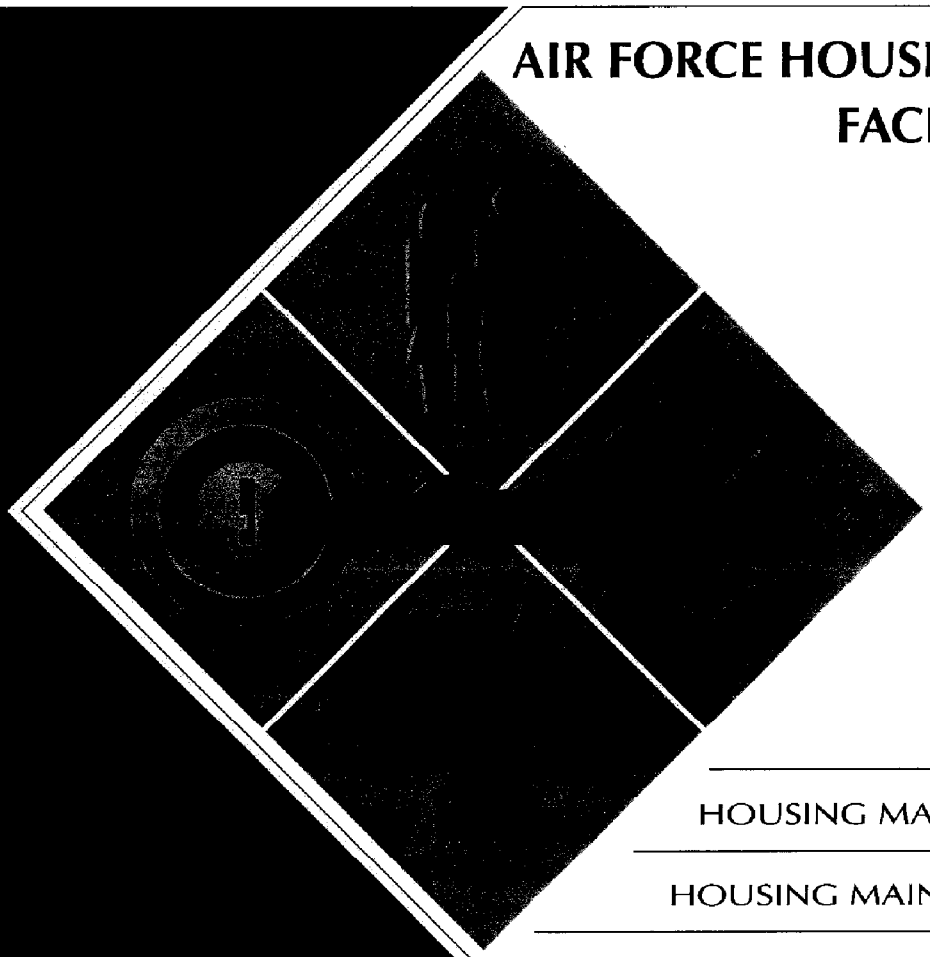

AIR FORCE HOUSING SUPPORT FACILITIES GUIDE

HOUSING MANAGEMENT OFFICE

HOUSING MAINTENANCE FACILITY

FURNISHINGS MANAGEMENT WAREHOUSE

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Chapter 1
Introduction

1.1 Purpose

This design guide provides the basic criteria to plan, program, and design Air Force Housing Management Offices, Housing Maintenance Facilities, and Furnishings Management Warehouses.

This document is to be used by base civil engineers, housing managers, housing maintenance managers, furnishings management supervisors, design architects and engineers, and other personnel involved in housing support facilities projects. It is intended to help all participants better understand Housing Management Office, Housing Maintenance Facility, and Furnishings Management Warehouse requirements and design criteria so they can effectively participate in the project development process.

1.2 Guide Development

A combined team of Air Force and contract architect-engineer personnel gathered data for this guide by touring several existing Housing Management Offices, Housing Maintenance Facilities, and Furnishings Management Warehouses; collecting information from their staff members through interviews and written responses to comprehensive questionnaires; and evaluating numerous floor plan designs of existing and projected housing support facilities.

Based on the findings of this data, the team then developed detailed written planning and design guidance for each type housing support facility, and organized the information into separate chapters, supported by charts, tables, diagrams, and example floor plans and site plans to further illustrate the guidance provided.

The team distributed interim submittals of the guide for review to housing management and operations personnel, architects, engineers, and interior designers from the Directorate of Housing at Headquarters United States Air Force, the Design Group at the Air Force Center for Environmental Excellence, the housing staffs at all major command headquarters, and some selected base housing staffs.

1.3 Scope and Use

This design guide is applicable to all design projects for Housing Management Offices, Housing Maintenance Facilities, and Furnishings Management Warehouses at Air Force bases in the continental United States (CONUS) and overseas. It applies to new facilities and to major or minor renovation projects. It provides criteria for determining the design of indoor and outdoor spaces, overall facility design, site evaluation and planning, and program requirements. Differences in facilities at CONUS and overseas bases are also discussed.

This document is not intended to provide all of the information necessary to identify project requirements or successfully prepare project design documents. It is to be used to prepare project programming documents, design statements of work, and appropriate portions of housing community plans in conjunction with other Air Force and Department of Defense (DoD) documents. Additional information on the unique program and design requirements of each base must be incorporated for the completion of a successful project.

1.4 Organization

The succeeding chapters of this guide are organized in the following manner:

A. Function Descriptions and Relationships

General information describing the facility is found in Section 1 of each respective chapter of this design guide. This includes a discussion of the functions to be accommodated and the relationships between the function areas.

B. Individual Space Requirements

Section 2 of each chapter contains specific requirements of individual spaces within every function area of the facility. These specific requirements include sizes and critical dimensions, organization and character, furnishings and equipment, and any technical requirements the space may need to function properly.

C. Overall Project Design

Overall Project Design, Section 3 of each chapter, discusses site evaluation, selection, and design requirements; overall building design requirements, including circulation, organization, architectural character, materials, and furnishings; building system requirements for each facility; and special project costs.

D. Illustrative Designs

The Illustrative Designs in Section 4 provide one or more example floor plans to help demonstrate the programming and design guidance of the preceding sections as applied to a typical building program. This section also includes a site plan illustrating a typical site layout for one of the example floor plans provided. These designs are not intended to restrict or limit the final design solutions of actual facility projects, but are only included to illustrate design concepts for successful housing support facilities.

1.5 Housing Management Office Overview

The mission of the Housing Management Office is to provide direct customer services and assistance to DoD members and their families in obtaining both government controlled and community housing. The facility accommodates the Housing Management Office of the Base Civil Engineer's organization. Supported functions include: managing military family and unaccompanied personnel housing and leased facilities (dwellings, trailer parks, etc.); inspecting housing facilities; initiating and monitoring programs for facility acquisition, improvements, operation, and maintenance; providing relocation/ housing referral assistance; and conducting various housing studies and market analyses. This office is usually the first stop for arriving personnel and the last stop for departing personnel.

Space requirements vary depending on the number of staff working in the facility, the total inventory of family housing assets, and the military population of the base.

1.6 Housing Maintenance Facility Overview

The mission of the Housing Maintenance Facility is to provide for the care and repair of family housing units owned or under contract lease by the Air Force. These housing units are occupied by DoD personnel and their families. The Housing Maintenance Facility personnel normally work under the supervision of the Housing Management Office or the Operations Flight of Base Civil Engineering. The facility size and number of personnel is dependent upon the inventory of housing units under the authority of the base.

1.7 Furnishings Management Warehouse Overview

The mission of the Furnishings Management Warehouse is to provide furniture and appliances, primarily for unaccompanied personnel housing. Overseas, Furnishings Management also supports on and off base family housing and off base unaccompanied personnel. Supported facilities include lodging, dormitories, and supplemental furnishings for designated General Officer's Quarters. Warehouse size in CONUS is dependent on the inventory of unaccompanied living quarters under the authority of the base. Overseas warehouse size depends on inventory of quarters supported and whether the base is in an area identified by the Joint Federal Travel Regulation (JFTR) as a full or limited JFTR area.

Chapter 2
Housing Management Office

2.1 Function Descriptions and Relationships

A. General

The success of any building project is dependent on the proper coordination of all the organizations and people involved in the design and operation of the facility. This coordination is important in the design of a Housing Management Office because the facility is one of the first places an arriving DoD member and his/her family visit when they come to a base. The image of this facility's professionalism is important in making the arriving member feel "at home". This professionalism is represented not only by the staff of the facility, but also by the facility itself through the arrangement of its functions, its staff work spaces, and the overall appearance of the building both inside and outside. It is very important that all organizations involved in the design and construction of a Housing Management Office understand the role the facility performs in greeting a member to a new assignment.

B. Functions

1. Assistance

This area contains work spaces for the assistance chief and the housing counselors/housing assistants. The terms "housing counselor" and "housing assistant" are used at different bases and generally refer to people who perform the same function. This Design Guide will use the term "housing assistant". The housing assistants provide the customer with guidance in the selection of government controlled accompanied and unaccompanied living quarters, assist in filling out forms, schedule inspection appointments, mediate neighbor disputes, and answer questions concerning the customer's obligations, rights, responsibilities, and entitlements.

2. Relocation Assistance

The relocation specialist interfaces with the customer who is seeking community housing; providing guidance in choosing appropriate living quarters, reviewing leases with community landlords, and mediating disputes between customers and community landlords/realtors. The relocation specialist also provides advance community housing information to inbound personnel before they have departed their previous station. The relocation specialist works with community realtors and landlords to ensure that information available to the customer is up-to-date, accurate, and in a form that is usable by the customer. At overseas locations, the relocation specialist has additional duties which include approving leases with community landlords and translation services.

3. Facilities

This area contains work spaces for the facilities chief and the facilities inspectors/quality assurance evaluators. The facilities inspectors perform housing inspections at change of occupancy, as scheduled by the housing assistants, and determine and coordinate the timing of change of occupancy maintenance and repair work. Depending on the unique situations at each base, they also perform a variety of other functions including inspecting maintenance contractors' work, inspecting housing areas, and recommending and reviewing facility projects.

4. Administrative Functions

The administrative functions include the office of the housing manager, the secretary/receptionist, and a conference room. The conference room is used for staff meetings, conferences, meetings with customers on housing issues requiring privacy, meetings with large numbers of customers, training, and other related tasks.

5. Waiting Room

This area is used by the member and/or family (typically called the "customer") while they are waiting for specific assistance from a staff member, availability of telephones, or for the use of housing aids provided by the Housing Management Office. The waiting room contains comfortable seating, displays of available government controlled and community housing, the government controlled housing waiting lists, a television and VCR, housing publications, popular magazines for the customer's use while waiting, and pamphlets, maps, guides, and other informational publications for the customer. The waiting room is also used by the customer as a work area to fill out various forms utilized by the Housing Management Office staff.

6. Children's Play Areas

The children's play areas, both indoor and outdoor, provide entertainment and distraction for toddlers, pre-schoolers, and elementary school age children.

7. Support Functions

Support functions for the Housing Management Office include the vestibule, a break room, an area for facility file cabinets, a storage room for office supplies and forms, a computer room, the toilets, a janitor's closet, and the mechanical/ electrical room.

C. Immediate Adjacencies

The adjacencies matrix for the Housing Management Office is shown in Figure 1. It shows, for each space in the facility, which other spaces should be located adjacent to it. This matrix is used to help the designer maintain the proper physical relationships between functions.

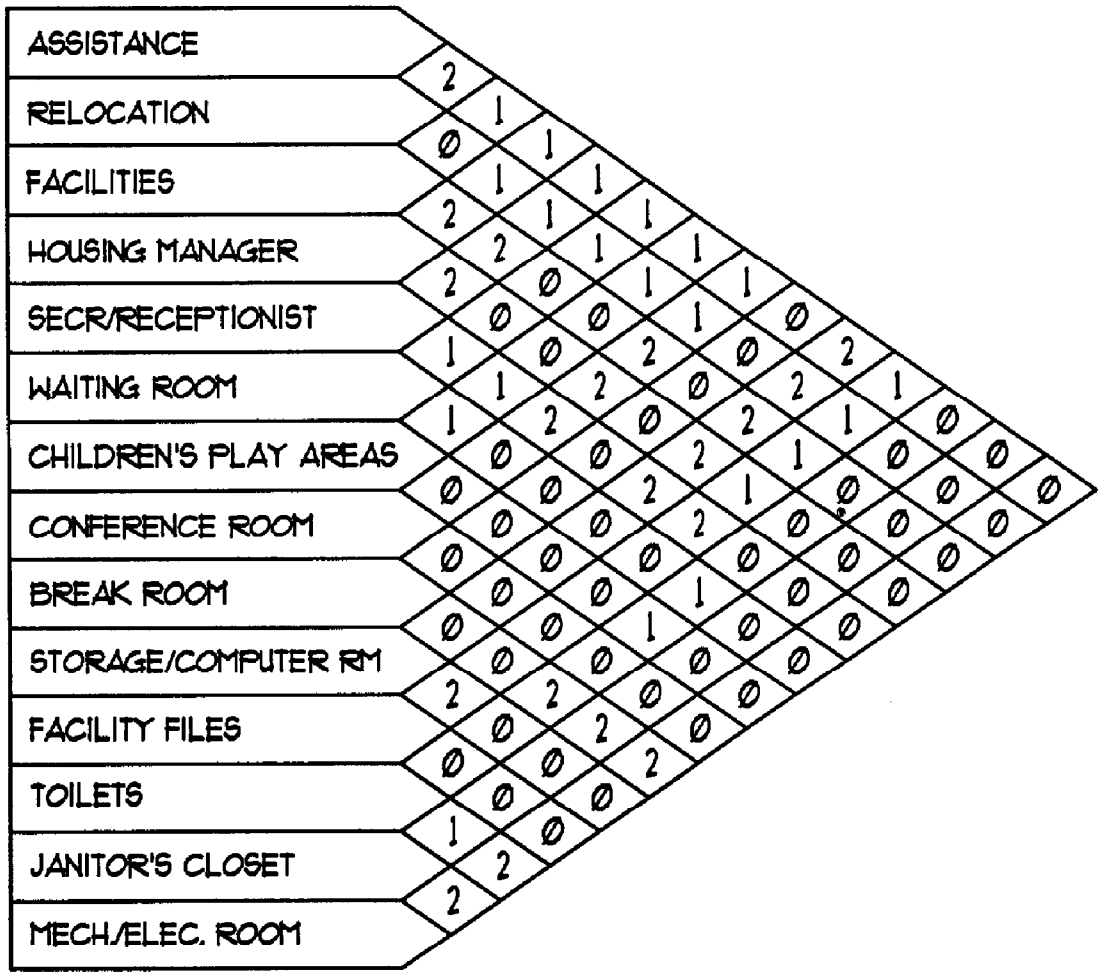


Figure 1 - Adjacencies Matrix

D. Relationships Diagram

Shown below is a "bubble" diagram indicating the relationships and adjacencies noted previously. This diagram does not depict actual room locations in a building.

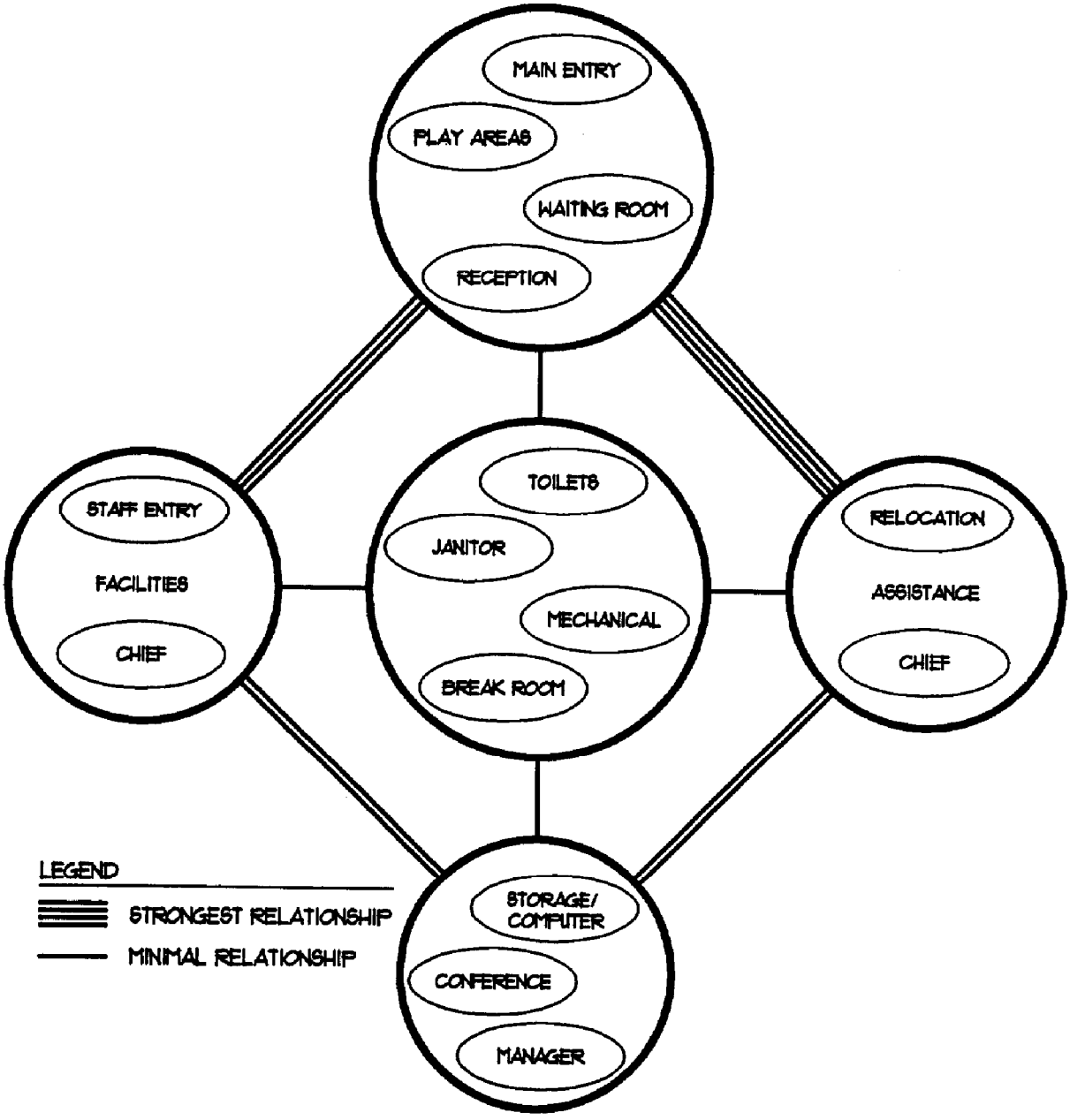


Figure 2 - Relationships Diagram

2.2 Individual Space Requirements

A. Space Criteria

1. Planning Considerations

Space criteria define the size, type, number, and functional relationships of areas required for the support of Housing Management Office requirements. Development of the Housing Management Office space criteria for each project must take into account the current and projected authorized staff sizes, the existing Housing Management Office spaces and their adequacies or inadequacies relative to current and future needs, the potential for retention and renovation of existing facilities, and the need for additions or complete new construction projects. Also consider the current and projected user population to be served, the quantity of government controlled housing, the availability of community housing, the number of unaccompanied housing rooms on base, and the occupancy turnover rate for both family housing and unaccompanied housing.

2. Standard Facility Requirements

The total square footage required for the Housing Management Office is directly related to the number of housing assistants and facility inspectors employed, which is directly related to the number of housing assets administered by the facility.

In order to provide guidance applicable for all installations, this guide categorizes bases into three different sizes, small, medium, and large, according to how many family housing assets each has.

For the purposes of this design guide, a small base has less than 1000 family housing assets, a medium base between 1000 and 1600 family housing assets, and a large base more than 1600 family housing assets. (These quantities include government-owned, leased, and otherwise controlled housing units and government mobile home parks.)

3. Design Issues and Relationships

In developing the space criteria for a Housing Management Office, consider the issues of overall building design and relationships discussed in Section 2.3.B. Each base may also determine different or additional requirements are needed to satisfy its own local program. These considerations could affect the overall function areas and spaces included in the proposed facility and may require the modification of their relative sizes. Housing Management Offices could be co-located with other base support facilities, notably Finance, Personnel, and Family Services. This would affect the required program spaces and sizes. Entire areas or spaces could be eliminated where their functions are provided in conjunction with another facility. The affected function areas could be the waiting room, toilets, conference room, break room, computer room, support facilities, and possibly the play areas.

4. Specific Requirements

The remainder of this section presents the criteria applicable to the design of each function area in the Housing Management Office. For each function area, the primary design considerations are given for the area as a whole. The primary design considerations include the use of the area, relationships between areas/spaces, and the organization and character the area is expected to present to the user and customer. Each space within that area then is listed complete with all furnishings and equipment expected to occupy the space, and any special technical requirements which exist for the space.

These criteria apply to all sizes of facilities. The variable factors affecting size are the number of staff positions each facility will be expected to support, the size of the customer population, and the quantity of housing assets administered by the management office.

Table A, ***Space Criteria Summary***, recommends square footage areas and minimum dimensions for all function areas and for all three base sizes. This table can be used to help ensure all function areas are incorporated into specific design projects at a size sufficient to function properly.

FUNCTION AREAS	SMALL BASE		MEDIUM BASE		LARGE BASE	
	Square Feet	Minimum Dimension	Square Feet	Minimum Dimension	Square Feet	Minimum Dimension
Assistance Chief	125	10'-0"	125	10'-0"	125	10'-0"
Housing Assistant (each)	115	9'-0"	115	9'-0"	115	9'-0"
Relocation Specialist	125	10'-0"	125	10'-0"	125	10'-0"
Relocation Telephones (each)	20	4'-0"	20	4'-0"	20	4'-0"
Facilities Chief	125	10'-0"	125	10'-0"	125	10'-0"
Facilities Inspector (each)	64	6'-0"	64	6'-0"	64	6'-0"
Facilities Common Use	40	6'-0"	60	6'-0"	60	6'-0"
Housing Manager	140	10'-0"	140	10'-0"	140	10'-0"
Secretary/Receptionist	100	10'-0"	100	10'-0"	100	10'-0"
Conference Room	160	12'-0"	200	12'-0"	240	12'-0"
Waiting Room	200*	15'-0"*	240*	15'-0"*	280*	15'-0"*
Indoor Play Room	140	10'-0"	180	10'-0"	200	10'-0"
Outdoor Play Area	240	15'-0"	270	15'-0"	300	15'-0"
Main Entrance/Vestibule	80	10'-0"	80	10'-0"	80	10'-0"
Staff Entrance/Vestibule	30	5'-0"	30	5'-0"	30	5'-0"
Break Room	140	10'-0"	180	10'-0"	200	10'-0"
Storage/Computer Room	240	12'-0"	280	12'-0"	320	12'-0"
Men's/Women's Toilets (Total for both)	240*	8'-6"*	240*	8'-6"*	280*	8'-6"*
Janitor's Closet	25	5'-0"	25	5'-0"	25	5'-0"
Mechanical/Electrical	**	**	**	**	**	**

NOTE: The areas given in the above table do not include circulation space.

* Square footage is dependent on number of employees and quantity of housing assets administered by the base. The facility sizes noted are minimums.

** Square footage is dependent on the gross facility size and geographical location.

Table A, Space Criteria Summary - Small, Medium, and Large Bases

B. Assistance

1. Primary Design Considerations

a. Use and Performance

The Housing Assistance area functions as an office, similar to the assistance section of a bank or other service organization which provides direct, confidential customer services and administrative support. This area contains work spaces for the assistance chief and the housing assistants. This area is the most important space in the Housing Management Office since it is where most of the customers' needs are met. The housing assistants provide the customer with guidance in the selection of government controlled living quarters, assist in filling out forms, schedule inspection appointments, mediate neighbor disputes, and answer questions concerning the customer's obligations, rights, responsibilities, and entitlements.

b. Space Organization and Character

The assistance chief's office should be private, and large enough for small conferences with customers and/or staff. This work space should be pleasant and bright, with windows overlooking desirable features of the building's site and should provide interior visibility of the housing assistants and waiting room.

The housing assistant's work space should be arranged efficiently, provide adequate space for customer seating, and provide adequate work space for the staff member and his/her equipment. Provide system furniture type space dividers with see-through clear panels across the front of the work space. The space itself should present an aura of professionalism to the customer, and assist the customer in discussing sometimes difficult issues by providing a sense of privacy and separation from neighboring work spaces.

2. Assistance Chief

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 3 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †
- 1 typewriter †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide computer cabling

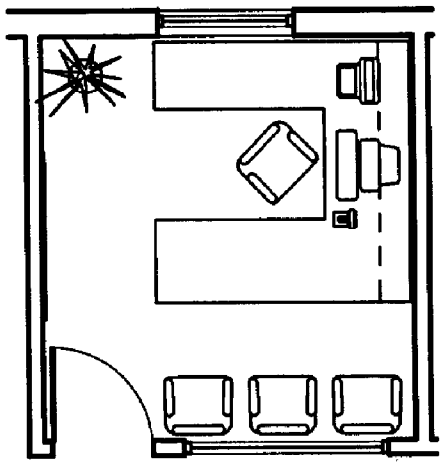


Figure 3 - Assistance Chief Office

3. Housing Assistant

All criteria is per assistant.

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 ergonomic desk chair
- 2 visitor chairs †

(Utilize "systems" type furniture)

- 1 telephone †
- 1 computer terminal †
- 1 typewriter †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

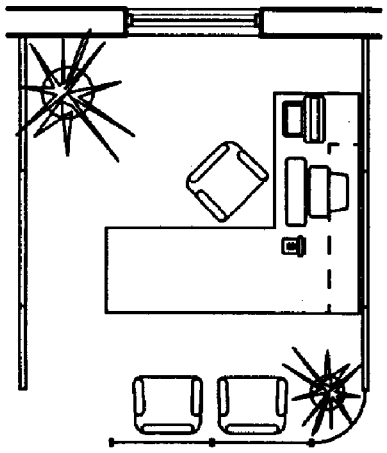


Figure 4 - Housing Assistant Work Space

C. Relocation Assistance

1. Primary Design Considerations

a. Use and Performance

The relocation specialist interfaces with the customer who is seeking community housing; providing guidance in choosing appropriate living quarters, reviewing leases with community landlords, and mediating disputes between customers and community landlords/realtors. This function also provides advance community housing information to inbound personnel before they have departed their previous station. The relocation specialist works closely with community realtors and landlords to ensure that information available to the customer is up-to-date, accurate, and in a form that is usable by the customer. At overseas locations, this element has additional duties which include approving leases with community landlords and translation services.

