



COMDTINST M11012.6
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COMMANDANT INSTRUCTION M11012.6

Subj: Unaccompanied Personnel Housing (UPH) Design Guide

1. PURPOSE. The UPH Design Guide is intended to be used as an aid in the decision making process necessary for the planning, programming, and designing of functional and modular unaccompanied personnel housing facilities. This Design Guide will be used for planning facility expansions and renovations as well as the construction of new unaccompanied personnel housing facilities. The UPH Design Guide is intended to be a major reference for use by Coast Guard planning personnel, Coast Guard civil engineers, and external architectural, engineering, and planning firms.
2. DISCUSSION.
 - a. The UPH Design Guide shall be used by designers at Coast Guard facilities as well as district and Headquarters personnel involved in planning unaccompanied personnel housing facilities.
 - b. The guide represents the synthesis of operating experiences and requirements gathered through program managers at Headquarters, districts, and through the operating units in the field. Their active involvement in the research effort to gather necessary supportive data and in the review effort at intermediate stages in the development of the guide provided a vital input.
 - c. The preparation, review and approval of Planning Proposals, AC&I Project Proposal Reports and STRUCTALTS should be based on the housing policy set forth in the Housing Manual, COMDTINST M11101.13, and in the criteria appearing in this guide, thereby reducing the time required to accomplish these functions. It is not intended, however, that Planning Proposals contain detailed facilities data; this type of information properly belongs in the AC&I Project Proposal Report.
3. CHANGES. Changes to this guide will be made by consecutively numbered amendments as loose leaf insert sheets once a year when all additions and corrections for the past year have been accumulated.
4. RECOMMENDATIONS. Recommendations for the improvement of this Manual should be submitted to the Commandant (G-ECV) via the chain of command.

/s/ K. G. WIMAN
Chief, Office of Engineering

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INTRODUCTION

This guide explains the Coast Guard's approach to the planning, programming, and design of Unaccompanied Personnel Housing (UPH) facilities for enlisted personnel, officers, and students. It is arranged to provide ready reference for all within and outside the Coast Guard who must make key decisions at each stage of the planning and design process.

This guide also contains basic planning, programming, and design criteria needed in the development of an Unaccompanied Personnel Housing (UPH) facility. Chapter 2, entitled "Planning and Programming," sets forth the general guidelines planners need when starting a project. The planning and programming checklists at the end of Chapter 2 may be used to outline basic requirements for a UPH facility at the Planning Proposal stage and later as a facility program at the AC&I Project Proposal Report stage. When completed and approved, the outline provides the basis for project scope, funding, and scheduling.

Chapter 3, entitled "Design," provides overall criteria to be applied by each of the architectural and engineering disciplines in achieving a functional, cost-effective, and aesthetically pleasing facility. Chapter 4, entitled "Individual Space Criteria," sets forth basic requirements for each type of space usually required in a UPH facility. It provides general information for planners and programmers and more detailed criteria for designers. At key places in the text, the guide refers to prime sources on the needs of each type of facility, details of the Coast Guard planning and programming process, and specific criteria for systems and architectural design. This information will assist designers in the preparation of a project STRUCTALT.

Chapter 5, entitled "Illustrative Designs," is included to demonstrate a possible solution to the space relationship matrices and the spatial relationship diagrams shown in the Individual Space Criteria chapter. The designs presented are acceptable solutions to the design problem, however, the designs were not intended to limit nor restrict new designs or innovative solutions so long as square feet requirements are not exceeded.

The approach to planning and design presented in this guide applies to renovation projects as well as to the construction of new UPH facilities. The design criteria applies to all UPH projects regardless of funding source (AC&I, Minor AC&I, or OE).

PLANNING AND PROGRAMMING

FACILITY PROGRAMMING

The successful design solution is one that translates the needs of a building's user, as expressed in a logical planning methodology or program, into a significant physical form. The purpose of this chapter is to state Coast Guard requirements for planning and designing and designing a UPH facility. No architect or professional designer can gain much satisfaction from devoting maximum effort to the careful design of a building from an inaccurate program. In such cases, chance and personal whim play too great a part in the design process. The document in the shore facility planning and programming process which expresses and describes the needs of the building user is the AC&I Project Proposal Report. The facility program, which is a part of the AC&I Project Proposal Report, defines project scope in terms of Coast Guard requirements. It is essential that the facility program be complete, sufficiently explicit, and contain reasonable requirements.

Master Plans

Larger Coast Guard units are required to have master plans showing existing buildings and facilities and proposed future construction. The Planning Proposal should indicate the way in which the master plan controls the project location and size. The master plan may also influence the relative proportions of length, height, width, exterior architectural treatment, quality of construction, building orientation, or direction of principal access. The facility program should reflect these master plan requirements and also define areas of design freedom.

Special Restrictions on Design

There may be special restrictions and limitations related to the building design which should be described in the facility program. Examples of special restrictions include certain types of materials or a special design feature which must be used, or that the building must not conflict with adjacent structures. There might also be environmental or historical design limitations related to the building design.

Site Characteristics

As much information as is known about the physical properties of the site should be collected. This includes site plans, plot plans, topographic surveys, soil borings, soils reports, location of utilities, etc.

Site Development Requirements

Site improvements (roads, walks, parking, grading, and landscaping) for the project need to be defined.

Facility Function Requirements

The facility program should state the views of the building's user on what functions the new facility should house. The facility program will treat the functional requirements for the proposed building as a whole and also consider each of the principal areas in some detail.

Occupant Characteristics

UPH buildings are for people. The facility program must indicate numbers and kinds of people who will use the various parts of the proposed building.

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This information is essential for sizing of rooms, corridors, exits, and for determining the quantities of services to be provided.

Specific Facility Requirements

One of the most important functions of the facility program is to bring together a consolidated listing of all the specific facility requirements. This information should include:

- (1) the number and sizes of spaces required;
- (2) the number and characteristics of the occupants;
- (3) the relative location and interrelationship of spaces; and
- (4) the essential architectural features, equipment requirements, and utility services.

The preparation of a detailed description of specific facility requirements is the best way for the Coast Guard planner to avoid overlooking many important details.

Space Interrelationships

The facility program should clearly indicate which spaces need special consideration with respect to location and interrelationship. This information is presented graphically by a space relationship matrix within the specific facility requirements.

Cost Estimates

The budget is a very important part of the facility program. Specific guidelines for cost estimating are included in the Civil Engineering Manual, COMDTINST M11000.1.

Flexibility

No building can be completely flexible in the provision of space and features for uncertain future needs. The facility program, however, should describe in detail the probable trends in the occupancy and functional uses of the facility. It should also provide judgments on the types of flexibility of space and service systems likely to be most valuable. The quantitative information provided in this guide is based on a modular system of building areas whereby future expansions and conversions can take place without radical changes to existing buildings.

Priority

The cost of providing all of the desired features in a new building may exceed the available funds, therefore, a facility program is described in a predesign program.

Summary

Data concerning development plans and special restrictions on design are usually locally generated and are available at a field command. The Site Selection section of this chapter discusses site characteristics and site development requirements. Facility functional requirements are discussed in the Facility Space Requirements section of this chapter. Other information is found in the remainder of this Design Guide.

PLANNING AND PROGRAMMING

STANDARDS

New construction projects shall be built to comply with New Construction Criteria for UPH Facilities as stated in TABLE 1. Exceptions to these established standards require a waiver from the Chief of Staff (G-CCS) and shall be explained in the AC&I Project Proposal Report.

Projects involving major rebuilding of existing facilities shall meet criteria for new construction in TABLE 1 except where economic or physical constraints are prohibitive. Such projects must then meet the minimum adequacy standards set forth in TABLE 2.

Additional guidance is also available in the Housing Manual, COMDTINS M11101.13.

TABLE 1
NEW CONSTRUCTION CRITERIA FOR UPH FACILITIES

CATEGORY	LIVING AREA (e)
E-1 Recruits	Open compartment with 72 net SF/person; maximum 60 persons per room. Adjacent central bathroom. (a)
E-1 thru E-3	Room with 90 net SF/person; maximum 3 persons per room. (b) (c) (d)
E-4 thru E-6	Room with 135 net SF/person; maximum 2 persons per room. (b) (c) (d)
E-7 thru E-9	Private room with 270 net SF/person. (b) (c) (d)
Enlisted Watchstanders,	Room with 90 net SF/person; maximum 3 per Reserves, Transients, and sons per room. (b) (c) (d)
Students (20 weeks or less)	
O-1 thru O-2 and W-1 thru W-4	Private room of approximately 360 net SF consisting of living/bedroom, bathroom, and pullman type kitchen.
O-3 and above	Private suite of approximately 460 net SF consisting of living room, bedroom, bathroom, and kitchen.
Officers and Warrant Officers	Semi-private room of 135 net SF consisting of living(study)/bedroom and shared bath. Watchstanders, Reserves, Transients, and Students (20 weeks or less) with no more than one other person. (b) (c)

-
- (a) The net living area is one equal share per person of the sleeping room. The sleeping room is measured to the inside face of the peripheral walls.
 - (b) Each room is provided with a three-fixture bathroom (approximately 60 net SF in addition to net living area) which includes a water closet, shower, and lavatory.
 - (c) The net living area is the clear area in the sleeping room allocated for the individual's bed, wardrobe-closet unit, and interior circulation. It excludes lounges, toilets, and general circulation.
 - (d) In isolated locations, where accessibility is difficult or where usual places of recreation, stores, homes, and facilities for normal living are not available, private rooms may be allowed. For paygrades E-1 to E-6, rooms will be at least 135 SF with one shared bath between two rooms. For paygrades E-7 to E-9, rooms will be at least 270 SF with private baths. Design of modules for isolated locations will be approved by G-CCS on a case by case basis.
 - (e) Net SF standards given are neither minimums nor maximums. They are new construction standards to be followed within a deviation of 5 percent.

TABLE 2
MINIMUM STANDARDS OF ADEQUACY FOR UPH FACILITIES

CATEGORY	LIVING AREA	BATHROOM FACILITIES
E-1 Recruits	Living area of at least 72 net SF/person maximum; 60 persons per room.	Central bathroom. (a)
E-1 thru E-3	Living area of at least 90 net SF/person; no more than four persons per room.	Central bathroom. (a)
E-4 thru E-6	Living area of at least 90 net SF/person; no more than two persons per room.	Central bathroom. (a)
E-7 thru E-9	Living area of at least 150 net SF/person; no more than two persons per room.	Shared bath with no person. (b)
E-2 thru E-6 Watchstanders, Reservists, Transients, and Students (20 weeks or less)	Living area of at least 75 net SF/person; no more than four persons per room.	Central bathroom. (a)
E-7 thru E-9 Watchstanders, Reserves, Transients, and Students (20 weeks or less)	Living area of at least 75 net SF/person; no more than two persons per room or 90 net SF/persons and no more than three persons per room	Central bathroom. (a)
O-1 thru O-2 and W-1 thru W-4	Living area of at least 200 net SF private combined sleeping/living room.	Private bathroom. (b)
O-3 and above	Living area of at least 335 net SF; private suite with living room and bedroom.	Private bathroom. (b)
Officers and Warrant Officers Watchstanders, Reserves, Transients, and students (20 weeks or less)	Living area of at least 135 net SF/person; semi-private room.	Shared bath with no more than one other person (b)

- (a) Central bathrooms shall have, as a minimum, the following fixtures: 1 lavatory/4 persons; 1 water closet/6 persons; and 1 shower/6 persons. When a central bathroom is used by four persons or less, privacy between sexes by sole use and queuing is adequate; when used by more than four persons, separate men and women bathroom facilities must be available.
- (b) A bathroom will normally include three fixtures: water closet, shower (or bathroom), and lavatory.

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UPH PLANNING AND PROGRAMMING

UPH facilities vary in size based upon number of personnel served, rank of personnel, mission of base installation, and the types of activities which are usually located within the same building. different types of Coast Guard installations have unique planning requirements, therefore, each UPH facility should have its own facility program. The process for planning and programming a UPH facility, however, remains the same throughout all Coast Guard installations.

Project Development

Under the Commandant's direction, overall program emphasis is provided in the Planning and Programming Manual, COMDTINST M16010.1. Within this framework, program directors establish mission goals, program standards, and guidelines for the management of their programs.

Other Coast Guard publications provide long-range planning information, other significant data, and criteria to aid in achieving program goals. These publications are referred to at relevant points in this guide, and a number of them are listed in the Appendix.

Planning

As a project progresses, a number of planning documents are prepared:

- Acquisition, Construction, and Improvement (AC&I) Data Sheets
- Master Plans
- Planning Proposals (PP's)
- Acquisition, Construction, and Improvement Project Proposal Reports
(AC&I PPR's)
- Structure Alteration Requests (STRUCTALTS)

The AC&I Data Sheet is the initial entry document into the Shore Facilities Planning System. The Data Sheet is used to develop a computer base of shore facility construction requirements for the Coast Guard. A detailed description of the Data Sheets, its purposes, and uses is contained in the Shore Facilities Planning Manual, COMDTINST M11010.6. TABLES 3 and 4 are to be used in developing square feet requirements for UPH facilities at the AC&I Data Sheet Stage.

The Planning Proposal or its equivalent, such as a master plan, is the first comprehensive document in the project planning process submitted to Headquarters. It analyzes the broad costs and benefits of alternative from which a course of action is selected. It forms the backbone of the project justification throughout the budget process.

