sheet or lap siding; stucco or masonry veneer can be installed on-site. Typically shingle roofing; metal ribbed roof- ing; simulated tile roofing, etc., also possible.	Should be responsive.
. Interior Construction:		
 Finishes: floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic. 	Walls typically vinyl-faced gypsum board or painted gypsum board. Carpet or sheet vinyl wainscot possible. Ceiling and floor finishes as required by user.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
 (2) Uther features: casework, platforms, dividers. 	Interior features provided per user's reguirements.	Should be responsive.
j. Noise Control: peak levels - 85 dBA; sustained levels - 45 dBA; no specific noise control measures identified.	Interior noise control measures similar to conventional construction practices.	Should be responsive; attention must be paid to acoustics in design.
k. Handicapped Provisions: building access per ANSI A117.1.	No inherent limitations to building access.	Should be responsive.

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Table A1 (Cont'd)

v.5	S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
5	Fire Safety:		
	 a. Floor Area Limitations: 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus). 	No inherent limitations regarding fire areas; area separation walls possible.	Should be responsive; most centers will not require area separation.
	b. Height Limitation: Une story.	One story typical.	Should be responsive.
	e. Exits:		
106	 Numbers required: 2 per each fire area; plus I each room used as child activity space. 	No inherent limitations on numbers or locations of exits.	Should be responsive.
	(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
	(3) Travel distance: 150 ft maximum + 50 ft is sprinkled.	No inherent limitations.	Should be responsive.
	 d. Fire-Resistive Requirements: 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior doors and windows. 	Light-gauge metal structural framing fully meets Army require- ments of "Noncombustible" construc- tion (UBC II-N).	Should be responsive.

ion Responsiveness to U.S. Army Requirements		light-gauge Should be responsive. •type gypsum each side).	on separation Should be responsive. Ir wall possible I-stud wall Il board (1 layer, gular gypsum 3 in. each side).	on hazard Should be responsive. ossible I-stud wall Il board (1 layer, gular gypsum 3 in. each side).	NA	on other fire Should be responsive. ossible I-stud wall Il board (1 layer, gular gypsum 8 in. each side).		led per Should be responsive.
Alternative Constructio Method Capabilities		2-hr wall possible with l metal-stud wall and X-t board (2 layers, 5/8 in. e	No inherent limitation of means of egress; 1-hr with light-gauge metal- and X-type gypsum wall 1/2 in. each side) or reg wall board (1 layer, 3/8	No inherent limitation c separation; 1-hr wall po with light-gauge metal- and X-type gypsum wall 1/2 in. each side) or reg wall board (1 layer, 3/8	NA	No inherent limitation of separation; 1-hr wall po with light-gauge metal- and X-type gypsum wall 1/2 in. each side) or reg wall board (1 layer, 3/8		Interior finishes provide users' requirements.
ırmy Requirements	Fire Separation:	(1) Fire areas: 2 hr.	(2) Means of egress: 1 hr.	(3) Ilazard separation: 1 hr.	(4) Exit access corridor:0 hr. No rating required with direct access.	(5) Others: classroom 1 hr.	Interior Finishes:	(1) Wall: Class A or B.

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Table A1 (Cont'd)

n.	S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	(2) Floor: Class 1 or 11.	Interior finishes provided per users' requirements.	Should be responsive.
	g. <u>Sprinkler</u> : Required in hazard areas (custodial closet).	Sprinklers can be installed per conventional construction practices.	Should be responsive.
	 Alarm: direct linkage to fire station required. Manual and auto- matic alarm with smoke and heat detectors. 	Alarm systems can be installed per conventional construction practices.	Should be responsive.
Э	Structural		
1 0	a. Live Loads: Per ANSI A58.1.	Structural design is per local	Should be responsive.
Q	(1) Vertical (Roof): 45 lb/sq ft (CONUS).	conditions and code requirements. Army requirements are comparable.	
	 (2) 40 lb/sq ft classroom, 100 lb/sq ft corridor. (3) Wind: 80 mph (CONUS). (4) Seismic: Zone 4. 		
	b. <u>Dead Loads</u> : As required.	Design as required.	Should be responsive.
4.	Quality and Durability		
	a. <u>Exterior</u> : "durable low main- tenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements. All material qualities can be per users' requirements similar to conventional construction.	Should be responsive.