This function also includes a number of relocation telephones for customer use in calling community housing vendors to seek housing that is appropriate for their situation.

b. Space Organization and Character

The relocation specialist's office functions similarly to a private real estate broker's office. The office should be private, and large enough for small conferences with customers and/or staff. Design the office to present an organized and professional appearance to give the customer a sense of being assisted by someone who is very knowledgeable about the local real estate market. The relocation specialist will often meet community housing vendors in this office. This work space should be pleasant and bright, with windows overlooking desirable features of the building's site.

Place the relocation telephones adjacent to the waiting room with a clear view into the children's play area and near the relocation specialist's office space. The number of relocation telephones will vary according to local conditions and the degree to which customers are housed in the community versus government controlled housing. A typical location will need a minimum of two relocation telephones, each in a 4' deep x 5' wide semi-private cubicle.

2. Relocation Specialist

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 3 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †
- 1 typewriter †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide computer cabling

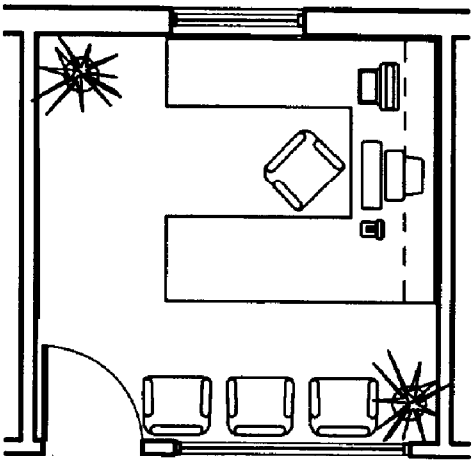


Figure 5 - Relocation Specialist Office

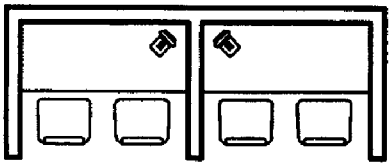


Figure 6 - Relocation Telephone Cubicles

3. Relocation Telephones

All criteria is per telephone station

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 desk/countertop 24" deep x 60" wide x 30" high
- 1 telephone †
- 1 set of telephone books †
- 2 ergonomic desk chairs †
- 1 combination notepad and pen †

† Non project funded equipment

c. Technical Requirements

- Provide off-base telephone calling capability, both local and limited long distance

D. Facilities

1. Primary Design Considerations

a. Use and Performance

This area contains work spaces for the facilities chief, the facilities inspectors, and a common use area for the facilities inspectors. The facilities inspectors are required to perform preliminary and final housing inspections at change of occupancy and, at some bases, they provide quality assurance inspections for housing maintenance contracts. They also do housing area inspections and recommend and review facility projects. Their work space is used to write reports and fill out forms. Most of the inspector's time is spent out in the housing areas, doing inspections.

The common use area contains a drawing lay-out table for reviewing blueprints. It also contains two visitor chairs for use by the facilities inspectors when meeting with customers.

b. Space Organization and Character

The facilities chief's office should be private, and large enough for small conferences with staff and/or contractors. This work space should be pleasant and bright, with windows overlooking desirable features of the building's site, and interior visibility of the facilities inspectors' work spaces.

Because the facilities inspectors are often out of their work space and, when they are present, have a lower frequency of customer interface than assistance section personnel, their work spaces are not required to be as large as the other staff work spaces. The facilities inspector's work space must be arranged efficiently because of the small area allotted to it. The work area should be pleasant and professional, with an openness to promote a sense of teamwork among all of the inspectors.

2. Facilities Chief

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 3 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †
- 1 typewriter †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide computer cabling

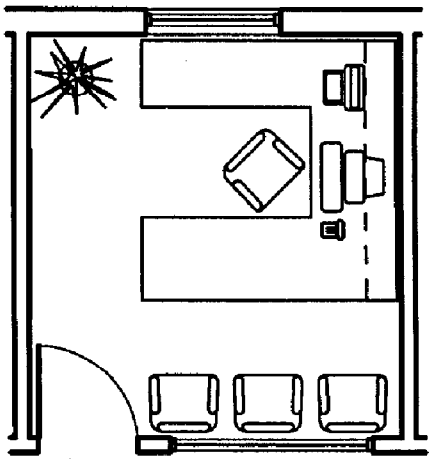


Figure 7 - Facilities Chief Office

3. Facilities Inspector

All criteria is per inspector.

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 1 under counter filing cabinet drawer
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 ergonomic desk chair

  (Utilize "systems" type furniture)
- 1 telephone †
- 1 computer terminal †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

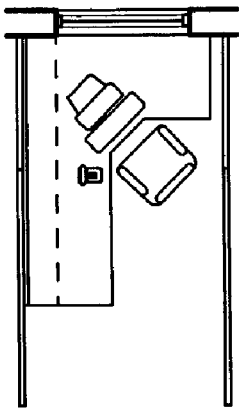


Figure 8 - Facilities Inspector Work Space

4. Facilities Common Use

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 2 panel mounted work surfaces, 36" deep
- 2 under counter filing cabinet drawers
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 ergonomic desk chair
- 2 visitor chairs †

  (Utilize "systems" type furniture)
- 1 hanging file for drawings †
- 1 telephone †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

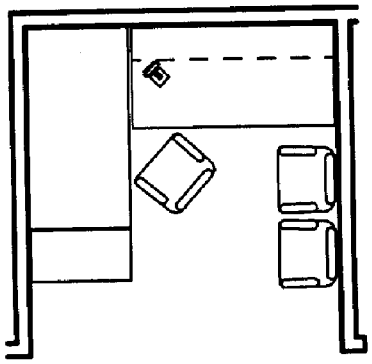


Figure 9 - Facilities Common Use Work Space

E. Administrative Functions

1. Primary Design Considerations

a. Use and Performance

The administrative functions of the Housing Management Office include an office for the housing manager, a work space for the secretary/receptionist, and a conference room. In addition to performing office administrative functions, the secretary/receptionist has the additional responsibility of greeting the customer and directing them to the proper place for whatever help they need.

b. Space Organization and Character

Organize the administrative spaces to present a sense of professionalism to the staff as well as to the customer. The manager's office should be private, and large enough for small conferences with customers and/or staff. This work space should be pleasant and bright, with windows overlooking desirable features of the building's site.

The secretary/receptionist work space should be efficiently arranged, and located near the front entrance and adjacent to the waiting area. It should provide the customer with a feeling of entry into a professional work place. At small bases, this work space may not exist and the duties of the secretary/receptionist will be performed by the housing assistants.

The conference room's main function will be for staff conferences and training, but it will also be used for meetings with customers on sensitive issues requiring privacy or are larger than can be accommodated by the housing manager or assistance chief office. Privacy for the conference room must be a prime consideration. The conference room will also be used as a work space for assembly of pamphlets, guides, and other informational documents distributed to the customers.

2. Housing Manager

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers (lockable)
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 3 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide door with key controlled access
- Provide computer cabling

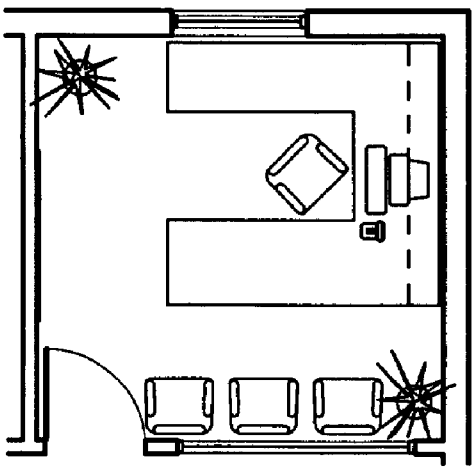


Figure 10 - Housing Manager Office

3. Secretary/Receptionist

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 "L" shaped secretarial work station with 30" deep work surfaces, 42" high panels with 12" deep transactional work surface
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 ergonomic desk chair

  (Utilize "systems" type furniture)
- 1 multi-button telephone †
- 1 computer terminal †
- 1 typewriter †
- 1 telefax machine †
- 1 laser printer †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

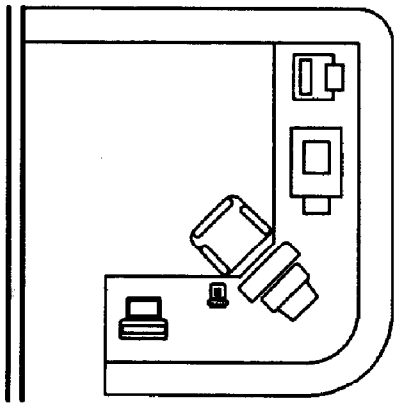


Figure 11 - Secretary/Receptionist Work Space

4. Conference Room

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Conference table and chairs (number to suit staff size) †
- Erasable markerboard/projector screen
- 1 television set with VCR †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc

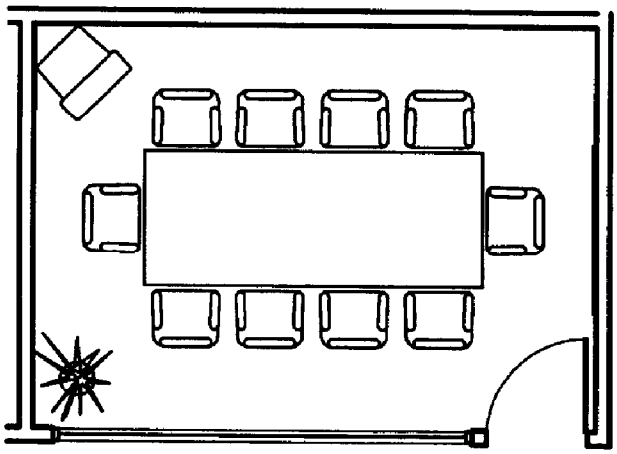


Figure 12 - Conference Room

F. Waiting Room

1. Primary Design Considerations

a. Use and Performance

This area is used by the customer while they are waiting for specific assistance from a staff member, availability of telephones, or while using housing aids provided by the Housing Management Office. Displays of available community and government controlled housing, the government controlled housing waiting lists, a television and VCR, housing publications and popular magazines for the customer's use while waiting, and pamphlets, maps, guides, and other informational publications for the customer are all accessed from this area. The waiting room is also used by the customer as a work area to fill out various forms utilized by the Housing Management staff.

b. Space Organization and Character

The waiting room is one of the first spaces the customer sees after entering the building. It should be pleasant and inviting, with wall art and accessories providing the customer with a sense of harmony and well-being. The waiting room should contain comfortable seating for the customer and should be organized for ease of access from both the front entry and the staff working area. A focal point of the waiting room should be the display area for government controlled and community housing materials. This cabinet holds housing materials and publications, waiting lists, and other pertinent materials. The television and VCR could be incorporated into the display area for a unified appearance. The entire space should be organized to present the desired image of professionalism to the customer.

2. Waiting Room

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Sofas †
- Chairs †
- 2 very firm chairs (for pregnant customers) †
- Occasional tables †
- Lamps for occasional tables †

  (The total number of sofas, chairs, tables, and lamps must be determined specifically for each project.)

- Coffee service table and materials †
- Display cabinet for information publications †
- Television set with VCR †
- Hanging and potted plants †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 30 fc
- Provide CATV and one wired outlet.

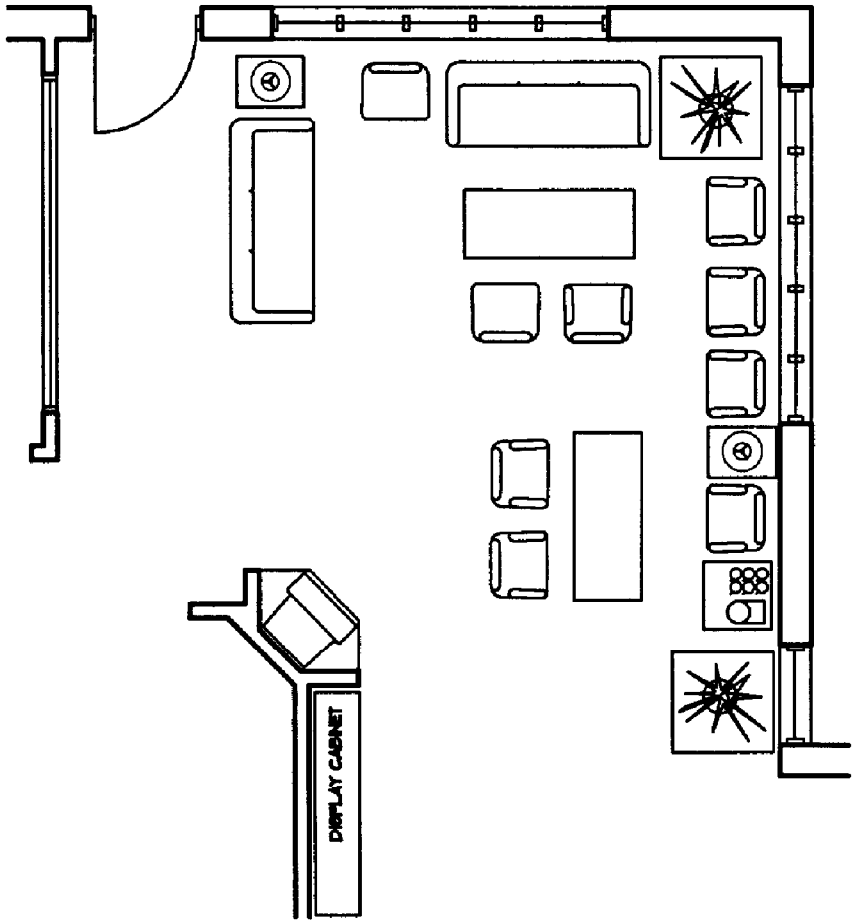


Figure 13 - Waiting Room

G. Children's Play Areas

1. Primary Design Considerations

a. Use and Performance

The children's play areas are used to distract and provide entertainment for children accompanying the customer to the Housing Management Office. It has two components, an indoor area and an outdoor area. Both the indoor and outdoor play areas are intended for children ranging from one year old (with parent attending) up to eight years old and should have equipment suitable for those age groups. An outdoor play area should only be considered where it can be utilized for a substantial part of the year.

b. Space Organization and Character

Locate the indoor play room adjacent to the waiting room, with clear views into it from the waiting room, relocation telephones, and the secretary/receptionist area. The space should be adequate to accommodate five to eight children of varying ages with room for small play equipment and toys. Provide a cable television outlet, located high on a wall, for a television and possible VCR. The television and VCR are a local option item, and, if provided, must be located out of reach of children. The play room should be acoustically isolated from the rest of the facility and requires at least one mostly glass wall facing the adjacent areas which require views into it. The glass is required to be shatter-resistant and protected from breakage. The finishes inside the play room should be bright and lively to invite children to want to play there, and must be durable and easily cleaned.

The outdoor area should be located immediately adjacent to the indoor play room with only indirect access provided between the two. The outdoor area should have a resilient play surface base and it must have a five foot high (minimum) fence with no gate to provide security and containment for the children inside. Design the fence to complement the building's exterior design and in accordance with the Base Architectural Compatibility Guide. The play equipment located in the outdoor area should be durable, maintenance free, and suitable for children from age one to age 8. The play area should be readily visible and accessible from the waiting room, relocation telephones, and the secretary/ receptionist area. Design the outdoor play area in accordance with the U.S. Product Safety Commission, **Handbook for Public Playground Safety.**

2. Indoor Play Room

a. Size and Critical Dimensions

- Refer to Table A, ***Space Criteria Summary***

b. Furnishings and Equipment

- 1 play table - 30" x 60" †
- 1 half-height play table - 48" x 48" †
- 2 chairs for play table †
- 4 chairs for half-height play table †
- Miscellaneous small toys and games †
- 1 toy and game shelf unit †
- Television set with VCR †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 30
- Cable television outlet
- Shatterproof glass wall

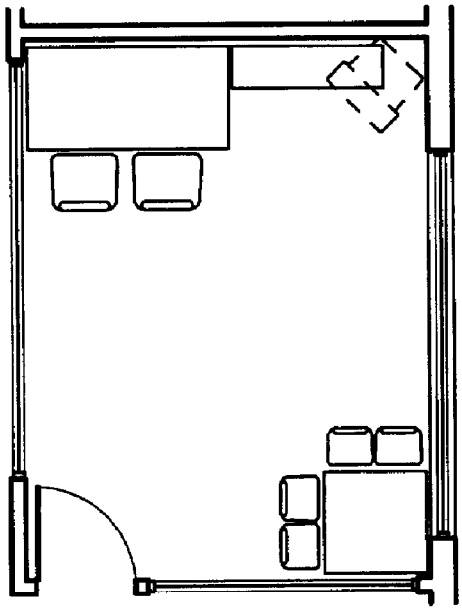


Figure 14 - Indoor Play Room

3. Outdoor Play Area

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Medium sized outdoor climbing structure
- Miscellaneous small outdoor toys †

c. Technical Requirements

- 5 foot high (minimum) fence with no gate
- Resilient play surface (with provision for adequate drainage)

† Non project funded equipment

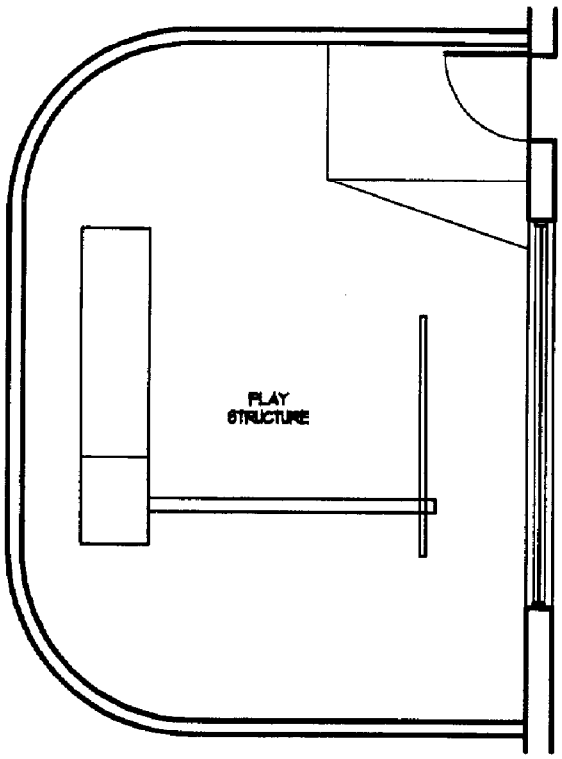


Figure 15 - Outdoor Play Area

H. Support Functions

1. Primary Design Considerations

a. Use and Performance

The support functions include areas for the entrances and circulation space, break room, computer room, facility file cabinet space, a storage room for office supplies, forms, and numerous customer handouts (pamphlets, maps, etc.), toilets, janitor's closet, and a mechanical/electrical room. The janitor's closet and the mechanical/electrical room have uses directly related to their name and do not need to be discussed further. The other areas all have special needs.

Two entrances are required: the main entrance, with a vestibule, at the front of the facility and a secondary entrance for staff use only.

The break room will be used by staff members for lunches and breaks at various times throughout the day. Design this area to allow small scale food preparation for staff use and any conferences supported by refreshments. It can also be used for meetings and as an additional work space.

The computer room contains a mini-computer or the file server for the facility's workstation computers, a high speed band printer, a copy machine, and miscellaneous storage for these machines. This equipment can also be located in an expanded storage room.

The area for facility file cabinet space must be easily accessible by both the housing assistants and the facility inspectors. These file cabinets contain a separate folder for each family housing unit. Use lateral-type file cabinets located in a wide hallway or recesses in hallway walls (see Figure 18).

Design the storage room for office supplies and forms to also accommodate storage for yard signs, lock boxes, a key cabinet, and miscellaneous shelving and cabinets for other storage needs. The storage room may also be designed to contain the mini-computer or file server, the high speed band printer, and copy machine.

The facility requires two handicapped-accessible public toilets, one male and one female. Locate the toilets to be accessible by both staff and customers.

b. Space Organization and Character

The entrances are located at the front and rear of the building and circulation spaces are throughout the facility. Locate the mechanical/electrical room on an outside wall for ease of access by maintenance personnel. All other spaces can be located in the building core. The toilets, main entry and vestibule, and the circulation spaces are the only support areas requiring customer access.

Provide all of the non-customer spaces with durable, economical, maintenance-free materials and finishings. The customer accessible areas will require materials and finishes that continue the image of professionalism the rest of the facility employs.

Design the main entrance to the facility to provide easy access into the receptionist area and the waiting room. Provide this entrance with a vestibule, a recessed entrance mat, and two sets of dual doors. The outer set should remain unlocked at all times to provide 24-hour access to a waiting list and other key housing information mounted on the vestibule walls. Minimize the interior circulation space as much as possible by allowing customers to travel through non-sensitive areas to reach other functions. Locate the secondary entrance for ease of access by the facility inspectors and the managers. The secondary entrance requires a smaller vestibule with recessed entrance mat and single doors.

Design the break room to contain a table with chairs and a counter area with sink, cabinets, refrigerator space, and microwave.

Locate the computer room so the high speed printer is readily accessible by the relocation specialist.

Locate the storage areas so all facility file cabinets are easily accessible by both the housing assistants and the facility inspectors.

Locate the toilets near the waiting room, with ready access from the staff work areas. Screen views into the toilets from other areas of the building. Locate the janitor's closet near the toilets with access from circulation space.

Locate the mechanical/electrical room on an outside wall at the rear or rear-side of the facility, with access from the outside only, near the toilets, and as centrally located as possible to minimize HVAC duct runs.

2. Main Entrance and Vestibule

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Recessed entrance mats
- Information boards

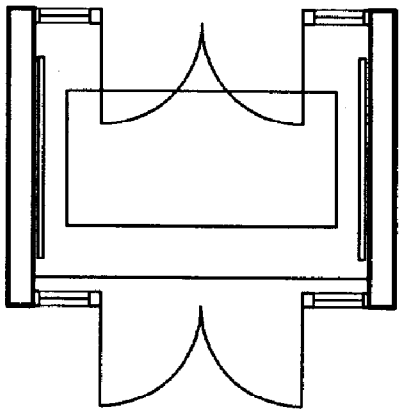


Figure 16 - Main Entrance and Vestibule

3. Staff Entrance and Vestibule

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Recessed entrance mat.

4. Break Room

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Base and wall cabinets with countertop
- Stainless steel sink
- 1 Break room table - 48" x 72" †
- 8 chairs †
- Refrigerator †
- Microwave †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Provide GFI receptacles at counter area

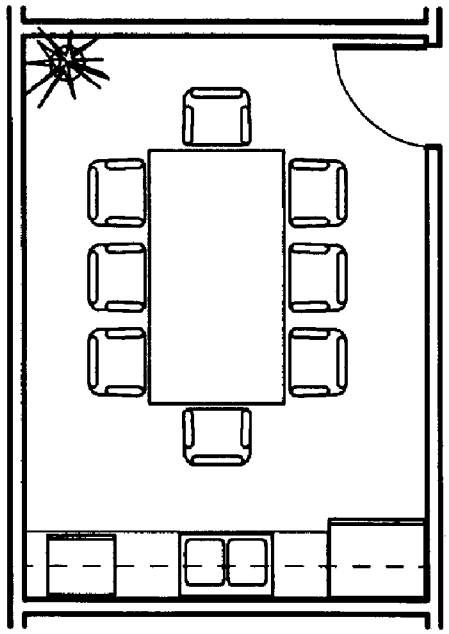


Figure 17 - Break Room

5. Storage/Computer Room

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Lateral type file cabinets in hallway †
- 1 copy machine †
- High speed band printer †
- Mini-computer/server (if required) †
- Key storage cabinet †
- Shelving for supplies and forms †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Cabling for workstation hook-up
- Extra HVAC (if required)

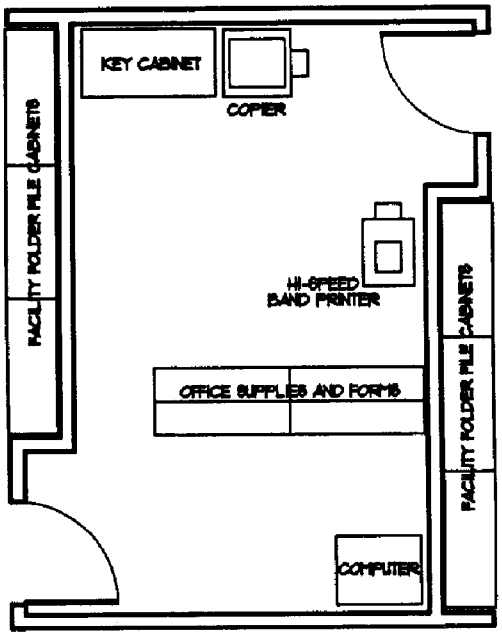


Figure 18 - Storage/Computer Room

6. Toilets

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Men - water closets, urinals, lavatories, counters, fold-down diaper changing station, soap dispensers, hot air hand driers or paper towel dispensers, toilet tissue dispensers, grab bars, mirrors, coat hooks, partitions, waste receptacles. All toilet accessories to comply with handicap requirements. (Number of toilet fixtures will vary based on size of facility.)
- Women - same as men except without a urinal and the addition of sanitary napkin dispenser/ disposal units.
- Water fountain in corridor

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Provide GFI type receptacles
- Exhaust fans
- Non-skid tile flooring
- Ceramic tile walls (full height or wainscot)
- Plastic laminate countertops

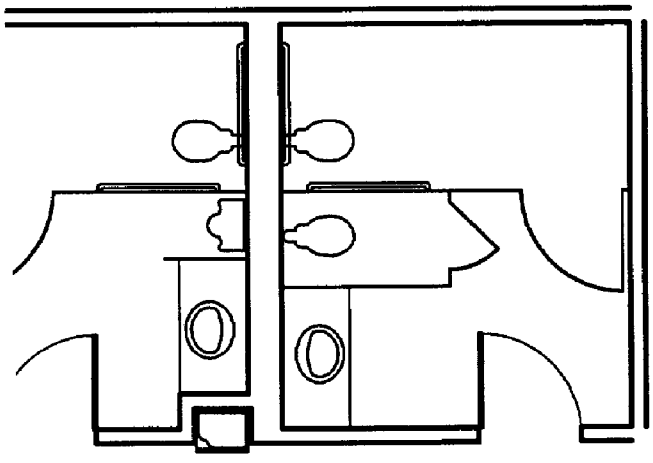


Figure 19 - Toilets

7. Janitor's Closet

a. Size and Critical Dimensions

- Refer to Table A, *Space Criteria Summary*

b. Furnishings and Equipment

- Floor mounted mop sink
- Shelves for cleaning supplies
- Wall mounted hooks for cleaning equipment

c. Technical Requirements

- Lighting level of 15 fc
- Provide GFI type receptacles
- Provide floor drain and slope floor to drain
- Provide water resistant floor surface

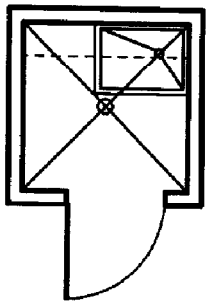


Figure 20 - Janitor's Closet

8. Mechanical/Electrical Room

a. Size and Critical Dimensions

- Size varies with building system requirements and local climate.

b. Furnishings and Equipment

- Electric panels
- Telephone panels
- Fire alarm controls
- HVAC system
- Hot water system

c. Technical Requirements

- STC rating of 52
- Provide floor drain and slope floor to drain.
- Provide work space around equipment as required by equipment manufacturer.
- Lockable door, entered from outside only, large enough to accommodate movement of HVAC equipment.
- Fire rated enclosure if required.