TABLES 5 and 6 are to be used in developing physical requirements for UPH facilities at the Planning Proposal stage. The Housing Manual, COMDTINST M11101.13, and additional planning criteria shall be consulted to determine current Coast Guard policy in providing on-base housing. The AC&I Data Sheet should also be updated at this point to reflect changes in project scope and project cost.

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The AC&I PPR is the next document in the project planning process following the approval of the Planning Proposal. It analyzes in detail the costs and benefits of the alternative which best achieves the previously selected course of action. With the AC&I PPR, the scope and the cost of the project are finalized for the budgetary process. The planning and programming checklists which define the facility space requirements serve primarily to provide assistance to the planner in the development of the AC&I PPR and STRUCTALT. TABLES 5 and 6 should be revalidated and the AC&I Data Sheet should be updated to be sure that personnel figures are accurate. Square footage for each space is located in the Individual Space Criteria Chapter of this Design Guide.

Programming

Along with the planning process, project programming at Headquarters is proceeding with the following types of documents:

- Resource Change Proposals (RCP's)
- Budget Sheets

The RCP analyzes in detail the costs and benefits of all the alternatives in accomplishing the previously selected operational course of action. More importantly, it provides the operational justification for a project.

Design

The design process has traditionally been divided into three phases:

- Schematic Design
- Design Development
- Construction Documents

The schematic design phase is often equated with the data required in preparation of the AC&I PPR. This information is presented in the Individual Space Criteria Chapter of this Design Guide.

The design development phase is documented by preparing a STRUCTALT. The STRUCTALT is an engineering document based on concepts approved by previous planning documents. Alternatives or changes in operational concepts do not belong in the STRUCTALT. It must conform with the approved AC&I PPR. The procedure for preparing a STRUCTALT is explained in the Civil Engineering Manual, COMDTINST M11000.1. The Illustrative Designs Chapter of this Design Guide is representative of the design development phase.

Contract documents, such as working drawings and specifications, comprise the final design phase. One of the main reasons for this Design Guide is to assist planners and designers in the early stages of project development. By consulting the guide early on, costly changes can be eliminated after contract documents are begun by architectural and/or engineering firms.

Based on the information provided in the planning documents, the UPH Design Guide, and other applicable Coast Guard publications, designers then apply their professional expertise in achieving the optimal design for a UPH facility.

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Timing

It is essential that Coast Guard construction funds are spent in a timely manner. This basically means that funds are to be obligated within the year appropriated.

TABLE 3
ENLISTED UPH REQUIREMENT ANALYSIS FOR AC&I DATA SHEETS

TOTAL PROPOSED PERSONNEL ALLOWANCES	MULTIPLY BY (b)	=	SUBTOTAL	DIVIDE BY (c)	=	NUMBER OF MODULES (f)
_____ (a)	x 0.55	=	_____ [1]	/ 2.0	=	_____ [A]
Shore Commands						
_____ (a)	x 0.55	=	_____ [2]	/ 2.0	=	_____ [B]
Tenant Vessels						
Personnel Subtotal						
			[1] + [2] = _____ [3]			
_____ (d) (h)	x 0.25	=	_____ /	3.0	=	_____ [C]
Watchstanders, Transients, and Students						
_____ (e)	x 1.00	=	_____ /	3.0	=	_____ [D]
Reserves						
Module Subtotal						
			[A] + [B] + [C] + [D] =			_____ [E]
TOTAL GROSS SF = Module Subtotal _____ [E] x 650 = _____ (g)						

- (a) This figure should include all personnel proposed to be assigned to the installation in the ranks E-1 thru E-9.
- (b) This is a conversion factor from total personnel loading to unaccompanied personnel loading.
- (c) This is a conversion factor based on average room loading.
- (d) If unknown, insert Personnel Subtotal [3]. Figures from G-P indicate that about 25% of a station may be on watch or transient status and that 10% of personnel are reserves.
- (e) If unknown, insert 10% of Personnel Subtotal [3].
- (f) For planning purposes, round up to the nearest whole number of modules. on 15 gross SF/person. Minimum size of recreation space shall be 750 gross SF.
- (h) At training commands, do not fill out TABLE 3 when calculating recruit or student UPH requirements. Proceed directly to TABLE 5 for a more accurate analysis.

TABLE 4
OFFICER UPH REQUIREMENT ANALYSIS FOR AC&I DATA SHEETS

TOTAL PROPOSED PERSONNEL ALLOWANCES	MULTIPLY BY (b)	=	SUBTOTAL	DIVIDE BY (c)	=	NUMBER OF MODULES (f)
_____ (a)	x 0.37	=	_____ [1]	/ 1.0	=	_____ [A]
0-1 thru 0-2						
W-1 thru W-4						
_____ (a)	x 0.08	=	_____ [2]	/ 1.0	=	_____ [B]
0-3 and above						
Personnel Subtotal						
			[1] + [2] = _____ [3]			
_____ (d) (g)	x 0.10	=	_____ /	2.0	=	_____ [C]
Watchstanders, Transcients, and Students						
_____ (e)	x 1.00	=	_____ /	2.0	=	_____ [D]
Reserves						
Module Subtotal						
			[C] + [D] = _____ [E]			
	Module Subtotal [A] _____	x	680	=		_____ [F]
	Module Subtotal [B] _____	x	780	=		_____ [G]
	Module Subtotal [E] _____	x	650	=		_____ [H]
TOTAL GROSS SF = [F] + [G] + [H] = _____ SF						

- (a) This figure should include all personnel proposed to be assigned to the installation in these ranks.
- (b) This is a conversion factor from total personnel loading to unaccompanied personnel loading.
- (c) This is a conversion factor based on average room loading.
- (d) If unknown, insert Personnel Subtotal [3].
- (e) If unknown, insert 10% of Personnel Subtotal [3].
- (f) For planning purposes, round up to the nearest whole number of modules, for a more accurate analysis.
- (g) For tenant activities, additional recreational space may be provided based on 15 gross SF/person. Minimum size of recreation space shall be 750 gross SF.
- (h) At training commands, do not fill out TABLE 3 when calculating recruit or student UPH requirements. Proceed directly to TABLE 5 for a more accurate analysis.

TABLE 5
ENLISTED UPH REQUIREMENT ANALYSIS FOR PLANNING PROPOSALS/MASTER PLANS

TOTAL PROJECTED PERSONNEL LOADING	MULTIPLY BY (a)	=	SUBTOTAL	/	DIVIDE BY (b)	=	NUMBER OF MODULES (c)
PERMANENT PARTY:							
_____ E-1 Recruits	x	1.00	= _____	/	3.75	= _____	[A]
_____ E-1 thru E-3	x	0.82	= _____	/	3.00	= _____	[B]
_____ E-4 thru E-6	x	0.44	= _____	/	2.00	= _____	[C]
_____ E-7 thru E-9	x	0.08	= _____	/	1.00	= _____	[D]
NON-PERMANENT PARTY:							
_____ Watchstanders	x	1.00	= _____	/	3.00	= _____	[E]
_____ Reserves	x	1.00	= _____	/	3.00	= _____	[F]
_____ Students less than 20 weeks	x	1.00	= _____	/	3.00	= _____	[G]
_____ Transients	x	1.00	= _____	/	3.00	= _____	[H]
			Module Subtotal				
			[A] + [B] + [C] + [D] + [E] + [F] + [G] + [H] = _____ [I]				
TOTAL GROSS SF = Module Subtotal [I] _____ X 650 = _____ (d)							

- (a) This is a conversion factor from total personnel loading to unaccompanied personnel loading.
- (b) This is a conversion factor based on average room loading.
- (c) For planning purposes, round up to the nearest whole number of modules.
- (d) For tenant activities, additional recreational space may be provided based on 15 gross SF/person. Minimum recreational space shall be 750 gross SF.

TABLE 6
OFFICER UPH REQUIREMENT ANALYSIS FOR PLANNING PROPOSALS/MASTER PLANS

PERSONNEL LOADING (NUMBER OF PEOPLE)	MULTIPLY BY (a)	=	SUBTOTAL	/	DIVIDE BY (b)	=	NUMBER OF MODULES (c)
<hr/>							
PERMANENT PARTY							
<hr/>							
_____	x 0.52	=	_____	/	1.00	=	_____ [A]
0-1 thru 0-2							
_____	x 0.08	=	_____	/	1.00	=	_____ [B]
W-1 thru W-4							
							Module Subtotal
							[A] + [B] = _____ [C]
_____	x 0.08	=	_____	/	1.00	=	_____ [D]
0-3 and above							
<hr/>							
NON-PERMANENT PARTY:							
<hr/>							
_____	x 1.00	=	_____	/	2.00	=	_____ [E]
Watchstanders							
_____	x 1.00	=	_____	/	2.00	=	_____ [F]
Reserves							
_____	x 1.00	=	_____	/	2.00	=	_____ [G]
Students less than 20 weeks							
_____	x 1.00	=	_____	/	2.00	=	_____ [H]
Transients							
							Module Subtotal
							[E] + [F] + [G] + [H] = _____ [I]
			Module Subtotal [C]		x 680		= _____ [J]
			Module Subtotal [D]		x 780		= _____ [K]
			Module Subtotal [I]		x 650		= _____ [L]
<hr/>							
TOTAL GROSS SF = [J] + [K] + [L] = _____							
<hr/>							

- (a) This is a conversion factor from total personnel loading to unaccompanied personnel loading.
- (b) This is a conversion factor based on average room loading.
- (c) For planning purposes, round up to the nearest whole number of modules.

PLANNING AND PROGRAMMING

SITE REQUIREMENTS

In planning a UPH facility, certain site considerations are needed so that project scope and project cost are adequately defined. Detailed information required for the project site design is contained in Chapter

3. A checklist of important factors that must be considered when selecting a site for a UPH facility has been developed.

Careful consideration of natural and man-made features is the foundation of site planning design. Essential site features which should be considered include topography, vegetation, drainage, views, climate, availability of circulation and utility systems, and functional and aesthetic relationships to other site facilities.

Building Location/Orientation

When the size of a project and the availability of land allow, a UPH facility should be located separately from industrial, operational, and administrative areas and should be within walking distance of dining facilities, recreational facilities, and community activities. At Air Stations or near runways, consult Commandant (G-ECV) for siting criteria to avoid accident potential zones. Buildings should be located so as to minimize external noise problems.

The orientation of the building should also be responsive to other factors such as solar energy (active or passive systems), energy conservation, views, and future expansion.

Civil Engineering

The topography of a site affects the type of structure to be built. In general, grading shall be minimized and the natural character of the site shall be preserved. A reasonable balance between cut and fill is acceptable. Existing ground forms, trees, and vegetation cover shall be minimally disturbed. Additional information is contained in the Civil Engineering Manual, COMDTINST M11000.1. A topography survey is a necessity for careful site analysis.

The most important physiographic feature in designing buildings and other site improvements is the bearing capacity of the soil. It affects the design and type of foundation and can limit the size of a building. Seismic forces on a structure can vary depending on the underlying soils. The design of foundations, structural systems, and exterior utilities can be affected depending on which seismic zone a building is located. A geological study including soil borings and engineering analysis will determine soil conditions.

The natural water table of a site affects a building's foundation design and finish floor elevation. At typical Coast Guard installations, extreme tidal changes, natural springs, aquifers, and the likelihood of flooding must be considered. These features also affect the location of underground utilities.

Site Improvements

The design and detailing of site components, including paving, plant materials, street furniture, lighting, and signage shall be developed as a con-

PLANNING AND PROGRAMMING

sistent system related functionally and aesthetically to such organizing elements as the vehicular and pedestrian circulation systems, land usage, and activity centers. The coordination and orderly development of these component systems add greatly to establishing an improved image and more functional environment.

Parking spaces may be improved in accordance with Personnel Parking Facilities Program, COMDTINST 5560. Parking shall be coordinated with underground utilities. The extreme of a profusion of small lots or excessively large lots shall be avoided. Tree islands or natural features may be used to relieve the massive character of large lots. Parking shall be oriented to allow ease of access to the main entrance. The service entrance shall be properly screened and appropriately located so as to avoid excessively long access drives. Garages for privately owned vehicles shall not be provided.

The location of walkways shall be determined in accordance with the efficient flow of exterior pedestrian traffic. Excessive walks shall be avoided and grades shall follow natural topography where feasible to avoid the placement of steps.

Outdoor recreational requirements shall be separately identified and are usually included as part of a UPH facility project. Specific sizes for outdoor recreational courts can be found in NAVFAC P-457 "Planning and Design of Outdoor Sports Facilities."

The scope and cost of additional site improvements such as landscpaing, street furniture, exterior lighting and signage are required even though they are difficult to identify in detail at this stage.

Site Utilities

A major consideration in site selection is the availability and location of site utilities. Access or proximity to public or existing services may not be primary factors, but they are helpful in reducing project costs. Utility systems shall be designed with a concern for their appearance. Past emphasis has been concerned almost solely with a cost and efficiency. A purely functional expression of utility systems can be attractive, however, utility poles, above ground steam lines, and open storm drains are often unsightly and detract from the appearance of a project. These detrimental effects can be ameliorated through appropriate location, screening, and detailing of utility systems. In general, underground services are preferable to above ground utility services. The types of exterior utility systems that must be considered are:

- | | |
|------------------------------|-----------------------|
| Potable water | Fire protection water |
| Sanitary sewers | Storm sewers |
| Telephone service | Fire alarm system |
| Heating fuels/energy sources | Refuse removal |

A site plan of existing conditions showing the location of various utility systems is required. This information may be included within the topographic site plan.