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Table A1 (Cont'd)

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, C	.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	b. <u>Thermal Envelope</u> : Solar and Energy Budget Analyses required.		
	(1) Roof:	Up to about U = .03, depending on roof structure.	Should be responsive.
	(2) Walls:	Up to $U = .05$ typical.	Should be responsive.
	 Floors: (over venti- lated craw! space). 	Up to U = .05 typical.	Should be responsive.
109	c. Interior <u>Construction</u> : "durable maintenance surfaces."	See 1j(1). Interior finish material qualities can be per users' require- ments similar to conventional con- struction.	Should be responsive. Attention must be paid to high-abuse items in speci- fication and design.
· •	Building Utilities:		
	a. <u>HVAC Systems</u> : per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.	HVAC design and installation per local conditions and code require- ments. No inherent limitations on HVAC system.	Should be responsive.
	b. <u>Plumbing Systems</u> : per DOD 4270.1M and TM 5-810-5.	Plumbing design and installation per local code requirements. Fixtures and equipment quality per users' requirements. No inherent limitations on plumbing system.	Should be responsive.
	c. Electrical <u>Systems</u> : design per TM 5-811-1 with modifications. Lighting levels up to 50 fc.	Electrical design and installation per local code reguirements. No inherent limitations on electrical	Should be responsive.

systems.

Table A2

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Pre-Engineered Metal Building Systems

n n	S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	Architectural		
	a. Building <u>Configuration</u> : "Efficient design" for economical construction; typically rectilinear.	Rectangular building configurations typical; no limitation to range of configurations possible.	Should be responsive.
	b. Interior Spaces: Enclosed age group activity modules and offices; open activity areas; food preparation and building service cores (toilets, custo- dial, mechanical). 8-ft plan- ning grid preferred.	Enclosed spaces typical by parti- tioning within the structural framing system; open areas typical within/through open structural frame system.	Should be responsive.
110	 c. Clear Span/Area Dimensions: (1) Enclosed space: about 290 sq ft with minimum room dimension of 12 ft. 	Partitioning independent from structural system/grid layout; no limitation maximum/minimum on enclosed space.	Should be responsive.
	(2) Open areas: no designated open-area square footage. Columns are tolerable within open areas. All minimum dimen- sions within open areas are 12 ft or less.	Clear span capabilities in excess of open area requirements of child age group activity space modules; spans ranging from 40 ft to 100 ft typical in 4-ft, 5-ft, 8-ft, and 10-ft increments; column free area typical; spans to 200 ft clear possible.	Should be responsive.
	d. <u>Partitioning</u> : throughout building.	No inherent limitations on location of partitions; most convenient to locate on planning modular/structural grid line.	Should be responsive.
	e. Ceiling Height: 8-ft maximum throughout building.	8 ft-0 in. through 40 ft-0 in. possible.	Should be responsive.

	Responsiveness to U.S. Army Requirements	Should be responsive.	Should be responsive.		Should be responsive.	Should be responsive.	Should be responsive.	Should be responsive.	Should be responsive.		Can be responsive with use of reduced spans and higher gables to achieve more "residential" qualities.
Table A2 (Cont'd)	Alternative Construction Method Capabilities	One sto y typical, two stories possible.	No inherent limitations on location	or type of entrance.	No inherent limitations on location, configuration, or type of emergency egress.	No inherent limitations on location, configuration, or type of windows.	No inherent limitations on location of food preparation or other "wet" areas; clustered plumbing and utilities preferred.	No inherent limitation on location of toilet areas; clustered plumbing preferred.	No inherent limitations on location of mechanical spaces.		Typically more "commercial" in scale and proportions; rectilinear build- ing forms; low slope 1/4 in.:12 in. to 4 in.:12 in. typical, higher slopes possible.
	U.S. Army Requirements	f. Number of Stories: One	g. Accommodation of Plan Features:	l) building perimeter.	(2) Emergency egress: throughout building perimeter.	 Windows: throughout building perimeter. 	11 (4) Food preparation area: central location.	(5) Toilet facilities: various locations within building.	(6) Mechanical: any location at building perimeter; access to exterior only.	h. Aesthetics: "harmonious with the existing permanent structures."	 Building form, propor- tions: typically rectangular; gable, hip, or shed roof lines.

Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(2) Exterior materials: typically brick, stucco, siding.	Typically pre-engineered; prefinished insulated metal panel/curtain wall system includes windows, doors, entry systems, and other elements; other finishes available, such as aggregate finished panels, but atypical.	Can be made responsive by substitut- ing exterior finish materials per users' requirements.
i. Interior Construction:		
 Finishes: floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic. 	No inherent limitations; typically excluded from pre-engineered systems so site-installed finishes may be provided to meet user requirements.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
 Other features: casework, platforms, dividers. 		
j. <u>Noise Control</u> : peak levels - 85 dBA; sustained levels - 45 dBA; no specific noise control measures identified.	No inherent limitations; noise con- trol measures similar to conventional design and construction practices.	Should be responsive; attention must be given to acoustics in design evaluation.
k. Handicapped Provisions: building access per ANSI A117.1.	No inherent limitations to handi- capped building access.	Should be responsive.
ire Safety:		
 a. Floor Area Limitations: 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus). 	No inherent limitations regarding fire area limits; area separation walls possible.	Should be responsive; most centers will not require area separation.
b. Height Limitation: One story.	One story typical.	Should be responsive.

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Table A2 (Cont'd)

D)	.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	c. <u>Exits</u> :		
	 Numbers required: 2 per each fire area, plus 1 for each room used as child activity space. 	No inherent limitations.	Should be responsive.
	(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
	(3) Travel distance: 150 ft maximum + 50 ft is sprinkled.	No inherent limitations.	Should be responsive.
113	 d. Fire-Resistive Requirements: 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior 	Fully complies with Army "Non- combustible" requirements (Type II-N, UBC); if alternative exterior/ interior materials are selected, they should also be noncombustible.	Should be responsive.
	e. Fire Separation:		
	(1) Fire areas: 2 hr.	2-hr walls possible with light- gauge metal framing and X-type gypsum board (2 layers, 5/8 in. each side).	Should be responsive.
	(2) Means of egress: 1 hr.	No inherent limitations on separa- tion of means of egress; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.

Leven 1-1-2-2-2-2-1-5-5Table A2 (Cont'd)

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U.S	Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	(3) Hazard separation: 1 hr.	No inherent limitation on hazard area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.
	(4) Exit access corridor:0 hr. No rating required with direct access.	Not applicable.	Not applicable.
114	(5) Others: classroom 1 hr.	No inherent limitation on other area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.
	f. Interior Finishes:		
	(1) Wall: Class A or B.	Interior finishes provided per users' requirements.	Should be responsive.
	(2) Floor: Class 1 or 11.	Interior finishes provided per users' requirements.	Should be responsive.
	g. <u>Sprinkler</u> : Required in hazard areas (custodial closet).	Sprinklers installed per conven- tional construction practices.	Should be responsive.

Table A2 (Cont'd)

U.S	k Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	 Alarm: direct linkage to fire station required. Manual and auto- matic alarm with smoke and heat detectors. 	Alarm systems can be installed per conventional construction practices.	Should be responsive.
з.	Structural		
	a. Live Loads: Per ANSI A58.1.	Structural design is per local conditions and code requirements; Army requirements are comparable.	Should be responsive.
	 Vertical (Roof): 45 lb/ sq ft (CONUS). 	40-50 lb/sq ft typical, higher as required.	Should be responsive.
115	(2) 40 lb/sq ft classroom, 100 lb/sq ft corridor.	40-50 lb/sq ft typical, higher as required.	Should be responsive.
	(3) Wind: 80 mph (CONUS).	20-25 lb/sg ft typical.	Should be responsive.
	(4) Seismic: Zone 4.	No inherent limitations.	Should be responsive.
	b. Dead Loads: As required.	Design as required.	Should be responsive.
4.	Quality and Durability		
	a. <u>Exterior</u> : "durable low main- tenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements; materials and quality can be per users' requirements, as conventional construction.	Should be responsive.
	 b. Thermal Envelope: Solar and energy budget analyses required. (1) Roof: 	No inherent limitations; using pre- engineered wall and roof panels, U values of .14 to .04 are typical; however, values of .024 and lower are feasible.	Should be responsive.