2.3 Overall Project Design

A. Site

1. Location

Locate the Housing Management Office at a site easily found from the main arrival gate with minimal directions, and convenient to the housing areas. Visual identity and access from a major roadway are important considerations. Choose a site that allows a safe outdoor play area to be constructed.

As a secondary consideration, locate the facility near other base support functions (i.e., Personnel, Finance, Traffic Management, Family Services, and Family Support) and temporary lodging facilities for the convenient use of those relocating to or from the base.

See Figure 21, ***Site Location Concept.***

2. Size

The required site size depends on the gross building area, the number of government vehicles assigned to the facility, and the amount of privately owned vehicle parking required, all of which are tied to the size of the staff. Also consider personnel arriving for the first time may have their entire family with them, including pets, and could be utilizing a 'self-move' rental trailer or van. Design the parking lot as a drive-through and allow adequate maneuvering area for novice moving van drivers or trailer-pullers.

Prepare a preliminary site design to insure the chosen site is large enough to accommodate the basic building and site criteria.

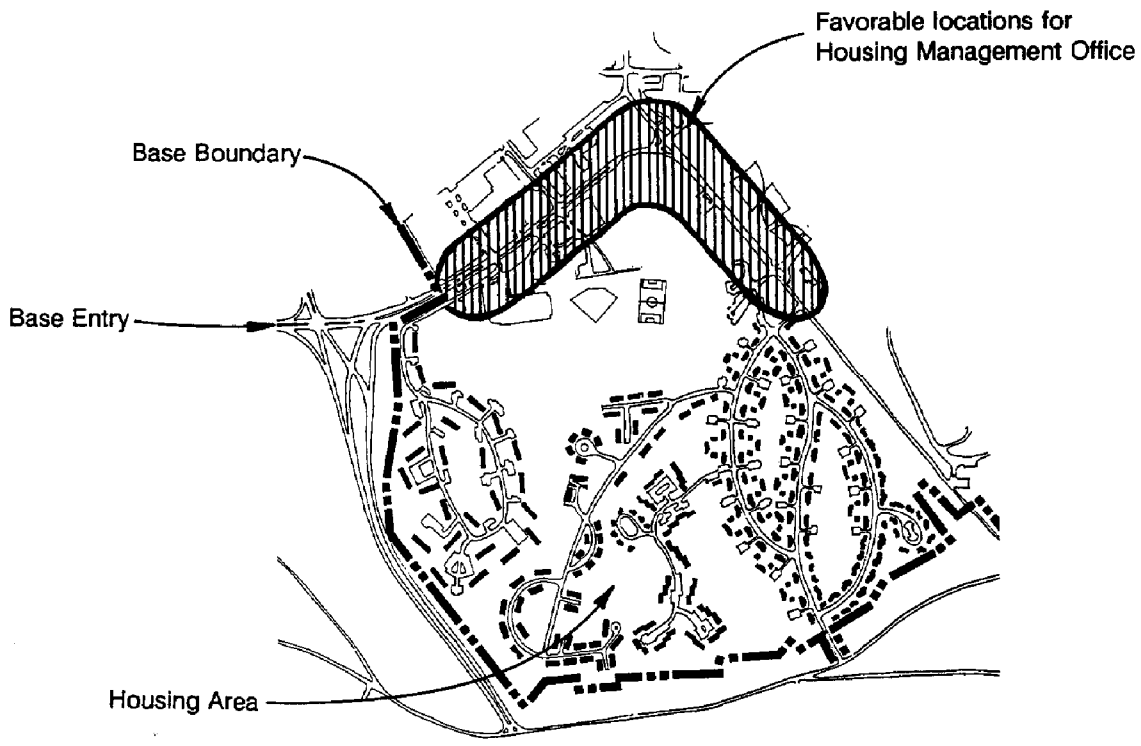


Figure 21 - Site Location Concept

3. Organization

Locate the facility on the site to provide an easily identifiable entrance to the building and convenient access for vehicular traffic into the parking lot. Also, provide easy access for pedestrian traffic.

The designer should take advantage of natural features present on the site as well as utilizing any spectacular views. Utilize landscaping to help define the site, screen unsightly views, accent positive features, and provide protection from adverse climatic conditions including wind, glare, excessive sun in warm climates, and other localized conditions.

See Figure 22, ***Site Organization Concepts***.

4. Access

Choose a site with easy access from the main arrival gate, that is easily visible and identifiable by personnel unfamiliar with the base, and is easily accessible from the housing areas. Avoid vehicular access patterns that pass through residential areas.

Provide easy access for automobiles towing trailers and for base traffic. Dimension vehicle entrances into the parking lot to accommodate rental moving vans and personal vehicles pulling trailers. Provide a secondary entrance to the parking lot situated so that novices driving these vehicles will not have to back up or maneuver excessively. Design the parking lot to accommodate at least one of each of these vehicles in clearly marked parking areas.

Provide parking spaces to accommodate all government vehicles assigned to the facility, all privately owned vehicles driven to the facility by staff members, and a minimum of 10 customer parking spaces. The number of customer parking spaces will vary depending on the total inventory of family housing assets, the military population of the base, and the average daily workload of the facility. Customer parking may be shared with co-located facilities.

Provide handicap access for staff and customer use through the use of designated parking spaces and handicap ramps leading to the facility entrances. Design handicap parking spaces and ramps to comply with DoD and ANSI requirements, and the Uniform Federal Accessibility Standards (UFAS).

Provide an easily identifiable entrance to the facility from the parking lot. Provide clearly identified handicapped entrance ramps and signage complying with federal requirements.

5. Utilities

The Housing Management Office requires access to major utilities including electricity, communications, sewer, water, and gas.

Provide basic utilities (water, sanitary sewer, and stormwater systems) in accordance with the design criteria found in applicable publications. Also provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services.

Provide telephone, TV cable, electric, sprinkler, and fire alarm services to the facility in accordance with criteria found in applicable publications and local practices and procedures. Provide computer cabling connecting to appropriate base facilities. Provide spare conduit into facility mechanical room for future requirements.

Install all utility services underground unless local conditions prevent underground installation.

Consider the use of utility control, monitoring, and energy savings systems.

See Section 2.3.C "Building Systems" for specific requirements.

6. Landscaping

Landscaping is an integral part of the image of professionalism that the Housing Management Office must project. Provide quality landscaping to make a good first impression to newcomers. Select new planting materials as recommended by the Base Landscape Plan. Select landscaping additions to the site to enhance the natural features existing on the site, screen unsightly views, screen air conditioning and transformer units from view, reinforce vehicular and pedestrian traffic patterns, and provide added protection from adverse climatic conditions. Preserve existing plants as much as possible, in keeping with the overall landscape plan for the facility. Unnecessarily removing existing plants and trees will increase the initial site preparation costs and add to the expense of providing new landscape materials. Depending on the local climate and the choice of planting materials, an underground sprinkler system may be required. Do not introduce plant materials not normally found in the region.

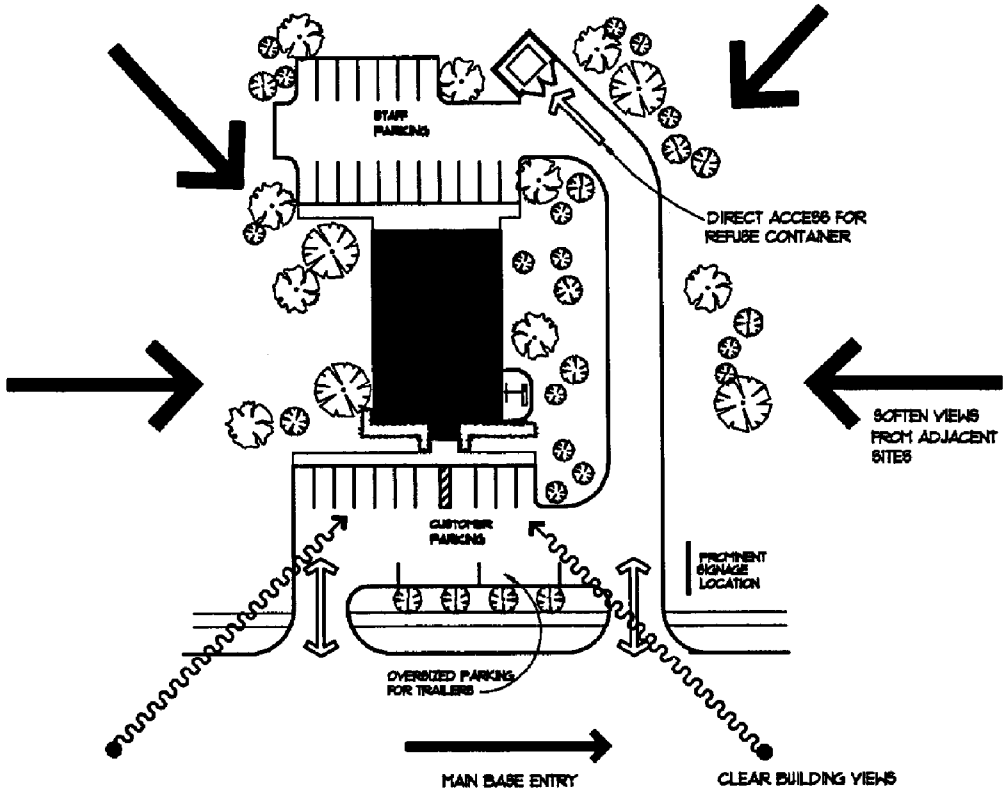


Figure 22 - Site Organization Concepts

B. Building

1. Building Organization and Circulation

The Housing Management Office consists of public and staff use areas generally separated by location within the building. The public areas include the waiting room, toilets, relocation telephone cubicles, and children's play areas. All other areas of the facility are considered to be staff use areas.

Locate the public areas just inside the main entrance of the building, surrounding the waiting room. Locate the conference room, even though it is considered a staff area, to be easily accessible from the public areas. Design the customer parking lot to provide direct access to the main building entry at the front of the facility. Provide additional space in the customer parking lot to accommodate government vehicles designated for customer transport.

Locate the staff areas requiring direct customer contact in a part of the facility with convenient access from the waiting room. Locate the staff areas not requiring frequent customer contact in less accessible areas of the facility. Provide a second entrance to the building directly accessible by the managers and the facility inspectors. This second entrance will provide access to the area of the parking lot designated for staff use government vehicles and staff privately owned vehicles.

Circulation from the public areas into the housing assistant and relocation specialist portions of the staff areas must not intrude upon or disrupt activities within these function areas.

Design the building to position most of the support functions, including the storage room, the computer room, janitor's closet, and file cabinet space, in areas that will not impact the customer service function of the facility. The storage room will contain shelving for office supplies and forms, cabinets to contain unit keys, open space for yard signs, and miscellaneous shelving and cabinets for other storage requirements. The storage room may also be designed to incorporate the computer room function.

Locate the break room, janitor's closet, mechanical/electrical room, and toilets near each other to minimize utility costs.

Orient the building spaces to take advantage of the natural features existing at the chosen site. Spectacular views and interesting landscape formations are both desirable features to be visible from inside the building. Consider local climatic conditions and orient spaces to employ passive energy saving measures as much as possible. Passive energy saving measures include the use of sunlight for heating during winter months, locating the building so as to use trees for shade during the summer months, and orienting the entrances away from the north side of the facility. The ability of the designer to use all of these measures is usually limited by the site selected, but as many as possible should be incorporated with priority given to those resulting in energy savings.

See Figure 2 for the ***Relationship Diagram*** and Section 2.4 for Illustrative Designs of various size facilities.

2. Architectural Character and Interior Design

The architectural design of the facility must be in keeping with the base architectural standards and guidelines. The interior design must complement the architectural design. Both architectural and interior design involve analysis of the function areas, and must be coordinated so as to project a professional image to the customer. Use materials that reflect the character of the local area, and use natural light sources to help project a feeling of openness.

Create an open design that facilitates staff availability to the customer and provides visibility into the waiting room, children's play areas, and other public areas.

3. Supervision and Control

The housing manager has responsibility for the overall supervision and control of the facility, but the receptionist is the initial greeter for all customers. This position welcomes the customer, notifies staff personnel the customer has come to visit, and controls customer access into the staff areas. Locate the reception desk immediately inside the main entrance, adjacent to the waiting room, with visibility into both the public spaces and the housing assistance area.

4. Flexibility and Expansion Potential

Design the structural and mechanical systems for ease of expansion of the staff areas and place the building in a position on the site to allow expansion. Design roof lines to accommodate future expansion.

5. Surface Materials and Furnishings

Use a professional interior design service for the selection of surface materials and furnishings. Require the interior design service to coordinate selections with the users of the current facility. Make the selections with the facility function as a prime consideration, incorporating maintenance concerns, life cycle costs, and fire and life safety requirements.

Coordinate the finishes, colors, and textures of materials used to enhance the building's design and project the desired professional image to the customer. Incorporate local culture, styles, and materials as much as possible to present the customer with a positive impression of the local community. Use colors, textures, and finishes to create a warm, inviting atmosphere for both the customer and staff. Provide non-military oriented artwork/wall hangings throughout the facility.

Use the ***Finish Schedule***, Figure 23, as a guide in the selection of finishes appropriate for specific spaces. Colors and patterns of finishes are not included. When selecting exact materials, patterns, and colors refer to the appropriate architectural compatibility manuals.

Interior furnishings are a vital part of the overall success of a Housing Management Office. Provide the customer waiting room with firm yet comfortable seating manufactured for commercial use, potted and hanging plants, occasional tables for lamps and magazines, and a television and VCR located so as to be both visible by the customers and available for staff use in presenting housing options to the customer. If desired by the users, provide additional televisions and VCRs in the indoor playroom for entertainment, and in the conference room, to be utilized for training videos. Provide two very firm chairs in the waiting room for use by customers in the advanced stages of pregnancy.

The staff areas require office-type systems furniture with provisions made for customer seating in all staff office workstations except the facility inspectors' area. The workstation furnishings are to be durable and attractive, and include space for a computer, a typewriter, and open desk areas. Also incorporate at least one drawer for files at each workstation. Use systems furniture panels, both solid and transparent, to provide individual workstation areas where applicable.

File cabinets are required and must be readily accessible by both the housing assistants and the facility inspectors. The quantity of file space required will depend on local needs. Coordinate file space requirements with the housing manager. Typically, file cabinets in the Housing Management Office are used to store facility files for each housing unit on base. Storage requirements exist for unit keys, forms, office supplies, letters for name and rank signs for housing units, lock-boxes for unoccupied units, and many other miscellaneous items.

Refer to individual furnishings lists in the design criteria of each function area in Section 2.2.

6. Handicapped Access

Design all function areas of the building to be handicapped accessible in accordance with DoD and ANSI standards and the Uniform Federal Accessibility Standards (UFAS).

Design the site and building to allow handicapped persons to function independently and have full use of all function areas.

7. Special Considerations for Renovations

All design criteria and functional relationships apply to renovation projects as well as new buildings. Alter the exterior image of an existing structure as needed to present the proper professional image and sense of identity to the customer.

FINISH SCHEDULE	FLOOR								BASE				WALLS					CEILING		
INDIVIDUAL SPACES / FINISHES	SEALED CONCRETE	RECESSED ENTRY MAT	VINYL COMPOSITION TILE	CARPET	CERAMIC OR QUARRY TILE	RESILIENT PLAY SURFACE			RUBBER BASE	CERAMIC OR QUARRY TILE	WOOD BASE		LATEX PAINT - SATIN OR EGGSHELL	LATEX PAINT - SEMI-GLOSS	VINYL WALL COVERING	CERAMIC TILE		GYPSUM WALL BOARD - PAINTED	SUSPENDED ACOUSTICAL TILE	
ASSISTANCE CHIEF				●					●		●		●		●			●	●	
HOUSING ASSISTANTS				●					●		●		●		●			●	●	
RELOCATION SPECIALIST				●					●		●		●		●			●	●	
RELOCATION TELEPHONES				●	●				●	●	●		●		●			●	●	
FACILITIES CHIEF				●					●		●		●		●			●	●	
FACILITIES INSPECTORS				●					●		●		●		●			●	●	
FACILITIES COMMON USE				●					●		●		●		●			●	●	
HOUSING MANAGER				●					●		●		●		●			●	●	
SECRETARY/RECEPTIONIST				●	●				●	●	●		●		●			●	●	
CONFERENCE ROOM				●					●		●		●		●			●	●	
WAITING ROOM				●	●				●	●	●		●		●			●	●	
INDOOR PLAY ROOM				●		●			●		●			●	●			●	●	
OUTDOOR PLAY AREA						●														
MAIN ENTRANCE/VESTIBULE		●	●		●				●	●			●		●			●	●	
STAFF ENTRANCE/VESTIBULE		●	●		●				●	●			●		●			●	●	
BREAK ROOM			●	●	●				●				●		●			●	●	
STORAGE/COMPUTER ROOM			●	●					●				●		●			●	●	
TOILETS			●		●				●	●				●	●	●		●	●	
JANITOR'S CLOSET	●		●		●				●	●				●				●	●	
MECHANICAL/ELECTRICAL	●								●				●					●		

Figure 23 - Finish Schedule - Housing Management Office

C. Medium Housing Maintenance Facility

The following assumptions were made in designing the facility shown in Figure 47. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage (gsf.).

Base administered housing units: 1480

Staff size: 25

Government operated vehicles (GOV): 11

FUNCTION AREA	SQUARE FOOTAGE
Work Shop Area	1495
Parts/Supply	824
Manager	140
Foreman/Quality Control	120
Receptionist/Clerk	120
Family Self-Help	700
Staff Room	437
Toilets	286
Locker Room	195
Entry/Vestibule	70
Mechanical/Electrical	96
Janitor's Closet	24
Storage Area	105
Circulation/Miscellaneous	895
TOTAL Gross Square Feet	**5,507**

Note: Total gross square footage would be less if Self-Help was not provided and/or if storage was sized for a contractor operated facility.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

C. Building Systems

1. Structural

Select an economical structural system based on the size of the facility, local climatic and geologic conditions, load requirements, and local availability of materials.

Design the structure to accommodate future expansion requirements.

2. Heating, Ventilation, and Air Conditioning

The heating, ventilation, and air conditioning (HVAC) systems are to conform to design requirements found in applicable publications and to the established requirements for each unique base. Perform a life cycle cost analysis of available energy sources prior to design. Provide an automatic set-back control system for the HVAC system. Zone controls are required to maintain desired environmental conditions for all function areas. Because of the varying customer load and thermal differences created by solar gain, etc. in perimeter spaces versus interior spaces, particular emphasis will need to be given to balancing the requirements in different areas of the facility. Provide a general ventilation rate of 20 cfm per person at all office areas, or as required by local conditions and applicable publications.

3. Plumbing

Provide for domestic hot and cold water, sanitary sewer, and stormwater drainage. All sinks and janitor's closets are to be provided with hot and cold water. Provide shut-off valves for all supply pipes at all plumbing fixtures. Floor drains are to be provided in all toilets, the janitor's closet, and mechanical/electrical room.

Provide a minimum of two exterior wall hydrants. Exterior wall hydrants shall be freeze-proof if the local climatic conditions justify them.

Provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services. Design all utilities and plumbing to conform with the requirements of applicable publications.

Provide metering for all utilities.

4. Electrical

Provide electrical service and distribution equipment, wiring devices, grounding, receptacles, interior and exterior lighting fixtures, lighting controls, telephone and TV cable service, emergency lighting, and fire alarm systems conforming to requirements in applicable publications.

Evaluate the HVAC system, individual staff workstations, computer equipment, and expansion potential to include their loads into the total electric service requirement. Provide metering of electricity usage.

All service equipment shall be Underwriter's Laboratory Listed or shall have been tested and approved by another independent laboratory. All wiring and grounding shall comply with the latest edition of the National Electrical Code (NEC).

Provide weather resistant outlets for the building exterior. In northern climates, additional weather resistant receptacles may be required for connecting heating devices to vehicles. Convenience outlets and special power outlets are to be specification grade. The spacing of convenience outlets shall not exceed 12'-0" o.c. Provide Ground Fault Interrupt (GFI) outlets in toilets, janitor's closet, break room kitchen area, children's play areas, and at exterior locations. Provide electrical, communication, and computer cable raceways to add layout flexibility in areas of the facility that contain systems furniture. Conceal all electrical, communication, and computer services within walls and systems furniture. Provide special power outlets as required for computers and other equipment (i.e. printer, telefax machine, copy machine, refrigerator, microwave, etc.).

Provide emergency-powered lighting and illuminated exit signs. Generally lighting shall be fluorescent, supplied with low-temperature ballasts and lamps if applicable. Incandescent lighting shall be held to a minimum and, where used, shall be supplied with lamps having an extended life of at least 2,500 hours. Provide exterior lighting for parking lots and grounds using high-intensity lighting fixtures controlled by automatic switches. Provide exterior lighting for building signage and the main building entry to help orient newcomers.

Provide a minimum of six incoming telephone lines for staff and customer use and an integral intercom communication system.

5. Fire Protection

Design the fire protection and detection systems to the requirements of applicable publications and to the latest edition of the National Fire Protection Association (NFPA) 101, Life Safety Code. Provide means of egress, distance to exits, and width of exits to conform to the requirements as noted in NFPA 101. Provide exit and emergency lighting to comply with all applicable sections of NFPA. Provide fire detection systems to comply with the local base fire department requirements and NFPA, as well as Uniform Federal Accessibility Standards (UFAS) requirements for both audio and visual means of notification. Provide a sprinkler system if required by local base regulations or by local or national codes. Provide portable, hand held fire extinguishers as directed by NFPA. Mount hand held fire extinguishers in color coordinated, recessed cabinets suitable for the space they are mounted in. Provide fire rated walls and area separation walls as required by local and national codes.

D. Special Project Costs

Except for children's play equipment outside the facility (see paragraph 2.2.G.3), Housing Management Offices should incur very little special project costs.

Consideration must be given, however, to the local climate and the possible need for preliminary soils analysis for early identification of high cost requirements for site and foundation work. Also, potential costs exist for hazardous waste mitigation associated with sites and existing facilities previously used for other purposes.

There are several items required to complete a Housing Management Office that are not project-funded, but must be paid for from alternative sources. These items include furnishings other than individual systems furniture workstations, telephones, computers and printers, indoor children's play items, wall hangings, plants, and waiting room amenities for customer use. Waiting room amenities include cable TV, coffee service, and magazine subscriptions. There should be enough variety in magazine selection to provide a suitable choice for the DoD member and his/her family. These items are essential to the operation of the Housing Management Office and the exclusion of any of these items will restrict its ability to properly serve its customers. These costs may be significantly reduced if all or a portion of the existing equipment and furnishings can be relocated. Evaluate the existing equipment and furnishings for relocation suitability.

2.4 Illustrative Designs

A. Introduction

The following pages contain example designs of different sized Housing Management Offices. One each of a large, medium, and small facility is provided. These designs are not intended to restrict the final design of the facility but are provided as examples of a design solution. The site plan illustrates a medium sized facility.

B. Large Housing Management Office

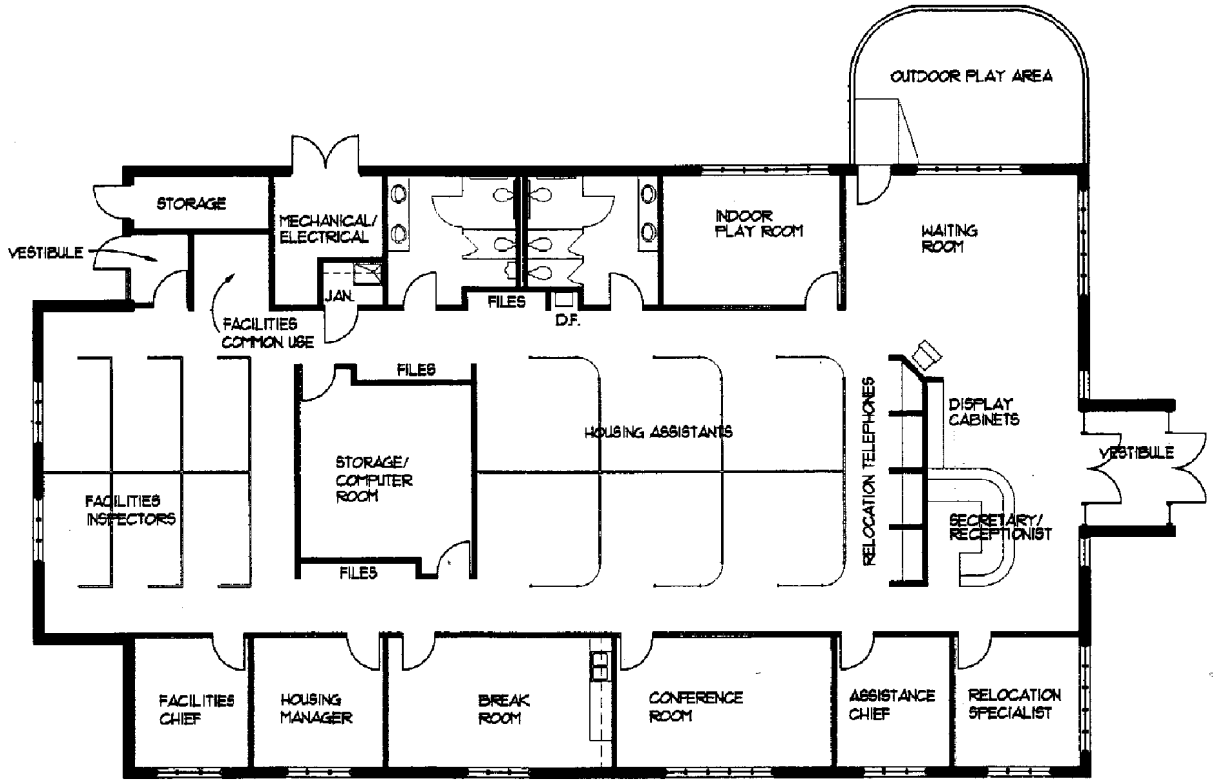
The following assumptions were made in designing the facility shown in Figure 24. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage.