PLANNING AND PROGRAMMING CHECKLISTS
Site Requirements

1. What utility services are required for this project? Consider construction requirements and costs.

Water:	potable	_____
	fire protection	_____
Sewerage:	sanitary	_____
	storm	_____
Electricity:		_____
Telephone:		_____
Fire alarm:		_____
Heating:	oil	_____
	gas	_____
	electricity	_____
	solar	_____
	steam	_____
Refuse removal:		_____
Other:		_____

2. What is the extent of the new roads and/or driveways that must be built? Parking? Bicycle racks? Sidewalks?

3. Will the site require extensive grading or cut and fill? Does the site have any unusual soil conditions which will impact on structural foundations and cause an increase in project costs?

4. If the site is located within a flood plain, what are the additional construction requirements?

5. What are the landscaping requirements?

6. To what extent are community services available and convenient for the use of unaccompanied personnel?

7. What outdoor recreational facilities should be provided?

Multi-purpose court	_____
Tennis court	_____
Volleyball court	_____
Basketball court	_____
Other	_____

8. Have the following documents been completed before beginning design?
 - Site plan of existing site including topographic data.
 - Site soils report including soil borings.
 - Environmental impact documentation.
 - Archeological survey.

9. What size must the site be?

PLANNING AND PROGRAMMING

FACILITY SPACE REQUIREMENTS

The space program for any UPH facility that is to be submitted with the AC&I PPR can be developed by first using TABLES 5 and 6 to determine number of personnel to be housed and then using the individual space criteria square footage given in Chapter 4 for each function required in the UPH facility. The number of bedroom modules for an enlisted UPH facility is obtained from TABLE 5 and for an officer UPH facility from TABLE 6. Five major types of UPH facilities have been identified in the space requirements checklists. Normally, at larger Coast Guard units, these facilities would be constructed as separate buildings. The Coast Guard planner and designer can easily modify the format to suit individual projects, especially those projects at smaller units that would combine berthing functions and types into one building. An example of this is contained in the Multi-Mission Station Design Guide, COMDTINST M11012.3.

Unaccompanied Personnel Housing facilities, depending on size and type, vary in respect to the kind and size of interior spaces that are to be included in the program for a specific project. Space and size requirements as indicated by TABLE 1 for living quarters areas and allowable gross building areas, however, are common to all UPH facilities. Standard designs for UPH facilities must be adhered to for the living quarters areas. The core or administrative spaces may vary to meet the design requirements of the specific project.

Living Quarter Areas

The basic unit of a UPH of a facility is the bedroom/bathroom area. A standardized repeatable module has been designed for the following types of UPH facility (see Illustrative Designs Chapter).

- Recruit module for 60 persons with central bath
- Enlisted module for permanent party and students, capable of housing 1, 2, or 3 people based upon rank, with private bath
- Junior officer module with private bath and kitchen
- Senior officer module with separate bedroom, private bath, and kitchen
- Student officer module with private bath.

Recreation Areas

Depending upon building function, building location, and number of people housed, various types of recreational areas should be included. For instance, a main lounge next to the lobby is required in an enlisted UPH and not in an officer UPH; reading lounges are only required in a student UPH. Specific spaces and their sizes are outlined in the Individual Space Criteria Chapter, but generally these include the following functions:

- Lobby
- Main lounge
- Vending area
- Public toilets
- Recreation room
- TV room
- Reading lounge

PLANNING AND PROGRAMMING

Utility Areas

Janitor's closets and laundries shall be provided (see Individual Space Criteria Chapter).

Storage Areas

Linen storage rooms and building storage rooms shall be provided. Seabag storage rooms shall be provided for a permanent party enlisted UPH facility. A wardrobe or closet with lock must be provided for all person in their living area. Specific criteria is given in the Individual Space Criteria Chapter.

Administrative Areas

Offices and lobby reception desks shall be provided. In enlisted UPH facilities, a master-at-arms duty section consisting of office, bedroom, and bath shall be provided next of the lobby area. For square feet requirements see Individual Space Criteria Chapter.

Net to Gross Area Calculations

The net square feet requirements do not include interior and exterior walls, vertical and horizontal circulation space, and mechanical equipment space. The net square feet calculated must be multiplied by an appropriate factor to get the project gross square feet. While an 80% efficiency is desirable, considering the smallness of Coast Guard facilities, the multiplicity of rooms, and usual bearing wall construction, an efficiency ratio of 75% should be used except in recruit UPH facilities. For an 80% efficiency, multiply the net square feet by 1.25 to get gross square feet; for a 75% efficiency, multiply the net square feet by 1.33 to get the gross square feet. This calculation should not exceed the gross square feet calculations of TABLES 5 of 6.

PLANNING AND PROGRAMMING CHECKLIST
Space Allocations List

RECRUIT UPH COMPLEX		
AREA	NET ft	
squad bays	4320	
central bathrooms	900	
lobby		1
main lounge		1
administration	300	1
recruit administration	510	
duty section	330	1
public toilets	180	1
recruit day room		1
recruit classroom		1
linin storage	50	
building storage	30	
janitor's closet	30	
total net ft2		
net/gross factor		x 1.25
total gross ft2		

* Net square feet requirements are located in Chapter 4, "Individual Space Criteria."

PLANNING AND PROGRAMMING CHECKLIST
Space Allocations List

ENLISTED PERMANENT PARTY UPH COMPLEX

AREA	NET ft	
bedrooms: E-1 thru E-9; Watch-standers; Transients; Reserves	270	
bathrooms	60	
lobby		1
main lounge		1
administration	300	1
duty section	330	1
public toilets	180	
recreation room		
tv room		
vending room	60	
laundry		
linen storage	50	
seabag storage		
bldg. storage	30	
janitor's closet	30	
total net ft ²		
net/gross factor		x1.33
total gross ft ²		

* Net square feet requirements are located in Chapter 4, "Individual Space Criteria."

PLANNING AND PROGRAMMING CHECKLIST
Space Allocations List

ENLISTED STUDENTS UPH COMPLEX		
AREA	NET ft	
bedrooms students; watchstanders	270	
bathrooms	60	
lobby		1
main lounge		1
administration	300	1
duty section	330	1
public toilets	180	
recreation room		
tv room		
reading lounge	150	
vending area	60	
laundry		
linen storage	50	
seabag storage		
building storage	30	
janitor's closet	30	
total net ft ²		
net/gross factor		x 1.33
total gross ft ²		

* Net square feet requirements are located in Chapter 4, "Individual Space Criteria."

PLANNING AND PROGRAMMING CHECKLIST
Space Allocations List

OFFICER PERMANENT PARTY UPH COMPLEX

AREA	NET ft	
apartments		
0-1 thru 0-2; W-1 thru W-4	360	
0-3 and above	460	
lobby		1
administration	300	1
public toilets	180	1
recreation room		1
tv room		1
vending area	60	
laundry		
linen storage	50	
seabag storage		
building storage	30	
janitor's closet	30	
total net ft2		
net/gross factor		x 1.33
total gross ft2		

* Net square feet requirements are located in Chapter 4, "Individual Space Criteria."

PLANNING AND PROGRAMMING CHECKLIST
Space Allocations List

STUDENT OFFICER UPH COMPLEX		
AREA	NET ft	
bedrooms students; watchstanders	270	
bathrooms	60	
lobby		1
administration	300	1
public toilets	180	
recreation room		
tv room		
reading lounge	150	
vending area	60	
laundry		
linen storage	50	
seabag storage		
building storage	30	
janitor's closet	30	
total net ft ²		
net/gross factor		x 1.33
total gross ft ²		

* Net square feet requirements are located in Chapter 4, "Individual Space Criteria."

DESIGN

DESIGN GUIDANCE

The design criteria and concept guidance are presented to ensure that all new UPH projects and UPH alteration projects are designed to provide the best quality housing environment available for Coast Guard personnel.

Attractive design shall be achieved by careful study and selection of materials, colors, equipment, and structure rather than reliance on architectural styles or ornamental details. In all instances, the prevalent base architectural character and construction materials found on-base are to be taken into consideration when designing UPH facilities.

The primary concern of the designer must be to provide each occupant with the best possible living conditions. The UPH facility must provide each individual with privacy, flexibility in arranging room furniture, acoustical separation of areas, adequate storage, and reasonable control of room temperature. In addition to the individual occupant's needs, the overall design must consider overall human scale. By clustering rooms, breaking up long corridors, and providing small scattered lounges, a sense of identity of space can be developed that should aid in the acceptance of the UPH facility by its occupants. A sense of belonging and personal identity will promote interest in taking care of the building.

The highest quality design providing maximum livability within authorized limitations must be the goal of all concerned with the design of UPH complexes.

DESIGN

CIVIL ENGINEERING

Proper site planning is essential for a well designed UPH facility. The perceived visual character of the environment surrounding facilities can be improved by proper landscaping to provide visual relief from stark buildings and grounds, visual reinforcement of open spaces and circulation systems (pedestrian and vehicular), and visual screening of obtrusive elements. Walkways should reflect pedestrian traffic flow. Meandering paths reduce the harshness of regimented grid path systems and can provide efficient circulation throughout a complex without breaking up open spaces. Lighting should be at a pedestrian scale and designed to be compatible with the surrounding architecture. Signage should also be compatible with the surrounding architecture and appropriately scaled to its setting. Pedestrian amenities such as outdoor recreation facilities, seating, trash receptacles, and drinking fountains shall be provided. Careful attention to site furnishings, recreational facilities, signage, and screening of grade-level mounted equipment such as transformers, condensers, and trash dumpsters can create an overall appearance of desired livability.

Parking

The design of automobile parking areas should be based on providing a maximum of 1.4 parking spaces for each bedroom. Typical parking stall size shall be 9 feet by 20 feet. Parking spaces for the physically handicapped including curb cuts, signage, and barrier free access to the main entrance of the UPH facility are required for all projects. Parking should be designed and sited for the convenience of the occupants taking into consideration the problems of noise, headlights shining into windows at night, and the appearance of the parking lot from rooms within the UPH facility. Parking lots should be visually screened by landscaping whenever possible. The proper selection and massing of plant materials as well as the use of berms can effectively reduce the problems associated with large parking areas.

For large projects (more than 72 room modules), special compact car parking areas may be provided. Typical parking stall size shall be 8 feet by 15 feet.

At installations where motorcycles are popular, consideration should be given to designing an area of the parking lot that could be used exclusively for motorcycles. This area should include a pipe rail or some other device that could be used to secure motorcycles. Consideration should also be given to designing an area for bicycle storage.

Roof Drainage

All designs for UPH facilities shall consider roof downspout discharge especially when this is done on grade. In exterior type corridor designs, the walkway along the building shall be high enough above grade so that roof drainage can go under the walkway. In conventional center corridor type designs, exterior walkways shall be far enough away from the building at the points where downspouts discharge so that there is a large landscaped area sized to absorb normal roof drainage.

DESIGN

LANDSCAPE ARCHITECTURE

Trees, shrubs, ground covers, vines, and turf comprise the palette of elements in planting compositions. The varieties selected should be as few as possible to satisfy the requirements and objectives of the design. By limiting the varieties of plants, rather than cluttering the design with a planting mixture, clashing colors and forms are less likely to occur and a unified composition will be created. Repetition with occasional contrast contributes to a successful planting design. In selecting plants, it is helpful to know their growth characteristics. Only those plants capable of thriving with low maintenance under actual site conditions and which are able to produce the desired effect should be chosen. The ecological association of plants is an additional factor to be considered when selecting plants since, in nature, plants grow in groups requiring similar soil and climatic conditions. Other important factors in the selection of plants consist of their: hardiness to temperature extremes; requirements in terms of soil fertility; ability to survive in very wet soil conditions; degree of tolerance to wind and salt air; ability to be transplanted; and resistance to insects and diseases.

DESIGN

ARCHITECTURAL DESIGN

Careful attention should be given to architectural detail and the careful integration of all building systems. The emphasis shall be on simple straightforward solutions to both interior and exterior design details rather than on elaborate or extraneous architectural embellishments. It should be recognized that good design does not imply added expense, but in fact can mean economical and functional results.

Design Considerations

General architectural requirements are published in the Civil Engineering Manual, COMDTINST M11000.1. Building designs must meet the code requirements of local jurisdictions unless waived by COMDT (G-ECV) or information contained in this guide. In general, the following national building codes shall be used:

- Uniform Building Code (West coast)
- BOCA Basic Building Code (East coast and Midwest)
- Standard Building Code (Gulf coast)

Acoustics

The UPH design should provide a sufficiently quiet environment in which to live comfortably. There should be acoustical privacy between all bedrooms and there should be no annoying noise generated within a bedroom by mechanical or electrical equipment or systems. The designer must be concerned with noise from the outside the building, noise from adjacent bedrooms and corridors, noise above and below rooms, and noise from miscellaneous equipment within each bedroom.

Considering program needs, interior spaces should be planned so that room functions become progressively less noisy as quiet areas are approached. When the best arrangement has been achieved by grouping compatible activities and separating unlike functions, remaining noise problems must be controlled with sound-absorbing materials. Within a space, carpeting, acoustical ceiling tile, or sound-absorbing wall panels can be used. To buffer sound transmission between spaces, batt insulation in the walls and above the ceiling can help control noise. TABLE 7 outlines Sound Transmission Class (STC) and Impact Isolation Class (IIC) requirements for interior spaces.