Table A2 (Cont'd)

U.S.	k Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	(2) Walls:		
	(3) Floors: (over venti- lated crawl space).		
	c. Interior Construction: "durable maintenance surfaces."	See 1j(1). Interior finish material qualities can be per users' require- ments as conventional construction.	Should be responsive.
5.	Building Utilities:		
	a. HVAC Systems: per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.	HVAC design and installation per local conditions and code requirements. No inherent limitations on HVAC system.	
116	b. Plumbing Systems: per DOD 4270.1M and TM 5-810-5.	Plumbing design and installation per local requirements. Fixtures and equipment quality per users' require- ments. No inherent limitations on plumbing system.	
	c. Electrical Systems: design per TM 5-811-1 with modifications. Lighting levels up to 50 fc.	Electrical design and installation per local code reguirements. No inherent limitations on electrical systems.	· ·

		Responsiveness to U.S. Army Requirement		Should be responsive.	Shouid be responsive.		Should be responsive.	Should be responsive.	Should be responsive. g
Table A3	Metal Frame Component Systems	Alternative Construction Method Capabilities		Rectangular building configurations are typical; however, there is no inherent limit to the range of con- figurations possible.	Enclosed spaces typically are by partitions bearing or nonbearing; no limitation to configuration or location.		No inherent limitation to enclosed space; minimum room dimensions can be per users' requirements as with conventional construction; maximum room dimensions are only limited by clear spans of light structural sys- tems; span capabilities exceed clear span requirements for enclosed and open spaces.	No inherent limitations; clear span capabilities exceed clear span requirements for open space (typical spans 8 ft, 60 ft, 100 ft possible); columns may intrude on spaces.	No inherent limitations to partition location; most convenient on plannin modular/structural grid line.
		U.S. Army Requirements	1. Architectural	a. Building Configuration: "Effi- cient design" for economical con- struction; typically rectilinear.	b. Interior Spaces: Enclosed age group activity modules and offices; open activity areas; food preparation and building service cores (toilets, custo- dial, mechanical). 8-ft plan- ning grid preferred.	c. Clear Span/Area Dimensions:	 2) Enclosed space: about 290 sq ft with minimum room dimension of 12 ft. 	 (2) Open areas: no designated open-area square footage. Columns are tolerable within open areas. All minimum dimensions within open areas are 12 ft or less. 	d. Partitioning: throughout building.

my Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
Ceiling Height: 8 ft maximum oughout building.	8 ft-0 in. typical.	Should be responsive.
Number of Stories: One.	One- and two-story typical, four and five stories possible.	Should be responsive.
Accommodation of Plan Features:		
(1) Building entrances: any location at building perimeter.	No inherent limitation on location of entrance.	Should be responsive.
(2) Emergency egress: throughout building perimeter.	No inherent limitation on location, configuration, or type of emergency egress.	Should be responsive.
 Windows: throughout building perimeter. 	No inherent limitations on location or type of windows.	Should be responsive.
(4) Food preparation area: central location.	No inherent limitations on location of food preparation or other "wet" areas; clustered plumbing and utilities.	Should be responsive.
 Toilet facilities: various locations within building. 	No inherent limitations on the location of toilet areas; clustered plumbing and utilities are preferred.	Should be responsive.
(6) Mechanical: any location at building perimeter; access to exterior only.	No inherent limitations on the location of mechanical spaces.	Should be responsive.