Base administered housing units: 1900

Staff size: 17

FUNCTION AREA	SQUARE FOOTAGE
Assistance Chief	125
Six Housing Assistants	716
Relocation Specialist	125
Four Relocation Telephones	80
Facilities Chief	125
Six Facilities Inspectors	407
Facilities Common Use	50
Housing Manager	140
Secretary/Receptionist	95
Conference Room	240
Waiting Room	266
Indoor Play Room	198
Main Entrance/Vestibule	80
Staff Entrance/Vestibule	35
Break Room	240
Storage/Computer Room	330
Toilets	280
Janitor's Closet	22
Mechanical/Electrical	94
Circulation/Miscellaneous	1,454
TOTAL Gross Square Feet	**5,102**
Outdoor Play Area	300

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

8' 4' 0 8' 16' 24'
SCALE IN FEET 3/32"=1'-0"

91'-5" x 56'-6" LARGE HOUSING MANAGEMENT OFFICE
5102 S.F.

Figure 24 - Example Floor Plan for Large Housing Management Office

C. Medium Housing Management Office

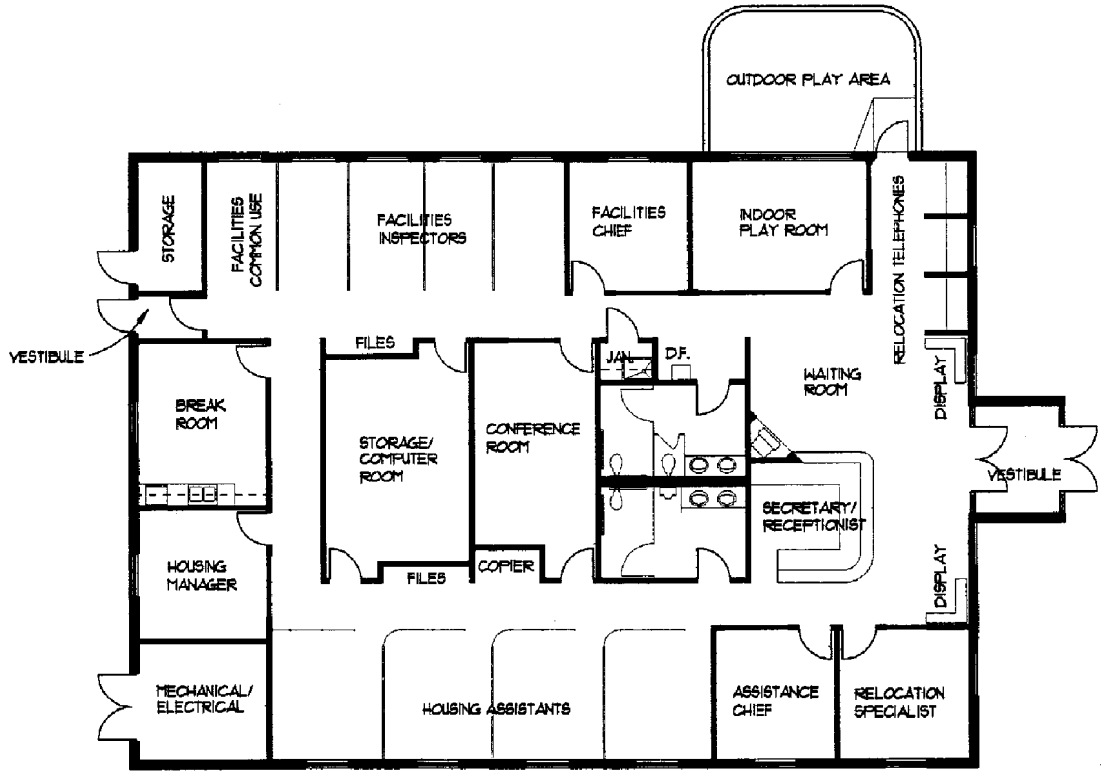
The following assumptions were made in designing the facility shown in Figure 25. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage.

Base administered housing units: 1480

Staff size: 13

FUNCTION AREA	SQUARE FOOTAGE
Assistance Chief	125
Four Housing Assistants	480
Relocation Specialist	125
Three Relocation Telephones	60
Facilities Chief	125
Four Facilities Inspectors	316
Facilities Common Use	79
Housing Manager	140
Secretary/Receptionist	100
Conference Room	200
Waiting Room	260
Indoor Play Room	180
Main Entrance/Vestibule	80
Staff Entrance/Vestibule	34
Break Room	177
Storage/Computer Room	330
Toilets	240
Janitor's Closet	18
Mechanical/Electrical	129
Circulation/Miscellaneous	1,141
TOTAL Gross Square Feet	4,339
Outdoor Play Area	270

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

78'-3" x 56'-11" MEDIUM HOUSING MANAGEMENT OFFICE
4339 S.F.

Figure 25 - Example Floor Plan for Medium Housing Management Office

D. Small Housing Management Office

The following assumptions were made in designing the facility shown in Figure 26. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage.

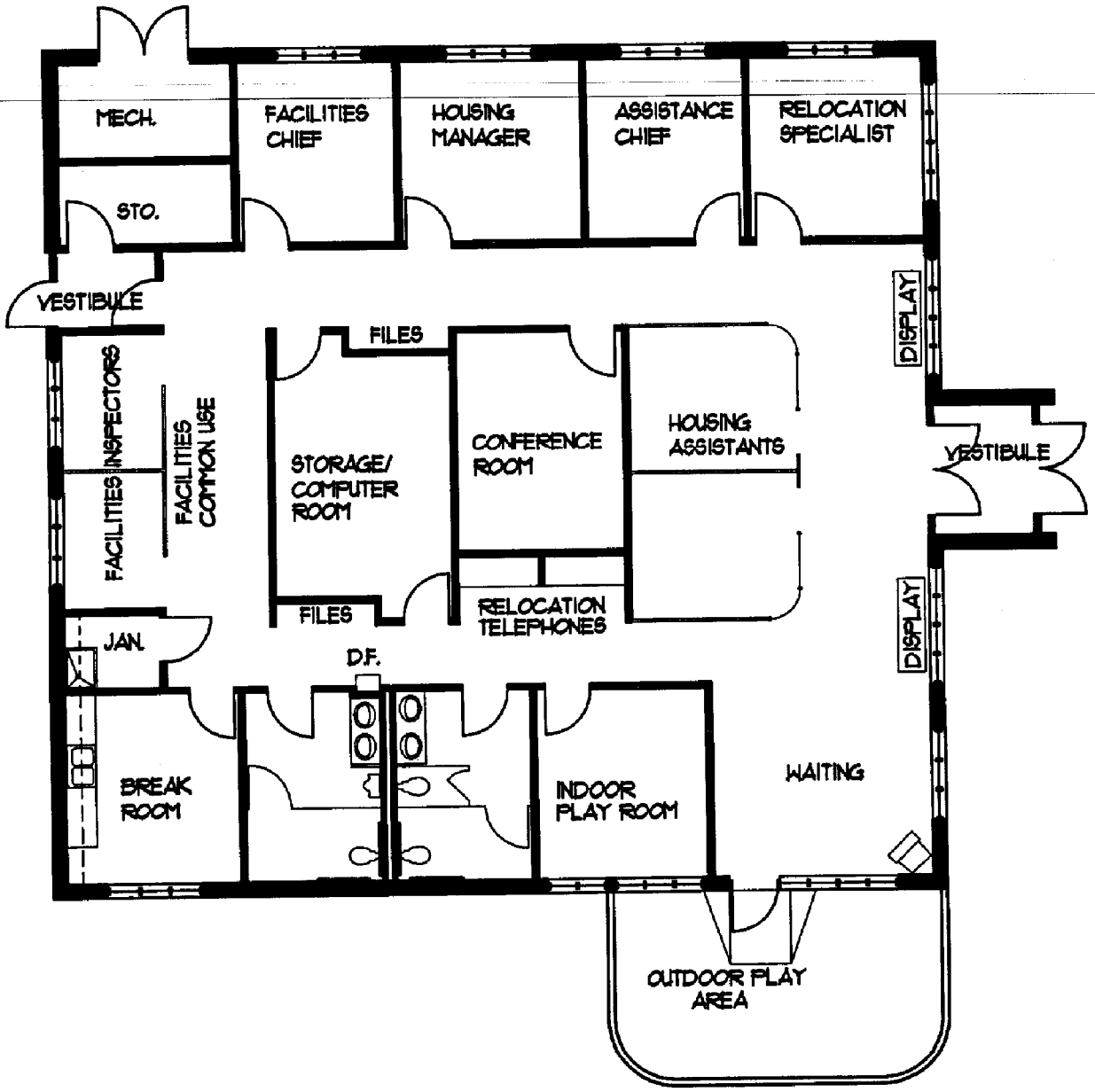
Base administered housing units: 1000

Staff size: 8

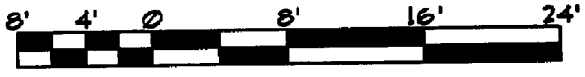
FUNCTION AREA	SQUARE FOOTAGE
Assistance Chief	125
Two Housing Assistants	230
Relocation Specialist	125
Two Relocation Telephones	40
Facilities Chief	125
Two Facilities Inspectors	124
Facilities Common Use	43
Housing Manager	140
Secretary/Receptionist	0*
Conference Room	161
Waiting Room	200
Indoor Play Room	140
Main Entrance/Vestibule	80
Staff Entrance/Vestibule	33
Break Room	138
Storage/Computer Room	252
Toilets	240
Janitor's Closet	31
Mechanical/Electrical	68
Circulation/Miscellaneous	895
TOTAL Gross Square Feet	**3,215**
Outdoor Play Area	240

* Note: Secretary/receptionist omitted from this size facility to illustrate a design solution with limited personnel.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



SCALE IN FEET 3/32"=1'-0"

59'-6" x 56'-6" SMALL HOUSING MANAGEMENT OFFICE
3215 S.F.

Figure 26 - Example Floor Plan for Small Housing Management Office

E. Site Plan for a Housing Management Office

The site plan shown in Figure 27 is based upon a medium size facility. The design of the site, organization, and layout will vary by actual conditions and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

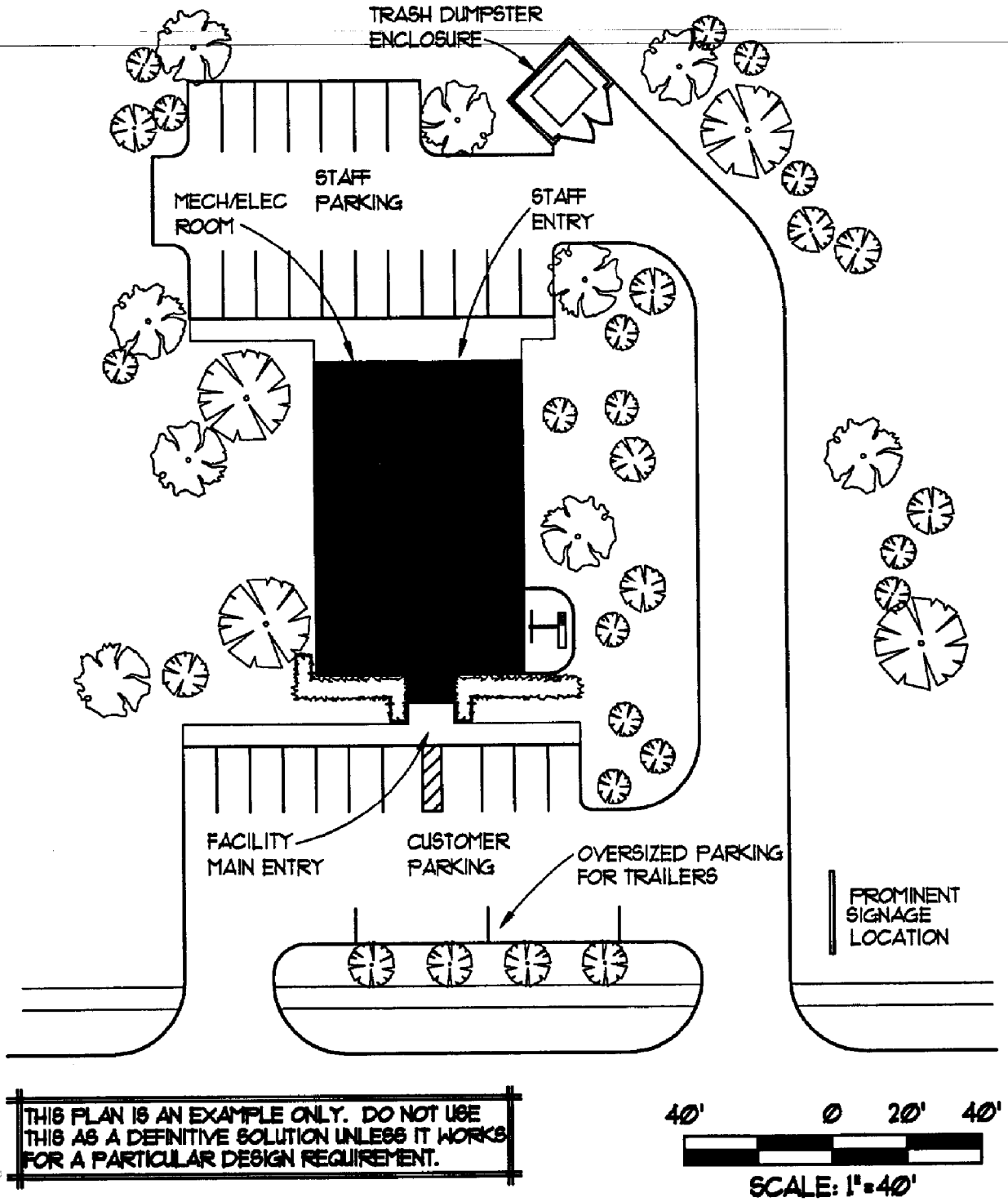


Figure 27 - Site Plan for Medium Housing Management Office

Chapter 3

Housing Maintenance Facility

3.1 Function Descriptions and Relationships

A. General

The success of any building project is dependent on the proper coordination of all the organizations and people involved in the design and operation of the facility. This coordination is important in the design of a Housing Maintenance Facility because its operation directly affects the military members' 'quality of life' perception and therefore their overall moral. The image of this facility's professionalism is important in making the member feel that his/her living quarters are being cared for by a highly skilled staff of craftsmen. This professionalism is represented not only by the staff of the facility, but also by the facility itself through the efficiency of the arrangement of its functions, and the overall appearance of the building both inside and outside. It is very important that all organizations involved in the design and construction of a Housing Maintenance Facility understand the role the facility performs in caring for government owned family housing assets.

Housing Maintenance Facilities can be operated by either in-house personnel or by a private maintenance contractor. The type of operation will vary by location. Due to the differing methods of procuring materials, parts, and appliances used by private maintenance contractors and in-house personnel, the size requirements for the Housing Maintenance Facility parts/supply and storage areas will vary. This guide applies to both in-house and contractor operated Housing Maintenance Facilities. But since in-house operations generally require more storage space, for the purposes of this design guide, recommendations for the sizes of the parts/supply and storage areas are based on the housing maintenance functions being performed by in-house personnel.

B. Functions

1. Work Shop Function

The work shop is the space within the facility where maintenance and repair operations that can not be done at the housing unit are performed. The work shop contains areas designated for each repair function. Some functions of the work shop will require separation from the rest of the space.

2. Parts/Supply Function

All materials and supplies used for maintenance and repair of the housing units are located within this area. This space stores a variety of sizes of parts and materials and contains a combination of storage shelves, bins, and racks with both floor and wall mounted components. It also includes both covered and uncovered yard storage areas for large items as well as a separate building for flammable storage needs.

3. Administrative Functions

The administrative functions contain office space for the manager, foreman/quality control, and the receptionist/dispatch clerk.

4. Family Housing Self Help

The family housing self help function is designated for the display and storage of materials and supplies that can be used by the housing occupant to complete minor repair and renovations. These materials and supplies are issued to the housing occupant for his/her use in performing maintenance or repairing items in his/her own housing unit. Instructional videos, "how-to" mock-ups, and information pamphlets are also available. Examples of items that are provided include: light switch covers, small cans of paint, sealants, knobs, and filters. Seasonal materials and supplies such as plants, fertilizer, fertilizer spreaders, small snow removal equipment, and lawn tools are also provided. At some bases the self help function will not be included within the Housing Maintenance Facility, but will be part of a consolidated Base Self Help Store.

5. Support Functions

The support functions of this facility include spaces for the entry vestibule, staff room, file cabinets, miscellaneous storage, locker room and toilets, the janitor's closet, and the mechanical/ electrical room. The staff room is used for work breaks, as a lunch room, and for periodic staff meetings and briefings. Standard forms, safety regulations, and important guidelines are also posted in this area. A large part of the daily communication between the managers and staff takes place in this space. The locker room/toilet area will provide showers, toilets, and storage lockers for employee personal items. Occasionally, some repair and maintenance activities at a housing unit may require that an employee shower and change clothing before proceeding to their next appointment. The janitor's closet contains storage for cleaning equipment and supplies. The mechanical/electrical room contains equipment necessary to provide plumbing, HVAC, electrical, and telephone services to the facility.

C. Work Flow

The housing maintenance operation is responsible for the care of all housing units under the authority of the base. The housing units may be located in one area, or in multiple areas, and may or may not be on the main base property. The maintenance personnel interact directly with the housing occupant. The hours of operation of maintenance facilities will vary. Telephone service to the maintenance facility is extremely important. A majority of the initial conversations with the housing occupant are accomplished by telephone, with face-to-face meetings usually occurring at the unit. Housing occupant calls are taken by the maintenance office clerk or receptionist, who then assigns the service calls to maintenance personnel proficient with that particular type of repair. Service calls are prioritized by the nature of the work required. The number of service calls received by the clerk will vary depending on the quantity of housing units, the age of the units, and the time of year. The frequency of calls is greater on Mondays and Fridays, and during the summer and winter months. An additional factor that contributes to the frequency of repairs is change of occupancy maintenance. Change of occupancy maintenance occurs most often in the summer months between school years and the school break between semesters during the winter.

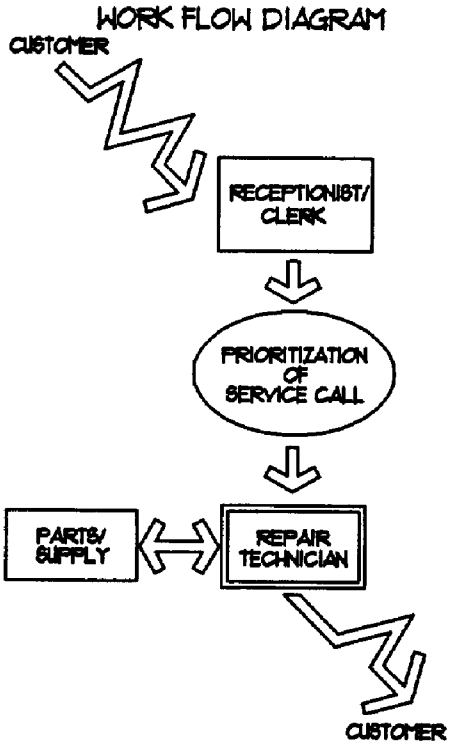


Figure 28 - Diagram indicating communication process (telephone and walk-in).

D. Immediate Adjacencies

The adjacencies matrix for the Housing Maintenance Facility is shown in Figure 29. It shows, for each space in the facility, which other spaces should be located adjacent to it. This matrix is used to help the designer maintain the proper physical relationships between functions.

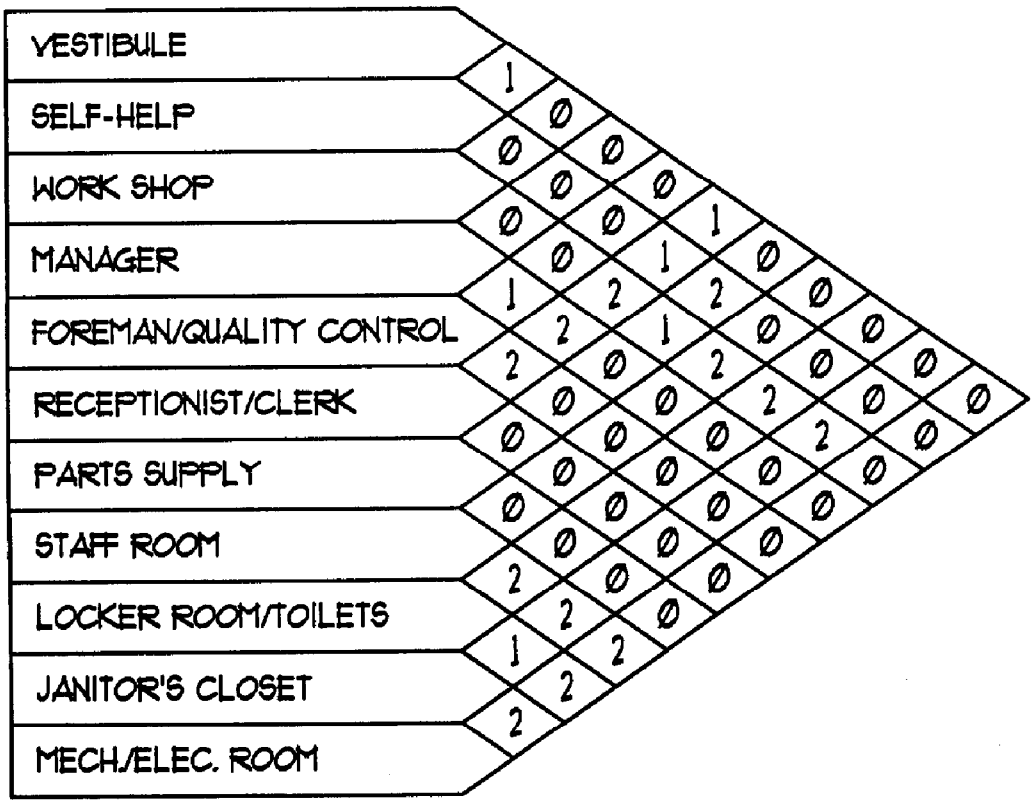


Figure 29 - Adjacencies Matrix

E. Relationships Diagram

Shown below is a "bubble" diagram indicating the relationships and adjacencies noted previously. This diagram does not depict actual room locations in a building.

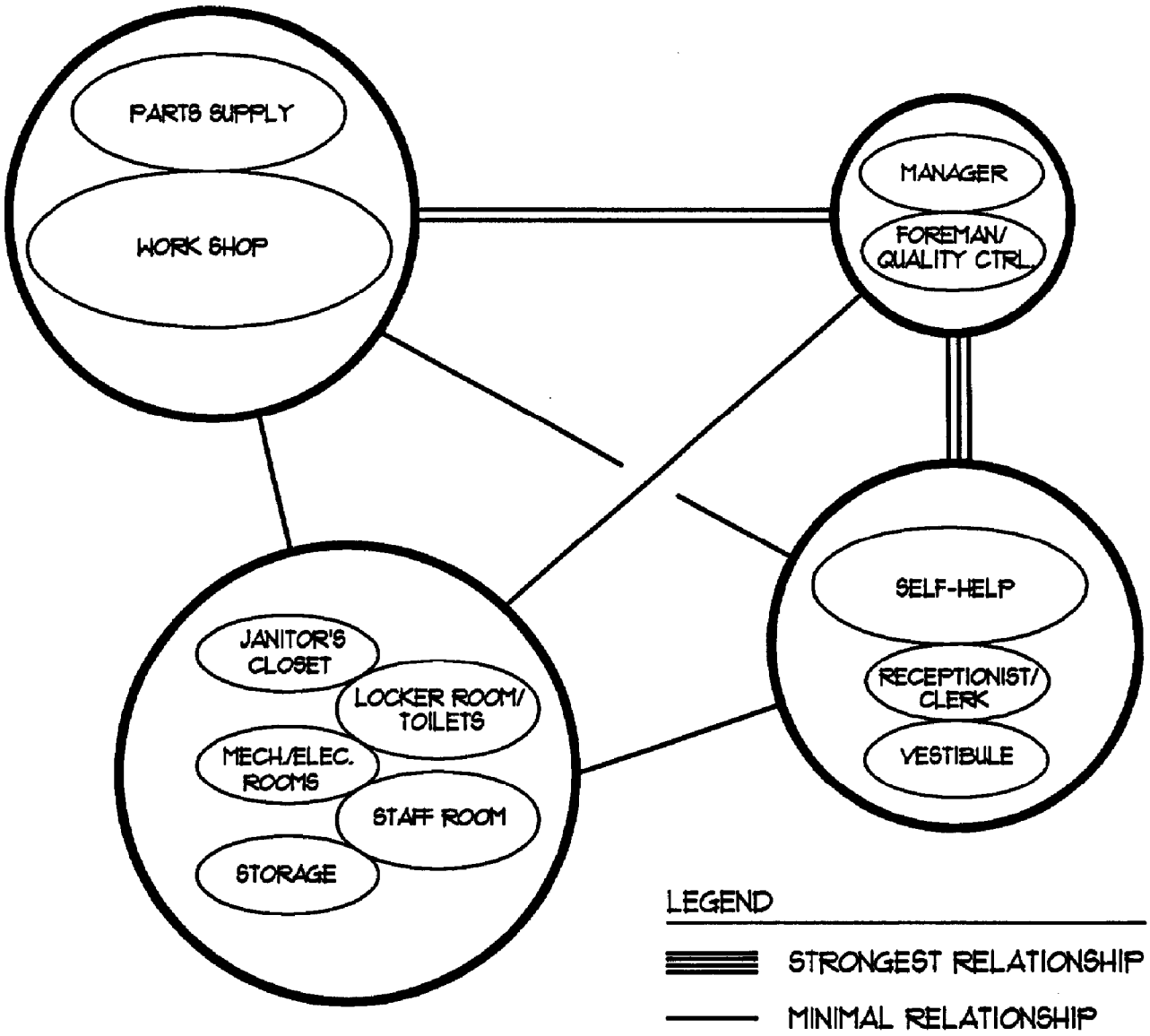


Figure 30 - Relationships Diagram

3.2 Individual Space Requirements

A. Space Criteria

1. Planning Considerations

Space criteria define the size, type, number, and functional relationships of areas needed for the support of Housing Maintenance Facility requirements. During the development of the Housing Maintenance Space Criteria for each project, take into account the existing Housing Maintenance Facility spaces and their adequacies or inadequacies relative to current and future needs, the potential for retention and renovation of existing facilities, and the need for additions or complete new construction projects. Also consider the current and projected user population to be served, the quantity of on-base housing, the occupancy turnover rate, and the current and projected authorized staff sizes.