Mechanical equipment must have vibration isolation to prevent the transmission of equipment-generated noise into a slab or other part of the structure. All plumbing, electrical distribution, and communication systems should perform without excessive noise generation or without compromising the acoustical performance of other building elements. Telephone, TV antenna outlets, and electrical receptacles should not reduce acoustical integrity of wall systems. Fluorescent lamp ballasts should be selected to avoid excessive noise generation.

Specific noise reduction problems shall be considered when designing Unaccompanied Personnel Housing at Air Stations. TABLE 8 provides outdoor noise criteria. UPH facilities shall not be sited in Composite Noise Rating (CNR)

DESIGN

Zone 3. CNR zones are defined in Table 9. In CNR Zone 2, walls and roofs shall be designed to provide a reduction of noise entering the structure from the outside that is equal to at least 25 dB, plus the amount by which the exterior CNR exceeds 100 dB.

Barrier Free Design

Accessibility for the physically handicapped is usually not required within an Unaccompanied Personnel Housing facility. Provisions for the handicapped are required in parking lots and access to the first floor of the building and shall include a barrier free entrance with doors and a vestibule sized in accordance with the 1980 American National Standards Institute (ANSI) Standard A117.1. Additional provisions include public restrooms, water fountain, pay phone and any other public facilities that may be located on the first floor of the UPH facility. General Coast Guard guidelines for barrier free design are contained in Civil Engineering Technical Report CG-ECV-1-83.

Life Safety

Design and construction of UPH facilities shall conform to applicable provisions of National Fire Protection Association (NFPA) Standard No. 101, Life Safety Code and the Civil Engineering Manual COMDTINST M11000.1.

Exit facilities shall be of sufficient number and appropriate size to adequately accommodate building occupancies. For emergency rescue purposes, each window in a bedroom where rooms do not have direct exit doors to the exterior shall be operable from the inside without the aid of tools; have a minimum clear opening of 24 inches in the least dimension; have at least 5 square feet in area; have a sill height not more than 4 feet above the floor; and have half of the glass area able to be opened. Interior exit corridors shall have a 1-hour fire rated construction with 3/4-hour (C label) self-closing fire doors. Dead end corridors should be avoided, but if constructed they shall not exceed 20 feet in length from the nearest exit. Enclosures for interior stairways, mechanical equipment rooms, and storage rooms shall have a 2-hour fire rated construction with 1-hour (B label) self-closing fire doors. Mechanical equipment rooms that use fossil fuel energy sources shall have outside entrances.

Fire walls shall be provided to limit floor areas for noncombustible construction. Galleys and dining facilities should be compartmentalized from UPH facilities.

Finishes, except carpets shall have flame spread rating of 25 or less and a smoke development rating of 450 or less (Class A Interior Finish). Carpet systems, carpet and underlay when tested together as they will be installed, shall pass FF-1-70 "Standard for the Surface Flammability of Carpet and Rugs (Pill Test)" and have a flame propagation index of less than 4.0 in accordance with UL-992 "Chamber Test Method of the Flame Propagation Classification of Flooring and Floor Covering Materials." In addition, corridor carpet shall have a minimum critical radiant flux of 0.45 watts Federal Test Method Standard 372-1977 "Test for Critical Radiant Flux of Carpet Flooring Systems (Floor Radiant Panel Test)."

Fallout Shelters

Fallout shelters shall be provided where required and feasible for the authorized shelter scope (number of persons) and within the authorized funds.

DESIGN

The shelter areas should be designed for dual purpose usage, provide 10 square feet per person and be located within the facility. In addition, shelter shall be designed in accordance with NBC Defense Preparedness Plan CG-368-3, Annex E "Fallout Shelters."

Building Height

In most cases, one to three story construction is preferred. Three stories shall be the maximum, unless limited real estate or other restrictions justify building height in excess of three stories. In structures exceeding two stories in height, a freight elevator shall be provided.

Floor-to-floor heights shall be minimized to avoid excessive building volume. Floor-to-floor heights, however, should be derived in conjunction with careful evaluation of both mechanical systems and structural framing system economics. Generally floor-to-floor heights in bedroom areas shall not exceed 9 feet 6 inches. Where mechanical ventilation, natural ventilation, evaporative cooling, or air-conditioning is authorized, floor-to-floor heights may be increased as necessary to accommodate the mechanical system or natural ventilation requirements up to a maximum of 10 feet 6 inches. The minimum clear floor-to-ceiling heights shall be 8 feet except that a lower floor-to-ceiling height will be permitted in limited areas to accommodate mechanical equipment. Clearance for wardrobes and other furnishings should be considered.

Historic Preservation

If the design of a building, renovation, or addition is impacted by historic preservation activities, guidelines as established by Civil Engineering Technical Report, CG-ECV-2-82, will be followed. The architectural style of a new building should blend with a surrounding historic area, however, this does not mean a slavish duplication of the surrounding architectural style but an awareness of the contextual aesthetic environment in providing complementing forms, materials, and building scale.

Expansion

Buildings should be designed for future expansion of the bedroom area necessitated by an increase in station personnel. Common areas will usually accommodate a small increase in station personnel without becoming overcrowded. Interior spaces should allow for remodeling without major structural modifications, however, a radical change in function of a UPH facility should not be anticipated. A more likely scenario would be the remodeling of a recruit UPH into an enlisted permanent party UPH rather than into a medical clinic.

Security

Room accommodations must be fitted with locks, and occupants must be permitted to lock their quarters. Master lock sets should be used or duplicate keys to individual locks should be retained by the UPH management staff. Exterior doors should be fitted with locks, and keys should be issued to all the occupants.

Material Considerations

Local materials and prevailing construction practices shall be used to the greatest extent possible. Buildings shall be designed to be residential in

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character and thus avoid an institutional appearance. Exterior building finishes shall harmonize with surrounding architecture provided that cost limitations are met and functional features maintained. Interior finishes shall be economical, durable, and easily maintained. Asbestos material shall not be used.

Windows

Glazed openings that are subject to accidental human impact, such as floor-length sidelights adjacent to entrance doors, glazed panels closer than 18 inches to the floor, sliding glass door units (both sliding and fixed sections), and fully glazed doors, shall be glazed with fully tempered glass, wire glass, laminated safety glass, or an acrylic sheet, as appropriate. Designs shall follow the criteria contained in the Safety Standard for Architectural Glazing Materials (16 CFR Part 1201) as issued by the U.S. Consumer Product Safety Commission of January 6, 1977, and effective on July 6, 1977.

The provision of storm sash or insulating glass is mandatory in locations where the winter design temperature is 15 degrees F dry-bulb or less. Exceptions to this policy may be granted by COMDT (G-ECV).

Insect screens shall be provided for all operable windows in habitable rooms.

The location, size, and glazing of windows have a considerable effect on energy consumption. For energy conscious building design requirements consult the Shore Facilities Energy Management Manual COMDTINST M11000.6.

For emergency rescue purposes, each bedroom window shall be operable from the inside.

Doors

Standard sizes suited to functional and fire safety requirements shall be used. Where screen doors are required, use a heavy duty type door. Proper consideration shall be given to security, such as proper hardware and the use of vision panels or door safety viewers. Room doors and wardrobes or closets must be fitted with locks. Master lock sets should be used or duplicate keys to individual locks should be provided to the UPH management staff. All bedroom entrance doors are to be solid-core. The doors should not have any grills or openings of any type that would reduce the sound attenuation that the solid-core door provides.

Floors

Floor finishes shall be durable, easy to maintain, and aesthetically pleasing. Activity preferences should be considered in selecting floor finishes. Carpeting may be used (see interior design guidelines).

Walls

Walls shall be designed for durability. Imagination and variety shall be used to create interesting and livable spaces. The backing behind baseboard materials on all stud partitions and walls should be solid to prevent damage from floor buffers. Tack strips or other provisions should be considered in order to allow for installation of wall hangings or artwork without damage to finished surfaces.

DESIGN

In bathrooms and other wet areas, a variety of wall materials may be used; these shall be moisture-resistant and easily cleanable. Bathroom wall construction shall consider accessibility for eventual plumbing maintenance requirements.

Ceilings

Ceilings shall be economical and durable. Lay-in ceilings should be avoided. Acoustic tile with concealed spline suspension systems are preferred. Where mechanical equipment, including adjustment and shut-off devices, is located above the ceiling, provisions must be made for access. Ceilings shall be easy to maintain and easy to repair in the event of damage.

TABLE 7
AIRBORNE AND IMPACT SOUND INSULATION

FLOOR CEILING ASSEMBLIES BETWEEN ROOMS	STC (1)	IIC (2)
Mechanical Equipment Room to Bedroom	52	56
Bedroom to Bedroom	48	51
WALL PARTITION ASSEMBLIES BETWEEN ROOMS	STC (1)	
Bedroom to Bedroom	48	
Bathroom to Bathroom	48	
Living Room to Bedroom	50	
Mechanical Space to Bedroom	48	
Mechanical Space to Other Areas	48	
Bathroom to Bedroom (Adjoining Suite)	52	
Bedroom to Corridor	48	
Living Room to Corridor	48	

(1) STC - Sound Transmission Class

(2) IIC - Impact Isolation Class

TABLE 8
OUTDOOR NOISE CRITERIA

OUTDOOR NOISE ENVIRONMENT (Ldn /Leq in dB)					
Facility Sound Level	85-89	80-84	75--79	70-74	65-69
Unaccompanied Personnel Housing	No	No	NLR35*	NLR30*	NLR25*

* Although it is recognized that local conditions may require residential uses in these areas, this use is strongly discouraged in day-night average sound level/equivalent sound level 75-79 and Ldn/Leq 70-74 and discouraged in Ldn/Leq 65-69. Noise Level Rating (NLR) criteria will not eliminate outdoor environment noise problems and, as a result, site planning and design should include measures to minimize this impact particularly where the noise is from ground level sources.

TABLE 9
COMPOSITE NOISE RATING (CNR)

CNR ZONE	TAKEOFFS/ LANDINGS	RUNUPS (15 minutes)	EXPECTED COMMUNITY RESPONSE
1	less than 100 dB	less than 80 dB	Essentially no complaints would be expected. The noise may interfere with certain activities of the residents.
2	100 dB to 115 dB	80 dB to 95 dB	Individuals may complain, perhaps vigorously.
3	greater than 115 dB	greater than 95 dB	Individual reactions would likely include repeated, vigorous complaints.

DESIGN

STRUCTURAL ENGINEERING

The structural systems and materials selected should to be suitable for permanent-type facilities, capable of carrying the required loads, in compliance with fire protection requirements, and compatible with architectural and functional concepts. The structural system shall be coordinated and integrated with the other building systems during the schematic design phase. Materials should be selected for economy, general availability, desirability, resistance to fire, and low maintenance costs over the design life of the facility.

Design Considerations

Structural engineering design criteria are published in the Civil Engineering Manual, COMDTINST M11000.1. Economic analyses shall be performed to aid in the selection of structural systems. The structural design should be conventional and straightforward. The impacts of mechanical, electrical, and fire protection systems as well as that of the architectural design must be considered when choosing the structural system.

Foundations

Foundations shall be designed with an understanding of existing soil conditions and topography. Sufficient subsurface exploration shall be made at the outset to determine the suitability of the site in supporting the proposed structure.

Wall Systems

Consideration should be given to the use of bearing walls. Walls and partitions should be held to a minimum thickness to obtain maximum livable areas within the gross square feet area limitations. The selection of wall systems must also take into consideration acoustical separation, fire protection, maintenance requirements, and integration of other building systems.

Roofs

The roof form selected has a major influence on a building's architectural design. Roof selection should, therefore, be a joint effort between the project's architect and structural engineer.

A flat roof is usually the most economical to fabricate and erect. Where feasible, the recommended slope for a flat roof is 1/2 inch per foot. All flat roofs must have a positive slope of at least 1/4 inch per foot to prevent the ponding of water. If the roof does not slope to a building edge, allowing drainage through gutters and rain leaders, a secondary means of drainage must be provided in case the primary system fails. This can be done by using a second drainage system raised 2 inches above the primary drains and independent of the primary system or by using scuppers through the exterior parapet wall with the bottoms of the scuppers at a distance 2 inches above the low point of the roof.

Other roof forms often used on Coast Guard buildings are shed, gable, or hip roofs.

DESIGN

Design Loads

The design floor live loads for UPH facilities shall be as follows:

<u>AREA</u>	<u>PSF</u>
Bedrooms and Bathrooms	40
Recruit Squad Bays	100
Recruit Central Bathrooms	75
Corridors and Balconies	100
Public Rooms	100
Stairs	100
Storage Rooms	100
Mechanical Rooms	150

Environmental Conditions

Care shall be taken in identifying all pertinent environmental factors such as snow, seismic, and wind loads. Special conditions concerning typhoon, hurricane, and earthquake forces or coastal tidal flooding must be determined. Most Coast Guard bases and installations are subject to corrosive atmospheres (i.e. salt-laden air) and are built in high humidity areas.

Material Considerations

In choosing structural materials for a specific project, consideration shall be given to the site environment, including climate, subsurface conditions, accessibility, wind velocity and seismic ratings, skill and experience of prospective contactors, experience of design and inspection personnel, the design life of the facility and maintenance costs over this period, availability of labor and materials, and the feasibility of pre-assembling or precasting major structural elements.