rmy Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
Aesthetics: "harmonious with he existing permanent structures."		
 Building form, propor- tions: typically rectangular; gable, hip, or shed roof lines. 	Typically residential in scale and proportions; rectilinear building form typical; irregular forms equally possible; gable, hip, or shed roof common with no limit on slopes.	Should be responsive; methodology most capable of configuration to "residential" image per users' requirements.
(2) Exterior materials: typically brick, stucco, siding.	Typically sheet or lap siding in many materials; stucco or masonry veneers may be site-installed per users' requirements; most finish materials possible. Typically shingle roofing, standing seam metal roofing; other roofing materials possible.	Should be responsive.
Interior Construction:		
 Finishes: floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic. 	Walls typically gypsum board painted or vinyl-faced; wainscotting pos- sible in plastic laminates, sheet vinyl, or carpet; other finishes, ceiling, floor, and wall as per users' requirements.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
(2) Uther features: casework, platforms, dividers.		
 Noise Control: peak levels - 35 dBA; sustained levels - 45 dBA; no specific noise control measures dentified. 	Interior noise control measures similar to conventional construction practices. evaluation.	Should be responsive; attention must be given to acoustics in design
 Handicapped Provisions: Duilding access per ANSI A117.1. 	No inherent limitations to building accessibility to the handicapped.	Should be responsive.

		Alternative Construction	Responsiveness to
	S. Army kequirements		o.o. Army kequirements
÷	rire adiety:		
	 a. Floor Area Limitations: 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus). 	No inherent limitations to building fire separation area; area separation walls possible.	Should be responsive; most centers will not require area separation.
	b. Height Limitation: One story.	One story typical.	Should be responsive.
	e. Exits:		
	 Numbers required: 2 per each fire area; plus 1 each room used as child activity space. 	No inherent limitations.	Should be responsive.
120	(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
	 Travel distance: 150 ft maximum + 50 ft is sprinkled. 	No inherent limitations.	Should be responsive.
	 d. Fire-Resistive Requirements: 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior 	Fully complies with Army "Non- combustible" requirements (Type II-N, UBC).	Should be responsive.
	e. Fire Separation:		
	(1) Fire areas: 2 hr.	2-hr walls possible with light- gauge metal framing and X-type gypsum board (2 layers, 5/8 in. each side).	Should be responsive.

Table A3 (Cont'd)

	Responsiveness to U.S. Army Requirements	Should be responsive.	Should be responsive.	Not applicable.	Should be responsive.		Should be responsive.	Should be responsive.	Should be responsive.
Table A3 (Cont'd)	Alternative Construction Method Capabilities	No inherent limitation on separation of means of egress; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).	No inherent limitation on hazard separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).	Not applicable.	No inherent limitation on other area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).		Interior finishes provided per users' requirements.	Interior firishes provided per users' requir `ments.	Sprinklers installed per conven- tional construction practices.
	U.S. Army Requirements	(2) Means of egress: 1 hr.	(3) Hazard separation: 1 hr.	 (4) Exit access corridor: 0 hr. No rating required with direct access. 	(5) Others: classroom 1 hr.	f. Interior Finishes:	(1) Wall: Class A or B.	(2) Floor: Class 1 or 11.	g. <u>Sprinkler</u> : Required in hazard areas (custodial closet).

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Table A3 (Cont'd)

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U.S	à Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
	 Alarm: direct linkage to fire station required. Manual and auto- matic alarm with smoke and heat detectors. 	Alarm systems installed per conven- tional construction practices.	Should be responsive.
ы.	Structural		
	a. Live Loads: Per ANSI A58.1.	Structural design is per local condition and code requirements; Army requirements are comparable.	Should be responsive.
	 Vertical (Roof): 45 lb/sq ft (CUNUS). 	35-50 lb/sq ft typical, higher as required.	Should be responsive.
I	(2) 40 lb/sq ft classroom, 100 lb/sq ft corridor.	35-50 lb/sq ft typical, higher as required.	Should be responsive.
22	(3) Wind: 80 mph (CONUS).	20-25 lb/sq ft typical.	Should be responsive.
	(4) Seismic: Zone 4.	No inherent limitations.	Should be responsive.
	b. Dead Loads: As required.	Design as required.	Should be responsive.
4.	Quality and Durability		
	a. Exterior: "durable low main- tenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements; quality can be per users' requirements as per conven- tional construction.	Should be responsive.
	b. Thermal Envelope: Solar and energy budget analyses required.		
	(1) Roof:	Up to about $U = .03$, depending on roof structure.	Should be responsive.
	(2) Walls:	Up to U = .05 typical.	Should be responsive.