2. Standard Facility Requirements

The space requirements for the Housing Maintenance Facility are directly related to the total number of family housing assets that are administered by the facility, and the size of the staff working in the facility.

The back-up stock of housing unit appliances is normally stored by the Base Civil Engineer and the requirement for this type of storage is not included in the Space Criteria Summary. At bases where the back-up stock of appliances is stored at the maintenance facility, the total storage area must be increased.

In order to provide guidance applicable for all installations, this guide categorizes bases into three different sizes, small, medium, and large, according to how many family housing assets each has.

For the purposes of this design guide, a small base has less than 1000 family housing assets, a medium base between 1000 and 1600 family housing assets, and a large base more than 1600 family housing assets. (These quantities include government-owned, leased, and otherwise controlled housing units and government mobile home parks.)

3. Design Issues and Relationships

In developing the space criteria for a Housing Maintenance Facility, consider the issues of overall building design and relationships discussed in Section 3.3.B. Each base may also determine that different or additional requirements are needed to satisfy its own local program. These considerations could affect the overall function areas and spaces included in the proposed facility and may require the modification of their relative sizes. Housing Maintenance Facilities could be co-located with other base support facilities, notably the Base Civil Engineer Maintenance Shops. This would affect the required program spaces and sizes. Entire areas or spaces could be eliminated where their functions are provided in conjunction with another facility. The affected function areas could be the waiting room, toilets, staff room, large item storage, support facilities, and possibly the parts/supply room.

The location of the Family Housing Self Help function is base dependent and it may be located in a structure other than the Housing Maintenance Facility (i.e. the Base Self Help Store). Verification of its location is required prior to programming and design.

4. Specific Requirements

The remainder of this section presents the criteria applicable to the design of each function area in the Housing Maintenance Facility. For each function area, the primary design considerations are given for the area as a whole. The primary design considerations include the use of the area, relationships between areas/spaces, and the organization and character the area is expected to present to the user and customer. Each space within that area then is listed complete with the furnishings and equipment expected to occupy that space, and any special technical requirements that exist for that space.

These criteria apply to all sizes of facilities. The variable factors affecting size are the number of staff positions each facility will be expected to support, the size of the customer population, and the quantity of housing assets administered by the maintenance facility.

Table B - ***Space Criteria Summary*** recommends square footage areas and minimum dimensions for all function areas and for all three base sizes. This table can be used to help ensure that all function areas are incorporated into specific design projects at a size sufficient to function properly.

FUNCTION AREAS	SMALL BASE		MEDIUM BASE		LARGE BASE	
	Square Feet	Minimum Dimension	Square Feet	Minimum Dimension	Square Feet	Minimum Dimension
Work Shop	1200	20'-0"	1400	20'-0"	1600	20'-0"
Parts/Supply	600	14'-0"	800	14'-0"	1000	14'-0"
Manager	140	9'-0"	140	9'-0"	140	9'-0"
Foreman/Quality Control	120	9'-0"	120	9'-0"	120	9'-0"
Receptionist/Clerk	120	10'-0"	120	10'-0"	120	10'-0"
Family Housing Self-Help	375	14'-0"	600	14'-0"	800	14'-0"
Staff Room	250*	14'-0"*	375*	14'-0"*	500*	14'-0"*
Locker/Toilet Rooms	375*	8'-0"*	450*	8'-0"*	500*	8'-0"*
Entry/Vestibule	40	8'-0"	60	10'-0"	80	10'-0"
Mechanical/Electrical	**	**	**	**	**	**
Janitor's Closet	25	5'-0"	25	5'-0"	25	5'-0"
Storage Area	80	12'-0"	120	12'-0"	200	12'-0"

NOTE: The areas given in the above table do not include circulation space.

* Square footage is dependent on number of employees. The facility sizes noted are minimums

** Square footage is dependent on the gross facility size and geographical location

Table B - Space Criteria Summary - Small, Medium and Large Bases

B. Work Shop Function

1. Primary Design Considerations

a. Use and Performance

This area is to be designed to permit a variety of tasks. Tasks most commonly performed in this area include general carpentry, appliance repair, HVAC repair, electrical repair, and window glass and screen repair. Painting of some materials and equipment is performed and requires a semi-clean environment. Ventilation and adequate lighting (natural and artificial) are of prime importance in this area. The type and number of electrical outlets serving the work shop area is critical to the successful utilization of this area.

b. Space Organization and Character

The work shop will consist of one large area with specialized equipment being placed at various locations throughout the area. Co-locating like equipment will define the type of work to be performed in that area. Provide access directly to the parts/supply area and the building's exterior. Provide at least one 10'-0" x 12'-0"(minimum size) sectional overhead door and at least one 3'-0" x 7'-0" personnel door for exterior access. Provide semi-direct access to the locker room/toilet areas and the staff room. Designate a portion of the work shop area for storage of oversized materials that can't be stored in the parts/supply room. These items include plywood, gypsum wall board, plastic laminate, assorted sizes of lumber, and other similar materials.

2. Work Shop

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 service sink
- 1 table saw (10") with end extensions †
- 1 radial arm saw (12") †
- 1 floor mounted 16" drill press †
- 1 disk/belt sander †
- 1 portable dust collection system †
- 1 telephone †
- 1 wall mounted glass cutter †
- 1 double wheel grinder †
- 1 band saw (14") †
- 1 fastener storage bin - metal or wood †
- 5 wood topped work surfaces - 36" x 72", 42" adjustable height, †
- 1 electronic work bench, 36" x 72", with drawers, shelf, and outlets (minimum) †
- 1 UL/FM approved flammable liquid safety storage cabinet, 60 gallon capacity †
- 1 cantilever rack storage bin for large size building materials (plywood, gypsum wall board, doors, screens, etc.) †
- 1 key duplicating machine (this item may not be required if this task is performed by others, verify) †
- 1 wire spool rack †
- 1 small parts storage bin, fasteners †
- first aid cabinet †
- hydraulic hand pallet truck †

† Non project funded equipment

c. Technical Requirements

- Interior walls to have an STC rating of 52
- Ventilation rate of 1.5 cfm/sf
- General lighting level of 30 fc
- Individual task lighting at equipment and work bench locations
- 42" mounting height for electric multi-outlet strips and receptacles mounted
- Unit heaters at overhead doors
- Clear sealed concrete floor surface

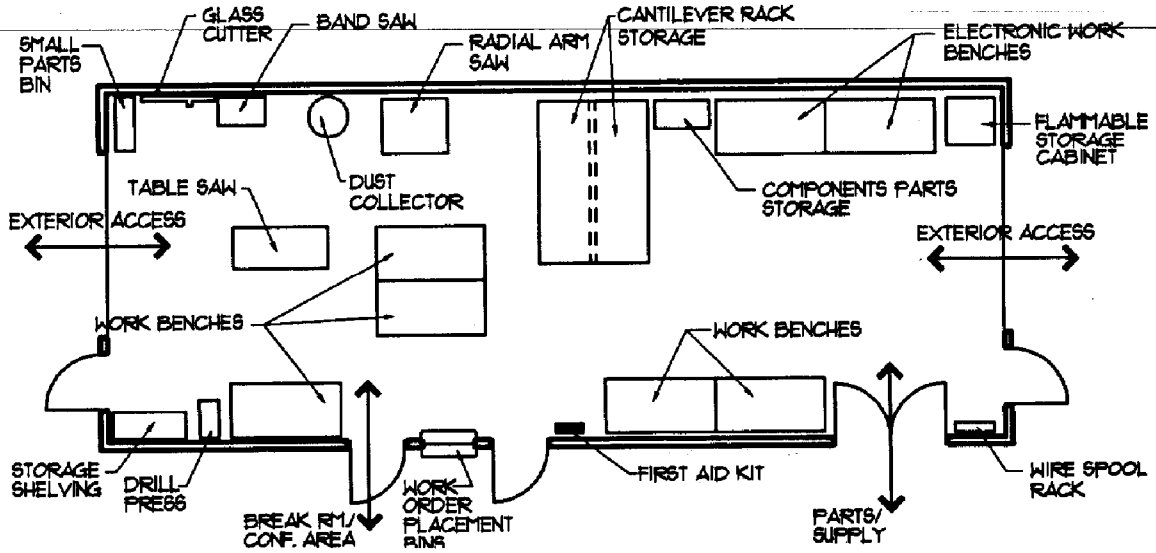


Figure 31 - Work Shop Area

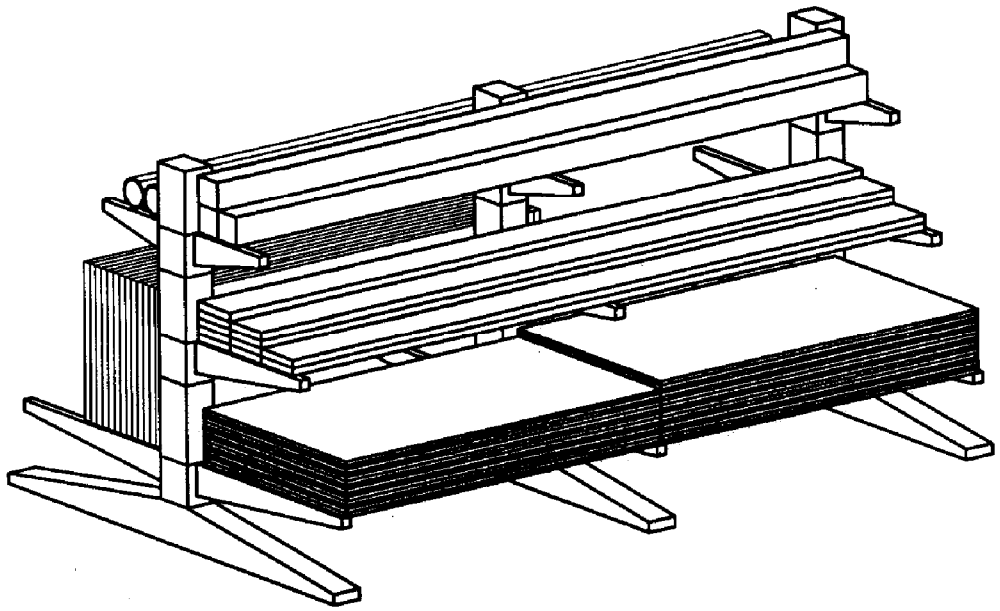


Figure 32 - Cantilever Rack Storage System

C. Parts/Supply Area

1. Primary Design Considerations

a. Use and Performance

Most parts and supplies required by the repair personnel for the maintenance of the housing units are stored here. This area acts as a small warehouse with direct access to the work shop area, building exterior, and the self-help area.

b. Space Organization and Character

This area will be accessed by a limited number of employees which include the parts/supply clerk, manager, and the foreman/quality control. Security of the area is required. A small work area is required for use by the clerk, including shelf space for repair manuals and catalogs. Approximately 75% of the area is devoted to storage shelving for small parts storage, while the remaining area is for bulk storage.

2. Parts/Supply Area

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 work surface - 36" x 72"
- 1 ergonomic desk chair

  (Utilize "systems" type furniture)
- 1 computer terminal †
- 1 printer †
- 1 filing cabinet †
- 1 telephone †
- 1 book case †
- Heavy duty shelving racks †

† Non project funded equipment

c. Technical Requirements

- Interior walls to have an STC rating of 52
- Ventilation rate of 1.5 cfm/sf
- General lighting level of 30 fc
- Task lighting at desk
- Provide computer cabling
- Provide wall and ceiling finish materials that are durable and easily cleaned
- Clear sealed concrete floor surface

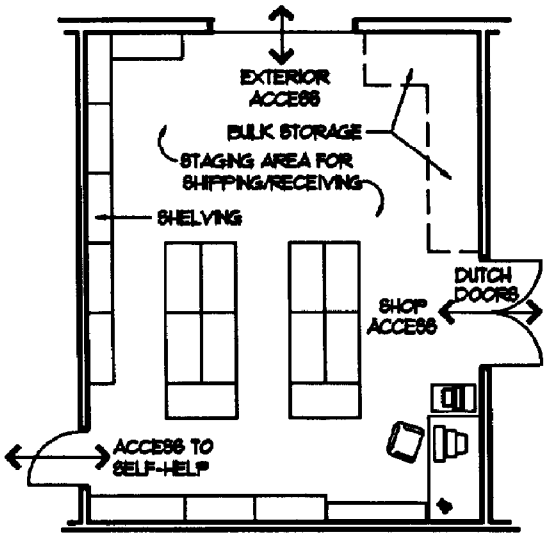


Figure 33 - Parts/Supply Area

D. Administrative Functions

1. Primary Design Considerations

a. Use and Performance

The administrative functions of the Housing Maintenance Facility include offices for the maintenance manager, foreman/quality control, a work space for the receptionist/clerk and a small vestibule. All of these areas perform administrative functions, with the receptionist/clerk having the additional responsibilities of greeting the customer, processing work requests, and administering the self help area.

b. Space Organization and Character

The administration area should present a sense of authority to employees and convey to the customer an image of knowledge and professionalism. Both the manager's and foreman/quality control office should be private and large enough for conferences with small groups of people. These work spaces should be pleasant and bright with windows overlooking desirable features of the building's site. The receptionist/clerk's work area is to be efficiently arranged, providing access to files, computers, telephones, and work order placement areas. Computer drives or main frames, serving the facility, are to be located in this area. Placement of the computer may be under counter or on a work surface.

2. Maintenance Manager

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 3 under counter filing cabinets drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 2 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †

† Non funded project equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide door with key controlled access
- Provide computer cabling

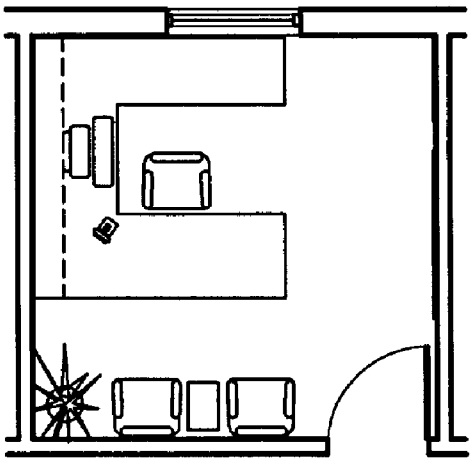


Figure 34 - Maintenance Manager Office

3. Foreman/Quality Control

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 3 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 panel mounted work surface, 24" deep
- 1 ergonomic desk chair
- 2 visitor chairs †

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 telephone †
- 1 computer terminal †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 50 fc
- Provide door with key controlled access
- Provide computer cabling

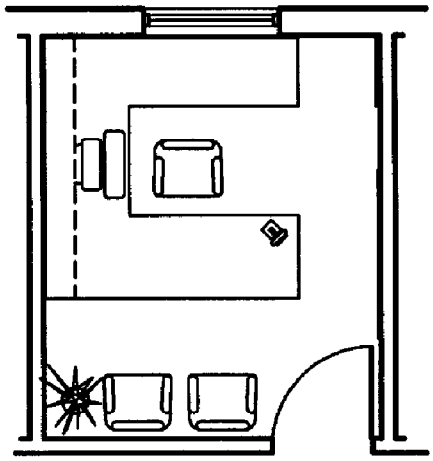


Figure 35 - Foreman/Quality Control Office

4. Receptionist/Clerk

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 "L" shaped secretarial work station with 30" deep work surfaces, 42" high panels with 12" deep transactional work surface
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 ergonomic desk chair

  (Utilize "systems" type furniture)
- 1 erasable marker board
- 1 work order placement area (bins) with extensions
- 1 telephone with hands free operation †
- 1 computer terminal †
- 1 printer †
- 1 typewriter †
- 4 filing cabinets, 4 drawer legal size †
- Rechargeable 2-way radios with recharging stand †
- Typewriter †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide additional 110 volt outlets for radio recharging
- Provide computer cabling
- Provide space and electrical outlets for computer hard drive or main frame.

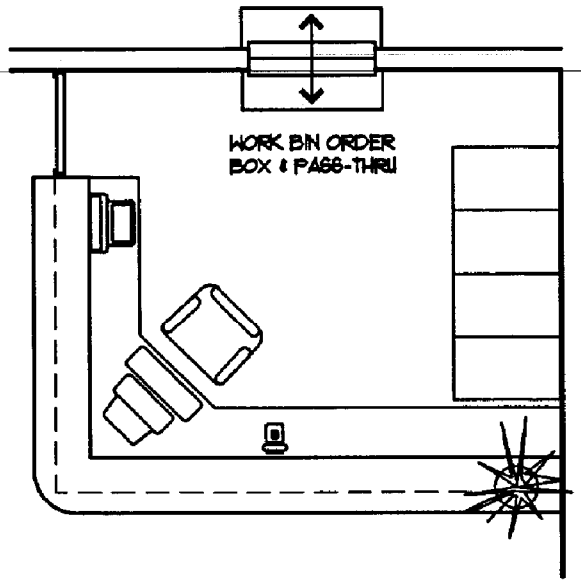


Figure 36 - Receptionist/Clerk Work Space

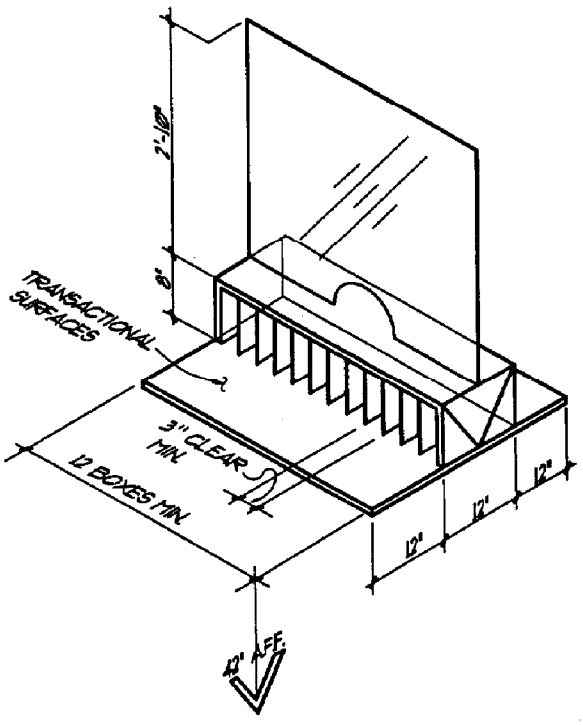


Figure 37 - Work Bin Order Box

E. Family Housing Self Help Area

1. Primary Design Considerations

a. Use and Performance

This area is used for the display, storage, and issuance of equipment and materials for use by the housing residents. The housing resident has the option to perform some maintenance on his/her housing unit. The types of materials and equipment is general in nature and does not require specialized knowledge or expertise for their use and installation. Some of these materials are seasonal while others are not. Display landscaping materials, if offered, in an exterior area directly adjacent to the self help area.

b. Space Organization and Character

This area should resemble similar commercial facilities that support "do-it-yourself" work in the civilian community. It should include a mock-up "how-to" display area in the customer shopping area for customer self-instruction on repair of bath, kitchen, plumbing, etc. This area is accessed primarily by the housing occupant and the administrative staff of the maintenance facility. A large area with shelving, this area displays and stores all items available to the housing occupant. Direct access from the vestibule and parts/supply area is required. Provide a service counter in facilities where the self-help area is administered by someone other than the receptionist/clerk. Verify the hours of operation of the self-help area and provide exterior access separate from the rest of the facility if necessary.

2. Self Help Area

a. Size and Critical Dimensions

- The size of this area is dependent upon the number and quantity of items offered to the housing occupant.
- Adequate spacing between display shelving for circulation is required.
- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- Service counter with file cabinet drawers - Optional

  (Utilize "systems" type furniture)
- Floor space for bulk materials/equipment
- Display/storage shelving †
- Display racks †
- Wall space with peg board †

† Non funded project equipment

c. Technical Requirements

- Lighting Level of 30 fc

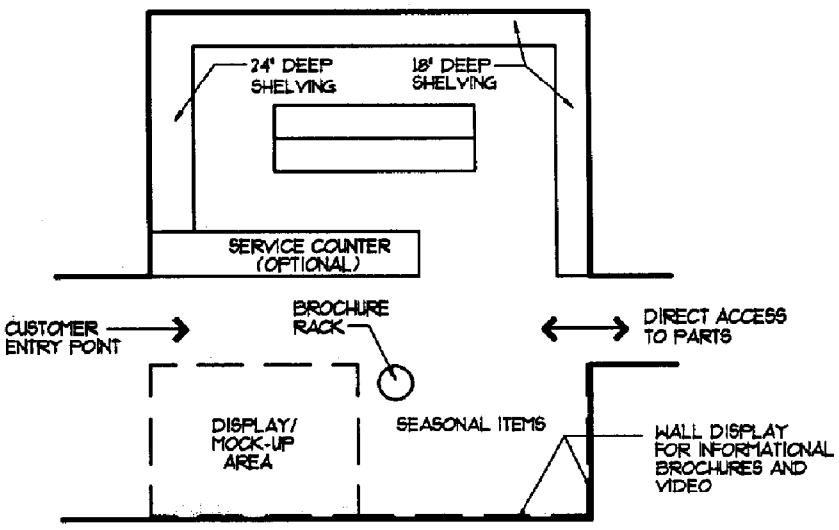


Figure 38 - Self Help Display Area

F. Support Functions

1. Primary Design Considerations

a. Use and Performance

The support functions include areas for a staff room, locker rooms/toilets, entry/vestibule, circulation space, the mechanical/electrical room, janitor's closet, and storage. The use of each area is directly related to its name.

The staff room is a multi-function area. It functions as an employee break room and also as a conference area where employee meetings, briefings concerning safety and maintenance issues, and training sessions are conducted.

Toilet facilities, complete with lockers and shower, are required for both male and female employees. Compliance with DoD, ANSI standards and UFAS regulations for handicap accessibility is required. Separate toilet facilities for customers are not required. The number of lockers is based on the number of employees. Locker benches are required as well as drying benches at the shower area.

b. Space Organization and Character

Design the staff room to contain a table with chairs and a counter area with sink, cabinets, and refrigerator space. Provide sufficient space to accommodate all employees at meetings and briefings. Provide surfaces that are durable and easily maintained.

The locker room/toilet area is to be accessible from the work shop area and the staff room. Provide 1 full height, 15" x 18" locker for each employee. Lockers are required for both the men's and women's locker room/toilet. All finish materials are to be durable and easily maintained.

Locate the entry/vestibule area at the front of the facility. Verify vestibule requirements with geographic location criteria. Locate the mechanical/electrical room on an outside wall with doors to the exterior only. Locate the janitor's closet close to the locker/toilet facilities to minimize plumbing requirements.

Some equipment and materials may be stored at remote locations around the base. Verify the requirements for the type and quantity of all materials and equipment requiring storage space at the Housing Maintenance Facility. Also consider the amount and type of hazardous materials to be stored. The Air Force currently limits the use of hazardous materials and prohibits the use of coating systems having a petroleum base. Additional materials such as rolled roofing, asphalt shingles, and roofing cement require storage within a rated enclosure.

2. Staff Room

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 bulletin board, 36" x 48"
- 1 erasable marker board
- Base and wall cabinets with plastic laminate countertop (72" long minimum)
- Stainless steel sink installed in base cabinet
- Telephone †
- 4 tables, 36" x 72" †
- 1 chair per employee † (except where not practical)
- Refrigerator †
- Microwave †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Provide GFI receptacles at counter area

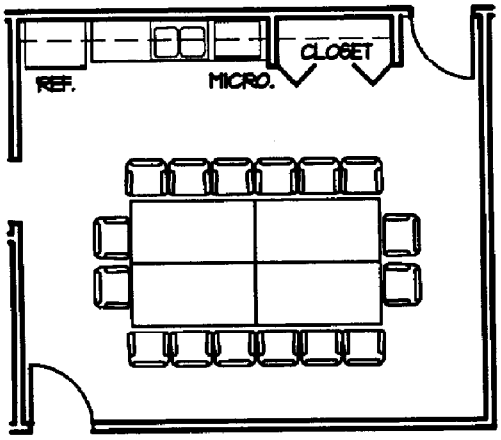


Figure 39 - Staff Room

3. Locker Rooms/Toilets

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- Lockers - 1 per employee
- Benches
- Lavatory counters with plastic laminate top
- Toilet facilities including water closets, urinals, lavatories, showers, and associated toilet and shower accessories. All accessories to comply with handicap requirements.