DESIGN

MECHANICAL ENGINEERING

The design of the mechanical systems for UPH facilities must take into consideration all factors that will provide a quiet, comfortable, and convenient interior environment for the occupants. Mechanical systems design shall be coordinated with the overall building design for mechanical space requirements, equipment locations, and clearances required for ductwork and piping runs. Exterior mechanical equipment should be sited as unobtrusively as possible or screened so as to blend in with the exterior architectural design.

DESIGN

HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC) DESIGN

In designing the HVAC system, several suitable systems should be considered, such as individual fan-coil units, through-the-wall terminal units, central systems with ductwork, and diffusers or variable air volume systems. The use of solar energy or other alternative energy sources for heating and cooling shall be considered. Economic analysis including life-cycle costs shall be a major factor in systems selection.

Design Considerations

Heating, ventilating, air-conditions, and refrigeration systems shall conform to the requirements given in the Civil Engineering Manual, COMDTINST M11000.1, and the Shore Facilities Energy Management Manual COMDTINST M11000.6. Heating and air-conditioning loads shall be calculated as described in the ASHRAE Handbook of Fundamentals. Transmission factors for walls, roofs, ceilings, and floors shall conform with ASHRAE Bulletin 90-75. Transmission factors for floors that are on grade shall be in accordance with ASHRAE Guide for "Slabs on Grade". Building ventilation rates shall conform with ASHRAE Bulletin 62-73.

Orientation

The orientation of a building is important to the selection of heating and air-conditioning equipment and for energy conservation. Large glass areas require an additional heating and air-conditioning capacity to compensate for their large heat loss/heat gain. The wall and glass areas of air-conditioned buildings shall be exposed to a minimum of afternoon sun to reduce solar heat gain. Proper orientation to prevailing summer breezes is especially important for a building without air-conditioning. If solar energy is not used as an energy source then glass areas, if practical, should be shaded.

Design Temperatures

Winter outdoor design temperature shall be selected from the column labeled "97 1/2 percent" of the ASHRAE Handbook of Fundamentals. Winter indoor design temperature shall be 68 degrees F for occupied spaces and 40 degrees F for freeze protection in storage areas.

Summer outdoor design dry-bulb temperature with coincident wet-bulb shall be selected from the column labeled "2 1/2 percent" of the ASHRAE Handbook of Fundamentals. Summer indoor design conditions shall be 78 degrees F and 60 percent relative humidity. Only the dry-bulb temperature will be controlled.

Eligibility for Air-Conditioning

UPH facilities will be eligible for air-conditioning, evaporative cooling, or mechanical ventilation according to the weather zone in which they are located. The weather zone is determined from the number of hours of dry-bulb and wet-bulb temperatures.

UPH facilities in areas where the wet-bulb temperature is 73 degrees F or higher less than 150 hours during the six warmest months of the year and the dry-bulb temperature is 93 degrees F or higher 155 hours or more during the same period may be cooled by evaporative cooling. Air-conditioning may be

DESIGN

used in lieu of evaporative cooling when analyses made by a mechanical engineer indicate that air-conditioning can be installed, maintained, and operated at a cost no greater than that for evaporative cooling.

UPH facilities may be air-conditioned when the wet-bulb temperature is 67 degrees F or higher 1,000 hours or more during the six warmest months of the year.

UPH facilities may be air-conditioned when the dry-bulb temperature is 80 degrees F or higher for more than 650 hours during the six warmest months of the year.

UPH facilities in areas where the dry-bulb temperature is 80 degrees F or higher for less than 350 hours during the six warmest months of the year may have mechanical ventilation.

Piping Systems

General mechanical piping systems shall be designed in accordance with procedures outlined by ASHRAE. Reverse return piping systems are preferred over direct return systems. Flow control valves should be provided for all equipment. Flow control valve and special fittings permitting the attachment of portable flow measurement meters should be used on mains and main branches where balancing would be difficult.

Duct Systems

Duct systems shall be designed in accordance with procedures outlined in ASHRAE. Supply and return duct systems shall be provided. Space above corridor ceilings may be used for return air plenums. Any nonmetallic ductwork shall comply with fire and smoke rating requirements. Reference shall be made to NFPA Standard no. 90A, Air-Conditioning Systems, for special requirements on smoke control.

Controls

Except for variable air volume (VAV) systems, temperature control of ducted central air systems shall be by zones. The building should be zoned by floors and by orientation. Thermostats shall be the tamperproof type. VAV system temperature control shall be by individual room thermostats.

An outdoor reset control shall be provided for hot water heating systems. The outdoor reset control shall shut off the heating system when outdoor temperature exceeds 65 degrees F. Separate reset controls shall be provided for zone pumps serving different orientations. End rooms of a building wing shall not be considered a separate zone.

Thermostats must be provided with factory-set, non-adjustable upper limits for heating cycle control and lower limits for cooling cycle control. If appropriate, night set-back control will also be supplied. Where heating or cooling is provided by an individual room unit, such as a fan-coil unit or a VAV terminal unit, an individual room control shall be provided.

All electrical heating units shall be thermostatically controlled. Timers shall be provided for bathroom heaters. The use of electric resistance type space heating must be economically justified.

DESIGN

Mechanical Equipment Rooms

The location of the mechanical equipment room or rooms is one of the first design decisions which the architect and the mechanical engineer should make. The best spot is in the center of the building. This location assures minimum wire, conduit, piping, and duct runs. For a multi-storied building this space has some disadvantages but for a single-story building where the roof can be penetrated, it is an ideal location.

In multi-storied buildings, the equipment may be placed in a basement, on the first floor, or on the roof. There is no easy rule to cover this decision, however, it is an expensive practice to separate a chiller from its cooling tower. If the equipment is placed on the roof, the structural elements must be increased in size to support the additional loads. If the cooling tower is placed on grade, it will have to be screened to be aesthetically compatible with the architectural design.

Equipment rooms for airhandlers should be centrally located within their zones and abut an outside wall.

Space requirements for mechanical and electrical equipment will usually equal 4 to 5 per cent of the building's total gross area. While this estimate is satisfactory for schematics, TABLE 10 gives space allocations for systems which would normally be selected for a UPH facility. If solar energy is used, increase the space requirements for mechanical equipment by another 1 to 3 per cent of the building's total gross area.

Weights of mechanical equipment are important to the structural engineer. He must know the weights to determine column and footing loads and sizes. According to most building codes, allowable design live loads for mechanical equipment room floors equal 150 PSF. The mechanical and structural engineers should coordinate this requirement.

Material Considerations

"U" Factors

Building materials shall be selected for low heat loss factors (U) to conserve energy by keeping heat gain and loss for walls and roof to a minimum, Table 11 lists the maximum "U" factors that are to be used in designing UPH facilities. Due to increased awareness of energy conservation, these "U" factors are more restrictive than those previously used and will require careful selection of wall and roof systems to meet these requirements. The increased cost of insulation should be offset by a reduction in size and cost of mechanical equipment and decreased operating expenses. When heated spaces are adjacent to exterior walls in slab-on-grade construction, perimeter insulation shall be installed on the interior of foundation walls as follows: one inch thick when annual heating degree days aggregate from 3500 to 4500, and two inches thick when annual heating degree days are 4500 and over. Glass areas should be double glazed and possibly tinted.

Acoustics

All mechanical equipment and systems shall be selected on the basis of acoustical considerations. Low frequency noise, frequencies below 100 Hertz

DESIGN

per second which are picked up by the structure and cause it to vibrate, are the most difficult to eliminate. The equipment selected should have rotating parts which are above 120 Hertz per second. Mechanical equipment must have vibration isolators to prevent the transmission of noise into a slab or other structural element. Conduit piping attached to equipment should be provided with flexible connections.

High frequency noise is more common and easier to attenuate than low frequency vibration. The problem is usually to contain and dampen the sound with-in the equipment room. Noise will escape through any opening in the equipment room's walls, floor, or ceiling, therefore, all penetrations should be sealed.

Another acoustical problem is ductwork noise. Air duct systems shall be designed for minimum sound transfer between rooms. By bending the duct into two 90 degree turns or by using insulation, the transference of noise may be muted.

TABLE 10
EQUIPMENT ROOM SPACE REQUIREMENTS

SYSTEM	Cycle equipment space SF/TON	Air handlers or fan SF/TON
Hot water - chilled water cycle	4.4	6.7
Hot water - direct expansion cycle	3.7	6.2

TABLE 11
"U" FACTORS

Winter Design Temperature	-40 to -10		
BUILDING ELEMENT			
Walls	.07	.10	.15
Floors over ventilated crawl spaces	.05	.07	.10
Ceilings and roofs	.05	.05	.05

DESIGN

PLUMBING DESIGN

Plumbing fixtures and circulation systems shall be carefully designed to ensure economy of layout and ease of maintenance. Quality systems shall be used to provide acceptable performance throughout the design life of the facility. Consideration should be given to solar energy as a primary source or a supplemental domestic hot water heating source. The Shore Facilities Energy Management Manual, COMDTINST M11000.6, contains information for justifying the use of solar energy. Economic analysis including life-cycle costs shall be a major factor in systems selection.

Design Considerations

The water supply system shall be designed according to the Civil Engineering Manual, COMDTINST M11000.1. Sanitary sewer design shall also follow COMDTINST M11000.1. Plumbing design shall follow the ICBO Plumbing Code on the West Coast, the Standard Plumbing Code on the Gulf Coast, and the BOCA Plumbing Code on the East Coast and in the Midwest. Hot water requirements and storage equipment sizing design shall conform to ASHRAE Handbook of Systems, Chapter 37. For exterior water supply and fire hydrants, the Water Supply and Waste Water Disposal Manual, COMDTINST M11000.3, shall be followed. COMDTINST M11000.1 shall be followed in selecting fire protection systems and equipment.

Domestic Hot Water Temperatures

Actual measured domestic hot water temperature delivered to the user will not exceed 110 degrees F in toilet facilities and washrooms without showers or tubs. Actual measured temperature delivered to the user will not exceed 120 degrees F in toilet facilities with showers or tubs, and in buildings where there is a common hot water supply system for toilet facilities with or without showers and tubs.

Distribution Systems

When hot water piping exceeds 75 feet in length, an insulated recirculating system shall be installed. A small in-line circulator operated by a return line aquastat will keep a constant supply of hot water available at the fixtures.

Water hammer arresters shall be provided in water suppliers where quick-closing valves are installed (i.e. at clothes washing machines) and where quick flush valves are installed.

Water closet and shower drains shall not be individually vented unless it is done in compliance with an applicable building code. Showers shall be equipped with flow control devices to limit water flow to 3 gallons per minute (GPM).

Outside fire hydrants shall be provided at approximately 150-foot intervals.

Fixtures

TABLE 12 provides minimum fixture allowances for a UPH facility. TABLE 13 provides typical fixture mounting heights.

DESIGN

Material Considerations

Water Piping

Water piping systems above ground can be designed with galvanized iron or copper piping. Copper is the preferred material for water piping as it is less susceptible to interior and exterior corrosion. Water pipe fittings and valves must be selected with extreme care if corrosion is to be avoided. When using copper piping, copper valves and fittings shall be specified. When using galvanized piping, valves and fittings shall be iron-body. The general rule in metal piping systems is to keep all piping materials the same. If it is necessary to install two different piping materials, such as copper and galvanized iron, separate the two materials with a 10 foot section of brass piping and install dielectric couplings at each end of the brass pipe. This procedure tends to act as a barrier to electrolytic reaction.

Plastic piping, especially polyvinyl chloride (PVC), is often being used in building piping systems. The temperature and the pressure of the liquid being piped should be checked so that the right plastic for the job is chosen. Chlorinated polyvinyl chloride (CPVC) or polyvinyl dichloride (PVDC) are much better materials for most applications. Choose heavy duty materials which can be heat welded rather than solvent welded.

Underground water piping may be cast iron, galvanized iron, copper, brass, or asbestos cement. Galvanized iron, copper, and asbestos cement are used most often from street to building.

Sanitary Soil, Waste, and Vent Piping

Sanitary soil, waste, and vent piping systems above ground can be designed with service-weight cast iron. Vent piping 3 inches and smaller may be of galvanized steel. The applicable building code should be checked to determine if galvanized steel is an acceptable material for vent piping. Soil, waste, and vent piping under concrete slabs shall be of service-weight cast iron.

TABLE 12
MINIMUM PLUMBING FIXTURES

UPH FACILITIES			
	Central Bath (male)	Central Bath (female)	Individual Bath
Water Closets	1 per 10 persons	1 per 8 persons	1 per bedroom
Urinals	1 per 25 persons		
Lavatories or Sinks	1 per 12 persons	1 per 12 persons	1 per bedroom
Bathtubs or Showers	1 per 8 persons	1 per 8 persons	1 per bedroom
Drinking Fountains	1 per 100 persons	1 per 100 persons	

TABLE 13
PLUMBING FIXTURE MOUNTING HEIGHTS

FIXTURE	ORDINARY USE	HANDICAPPED USE
Water Closet	15"	20"
Lavatory	31"	29" clear space underneath
Wall Urinal	24"	19"
Drinking Fountain	40"	34"
Shower Valve	48"	40"
Shower Head	66"	66"

DESIGN

ELECTRICAL ENGINEERING

The design of electrical systems for UPH facilities must take into consideration all factors that will provide adequate, safe, and efficient operation of electrical equipment and accessories. These factors include: the service switch for main service control, protection, and metering; the main switchboard for control and protection of main feeders; the panelboards for control and protection of branch circuits; the outlets for local connections to lamps, motors, and other devices; the starting switches and other control devices for motorized equipment; and the conduit and wiring system which interconnects all the preceding listed parts. Each of these pieces must be carefully designed to operate safely and economically under normal and abnormal conditions.