Table A3 (Cont'd)

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U.S	 Army Requirements (3) Floors: (over venti- lated crawl space). 	Alternative Construction Method Capabilities Up to U = .05 typical.	Responsiveness to U.S. Army Requirements Should be responsive.
	c. Interior Construction: "durable maintenance surfaces."	See 1j(1). Interior finish material qualities can be per users' requirements as conventional construction.	Should be responsive.
5.	Building Utilities:		
	a. <u>HVAC System</u> s: per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.	HVAC design and installation per local conditions and code require- ments. No inherent limitations on HVAC system.	Should be responsive.
123	b. Plumbing Systems: per DOD 4270.1M and TM 5-810-5.	Plumbing design and installation per local code requirements. Fixtures and equipment quality per users' requirements. No inherent limita- tions on plumbing system.	Should be responsive.
	c. <u>Electrical Systems</u> : design per <u>TM 5-811-1 with modifications</u> . Lighting levels up to 50 fc.	Electrical design and installation per local code requirements. No inherent limitations on electrical systems.	Should be responsive.

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APPENDIX B

U.S. ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY SURVEY FORM FOR PROPRIETARY CHILD CARE ORGANIZATIONS/FACILITIES

SURVEY RESPONSES INSTRUCTIONS (Date) (Organization Name) (Organization Address) (Respondent Name/Title) (Respondent Ofc div/br., etc.) (Telephone) (Please provide response data current as of the date of survey completion reflecting all current facilities. Info in [] provided previously by telephone; check if valid) GENERAL - BACKGROUND/APPROACH # CENTERS (Total centers in operation) NEW CTRS/YEAR (Projected new centers in '84) ____ STATES OPRN (Number of states w/centers. Please provide a list of states and number of centers/state.) USDA FOOD PROG (Indicate whether centers participate in USDA Child Care Food Program by yes "X," or no "0") (%) SERVICES (X,O) (Indicate provided "X" or not provided "O," and the % of the -FULL DAY -PART DAY program represented) -PRESCHL AGE -AFTER SCHOOL -DROP IN (HRLY) -NIGHT -WEEK END OPERATION SCHEDULE (Indicate typical operation -DAYS/WEEK schedule by days/week "Sun, Mon, Tues, Wed, Thur, Fri, Sat" and -HOURS/DAY operation hours, ex. 0630-1830 and preferred schedule and hours) GENERAL - FACILITY DESIGN/CONSTRUCTION -STD/INDIV (Indicate whether facilities are constructed from standard or individual designs)

POPULATION -MAX OC CUP (Indicate range of code-specified -ADULTS maximum occupancy for all centers -CHILDREN and preferred occupancy for adults, -TOTAL children, and total) S IZE (Indicate sizes as ranges for all -CENTER(SF) centers and size preferred) -PLAY YARD(SF) -SITE(SF) PLAN ARRANGEMENTS (Indicate range of arrangements -OPEN/CLOSED provided at all centers and -SING/MULT STOR preferred arrangement) -TOILETS(CHILD) -CENTRAL/INDIV / LIFE SAFETY (Indicate life safety require--AREA LMITS(SF)_____ ments as "CODE" or actual -EXITS minimums where in excess of -#a/AREA code) -DIR FRM CLSRM -CORR WDTH(FT) -FIRE PROTECT (Fire resistance in hours for: -CONSTRUCT (HRS)_____ Construction/Structure: -SEPARAT(HRS) Area Separation; _____ -EXITWAYS(HRS) Means of Egress) _____ -INT FIN(CLASS) (Interior finish classification) (Indicate provided "X," or not -ALARM SYSTEM provided "0") -TO FIRE STAT -INTERNAL -MANUAL -AUTOMATIC -SMOKE DETECT -SPRINKLER (Indicate provided "X," or not _____ provided "0") -CODE (Indicate actual code that buildings are designed to, ex. _____ NFPA 101) (Indicate provided "X," or not -CONSTRUCTION TYPE provided "O". Construction -TYPE-I -TYPE-II types are in accordance with _____ -TYPE-III NFPA 101 & 220, and listed in -TYPE-IV descending order of fire -TYPE-V resistance) BARRIER FREE (Adults/Children) (Indicate which facility elements -INDR FURN/EQUIP are designed to be access--OUTDR PLAY EQIP ible to the handicapped and for which ages, adult-staff/children, -TOILETS -RAMPS by provided "X," or not -ADUTL CIRC provided "0") -CORR WIDTH(FT) (Indicate minimum dimensions) -DOOR WIDTH(IN) (Indicate minimum dimensions)