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Provide GFI type receptacles
- Exhaust fans at locker room and toilets
- Non-skid ceramic tile flooring

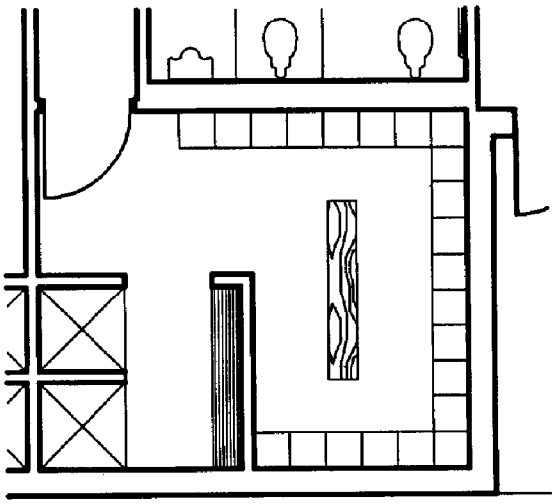


Figure 40 - Locker Area with Showers

4. Entry/Vestibule

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- Recessed entry mat
- Information board

c. Technical Requirements

- Durable and easily cleaned finish materials

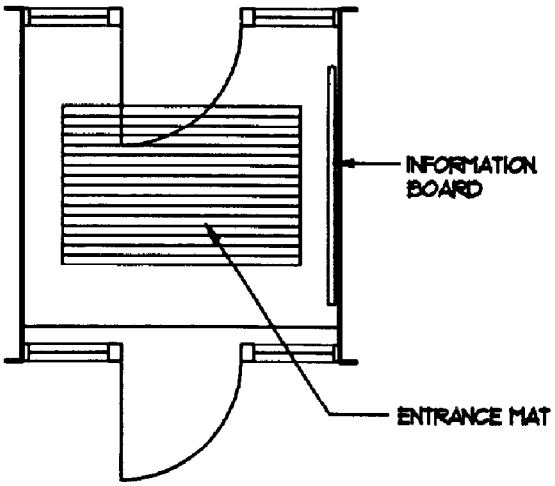


Figure 41 - Entry Vestibule Area

5. Mechanical/Electrical Room

a. Size and Critical Dimensions

- Size varies with building system requirements and local climate.

b. Furnishings and Equipment

- Electrical panels
- Telephone panels
- Fire alarm controls
- HVAC system
- Hot water system

c. Technical Requirements

- STC rating of 52
- Provide floor drain and slope floor to drain.
- Provide work space around equipment as required by equipment manufacturer.
- Lockable door, entered from outside only, large enough to accommodate movement of HVAC equipment.
- Fire rated enclosure if required.

6. Janitor's Closet

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- Floor mounted mop sink
- Shelves for cleaning supplies
- Wall mounted hooks for cleaning equipment

c. Technical Requirements

- Lighting level of 15 fc
- Provide GFI type receptacles
- Provide floor drain and slope floor to drain
- Provide water resistant floor surface

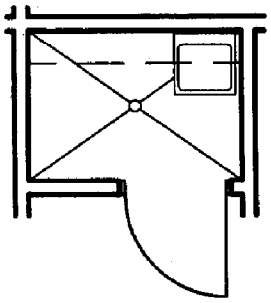


Figure 42 - Janitor's Closet

7. Storage Area

a. Size and Critical Dimensions

- Refer to Table B, *Space Criteria Summary*

b. Furnishings and Equipment

- Storage shelving

c. Technical Requirements

- Lighting level of 15 fc
- Door with key controlled access

3.3 Overall Project Design

A. Site

1. Location

Locate the Housing Maintenance Facility either directly adjacent to the main housing area or centrally located to multiple housing areas. Orientation of the facility on the site and visual screening of storage areas are very important to lessen the impact of an industrial facility placed inside or adjacent to residential neighborhoods. Access from a major roadway for use by delivery vehicles is also a factor in determining the location. The maintenance facility can sometimes be located with the Housing Management Office.

See Figure 43, ***Site Location Concept.***

2. Size

The required site size depends on the gross building area, the number of government vehicles assigned to the facility, and the amount of privately owned vehicle (POV) parking required, all of which are tied to the size of the staff. Also allow adequate room for exterior storage and work areas and consider that the location inside a residential neighborhood will require sufficient buffer areas around the facility to allow visual screening of storage and work areas from adjacent facilities, especially housing units.

Prepare a preliminary site design to insure that the chosen site is large enough to accommodate the basic building and site criteria. Allow for future expansion.

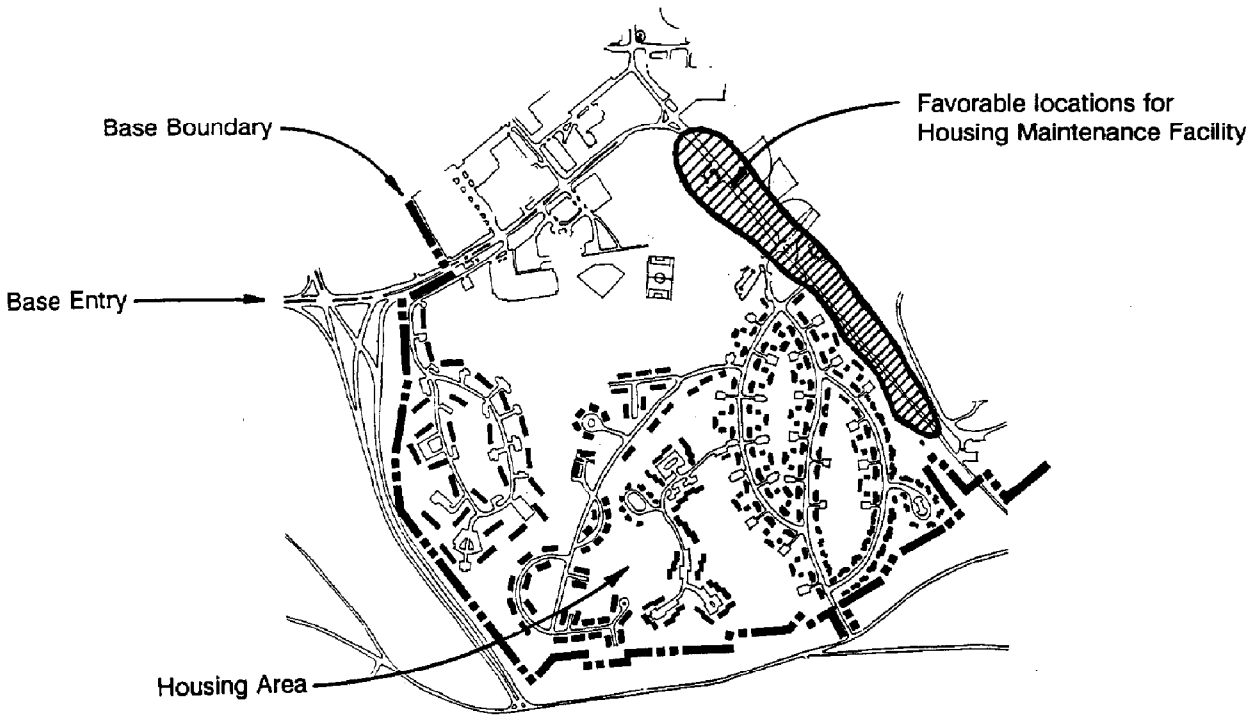


Figure 43 - Site Location Concept

3. Organization

The design of the site and the placement of the structure within the boundaries of the property are very important. Locate the structure on the site so that adequate parking and vehicular access is provided. The structure set-back distance from the street should correspond with adjacent facilities.

Two distinct parking areas are required. Design the rear parking area/workyard to accommodate overnight parking for government vehicles, to provide access to the facility for delivery vehicles, to allow adequate room for exterior access to the work shop and exterior storage facilities, and to provide for temporary storage of items awaiting disposal. See paragraph 3.3.A.7 for additional storage requirements. The rear parking area may also extend along the sides of the facility. The government vehicles include compact and mid-size pick ups, step vans, and vans. Obtain current and projected requirements for the number and size of government vehicles prior to beginning the site design.

Locate the second area of parking at the front and sides of the facility. Design this parking area to accommodate a personal vehicle for each authorized staff member and a minimum of four customer/visitor parking spaces.

Visual screening of the rear portion of the site is important. Accomplish the screening through the use of fencing, berming, and planting materials. This combination of fencing and plants will provide visual screening of the workyard, with its storage, parking, and refuse containment areas, from the adjacent residential neighborhoods as well as providing security for government vehicles and the facility itself. The materials used for fencing are to comply with the Base Master Plan and the Base Architectural Compatibility Guide.

Design the surfacing material of the parking area to comply with applicable publications. Provide concrete pavement directly beneath and in front of the area where the refuse container will be located. The area of concrete pavement is dictated by size of the refuse container and the maneuvering area required for unloading.

See Figure 44, ***Site Organization Concepts***

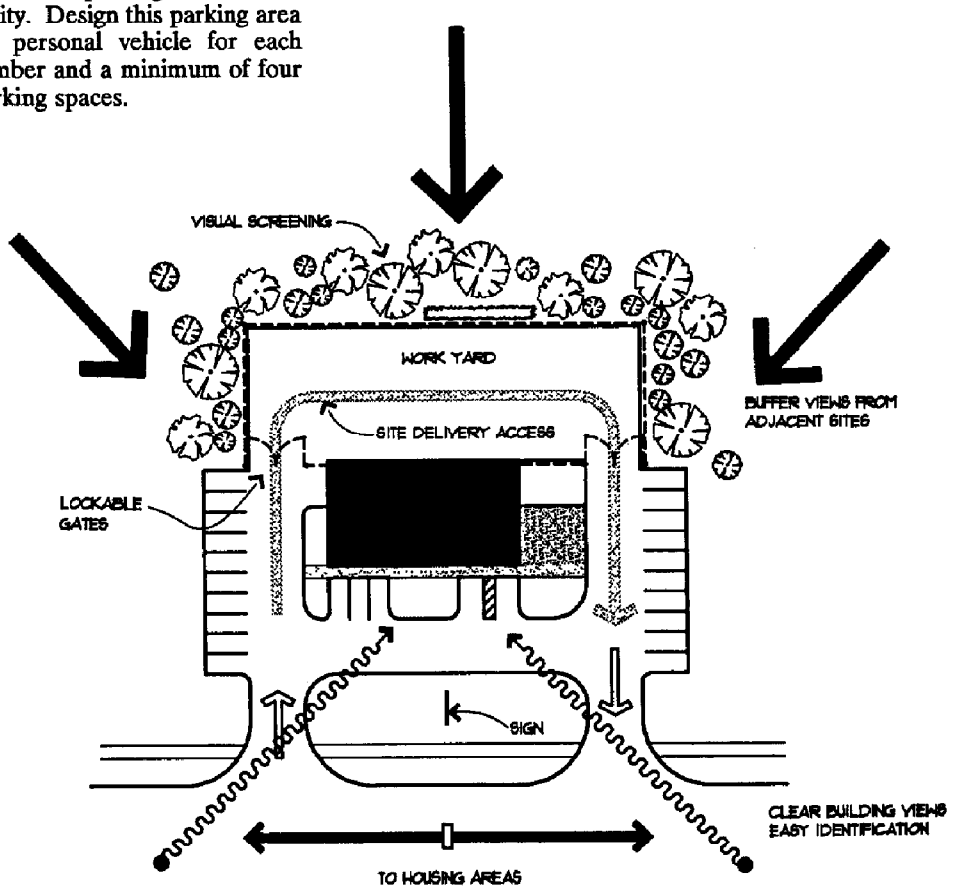


Figure 44 - Site Organization Concepts

4. Access

Provide easy access for maintenance vehicle traffic into the work yard and for staff vehicles and other base traffic into the public parking areas of the site. Ensure that the chosen site has streets and roadways leading to it that are large enough to accommodate delivery vehicles. Delivery vehicles will range in length from 45' long for a city tractor trailer and straight body truck to step type vans and full size pick ups. Verify maximum vehicle lengths with state transportation regulations.

Provide handicap access for staff and customer use through the use of designated parking spaces and handicap ramps leading to the facility entrances. Design handicap parking spaces and ramps to comply with DoD and ANSI requirements, and the Uniform Federal Accessibility Standards (UFAS). Design maneuvering areas for the refuse handling vehicle as well as maintenance vehicles.

5. Utilities

The Housing Maintenance Facility requires access to major utilities including electricity, communications, sewer, water, and gas. The facility has no unique utility requirements.

Provide basic utilities (water, sanitary sewer, and storm water systems) in accordance with the design criteria found in applicable publications. Also provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services.

Provide telephone, electric, sprinkler, and fire alarm services to the facility in accordance with criteria found in applicable publications and local practices and procedures. Provide computer cabling connecting to appropriate base facilities.

Install all utility services underground unless local conditions prevent underground installation.

Consider the use of utility control, monitoring, and energy savings systems.

See Section 3.3.C "Building Systems" for specific requirements.

6. Landscaping

Landscaping is an integral part of the placement of the Housing Maintenance Facility inside a residential area. Select new planting materials as recommended by the Base Landscape Plan. Select landscaping additions to the site to enhance the natural features existing on the site, screen unsightly views, and provide added protection from adverse climatic conditions. Preserve existing plants as much as possible, in keeping with the overall landscape plan for the facility. Unnecessarily removing existing plants and trees will increase the initial site preparation costs and add to the expense of providing new landscape materials. Depending on the local climate and the choice of planting materials, an underground sprinkler system may be required. Do not introduce plant materials not normally found in the region.

7. Storage

Design the site to include storage areas for used appliances awaiting disposal by the Defense Reutilization Marketing Organization (DRMO), recently received building materials and appliances, small flammable storage buildings, and an open-air covered storage area to shelter oversized construction materials. The open-air covered storage area may be designed as a part of the main building structure. Refer to Section 3.2.F.1.b for additional information regarding storage requirements. Ensure this area is screened.

B. Building

1. Building Organization and Circulation

The Housing Maintenance Facility consists of public and staff use areas generally separated by location within the building. The public areas include the vestibule and the family housing self help function areas. All other areas of the facility are considered to be staff use areas.

Locate the public areas just inside the main entrance of the building. Locate the toilet and administrative functions, even though they are staff areas, for easy access from the public areas.

Locate the work shop and parts/supply functions adjacent to each other with access from the administrative area. Provide overhead doors for both the work shop and parts/supply functions. Provide a swing door adjacent to the overhead door in the work shop.

Locate the staff room, toilets, janitor's closet, and mechanical/electrical room near each other to minimize utility costs.

Orient the facility to take advantage of natural features existing at the chosen site. Consider local climatic conditions and orient interior spaces to employ passive energy saving measures as much as possible. Passive energy saving measures include the use of sunlight for heating during winter months, the use of trees for shade during the summer months, and orienting the entrances away from the north side of the facility.

See Figure 29 for the ***Relationship Diagram*** and Section 3.4 for Illustrative Designs of various size facilities.

2. Architectural Character and Interior Design

Design the facility to comply with the Base Architectural Compatibility Guide and to project a professional, efficient, and organized image to employees. Design the interior of the public spaces to complement the exterior architectural design of the building. Use materials that reflect the character of the local area, and use natural light sources to enhance the character of the materials used and to help define spaces.

Design the work shop, parts/supply area, and other staff areas to project a professional, efficient, and organized image to employees.

3. Supervision and Control

The maintenance manager has overall supervisory responsibility for the facility. Direct contact with other personnel in the facility occurs daily, but no direct visual control is required.

4. Flexibility and Expansion Potential

Design the structural and mechanical systems for ease of expansion and place the building on the site to allow that expansion.

5. Surface Materials and Finishing

Use a professional interior design service for the selection of surface materials and furnishings, especially in the administrative and public spaces. Require the interior design service to coordinate selections with the users of the current facility. The selections should be made with the facility function as a prime consideration, incorporating maintenance concerns, life cycle costs, and fire and life safety requirements. Use standard office-type finishes for the administrative area. Select finishes for all other areas on the basis of durability and ease of maintenance. Use natural lighting to the greatest extent practical.

Use the ***Finish Schedule***, Figure 45, as a guide in the selection of finishes appropriate for specific spaces. Colors and patterns of finishes are not included. When selecting exact materials, patterns, and colors refer to the appropriate architectural compatibility manuals.

6. Handicapped Access

Design all function areas of the building to be handicapped accessible in accordance with DoD and ANSI requirements, and the Uniform Federal Accessibility Standards (UFAS).

Design the site and building to allow handicapped persons to function independently and have full use of all function areas.

7. Special Considerations for Renovations

All design criteria and functional relationships apply to renovation projects as well as new buildings. Alter the exterior of an existing structure as needed to present the proper professional image and sense of identity to the customer.

FINISH SCHEDULE	FLOOR							BASE			WALLS							CEILING			
INDIVIDUAL SPACES / FINISHES	SEALED CONCRETE	RECESSED ENTRY MAT	VINYL COMPOSITION TILE	CARPET	CERAMIC OR QUARRY TILE			RUBBER BASE	CERAMIC OR QUARRY TILE		LATEX PAINT - SATIN OR EGGSHELL	LATEX PAINT - SEMI-GLOSS	VINYL WALL COVERING	CERAMIC TILE	1/4" PEG BOARD	PLYWOOD (FULL HGT OR WAINSCOT)		EXPOSED STRUCTURE - PAINTED	GYPSUM WALL BOARD - PAINTED	SUSPENDED ACOUSTICAL TILE	
WORK SHOP AREA	●							●			●				●	●		●			
PARTS/SUPPLY AREA	●							●			●					●		●	●		
MANAGER			●	●				●			●		●						●	●	
FOREMAN/Q.C.			●	●				●			●		●						●	●	
SECT./RECEP./CLERK			●	●				●			●		●						●	●	
FAMILY HOUSING SELF-HELP	●		●					●			●		●		●	●			●	●	
STAFF ROOM			●	●				●			●		●						●	●	
LOCKER/TOILET ROOMS			●		●			●	●			●		●					●	●	
SHOWER					●				●					●					●		
ENTRY/VESTIBULE		●	●					●			●		●						●	●	
MECHANICAL/ELECTRICAL	●							●			●					●		●	●		
JANITOR'S CLOSET	●		●					●				●				●			●	●	
STORAGE AREA			●					●			●					●			●	●	

Figure 45 - Finish Schedule - Housing Maintenance Facility

C. Building Systems

1. Structural

Select an economical structural system based on the size of the facility, local climatic and geologic conditions, load requirements, and local availability of materials.

Design the structure to accommodate future expansion requirements.

2. Heating, Ventilation, and Air Conditioning

The heating, ventilation, and air conditioning (HVAC) systems are to conform to design requirements found in applicable DoD publications and to the established requirements for each unique base. Perform a life cycle cost analysis of available energy sources prior to design. Provide an automatic set-back control system for the HVAC system. Unit heaters are required at overhead doors. Zone controls are required to maintain desired environmental conditions for all function areas. Because of the varying customer load and thermal differences created by solar gain, etc. in perimeter spaces versus interior spaces, particular emphasis will need to be given to balancing the requirements in different areas of the facility.

3. Plumbing

Provide for domestic hot and cold water, sanitary sewer, and storm water drainage. All sinks and janitor's closets are to be provided with hot and cold water. Provide shut-off valves for all supply pipes at all plumbing fixtures. Floor drains are to be provided in all toilets, janitor's closets, and mechanical/electrical rooms.

Provide a minimum of two exterior wall hydrants. Exterior wall hydrants shall be freeze-proof if the local climatic conditions justify them.

Provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services. Design all utility and plumbing work to conform with the requirements of applicable DoD publications.

Provide metering for all utilities.

4. Electrical

Provide electrical service and distribution equipment, wiring devices, grounding, receptacles, interior and exterior lighting fixtures, lighting controls, telephone service, emergency lighting, and fire alarm/intrusion systems conforming to requirements found in applicable DoD publications.

Evaluate the HVAC system, individual staff work stations, computer equipment, work shop equipment, and expansion potential to include their loads into the total electric service requirement. Provide metering of electricity usage.

Provide electrical service to equipment and to multi-outlet strips in the work shop where work tables are shown. Install task lighting in areas of the work shop where equipment and work tables are permanently located.

All service equipment shall be Underwriter's Laboratory Listed or shall have been tested and approved by another independent laboratory. All wiring and grounding shall comply with the latest edition of the National Electrical Code (NEC).

Mount multi-outlet strips and receptacles in the work shop area 42" above the finished floor and mount all other receptacles 15" above the finished floor. Provide weather resistant outlets for the building exterior. In northern climates, additional weather resistant receptacles may be required for connecting heating devices to vehicles. Convenience outlets and special power outlets are to be specification grade. The spacing of convenience outlets shall not exceed 12'-0" o.c. Provide special power outlets as required for computers and other equipment (i.e. printers, telefax machines, copy machines, refrigerator, microwave, etc.). Provide special power outlets as required for work shop equipment.

Provide for emergency-powered lighting and illuminated exit signs. Generally lighting shall be fluorescent, supplied with low-temperature ballasts and lamps if applicable. Incandescent lighting shall be held to a minimum and, where used, shall be supplied with lamps having an extended life of at least 2,500 hours. Provide exterior lighting for parking lots and grounds using high-intensity lighting fixtures controlled by automatic switches. Provide exterior lighting for building signage.

Provide a minimum of four incoming telephone lines and an integral intercom communication system. Provide the receptionist/clerk with a hands-free operable telephone system.

5. Fire Protection

Design the fire protection and detection systems to the requirements of applicable DoD publications and to the latest edition of the National Fire Protection Association (NFPA) 101, Life Safety Code. Provide means of egress, distance to exits and width of exits to conform to the requirements as noted in NFPA 101. Design a swing door exit way adjacent to all overhead doors. Provide exit and emergency lighting to comply with all applicable sections of NFPA. Provide fire detection systems to comply with the local base fire department requirements and NFPA as well as UFAS requirements for both audio and visual means of notification. Fire alarm notification devices, connected to the nearest base fire station are to be provided as directed by the base fire marshall. Provide an automatic sprinkler system, in accordance with NFPA, if required by local base regulations or by local or national codes. Provide portable, hand held fire extinguisher as directed by NFPA. Mount hand held fire extinguisher in color coordinated cabinets suitable for the space they are mounted in. Provide fire rated walls and area separation walls as required by local and national codes.

D. Special Project Costs

There are no special project costs associated with the standard building requirements for the Housing Maintenance Facility. Consideration must be given, however, to the local climate and the possible need for preliminary soils analysis for early identification of high cost requirements for site and foundation work. Also, potential costs exist for hazardous waste mitigation associated with sites and existing facilities previously used for other purposes.

There are several items required to complete a Housing Maintenance Facility that are not project-funded, but must be paid for from alternative sources. These items include furnishings other than individual systems furniture work stations, telephones, computers and printers, and workshop equipment. These items are essential to the operation of the Housing Maintenance Facilities and the exclusion of any of these items will restrict its ability to function properly. These costs may be significantly reduced if all or a portion of the existing equipment and furnishings can be relocated. Evaluate the existing equipment and furnishings for relocation suitability.

3.4 Illustrative Designs

A. Introduction

The following pages contain example designs of different sized Housing Maintenance Facilities. One each of a large, medium, and small facility is provided. The floor plans on the following pages are based upon all functions being performed by in-house personnel. Contractor operations could require less storage space than shown on these plans. These designs are not intended to restrict the final design of the facility but are provided as examples of a design solution. The site plan illustrates a medium sized facility.

B. Large Housing Maintenance Facility

The following assumptions were made in designing the facility shown in Figure 46. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage (gsf.).

Base administered housing units: 1900

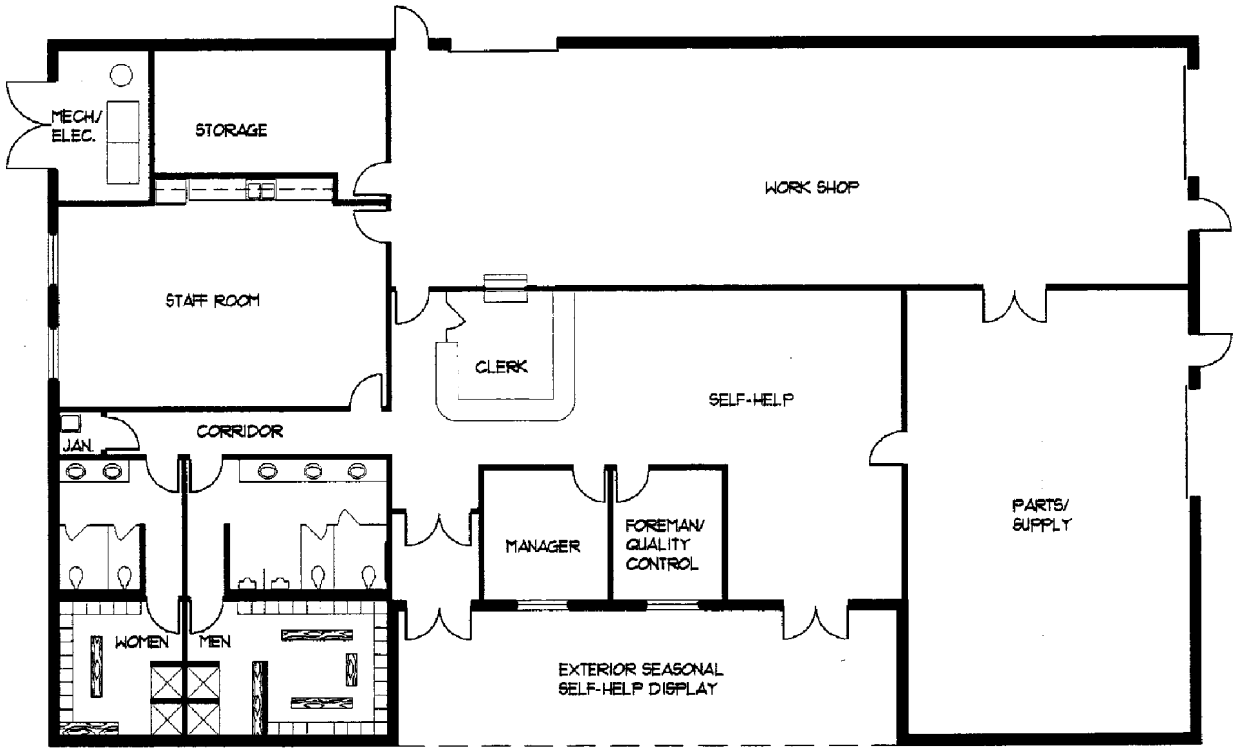
Staff size: 42

Government operated vehicles (GOV): 14

FUNCTION AREA	SQUARE FOOTAGE
Work Shop Area	1617
Parts/Supply	1066
Manager	140
Foreman/Quality Control	120
Receptionist/Clerk	120
Family Self-Help	616
Staff Room	555
Toilets	360
Locker Room	360
Entry/Vestibule	64
Mechanical/Electrical	112
Janitor's Closet	16
Storage Area	246
Circulation/Miscellaneous	948
TOTAL Gross Square Feet	**6,340**

Note: Total gross square footage would be less if Self-Help was not provided and/or if storage was sized for a contractor operated facility.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

8' 4' 0' 8' 16' 24'

SCALE IN FEET (3/32"=1'-0")

106'-0" x 65'-3" LARGE HOUSING MAINTENANCE FACILITY

6340 SQUARE FEET

Figure 46 - Example Floor Plan for Large Housing Maintenance Facility

C. Medium Housing Maintenance Facility

The following assumptions were made in designing the facility shown in Figure 47. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage (gsf.).