Design Considerations

Electrical systems shall conform to the requirements as given in the Civil Engineering Manual, COMDTINST M11000.1. Installation of electrical systems shall comply with the National Electrical Code (NEC).

Lighting

Lighting design is a combination of applied art and applied science. The goal of lighting is to create an efficient and pleasing environment on the interior and exterior. Lighting levels should be adequate for suitable vision, yet absolute uniformity is not required. Lighting equipment should be unobtrusive, but not necessarily invisible. Lighting quality is described in terms of luminance ratios, diffusion, uniformity, and chromaticity of the lighting. The Illuminating Engineering Society (IES) Lighting Handbook's recommended lighting levels for hotels shall be used as a guide in designing UPH facilities. The most efficient lighting source suitable for an area should normally be used.

Except in recruit squad bays, ceiling mounted fluorescent fixtures are not to be used in bedrooms. Instead a valance fluorescent fixture that throws light on ceiling and walls or down on a bed or desk should be used. This type of fixture should only be used where it will not conflict with the furniture selected. If wall system furniture is used: valance fixtures may be used but should only be placed over a window; ceiling or wallmounted incandescent fixtures that can be directionally adjusted may be used; or undershelf fluorescent fixtures suitable for mounting over a bed or desk may be used. It is recommended that no built-in fixtures be provided in the bedroom and that a switch by the door control a receptacle in the bedroom. Bedrooms may have a low level night light installed near the door.

Lights in corridors should be used to enhance and accentuate the appearance of certain areas instead of providing a uniform wash of light over all surfaces. Lighting should emphasize areas with special finishes and play down areas that are less attractive. UPH facilities with exterior walkways should have light fixtures carefully selected and located to provide sufficient light on the walkways and on entrance doors without causing glare in the bedrooms.

Lighting in lounges should be flexible so that different activities requiring varying lighting levels can be accommodated. Multilevel switching or dimming systems can result in operating economies.

DESIGN

Exit and emergency lighting shall conform to the National Fire Protection Association (NFPA) Standard No. 101, Life Safety Code.

Outlets

Duplex convenience outlets shall be provided in accordance with the National Electrical Code. In bedrooms, outlets shall be provided for each bed and desk. Ground fault circuit interrupter receptacles shall be provided in bathrooms and in exterior applications. Exterior receptacles shall be provided at convenient locations for maintenance tools, lawn equipment, and other similar exterior power needs. Clock outlets shall not be provided.

Communications Systems

Public address system

Public address communication will be needed for operational control and prompt response of personnel. Proper choice of amplification system will ensure that announcements are audible without signal distortion. Speakers should be selected to give adequate coverage, considering individual area differences such as background noise, size, acoustics, and function. The PA system should be coordinated with other station communications systems.
Telephone system

Telephone service must include an intercommunication system so that a separate system is not needed. A raceway/outlet system should be included in the building construction contract. A local telephone company will then install the telephone system. Ample space should be allocated for telephone equipment and connect panels. Each bedroom will have one telephone outlet. Outlets for public telephones shall be provided in lobbies.

TV antenna system

Where TV and FM reception is marginal and past experience has shown the need for outside antennas for proper reception, a master TV antenna system should be installed with an outlet in each bedroom and each lounge (i.e. main lounge, recreation room, and TV room). In areas where cable TV is available, provisions should be made to bring the service into the UPH facility. TV outlets shall be located next to a convenience outlet.

Fire Safety Systems

A fire detection and alarm system that meets the requirements of the Civil Engineering Manual COMDTINST M11000.1, and NFPA Standard No. 101, Life Safety Code shall be provided. Detectors (i.e. smoke, fixed-temperature, combination fixed-temperature/rate-of rise, and duct), manual pull stations, and evacuation alarms will be connected to, powered through, and supervised by an automatic fire alarm panel in the administration reception desk area. Battery operated smoke detectors are not authorized. The system shall be designed to provide earliest possible detection of fires, thus protecting personnel and minimizing damage to property. Dry chemical and pressurized water fire extinguishers shall be provided in appropriate, accessible locations for the control of small fires.

Material Considerations

Only electrical materials bearing a nationally recognized testing laboratory label will be acceptable.

DESIGN

INTERIOR DESIGN

The standard Coast Guard bedroom modules require careful planning and furnishing to make them as livable as possible. The limited space provided, in conjunction with the style of living and quantity of personal property and equipment that personnel acquire, can result in poor living conditions if appropriate furniture is not selected. The furniture must provide flexibility in room arrangement and use without being bulky and taking up excessive floor space. Furniture that can be used various ways is especially desirable (i.e. a chair that is suitable for use as a desk chair and also comfortable enough to be used as a lounge chair; drop-front cabinets that can be used as a desk, as a hi-fi cabinet, or for storage; and shelves that are adjustable so that they can hold books, hi-fi equipment, and TV sets). Lamps should also be selected for versatility. Many contemporary floor lamps, table lamps and wall mounted fixtures available provide adjustments in height, light intensity, and direction of throw thereby allowing the user to adjust and change the height for various uses. Adequate lighting should be provided for reading in bed, in a lounge chair, or for study at a desk.

Color should be used to add interest and vitality to all UPH projects. Accent color can do much to brighten up and add interest to an otherwise uninteresting area or surface. Accent colors can be introduced in the bedrooms by the use of a different color paint on one wall or by using a carpet-like tack surface as a vertical or horizontal accent stripe. Graphics can also be used to add interest and color not only to bedrooms, but to public areas as well. Super graphics can also be used to add color and interest to corridors, stairways or lounges, however, the cost of maintaining painted super graphics should be carefully considered since the continued cost of repainting them each time the building is painted can add considerably to the cost of maintenance.

Furniture and Furnishings

The selection of furniture should take into consideration the status of the room occupant. In permanent party UPH facilities greater storage and flexibility is required than in UPH facilities that are used for short term occupancy. At training locations, a standard desk may be necessary because of the type of materials a student works with, while in other locations a versatile drop-front cabinet may suffice. Consideration should be given to the use of multi-purpose vertical wall type units that serve various functions and take up very little floor space. Such units can provide drawers, desk, shelves and storage cabinets in less space than a conventional desk or chest of drawers would occupy. Many units are available with built-in light fixtures and with cut outs to accept electrical cords to facilitate their use as TV or hi-fi cabinets. It is recommended that all light fixtures be supplied as part of outfitting to eliminate any problems with furniture placement and provide maximum flexibility.

All furniture including chairs, tables, and vertical wall units should be selected to be scaled in proportion to the room size and available space. Beds that do not have a frame projecting beyond the mattress are preferred. All interior furnishing should be selected for low maintenance qualities and high resistance to damage from abuse or misuse. Furniture and furnishings shall be provided as outfitting equipment and shall not be part of the construction contract.

DESIGN

Wardrobes and Chests

Three factory-produced wardrobes, 42 inches wide, shall be provided in each bedroom of an enlisted UPH facility regardless of the number of personnel actually programmed to occupy the room. Wardrobes shall be in accordance with MIL-W-28581. A removable three-drawer chest conforming to MIL-C-28580 shall be installed in each wardrobe. Wardrobe finish is to be coordinated with the finish of the lavatory cabinet. The wardrobes shall be movable within the bedroom. In recruit squad bays provide metal lockers instead of wardrobes.

Window Coverings

Venetian blinds (horizontal or vertical) or traverse draperies shall be provided for all windows. Venetian blinds and draperies are not to be used together. Attention must be given to coordinating construction details to allow for the installation of window coverings. Draperies shall be flame retardant.

Carpeting

Carpeting is an approved floor finish in UPH facilities. Carpeting shall be used in bedroom areas, except in recruit UPH facilities. Ceramic tile shall be used in bathrooms and in areas adjacent to lavatories. Carpeting may also be installed in common use and circulation spaces if proper maintenance procedures are followed to retain an acceptable appearance level. Carpeting shall not be used in areas where spillage may be a problem such as toilet rooms, vending machine areas, laundries, storage rooms, drinking fountain areas, or kitchens.

Utility chases, columns, or offsets in rooms should be avoided to insure simple and economical installation of carpets. All carpeting must meet fire protection standards as outlined in the Architectural Design section.

Works of Art

Project funds can be used to buy artworks for public spaces within the UPH facility. Artwork in this case refers to objects used for aesthetic rather than functional reasons. It serves to decorate a space or surface, and its main benefit is in making the space unique or more interesting. Art forms to be considered include sculpture, paintings, murals, mosaics, and mobiles.

The amount spent on art should be reasonable and appropriate in relation to total project cost. There is no set percentage that may be spent on art, but the general guideline is 3/8 of one percent of the total construction cost of a building. Renovation projects could use a higher percentage.

Signage

Signage includes building identification signs, room identification signs and numbers, direction signs, door name card holders and informational signs. These items are usually afterthoughts and are often makeshift. They can detract from and completely spoil an otherwise satisfactory building design. All requirements for signage shall be included in the project plans and specifications. The signage system shall be a commercially available, non-proprietary product.

A tackable surface should be included in all bedrooms and in certain public areas where appropriate. These should be carefully selected and detailed to

DESIGN

add to the attractiveness of the interior and not be a makeshift afterthought detracting from an otherwise finished interior. The use of colorful burlap or carpet like tack board or a panel of cork can add to the interior design and be appropriate for a residential area as opposed to a typical aluminum framed bulletin board that has an institutional appearance.

INDIVIDUAL SPACE CRITERIA

GENERAL

Chapter 4 describes the individual spaces necessary to accommodate typical functional requirements of housing and recreational activities for personnel within UPH facilities. These are described under the following main functional areas:

- Living quarters areas
- Administrative areas
- Recreation areas
- Storage areas
- Utility areas

This chapter also graphically describes the space organization principles which generally govern the organization and layout of building spaces. This data is displayed at the end of this chapter by using space relationship matrices and spatial relationship diagrams for the following types of UPH facilities:

- Recruits
- Enlisted permanent party
- Enlisted students
- Officer permanent party
- Student officers

INDIVIDUAL SPACE CRITERIA

SQUAD BAYS

Recruits

Functions/Users

Squad bays will temporarily house 60 recruit personnel for approximately 6 weeks at a time. Most occupants will be 18 to 21 years of age. Character of the room should be highly structured and provide a military atmosphere.

Size

4320 net SF (excluding central bathroom).

Furnishings/Equipment

One bunkable bed per occupant. One locker per occupant. One foot locker (optional) per occupant.

Adjacency/Accessibility/View

Squad bay will be adjacent and directly accessible to the central toilet. The room must have two separate means of egress, excluding the access to the central toilet. Windows are required.

Spatial Definition

Recommended ceiling height 9'-0". Minimum ceiling height 8'-0". Squad bay should be designed so that in the future it could be subdivided into modular individual bedrooms.

Durability/Maintenance

High wear requirements. No carpet allowed. Floor and wall finishes should be cleanable, durable, and easily maintained at high appearance levels.

Acoustics

STC: 48.

Lighting

Area lighting:50 FC.

Communications

One telephone outlet. PA speakers.

Electric Outlets

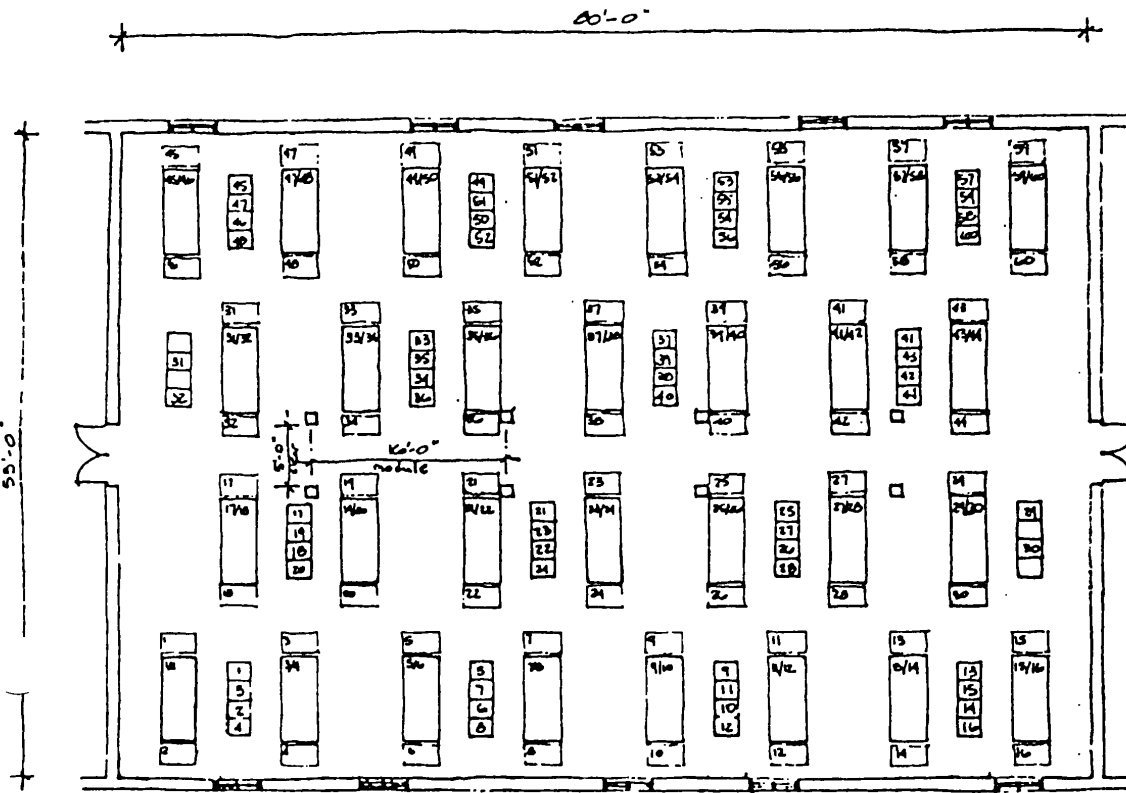
120-VAC Duplex wall outlets spaced 8'-0" on center around room perimeter.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

None.