(Please provide a separate list of BUILDING, SITE WORK, PLAYGROUND, and SITE costs in \$/GROSS SF for twelve (total cases) of your most recent facilities constructed in the following states (l case/state): Alaska, Arizona, California, Colorado, Georgia, Louisiana, Massachusetts, New York, North Carolina, South Carolina, Texas, and the Washington, D.C., metropolitan area. If you have no facilities in a particular state or states, or if the most recent facility in a particular state is more than one year old, substitute data from more recent facilities in a state of your choosing. Please indicate the city, state, and beneficial occupancy date of each case listed.)

COST/SF GROSS		
-BUILDING	/	
-SITE WORK	/	
-PLAY GROUND	//	
-SITE	/	
-TOTAL FACIL	//	
-INCLUDED IN BUI	LDING COST	
-BUILDING		
-FXD FRN/EQUIP		
-MVE FKN/EQUIP		
-TOYS/MATRLS		
-LOAN COSTS		
-OTHER		
		
	TE UNDE COSTE	
-INCLUDED IN SIT	E WUKK CUSIS	
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	C	X,0)
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dicate the range of costs \$/gross square foot for all ldings constructed in the t year and the average or t for planning purposes. sider all building costs to "five foot line.") dicate the range of Cost 3 \$/gross square foot or lump for all facilities structed in the past year the average or cost for nning purposes) dicate normal building ments included "X," or luded "O" in the above lding costs)

(List major items)

(List major items)

(Indicate Alternative Contract Methods "X" or conventional contract methods "O" utilized. If "X", list alternative contract techniques utilized, ex. competitive bid)



-PRESCHOOL AGE -SCHOOL AGE

GE _____/____

STAFF MIX, # -DIRECTOR -CLERICAL -CARE GIVERS -COOK -JANITOR -OTHER



(Indicate the staff mix in numbers of staff members as a range for all centers and the preferred staff mix. If the titles identified here are inappropriate to your operations, list applicable titles)

PROGRAM SPACES

SECONDARY ACTIVI	TY SPACES	
-EATING		/
-NAP PING		
-CRIB		/
-DIAPER STAT		/
-TOILETS		
-CUBBIES		
-CLRM RECEP/CARE		/
-OTHER		/
		/

(Indicate whether the activity is provided "X," or not provided "O" and if it is included "INCL," or excluded "EXCL" in the net activity space)

NONPROGRAM SPACES

ADMINISTRATION SPACE	ES
-WAITING/RECEPT	/
-OFFICES	/
-STAFF LOUNGE	/
-CENTRAL STOR	
-ISOLATION AREA	/
-ADULT TOILETS	
-STAFF	/
-PARENTS	
-UNISEX	/
-MALE /FEMALE	
-OTHER	/
	/
	/

(For all nonprogram spaces, indicate whether the activity is provided "X," or not provided "O" and the preferred space allowance in gross SF)

SUPPORT SPACES -KITCHEN

-LAUNDRY -MAINT/JANITOR -MECH/ELECT -PANTRY -OTHER	 	/ / /
OTHER NON ASSIGN	SPACE	/

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OTHER NON ASSIGNABLE SPACE

-CORRIDORS	/	
-OTHER		/
	/	
	1	/
		and the second distance of the second distanc

OUTDOOR SPACES

SECONDARY OUTDOOR AREAS

-PORTE COCHERE	 /
-PEDEST WALKS	 /
-VEHIC CIRC	/
-SERV AREA/DRIV	 /
-OTHER	 /
	 /
	 /
	/

APPENDIX C:

PROPRIETARY FACILITY DATA DISPLAY FORMAT

COM ME NES					المالية المالي مناطقة
SELECTED OF LAR CARE GENTER	GENTER DATA (Actual)	Date of Opening:	Standard(or)Individual Design (Actual)	(Actual) Open(or)Closed Single(or)Multiple Story	
CON-ELVES			ed)	r)Multiple Story	
CENTAAL HEAD JUARTERS	NATIONAL ORGANIZATION DATA Average and Preferred	ORGANIZATIONAL BACKGROUND -Centers in Operation: -New Centers in 1984: -States of Operation:	GENERAL FACILITY CHARACTERISTICS Design/Construction Approach: -Standard(or)Individual Designs Sizes: Average /Prefer -Center(sq ft) -Play Yard(sq ft) -Site(sq ft)	Plan Arrangements Provided: (Average / Preferred -Open(or)Closed/Open(or)Closed -Single(or)Multiple Story/Single(o -Children's Toilets	
			134		

COMMENTS			E P ∵⇒bc
CENTER DATA AUTIALD	Gentral(or-Ind.vidua)		(Provided tof Program) Fill Day -Part Day -Part Day -Preschool Age / -After School -Drop in (Hourly) / -Night / -Wedend / -Weedend /
COMP. VIS	Indevî în L	(Actual / Licensed)	, Tred
verige and Preferred)	Central(or)Individual/Central(or)	nter Capacity: aximum Occupancy (Licensed / Design) Children	<pre>KAIIJONAL REQ'IREMENTS rvices: (Provided / . of Program) art Day Preschool Age /</pre>





CENTER DATA (ACTUAL) COMMENTS	Manual/Manual Automatic/Automatic Smoke Detect/Smoke Detect Smoke Detect/Smoke Detect Type I Type II Type II Type II Type II Type II Type V (Provided For Adults / Children) Indoor Furn. and Equip./Indoor Furn. and Equip. Type V (Provided For Adults / Children) Indoor Furn. and Equip./Indoor Furn. and Equip. Type V (Provided For Adults / Children) Indoor Furn. and Equip./Indoor Furn. and Equip. Additional Circ./Additional Circ. (Actual) Building
NATIONAL OKCANIZATION DATA (Average and Preterred) COMMENTS	-Manual -Manual -Mucomatic -Smoke Detect -Smoke Detect -Code -Type II -Type II -Total Facil. -Theluding -Theluding Cost:

Fired Funiture and Equip. Houble Funiture and Equip. Day Alacterials Loan Costs Loan Costs Loan Costs Loan Costs Action Costs Loan Costs Included in Above Site Nork Costs: Included in Above Site Nork Costs: Included in Above Flayground Costs: Included in Above Playground Costs: Included Include	Fixed Furniture and Equip. Fixed Furniture and Equip. -Toys/Materials Dovable Furniture and Equip. -Toys/Materials Toys/Materials Included in Above Site Work Coats: Tows/Materials Included in Above Playground Coats: Tows/Materials Included in Above Playground Coats: Modular Systems Undular Systems Modular Systems Modular Systems Modular Systems	niture and Equip.
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COMMENTS	provide all Primary	
CENTER DATA (ACTUAL)	Precast Concrete Component Construction Wood Frame Metal Frame Precast Concrete Precast Concrete (Actual Space Provided) Eating / Napping / Crib / Diaper Station / Cubbies / Cubbies /	
NATIONAL ORGANIZATION DATA (Averige and Preferred)	-Pre-ast Concrete -Component Construction -Wood Frame -Wood Frame -Weal Frame -Pre-ast Concrete -Pre-ast Concrete -Pre-ast Concrete -Pre-ast Concrete -Proprietary child co -Proprietary child co -Proprietary child co -Proprietary child co -Proprietary child co -Crib / Included in net Space) or (if excluded / Spaces Provided: -Crib / Included in net Space) or (if excluded / Spaces Provided: -Cubbies /	
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