Base administered housing units: 1480

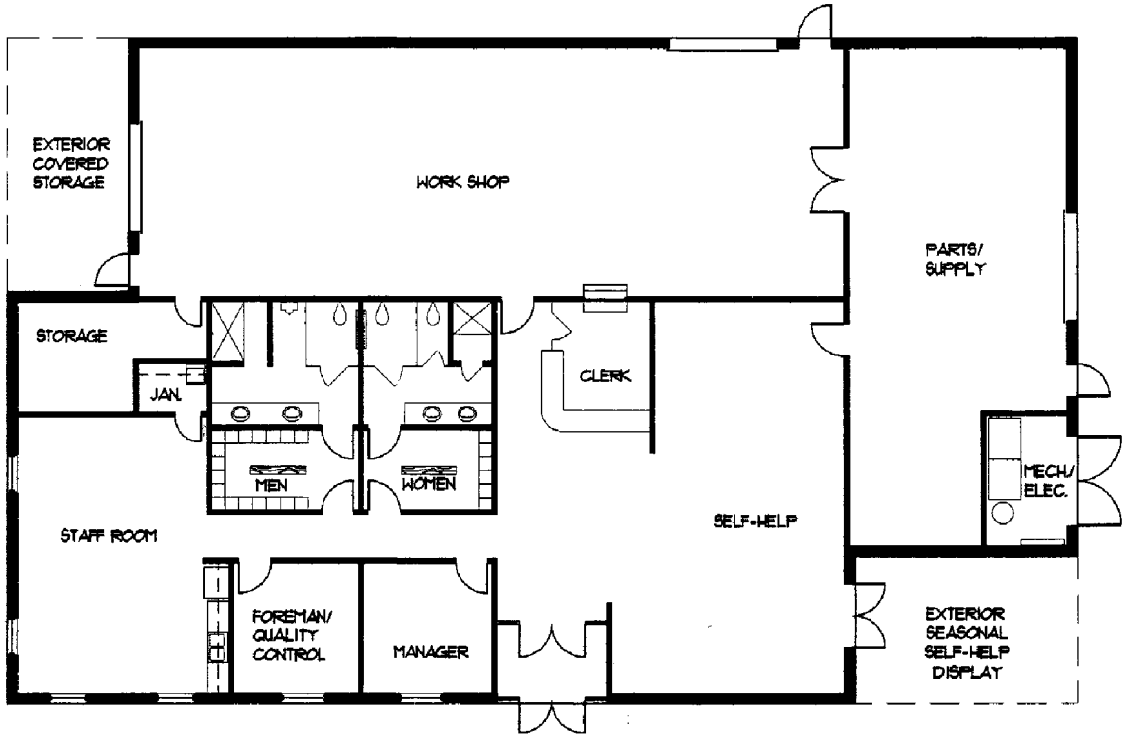
Staff size: 25

Government operated vehicles (GOV): 11

FUNCTION AREA	SQUARE FOOTAGE
Work Shop Area	1495
Parts/Supply	824
Manager	140
Foreman/Quality Control	120
Receptionist/Clerk	120
Family Self-Help	700
Staff Room	437
Toilets	286
Locker Room	195
Entry/Vestibule	70
Mechanical/Electrical	96
Janitor's Closet	24
Storage Area	105
Circulation/Miscellaneous	895
TOTAL Gross Square Feet	**5,507**

Note: Total gross square footage would be less if Self-Help was not provided and/or if storage was sized for a contractor operated facility.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

8' 4' 0' 8' 16' 24'

SCALE IN FEET (3/32"=1'-0")

61'-5" x 93'-6" MEDIUM HOUSING MAINTENANCE FACILITY
5507 SQUARE FEET

Figure 47 - Example Floor Plan for Medium Housing Maintenance Facility

D. Small Housing Maintenance Facility

The following assumptions were made in designing the facility shown in Figure 48. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage (gsf.).

Base administered housing units: 1000

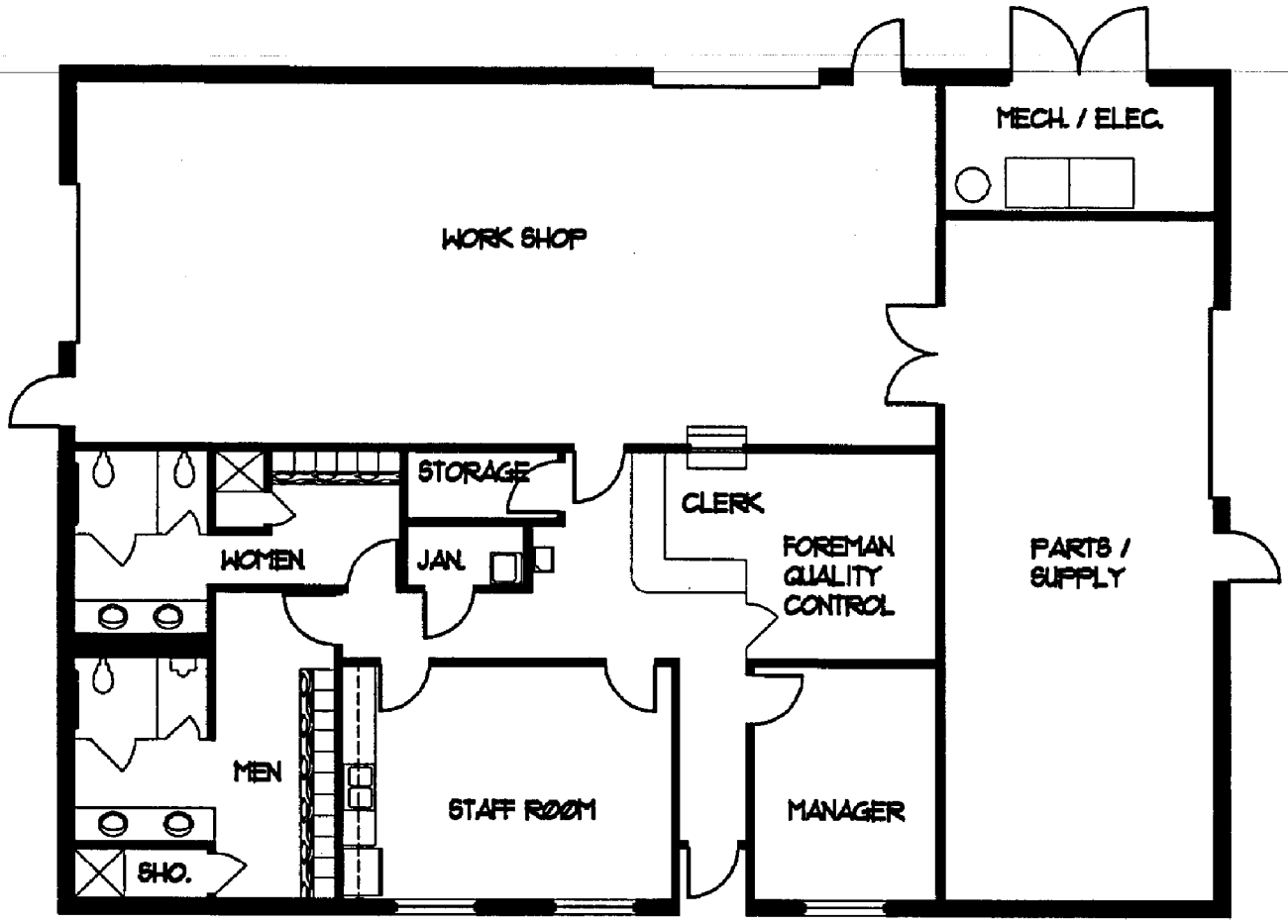
Staff size: 15

Government operated vehicles (GOV): 8

FUNCTION AREA	SQUARE FOOTAGE
Work Shop Area	1092
Parts/Supply	640
Manager	140
Foreman/Quality Control	120
Receptionist/Clerk	90
Family Self-Help	0*
Staff Room	245
Toilets	188
Locker Room	241
Entry/Vestibule	40
Mechanical/Electrical	112
Janitor's Closet	25
Storage Area	36
Circulation/Miscellaneous	563
TOTAL Gross Square Feet	3,532

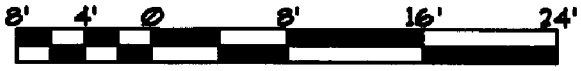
* **Note:** For the design of this example floor plan, the family housing self help area is not included in the Housing Maintenance Facility but is assumed to be located in another facility (i.e. the Base Self Help Store).

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



69'-10"x 50'-7" SMALL HOUSING MAINTENANCE FACILITY

3532 SQUARE FEET



SCALE IN FEET 3/32"=1'-0"

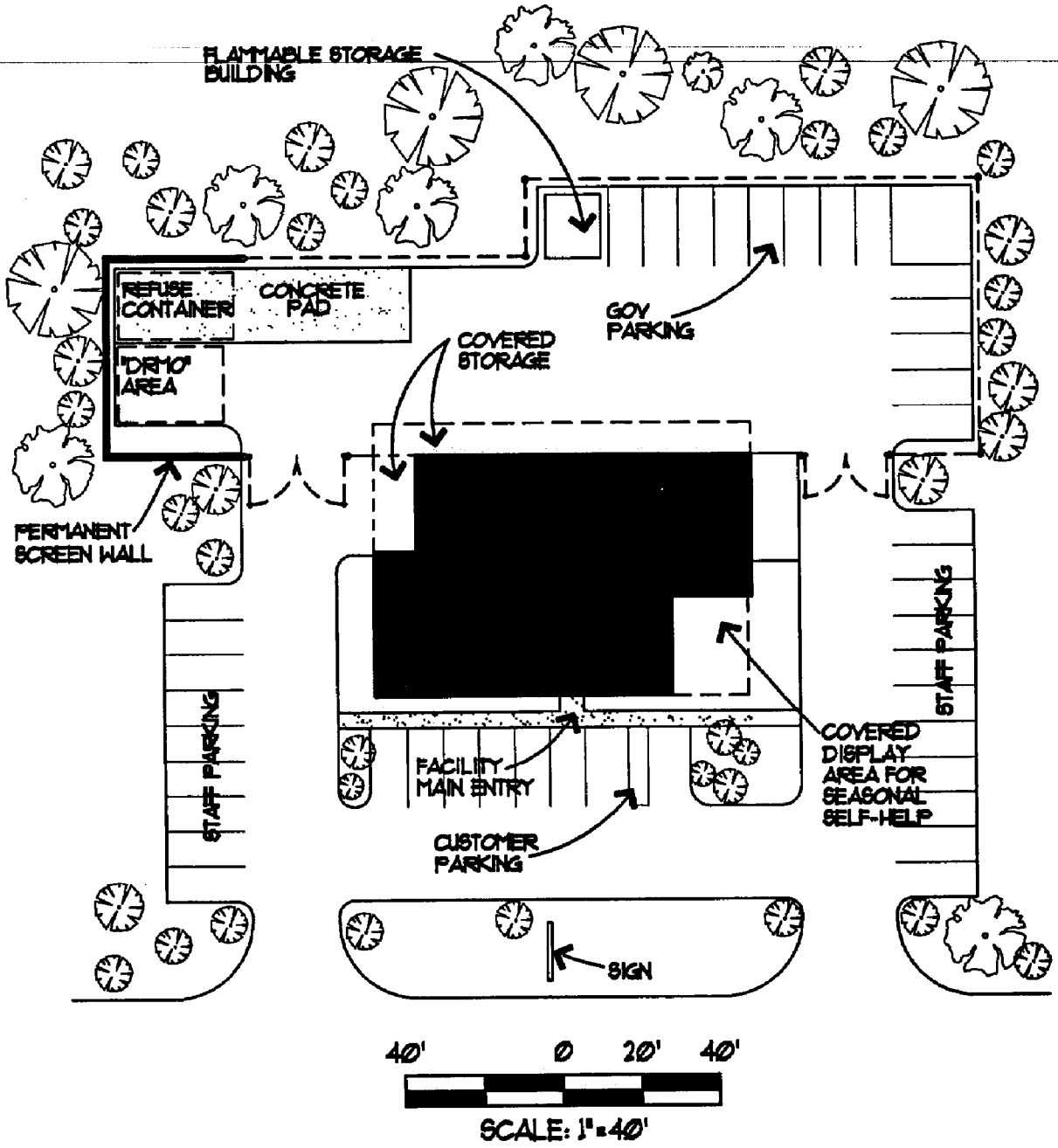
THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

Figure 48 - Example Floor Plan for Small Housing Maintenance Facility

E. Site Plan for a Housing Maintenance Facility

The site plan shown in Figure 49 is based upon a medium size facility. The design of the site, organization, and layout will vary by actual conditions and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design.

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



MEDIUM HOUSING MAINTENANCE FACILITY SITE PLAN

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

Figure 49 - Site Plan for Medium Housing Maintenance Facility

Chapter 4

Furnishings Management Warehouse

4.1 Function Descriptions and Relationships

A. General

The success of any building project is dependent on the proper coordination of all the organizations and people involved in the design and operation of the facility. This coordination is important in the design of a Furnishings Management Warehouse because the facility is the depository of large quantities of government owned furniture and appliances. This facility must be easily secured, readily accessible to customers and large trucks, and efficiently organized.

B. Functions

1. Warehouse

This area contains warehouse space for storage of unaccompanied housing, lodging, and designated General Officer Quarters furnishings. Warehouses at overseas bases also provide storage support for accompanied quarters on and off base, as well as unaccompanied quarters off base. This function includes a secure area for pilferables and a staging area for processing items both inbound and outbound. It also has a workshop area for minor maintenance and repair, and a flammable storage area.

2. Dock Area

The dock area is the exterior loading and unloading platform for the movement of furnishings into and out of the warehouse.

3. Administrative Functions

The administrative office contains work spaces for the furnishings management warehouse supervisor, clerks, and warehousemen; a customer service area; and an optional furniture display area.

4. Support Functions

Support functions for the Furnishings Management Warehouse include a toilet, a janitor's closet, and the mechanical/electrical room. The janitor's closet at overseas bases will be expanded into a cleaning room for servicing appliances.

C. Immediate Adjacencies

The adjacencies matrix for the Furnishings Management Warehouse is shown in Figure 50. It shows, for each space in the facility, which other spaces should be located adjacent to it. This matrix is used to help the designer maintain the proper physical relationships between functions.

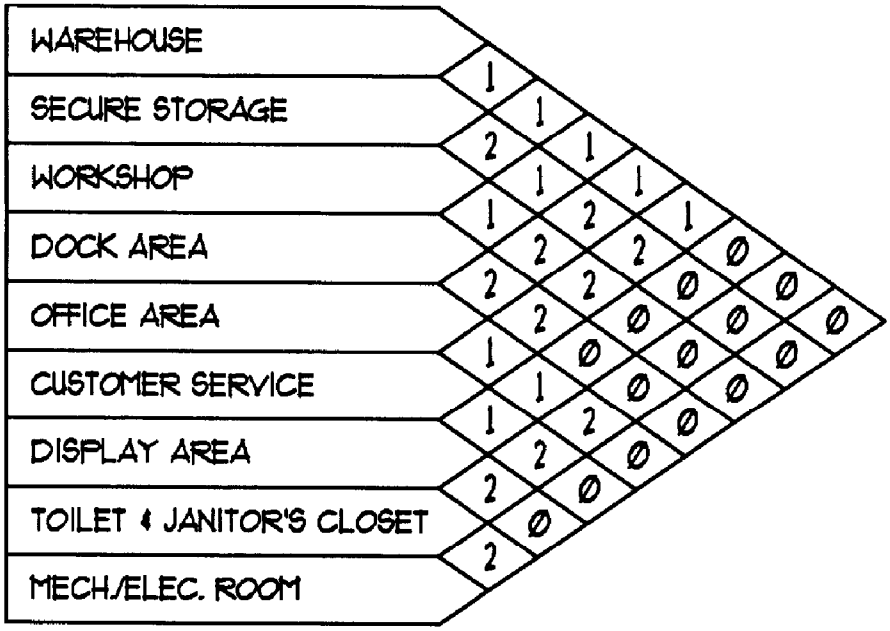


Figure 50 - Adjacencies Matrix

D. Relationships Diagram

Shown below is a "bubble" diagram indicating the relationships and adjacencies noted previously. This diagram does not depict actual room locations in a building.

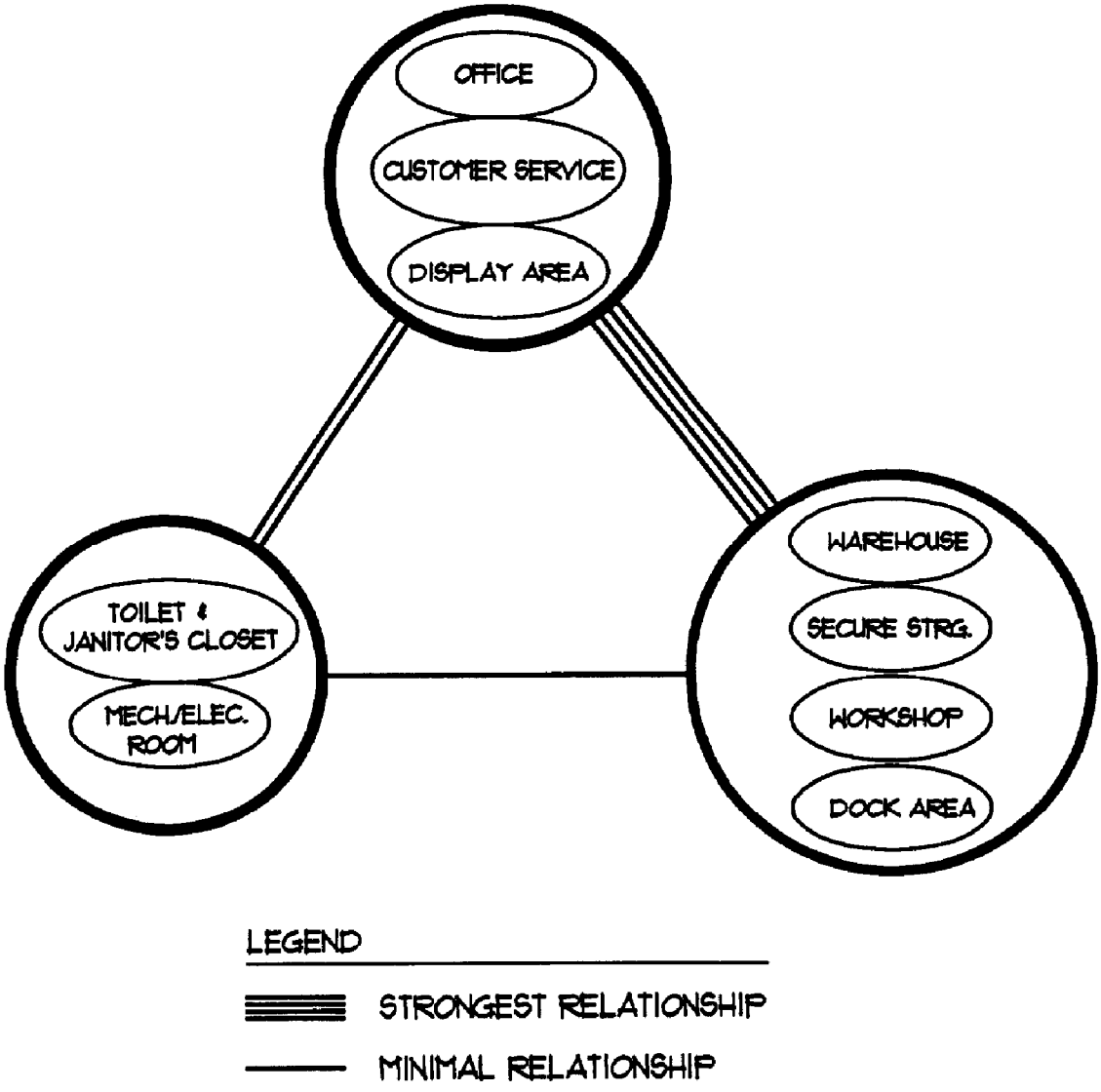


Figure 51 - Relationships Diagram

4.2 Individual Space Requirements

A. Space Criteria

1. Planning Considerations

Space criteria define the size, type, number, and functional relationships of areas required for the support of Furnishings Management Warehouse requirements. Development of the Furnishings Management Warehouse space criteria for each project must take into account the existing Furnishings Management Warehouse spaces and their adequacies or inadequacies relative to current and future needs, the potential for retention and renovation of existing facilities, and the need for additions or complete new construction projects. Also consider the current and projected quantity of lodging and unaccompanied quarters on base, the occupancy turnover rate for unaccompanied quarters, and the current and projected authorized staff sizes. Overseas bases must also consider the impact that support of accompanied quarters furnishings will have on the size of the warehouse.

2. Standard Facility Requirements

In general Furnishings Management Warehouses will require approximately 10 square feet of warehouse space for each unaccompanied housing space located on the base. This area will allow adequate space for storage of replacement furnishings as well as providing space for storage of furnishings awaiting installation into a new or remodeled facility and furnishings excess to the needs of the currently assigned member.

Accompanied quarters furnishings support will require square footage allocations in excess of the requirement for unaccompanied quarters. This excess requirement will vary by overseas location and whether the base permits full Joint Federal Travel Regulation (JFTR) authorization or limited JFTR. Bases which permit only limited JFTR must provide incoming families a complete set of home furnishings during their entire stay and consequently will have a larger storage requirement. Bases which permit full JFTR generally supply incoming families with loaner sets of furniture only until their personal belongings arrive, and a limited amount of other furnishings for the duration of their stay. The amount of storage space required must be determined at the local level. As a general guide, provide 35 SF per authorized full loaner kit (500 cubic feet each) stacked to 15 feet high.

The total square footage required for Furnishings Management Warehouses in the continental United States is directly related to the number of unaccompanied housing spaces administered by the installation. For the purposes of this design guide, a small base has less than 500 unaccompanied housing spaces, a medium base between 500 and 1000 unaccompanied housing spaces, and a large base more than 1000 unaccompanied housing spaces.

As a minimum, provide space for two warehousemen/clerks and one supervisor at all bases. Overseas staffs are larger than in the CONUS. Total space requirements must be determined locally, emphasizing the use of mezzanine capability for larger warehouses.

3. Design Issues and Relationships

In developing the space criteria for a Furnishings Management Warehouse, consider the issues of overall building design and relationships discussed in Section 4.3.B. Each base may also determine that different or additional requirements are needed to satisfy its own local program. These considerations could affect the overall function areas and spaces included in the proposed facility and may require the modification of their relative sizes. Furnishings Management Warehouses could be co-located with other base support facilities, notably Base Supply. This would affect the required program spaces and sizes. Entire areas or spaces could be eliminated where their functions are provided in conjunction with another facility. The affected function areas could be the loading dock, toilets, mechanical/electrical room, and possibly the administrative areas. If Furnishings Management Warehouses are co-located with other supply facilities, take precautions to ensure furnishings warehouses are secured with limited access to authorized personnel.

4. Specific Requirements

The remainder of this section presents the criteria applicable to the design of each function area in the Furnishings Management Warehouse. For each function area, the primary design considerations are given for the area as a whole. The primary design considerations include the use of the area, relationships between areas/spaces, and the organization and character the area is expected to present to the user and customer. Each space within the area then is listed complete with the size and critical dimensions required, furnishings and equipment expected to occupy that space, and any special technical requirements for the space.

These criteria apply to all sizes of facilities, the variables being the number of staff positions each facility will be expected to support and the quantity of unaccompanied housing spaces supported by the Furnishings Management Warehouse.

Table C, *Space Criteria Summary*, recommends square footage areas and minimum dimensions for all function areas at a typical base. Also provide approximately 10 square feet of warehouse space in the CONUS for each unaccompanied housing space on base. As a general guide, provide 35 SF per authorized full loaner kit (500 cubic feet each) stacked to 15 feet high.

FUNCTION AREAS	TYPICAL CONUS BASE	
	Square Feet	Minimum Dimension
Supervisor	120*	10'-0"
Warehouseman/Clerk (Each)	90*	9'-0"
Customer Service Area	100*	10'-0"
Furniture Display Area (Optional)	90*	9'-0"
Workshop	120	10'-0"
Toilets	76	7'-6"
Janitor's Closet	25	5'-0"
Mechanical/Electrical	**	3'-0"
Dock	**	18'-0"
Warehouse	***	Not Applicable

Table C - Space Criteria Summary - Typical CONUS Base

* Supervisor, Warehousemen/Clerks, Customer Service Area, and Furniture Display Area may share open office area.

** Square footage will vary by facility design.

*** Warehouse square footage will vary by number of unaccompanied housing spaces (approximately 10 S.F. per unaccompanied housing space in the CONUS).

B. Warehouse/Dock Area

1. Primary Design Considerations

a. Use and Performance

The warehouse and dock areas provide storage space and material handling areas for housing furnishings. The warehouse area includes a secure area for pilferables, a staging area for processing inbound and outbound furnishings, and a small workshop for minor maintenance and repair of furniture items. The workshop will require a small flammable storage cabinet.

b. Space Organization and Character

Both of these areas require durable, non-skid, easily cleaned finishes. Consider the use of mezzanines in large warehouses to maximize available storage space. Locate the staging area adjacent to the office and dock. The staging area also contains limited storage for commonly used customer repair items. The dock area finishes are to be suitable for exterior conditions. Consider providing end walls and coverings for the dock area to protect furnishings and personnel during inclement weather, particularly at northern tier bases.