SQUAD BAY 60'-0" x 55'-0" = 4240 NET SF
 MAXIMUM NET SF
 72 SF x 60 = 4320 NET SF

FURNITURE 30 DOUBLE BUNKS
 60 FOOT LOCKERS (OPTIONAL)
 60 LOCKERS

NOTE: MODULE CONCEPT WILL ALLOW
 LARGE OPEN BAY TO BE
 SUB-DIVIDED AT A FUTURE
 DATE INTO 10-3 PRISON
 MODULES WITH INDIVIDUAL
 BATHS.

NOTE: WHILE A COLUMN FREE
 AREA IS NOT MANDATORY,
 IT IS HIGHLY DESIRABLE.

●
 RECRUIT SQUAD BAY
 MODULE (MALE OR FEMALE)
 60 RECRUITS

INDIVIDUAL SPACE CRITERIA

CENTRAL BATHROOMS

Required in recruit UPH complexes.

Functions/Users

Serves as the toilet facility for sixty recruits.

Size

900 net SF.

Furnishings/Equipment

Should have required toilet accessories such as mirrors, shelves, toilet tissue holders, robe hooks in toilet stalls and near showers, paper towel dispensers, waste baskets, etc.

Adjacency/Accessibility/View

Central bath will be adjacent and directly accessible to the recruit squad bay. Should also be accessible to central corridor.

Spatial Definition

Recommended ceiling height 9'-0".

Durability/Maintenance

High wear requirements. Ceramic tile walls and floor. Moisture resistant ceiling.

Acoustics

STC:48.

Lighting

Area lighting: 50 FC.

Communications

None.

Electric Outlets

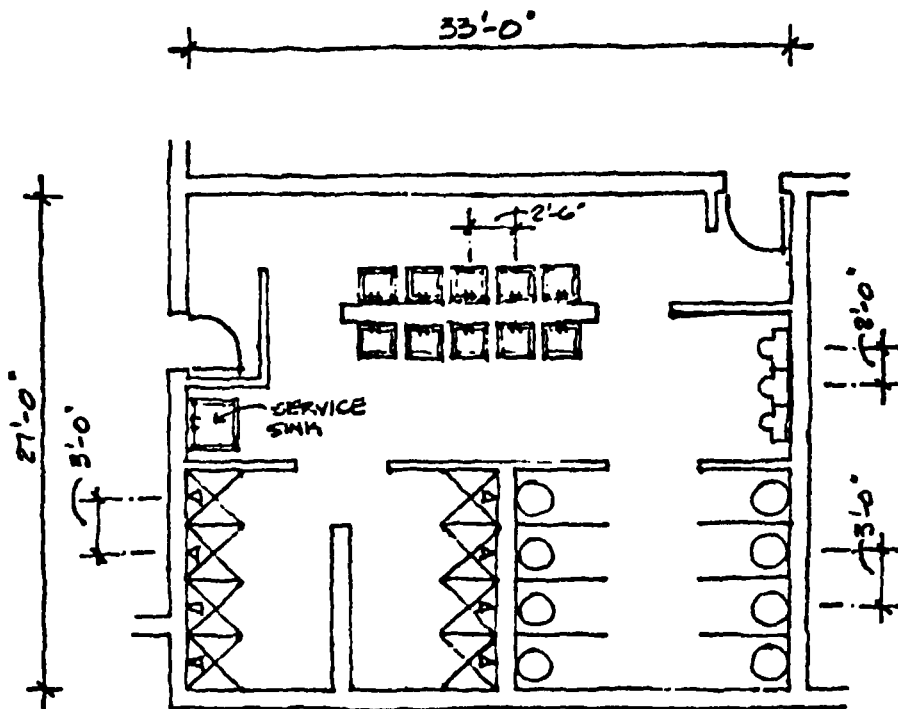
120-VAC ground fault duplex wall outlets at sinks.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Room shall not be air-conditioned.

Plumbing

Central bathrooms (male) should contain the appropriate number of water closets, urinals, sinks, and showers. Central bathrooms (female) should contain the appropriate number of water closets, sinks, and showers. For fixture count, see Tables 14 and 15.



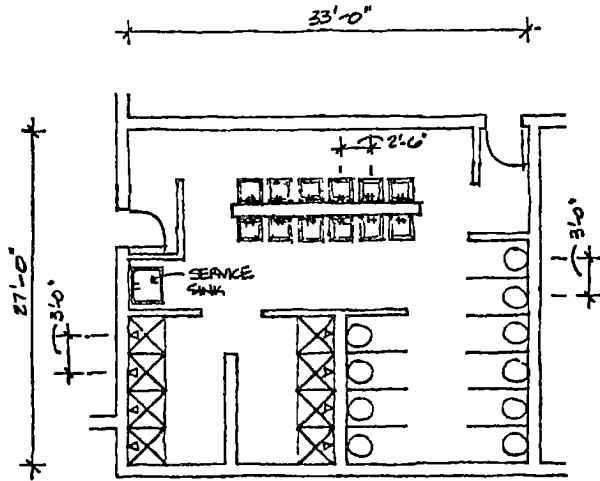
CENTRAL BATHROOM (MALE)
60 RECRUITS

CENTRAL BATHROOM 27'-0" x 33'-0" = 891 SF
 MAXIMUM SF 15SF x 60 = 900 SF

FIXTURES:

RECOMMENDED NUMBER	FIXTURE NAME	MINIMUM NUMBER
6	WATER CLOSET	1 PER 10 persons
6	URINAL	1 PER 25 persons
10	SINK	1 PER 12 persons
6	SHOWER	1 PER 6 persons

TABLE 14



0 5
CENTRAL BATHROOM (FEMALE)
60 RECRUITS

CENTRAL BATHROOM 27'-0" x 33'-0" = 891 SF
 MAXIMUM SF 15 SF x 60 = 900 SF

FIXTURES:

RECOMMENDED NUMBER	FIXTURE NAME	MINIMUM NUMBER
10	WATER CLOSET	1 PER 3 persons
12	SINK	1 PER 12 persons
3	SHOWER	1 PER 3 persons
0*	BATHTUB	1 PER 30 persons

* NO BATHTUBS SHALL BE PROVIDED FOR RECRUITS

TABLE 15

INDIVIDUAL SPACE CRITERIA

BEDROOMS

Enlisted Permanent Party

Functions/Users

Should provide inviting, relaxing, comfortable residential atmosphere. Should reflect unstructured character. Most occupants will be approximately 18 to 30 years of age. When occupied by more than one person, should provide private space for each occupant.

Size

330 net SF (including bathroom) will house one E-7 through E-9, two E-4 through E-6, or three E-1 through E-3. Male and female personnel are housed on the same basis.

Furnishings/Equipment

One drop-leaf wall unit and desk chair per occupant. One bed per occupant. One lounge chair per occupant. Three wardrobes per room. Carpet. Drapes. Bathroom should have mirror, medicine cabinet, and towel bars (three per bathroom).

Adjacency/Accessibility/View

Should be convenient to dining facility, recreation room, and TV room. Should be securely lockable. Accessible via a common corridor or area that does not serve another major function. Direct access from public areas is undesirable. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms. Room dimensions should allow personal choice in furniture placement.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

120-VAC duplex wall outlets to serve radios, lamps, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom.

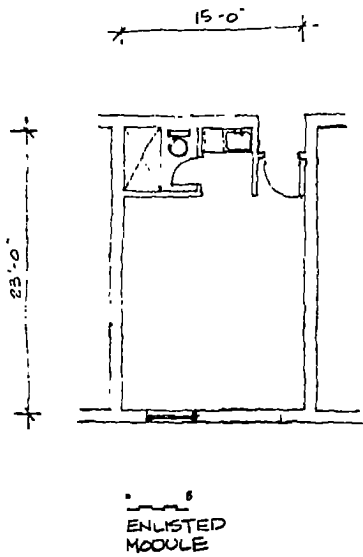
INDIVIDUAL SPACE CRITERIA

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathrooms should contain water closet, lavatory, and shower. Shower stalls should be large enough to accommodate a small built-in seat. Bathtubs with shower heads may be installed instead of shower stalls.



BEDROOM	15'-0" x 17'-6"	=	263
BATH	10'-6" x 5'-0"	=	53
ENTRY	4'-0" x 3'-0"	=	12
			<u>328</u> NET SF
MAXIMUM NET SF			330 NET SF

- FURNITURE * 3-BEDS (BUNK ACLE,
 * 3-WARDROBES
 * 3-DROP-LEAF WALL UNITS
 * 3-DESK CHAIRS
 * 3-LOUNGE CHAIRS
 * 3-DESK LAMPS

* FOR ONE-PERSON MODULE,
 PROVIDE ONE ITEM ONLY

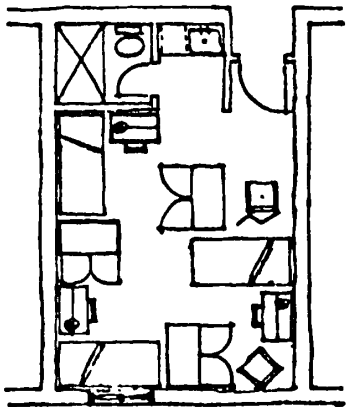
ENLISTED MODULE

3 Person Permanent Party (E-1 through E-3) at 90 net SF/person + bathroom

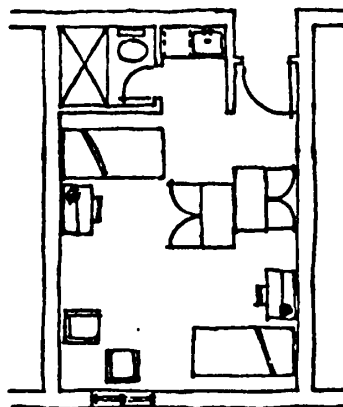
2 Person Permanent Party (E-4 through E-6) at 135 net SF/person + bathroom

1 Person Permanent Party (E-7 through E-9) at 270 net SF/person + bathroom

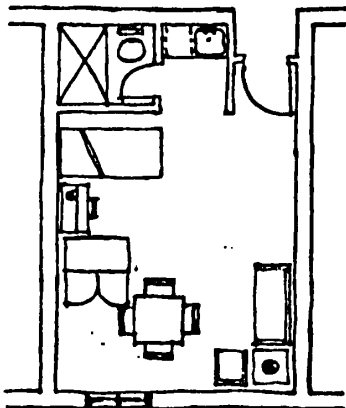
ENLISTED PERMANENT PARTY UPH MODULE
FURNITURE ARRANGEMENTS



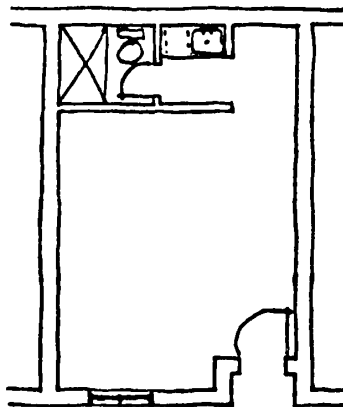
ENLISTED
MODULE
3 PERSON



ENLISTED
MODULE
2 PERSON



ENLISTED
MODULE
1 PERSON



ENLISTED
MODULE
EXTERIOR ENTRANCE

INDIVIDUAL SPACE CRITERIA

BEDROOMS

Enlisted Students

Functions/Users

Should provide inviting, relaxing, and comfortable residential atmosphere conducive to studying for three enlisted students. Male and female personnel are housed on the same basis.

Size

330 net SF (including bathroom).

Furnishing/Equipment

One desk and chair per occupant. One bed per occupant. One lounge chair per occupant. Three wardrobes per room. One bookshelf per occupant. Carpet. Venetian blinds. Bathroom should have mirror, medicine cabinet, and towel bars (one per occupant).

Adjacency/Accessibility/View

Should be convenient to dining facility, recreation room, and TV room. Should be securely lockable. Accessible via a common corridor or area that does not serve another major function. Direct access from public areas undesirable. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms. Room dimensions should allow personal choice in furniture placement.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC fluorescent desk lamps. Bathroom:30 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

120-VAC duplex wall outlets to serve radios, lamps, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom.