2. Warehouse

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- Chain link fencing around securable area with lockable gates
- Heavy duty shelving suitable for use in a furniture warehouse †
- Shelving/cabinets on a staging area wall for commonly used repair items †
- Workbenches and small hand and power tools for use in workshop †
- 1 small flammable storage cabinet for workshop †
- 1 electric fork lift †
- 1 pallet jack †
- Hand dollies †
- Warehouse platform wagon †
- Protective coverings (blankets, padding) †
- Plywood (for stacking) †

† Non project funded equipment

c. Technical Requirements

- STC rating of 52 for walls common with office space
- Ventilation rate of 1.5 cfm/sf
- General lighting level of 10 fc with 30 fc at workshop
- Climate control to preserve wood and fabrics on stored furnishings
- Work benches and appropriate electrical outlets in workshop area
- Fire protection and suppression system as required
- Unit heaters located near overhead doors

3. Dock Area

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 adjustable dock leveler located in front of an overhead door
- Continuous dock bumpers along edge of dock

c. Technical Requirements

- Dock height between 3'-8" and 4'-4"
- Ramp from dock level to finish grade with access required from both the POV parking area and the truck parking area
- Metal roof canopy
- Floor loading capacity of 1,500 lbs/SF

C. Administrative Functions

1. Primary Design Considerations

a. Use and Performance

The administrative office of the Furnishings Management Warehouse contains work spaces for the supervisor and warehousemen/clerks and a customer service area. Overseas bases will require a larger customer service area than CONUS bases. The office may also contain a furniture display area.

b. Space Organization and Character

The workspace for the supervisor should have a window overlooking both the dock area and entrances into the warehouse itself.

The warehousemen/clerk's work space should be arranged efficiently, provide adequate work space for the staff member to perform his/her office duties, and have direct access into the warehouse.

The customer service area will be satisfied by including visitor chairs and a catalogue review table in the general office area.

The furniture display area would contain a typical set of dormitory room furnishings. At overseas locations, this area may be expanded to include other type furnishings.

All of these spaces can be included in one general office area.

2. Supervisor Work Area

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 L-shaped work surface, 30" deep
- 2 under counter filing cabinet drawers
- 1 under counter adjustable keyboard tray
- 1 under counter pencil drawer
- 1 panel mounted book shelf
- 1 tackboard mounted beneath book shelf
- 1 ergonomic desk chair

  (Utilize "systems" type furniture)
- 1 telephone †
- 1 computer terminal †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

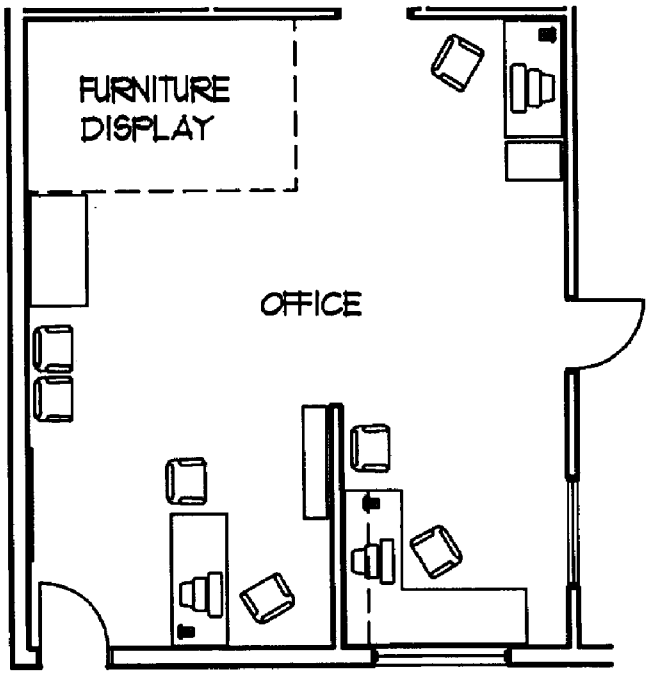


Figure 52 - Typical Warehouse Office Space

3. Warehouseman/Clerk Work Area

All criteria, unless noted, is per warehouseman/clerk.

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 work surface, 30" deep
- 1 under counter filing cabinet drawer
- 1 under counter pencil drawer
- 1 ergonomic desk chair

(Utilize "systems" type furniture)

- 1 telephone †
- 1 computer terminal †
- 1 book case, shared use †
- 1 four-drawer filing cabinet, shared use †
- 1 typewriter, shared use †

† Non project funded equipment

c. Technical Requirements

- Lighting level of 50 fc
- Provide computer cabling

4. Customer Service Area

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- 1 table, 30" deep †
- 2 visitor chairs †

(Utilize "systems" type furniture)

- 1 erasable marker board

D. Support Functions

1. Primary Design Considerations

a. Use and Performance

The support functions contain a toilet, janitor's closet, and the mechanical/electrical room. The use of each area is directly related to their name.

The janitor's closet at overseas bases will be expanded into a cleaning room for servicing appliances.

A single uni-sex toilet facility complying with DoD and ANSI requirements, and the Uniform Federal Accessibility Standards for handicap accessibility is required.

b. Space Organization and Character

All finish materials in the toilet and janitor's closet are to be durable and easily maintained.

2. Toilets

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- Water closet
- Lavatory
- Associated toilet accessories

c. Technical Requirements

- STC rating of 52
- Lighting level of 30 fc
- Provide GFI receptacles
- Lavatory counter with a plastic laminate countertop
- All necessary toilet accessories for handicap compliance
- Exhaust fan
- Provide floor drain and slope floor to drain

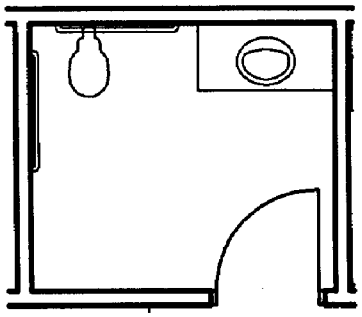


Figure 53 - Toilet

3. Janitor's Closet

a. Size and Critical Dimensions

- Refer to Table C, *Space Criteria Summary*

b. Furnishings and Equipment

- Floor mounted mop sink
- Shelves for cleaning supplies
- Wall mounted hooks for cleaning equipment

c. Technical Requirements

- Lighting level of 15 fc
- Provide GFI type receptacles
- Provide floor drain and slope floor to drain
- Provide water resistant floor surface

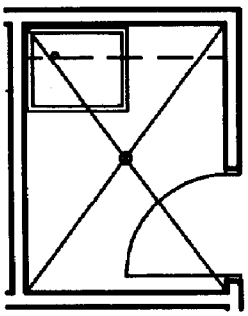


Figure 54 - Janitor's Closet

4. Mechanical/Electrical Room

a. Size and Critical Dimensions

- Size varies with building system requirements and local climate.

b. Furnishings and Equipment

- Electric panels
- Telephone panels
- Fire alarm controls
- HVAC system
- Hot water system

c. Technical Requirements

- STC rating of 52 when located with common walls to administration area
- Provide floor drain and slope floor to drain.
- Provide work space around equipment as required by equipment manufacturer.
- Lockable door, entered from outside only, large enough to accommodate movement of HVAC equipment.
- Fire rated enclosure if required.

4.3 Overall Project Design

A. Site

1. Location

Locate the Furnishings Management Warehouse in an industrial area of the base providing easy access for large trucks arriving both from off-base and from the Base Supply area. Identity and access from a major roadway are important considerations. Relative proximity to unaccompanied housing is favorable as well as any other provisions to facilitate accessibility to customers.

2. Size

The required site size depends on the gross building area, the number of government vehicles assigned to the facility, and the amount of privately owned vehicle parking required, all of which are tied to the size of the staff. Allow adequate maneuvering area for vans and semi-trailer trucks. At overseas locations, consider additional space requirements for large overseas transport containers.

Prepare a preliminary site design to insure that the chosen site is large enough to accommodate the basic building and site criteria.

3. Organization

Locate the facility on the site to provide an easily identifiable entrance to the building and convenient access for vehicular traffic into the parking lot. Because co-locating POV and truck traffic areas presents safety hazards, separate POV parking from truck traffic.

Utilize landscaping to help define the site, screen unsightly views, accent positive features, and provide protection from adverse climatic conditions including wind, glare, excessive sun in warm climates, and other localized conditions.

See Figure 56, ***Site Organization Concepts***.

4. Access

Choose a site with easy access from the main arrival gate, that is easily visible and identifiable by personnel unfamiliar with the base. Avoid vehicular access patterns that pass through residential areas.

Dimension vehicle entrances into the parking lot to accommodate large semi-trailer trucks and provide adequate maneuvering room to allow truck drivers to back their trailer into the loading dock without conflicting with POV traffic.

Provide an easily identifiable entrance to the facility from the parking lot. Provide clearly identified handicapped entrance ramps and signage complying with federal requirements.

Provide parking spaces to accommodate all government vehicles assigned to the facility, and all privately owned vehicles driven to the facility by staff members. Staff parking may be shared with co-located facilities. Customer parking must be readily accessible and clearly marked.

5. Utilities

The Furnishings Management Warehouse requires access to major utilities including electricity, communications, sewer, water, and gas.

Provide basic utilities (water, sanitary sewer, and stormwater systems) in accordance with the design criteria found in applicable publications. Also provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services.

Provide telephone, electric, sprinkler, and fire alarm services to the facility in accordance with criteria found in applicable publications and local practices and procedures. Provide computer cabling connecting to appropriate base facilities.

Install all utility services underground unless local conditions prevent underground installation.

Consider the use of utility control, monitoring, and energy savings systems.

See Section 4.3.C "Building Systems" for specific utility requirements.

6. Landscaping

Landscaping is an integral part of the image of professionalism that the entire base infrastructure must project. Select new planting materials as recommended by the Base Landscape Plan. Select landscaping additions to the site to enhance the natural features existing on the site, screen unsightly views, reinforce vehicular and pedestrian traffic patterns, and provide added protection from adverse climatic conditions. Preserve existing plants as much as possible, in keeping with the overall landscape plan for the facility. Unnecessarily removing existing plants and trees will increase the initial site preparation costs and add to the expense of providing new landscape materials. Depending on the local climate and the choice of planting materials, an underground sprinkler system may be required.

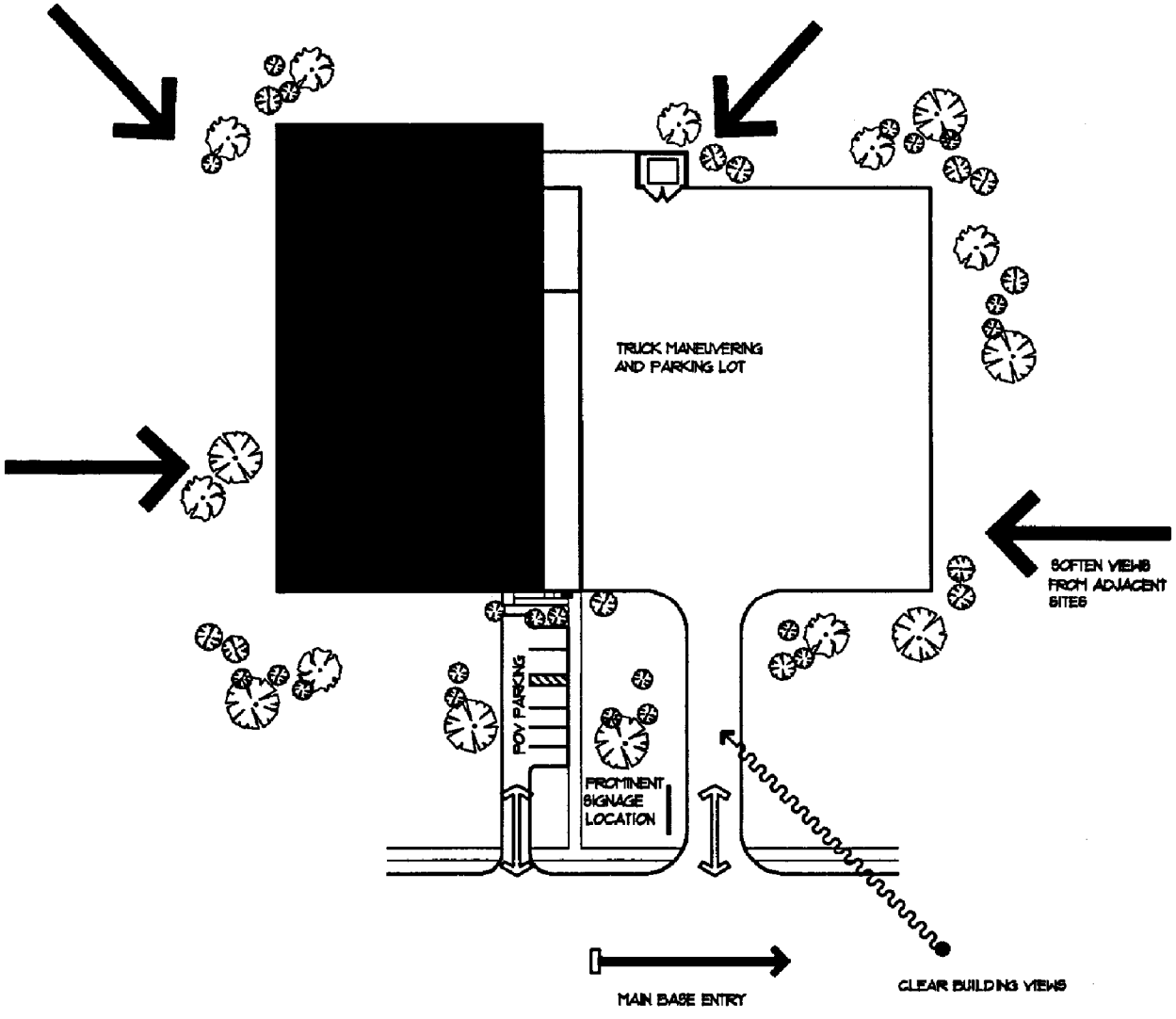


Figure 55 - Site Organization Concepts

B. Building

1. Building Organization and Circulation

Furnishings Management Warehouses in the CONUS are visited by customers on an infrequent basis. Provide a small waiting area and customer service area near a limited number of customer parking spaces. At overseas locations, much larger customer service functions are required, with waiting areas and parking more commensurate with Housing Management Offices.

Locate the administrative areas, the toilets, and the mechanical/electrical room in a corner of the warehouse with direct access to the dock and warehouse areas.

Consider local climatic conditions and orient occupied interior spaces to employ passive energy saving measures as much as possible. Passive energy saving measures include the use of sunlight for heating during winter months, locating the building so as to use trees for shade during the summer months, and orienting the entrances away from the north side of the facility. The ability of the designer to use all of these is usually limited by the site selected, but as many as possible should be incorporated with priority given to those that result in energy savings.

See Section 4.4 for an Illustrative Design of a typical Furnishings Management Warehouse.

2. Architectural Character and Interior Design

Design the facility to comply with the Base Architectural Compatibility Guide and to complement adjacent structures. Use standard office type finishes for the administrative area. Select finishes for all other areas on the basis of durability and ease of maintenance.

3. Supervision and Control

The furnishings management warehouse supervisor has responsibility for the overall supervision and control of the facility. The supervisor should be able to view the dock area and main entrances into the warehouse.

4. Flexibility and Expansion Potential

Design the structural and mechanical systems for ease of expansion of the warehouse areas and place the building on the site to allow that expansion.

5. Surface Materials and Furnishings

Make selections for the administrative area materials and furnishings with the facility function as a prime consideration, incorporating maintenance concerns, life cycle costs, and fire and life safety requirements.

The administrative and customer service areas require standard office-type finishes.

Use the ***Finish Schedule***, Figure 56, as a guide in the selection of finishes appropriate for specific spaces. Colors and patterns of finishes are not included. When selecting exact materials, patterns, and colors refer to the appropriate architectural compatibility manuals.

A file cabinet is required and must be readily accessible by the furnishings management warehouse staff. A single four-drawer cabinet will typically satisfy requirements at all CONUS locations. File cabinets in the Furnishings Management Warehouse are used to store furnishings inventory lists.

Refer to individual furnishings lists in the design criteria of each function area in Section 4.2.

6. Handicapped Access

Design all function areas of the building to be handicapped accessible in accordance with DoD and ANSI requirements, and the Uniform Federal Accessibility Standards (UFAS).

Design the site and building to allow handicapped persons to function independently and have full use of all function areas.

7. Special Considerations for Renovations

All design criteria and functional relationships apply to renovation projects as well as new buildings.

C. Building Systems

1. Structural

Select an economical structural system based on the size of the facility, local climatic and geologic conditions, load requirements, and local availability of materials.

Design the structure to accommodate future expansion requirements.

2. Heating, Ventilation, and Air Conditioning

The heating, ventilation, and air conditioning systems are to conform to design requirements found in applicable DoD publications and to the established requirements for each unique base. Perform a life cycle cost analysis of available energy sources prior to design. Provide an automatic set-back control system for the HVAC system. Zone controls are required to maintain desired environmental conditions for all function areas. Provide heating and ventilation for the warehouse with a series of ceiling-hung unit heaters and through-the-wall thermostat controlled exhaust fans. More stringent climate control measures may be required for bases located in areas subject to climatic extremes.

3. Plumbing

Provide for domestic hot and cold water, sanitary sewer, and stormwater drainage. All sinks and janitor's closets are to be provided with hot and cold water. Provide shut-off valves for all supply pipes at all plumbing fixtures. Floor drains are to be provided in all toilets, the janitor's closet, and the mechanical/electrical room.

Provide a minimum of two exterior wall hydrants. Exterior wall hydrants shall be freeze-proof if the local climatic conditions justify them.

Provide piping for natural gas, steam heating, and/or fuel oil if these utilities are used for local services.

Provide metering for all utilities.

Design all utilities and plumbing to conform with the requirements of applicable publications.

4. Electrical

Provide electrical service and distribution equipment, wiring devices, grounding, receptacles, interior and exterior lighting fixtures, lighting controls, telephones, emergency lighting, and fire alarm/intrusion systems conforming to requirements found in applicable publications.

Evaluate the HVAC system, individual staff workstations, computer equipment, and expansion potential to include their loads into the total electric service requirement. Provide metering of electricity usage.

All service equipment shall be Underwriter's Laboratory Listed or shall have been tested and approved by another independent laboratory. All wiring and grounding shall comply with the latest edition of the National Electrical Code (NEC).

Provide weather resistant outlets for the building exterior. In northern climates, additional weather resistant receptacles may be required for connecting heating devices to vehicles. Convenience outlets and special power outlets are to be specification grade. The spacing of convenience outlets in administrative and support areas shall not exceed 12'-0" o.c. Provide special power outlets as required for computers and other equipment (i.e. fork-lift, printer, telefax machine, copy machine, refrigerator, microwave, etc.), and for equipment in the workshop.

Provide emergency-powered lighting and illuminated exit signs. Generally lighting in the administrative areas shall be fluorescent, supplied with low-temperature ballasts and lamps if applicable. Lighting in the warehouse areas shall be HID aisle lighting (e.g. high-pressure sodium fixtures), or strip fluorescent. Incandescent lighting shall be held to a minimum and, where used, shall be supplied with lamps having an extended life of at least 2,500 hours. Provide exterior lighting for parking lots and grounds using high-intensity lighting fixtures controlled by automatic switches.

5. Fire Protection

Design the fire protection and detection systems to the requirements of applicable DoD publications and to the latest edition of the National Fire Protection Association (NFPA) 101, Life Safety Code. Provide means of egress, distance to exits and width of exits to conform to the requirements as noted in NFPA 101. Provide exit and emergency lighting to comply with all applicable sections of NFPA. Provide fire detection systems to comply with the local base fire department requirements and NFPA as well as UFAS requirements for both audio and visual means of notification. Provide a sprinkler system if required by local base regulations or by local or national codes. Provide portable, hand held fire extinguishers as directed by NFPA. Mount hand held fire extinguishers in color coordinated cabinets suitable for the space they are mounted in. Provide fire rated walls and area separation walls as required by local and national codes.

D. Special Project Costs

The Furnishings Management Warehouse should incur very little special project costs other than ramps, dock, and dock levelers. Consideration must be given, however, to the local climate and the possible need for preliminary soils analysis for early identification of high cost requirements for site and foundation work. Also, potential costs exist for hazardous waste mitigation associated with sites and existing facilities previously used for other purposes.

There are several items required to complete a Furnishings Management Warehouse that are not project-funded, but must be paid for from alternative sources. These items include furnishings other than systems furniture, telephones, computers and printers, mobile material handling equipment, and shelving. These items are essential to the operation of the Furnishings Management Warehouse and the exclusion of one or all of these items will severely restrict its ability to function properly. These costs may be significantly reduced if all or a portion of the existing equipment and furnishings can be relocated. Evaluate the existing equipment and furnishings for relocation suitability.

FINISH SCHEDULE	FLOOR				BASE		WALLS					CEILING			
FINISHES / INDIVIDUAL SPACES	SEALED CONCRETE	VINYL COMPOSITION TILE	CARPET		RUBBER BASE		LATEX PAINT - SATIN OR EGGSHELL	LATEX PAINT - SEMI-GLOSS	PLYWOOD (FULL HGT OR WAINSCOT)	WIRE MESH PARTITION		EXPOSED STRUCTURE - PAINTED	GYPSUM WALL BOARD - PAINTED	SUSPENDED ACOUSTICAL TILE	
OFFICE		●	●		●		●							●	
CUSTOMER SERVICE		●	●		●		●							●	
DISPLAY AREA		●	●		●		●							●	
WORKSHOP	●								●			●			
TOILET & JANITOR'S CLOSET		●			●			●					●		
MECHANICAL/ELECTRICAL	●				●			●					●		
SECURABLE STORAGE	●								●	●		●			
WAREHOUSE	●								●			●			

Figure 56 - Finish Schedule - Furnishings Management Warehouse

4.4 Illustrative Design

A. Typical Furnishings Management Warehouse

The following assumptions were made in designing the facility shown in Figure 57. The design of a facility for an actual base will vary and this design is not intended to restrict or limit the final design, but is an example of a way to complete the design. Values noted below are gross square footage (gsf.).

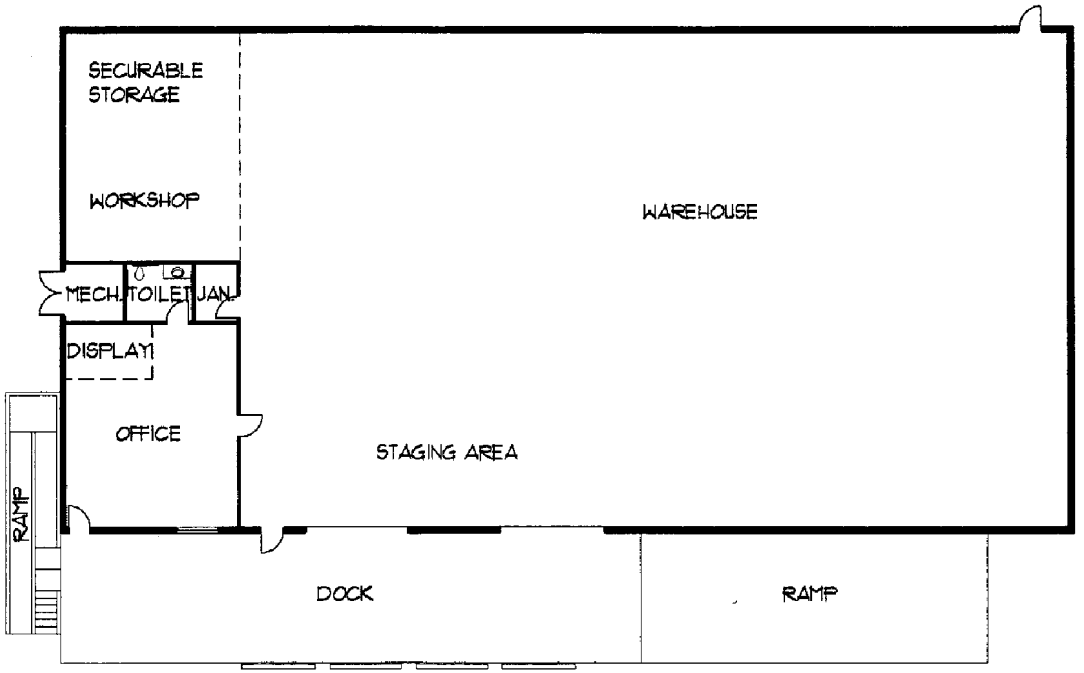
Refer to Figure 55 for a site layout of this facility.

CONUS-base administered unaccompanied housing spaces: 900

Staff size: 3

FUNCTION AREA	SQUARE FOOTAGE
Supervisor	120
Two Warehousemen	180
Customer Service Area	100
Display Area	90
Workshop	120
Securable Storage	650
Toilet	72
Janitor's Closet	48
Mechanical/Electrical	65
Office Area Circulation/Miscellaneous	40
Warehouse	8,315
TOTAL Gross Square Feet	**9,800**

THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.



THIS PLAN IS AN EXAMPLE ONLY. DO NOT USE THIS AS A DEFINITIVE SOLUTION UNLESS IT WORKS FOR A PARTICULAR DESIGN REQUIREMENT.

16' 8' 0 16' 32' 48'

SCALE IN FEET (1/16"=1'-0")

140'-0" x 70'-0" TYPICAL FURNISHINGS MANAGEMENT WAREHOUSE
9800 S.F.

Figure 57 - Example Floor Plan for CONUS-based Furnishings Management Warehouse

Appendix A
Publications and Design References

The following publications and references apply to the design of housing support facilities.

Air Force Publications

Although several of the documents listed here have been rescinded and are due to be replaced by Air Force Instructions, Air Force Handbooks, or other publications, an adequate list of replacement documents was not available for inclusion in this document.

AFM 86-2	Standard Facility Requirements
AFM 88-2	Definitive Designs of Air Force Structures
AFM 88-3	Technical Manuals
AFM 88-7	Chapter 5, General Provisions and Geometric Design for Roads, Streets, Walks and Open Storage Areas
AFM 88-15	Criteria and Standards of Air Force Construction
AFM 88-17	Chapter 4, Planting and Establishment of Trees, Shrubs, Ground Cover and Vines
AFM 88-30	Children's Play Areas and Equipment
AFM 88-40	Sign Standards
AFM 88-43	Installation Design
AFP 86-10	Landscape Planning and Design
AFP 88-41	Interior Design
AFR 18.1	Air Force Energy Management
AFR 89-1	Design and Construction Management
AFI 32-6004	Furnishings Management

Other Publications

ANSI A58-1	Building Code Requirements for Minimum Design Loads for Buildings and Other Structures
ANSI A117.1	Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped
DoDR 4145.19R-1	Storage and Warehousing Facilities and Service
DoD 4270.1-M	Construction Criteria Manual
NFPA	National Fire Protection Association
NFPA 101	Life Safety Code
UFAS	Uniform Federal Accessibility Standards

U.S. Consumer Product Safety Commission - Handbook for Public Playground Safety

MAJCOM Housing Guide (if available)

Base Master Plan

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