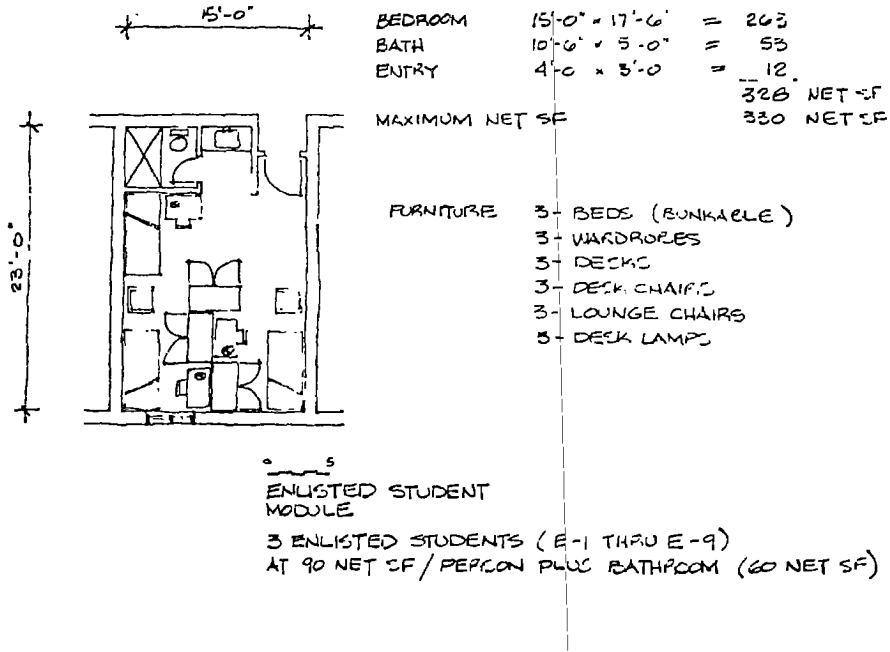
Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

INDIVIDUAL SPACE CRITERIA

Plumbing

Bathroom should contain water closet, lavatory and shower. Shower stalls should be large enough to accommodate a small built-in seat.



INDIVIDUAL SPACE CRITERIA

WATCHSTANDERS QUARTERS

Enlisted Watchstanders. Required as needed depending upon installations mission.

Functions/Users

Should provide temporary sleeping quarters for special duty overnight assignments such as a ready-boat crew at a multi-mission station. When needed, at least two rooms shall be provided, one for female personnel and one for male personnel. Rooms will usually house three watchstanders.

Size

330 net SF (including bathroom). Rooms repeat module size of enlisted permanent party bedrooms.

Furnishings/Equipment

Three beds per module. Three wardrobes per module. Three lounge chairs. Carpet. Venetian blinds. Bathroom should have mirror, medicine cabinet, and towel bars (three per bathroom).

Adjacent/Accessibility/View

Should be near duty section. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable and durable.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

Telephone with intercom. PA speaker.

Electric Outlets

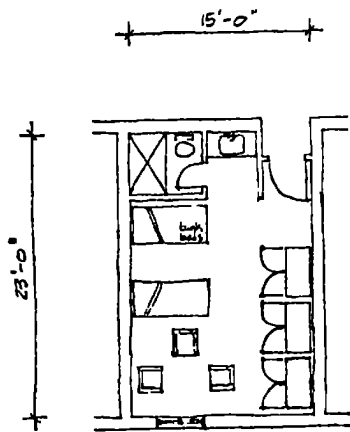
120-VAC Duplex wall outlets.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathrooms should have a water closet, lavatory and shower. Shower stalls should be large enough to accommodate a small built-in seat. Bathtubs with shower heads may be installed in female watchstanders quarters.



BEDROOM	15'-0" x 17'-6"	=	263	
BATH	10'-6" x 5'-0"	=	53	
ENTRY	4'-0" x 3'-0"	=	<u>12</u>	
			328	NET SF
MAXIMUM NET SF			330	NET SF

- FURNITURE
- 5 - BEDS (BUNKABLE)
 - 3 - LOCKERS
 - 3 - EASY CHAIRS

5
 ENLISTED WATCHSTANDERS
 QUARTERS
 5 WATCHSTANDERS AT 90 NET SF/PERSON
 PLUS BATHROOM (60 NET SF)

INDIVIDUAL SPACE CRITERIA

TRANSIENTS/RESERVES QUARTERS

Enlisted Transients and Reserves

Functions/Users

Serve as berthing for permanent party personnel in a transient status or reserve personnel on temporary duty.

Size

330 net SF (including bathroom) to house three persons. Rooms repeat module size of enlisted permanent party bedrooms.

Furnishings/Equipment

One drop-leaf wall unit and desk chair per room. One bed per occupant. Two lounge chairs per room. One wardrobe per occupant. Carpet. Drapes. Bathroom should have mirror, medicine cabinet, and towel bars (one per occupant).

Adjacency/Accessibility/View

Should be convenient to recreation room and TV room. Should be securely lockable. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

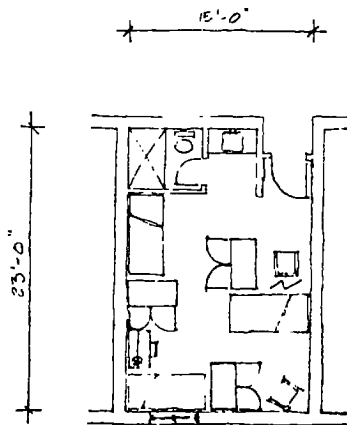
120-VAC duplex wall outlets to serve radios, lamps, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathroom should contain water closet, lavatory and shower. Shower stalls should be large enough to accommodate a small built-in seat.



0 5

ENLISTED TRANSIENTS/RESERVES
QUARTERS

3 PERSONS AT 90 NET SF/PERSON PLUS BATHROOM (60 NET SF)

BEDROOM	15'-0" x 17'-6"	=	263
BATH	10'-6" x 5'-0"	=	53
ENTRY	4'-0" x 3'-0"	=	12
			<u>328 NET SF</u>
MAXIMUM NET SF			330 NET SF

- FURNITURE
- 3- BEDS (BUNKABLE)
 - 3- WARDROBES
 - 1- DROP-LEAF WALL UNIT
 - 1- DESK CHAIR
 - 2- LOUNGE CHAIRS
 - 1- DESK LAMP

INDIVIDUAL SPACE CRITERIA

APARTMENTS

Junior Officers

Functions/Users

Should provide inviting, relaxing, and comfortable residential atmosphere. Most occupants will be college-educated and approximately 22 to 28 years of age.

Size

360 net SF (including bathroom and kitchen) will provide a private efficiency apartment for officer ranks W-2 through W-4 and O-1 through O-2.

Furnishings/Equipment

Sleep sofa. Lounge chair. Coffee table. End table with lamp. Floor lamp. Dining table and 4 chairs. Book case. Desk and desk chair. Chest or dresser. Desk lamp. Carpet. Venetian blinds or drapes. Kitchen should have refrigerator/freezer, range with oven, dishwasher, and garbage disposer. Bathroom should have mirror, medicine cabinet, and towel bar.

Adjacency/Accessibility/View

Should be convenient to recreation room and TV room. Should be securely lockable. Accessible via a common corridor or area that does not serve another major function. Direct access from exterior is a viable alternative, particularly in single-story structures. Windows are required.

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms. Room dimensions should allow personal choice in furniture placement.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom. Vinyl floor in kitchen area.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent. Kitchen:50 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

120-VAC duplex wall outlets to serve radios, lamps, TVs, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlets in bathroom and kitchen. Special outlet required for electric range. TV antenna outlet.

INDIVIDUAL SPACE CRITERIA

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable. Exhaust hood should be provided over range.

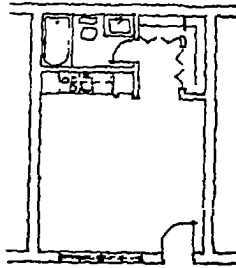
Plumbing

Bathroom should contain water closet, lavatory, and bathtub with shower head. Kitchen should contain sink with garbage disposer and a dishwasher.

JUNIOR OFFICER APARTMENT	BATHROOM	KITCHEN
RELATIONSHIP OF SPACES		
LIVING AREA	1	1
KITCHEN	2	

SPACE RELATIONSHIP MATRIX

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- 6 = MUST BE DISTANT

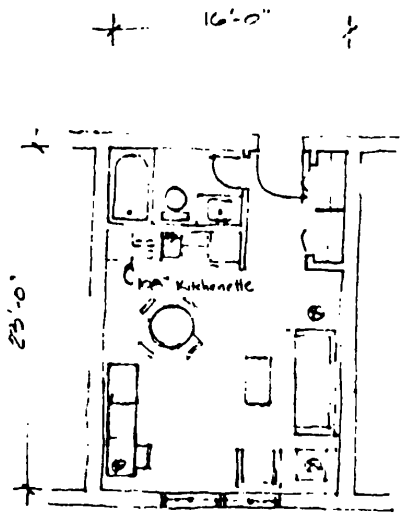


JUNIOR OFFICER MODULE
EXTERIOR ENTRANCE



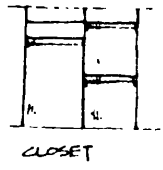
SPATIAL RELATIONSHIP DIAGRAM

JUNIOR OFFICER APARTMENT



LIVING/BEDROOM	16'-0" x 15'-0"	=	240
KITCHENETTE	9'-0" x 2'-0"	=	23
BATH	9'-0" x 5'-0"	=	45
CLOSET	7'-0" x 2'-0"	=	15
ENTRY	4'-0" x 8'-0"	=	32
			355 NET SF
MAXIMUM NET SF			360 NET SF

JUNIOR OFFICER
 MODULE
 O-1 THRU O-2
 AND W-1 THRU W-4



- range w/oven
- sink w/ garbage disposer
- dishwasher
- refrigerator w/ freezer
- stainless steel counter top

- FURNITURE
- SLEEP SOFA
 - LOUNGE CHAIR
 - COFFEE TABLE
 - END TABLE W/ LAMP
 - FLOOR LAMP
 - DINING TABLE
 - 4 CHAIRS
 - BOOK CASE
 - DESK
 - DESK CHAIR
 - CHEST/DRESSER
 - DESK LAMP

INDIVIDUAL SPACE CRITERIA

APARTMENTS

Senior Officers

Functions/Users

Should provide inviting, relaxing, comfortable residential atmosphere. Should reflect unstructured, character. Most occupants will be college educated, and approximately 30 years of age and older.

Size

460 net SF (including bathroom and kitchen) will provide a private one bedroom apartment for officer ranks 0-3 and above.

Furnishings/Equipment

Sofa. Lounge chair. Coffee table. End table with lamp. Lamp table with lamp. Dining table and 4 chairs. 1 book case. Desk and desk chair. 2 chests or dressers. 1 desk lamp. Single bed. Night stand with lamp. Carpet. Venetian blinds or drapes. Kitchen should have refrigerator/freezer, range with oven, dishwasher, and garbage disposer. Bathroom should have mirror, medicine cabinet, and towel bar.

Adjacency/Accessibility/View

Should be convenient to recreation room and TV room. Should be securely lockable. Accessible via a common corridor or area that does not serve major function. Windows are required in bedroom and living room.

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms. Room dimensions should allow personal choice in furniture placement. A separate bedroom shall be provided.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom. Vinyl floor in kitchen area.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent. Kitchen:50 FC fluorescent

Communications

One telephone outlet.

Electric Outlets

120-VAC duplex wall outlets to serve radios, lamps, TVs, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground duplex wall outlets in bathroom and kitchen. Special outlet required for electric range. TV antenna outlet.

INDIVIDUAL SPACE CRITERIA

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable. Exhaust hood should be provided over range.

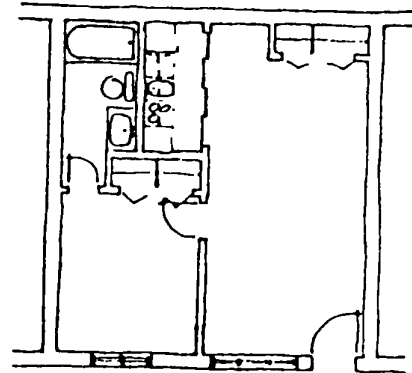
Plumbing

Bathroom should contain water closet, lavatory and bathtub with shower head. Kitchen should contain sink with garbage disposer and a dishwasher.

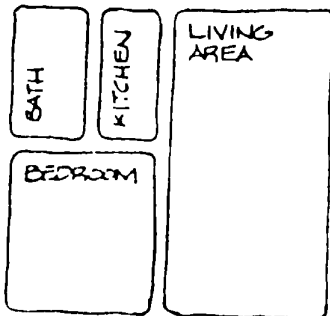
SENIOR OFFICER APARTMENT	BATHROOM	BEDROOM	KITCHEN
RELATIONSHIP OF SPACES			
LIVING AREA	4	1	1
KITCHEN	2	4	
BEDROOM	1		

SPACE RELATIONSHIP MATRIX

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- 6 = MUST BE DISTANT

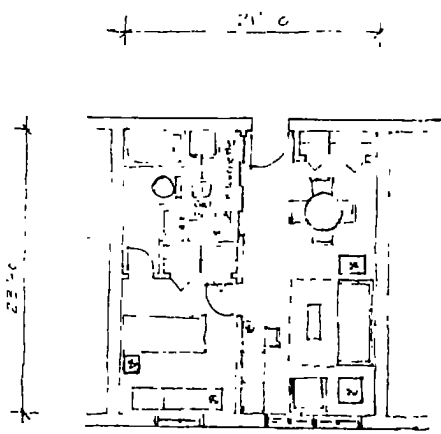


SENIOR OFFICER MODULE
EXTERIOR ENTRANCE



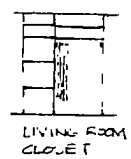
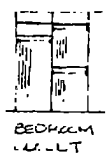
SPATIAL RELATIONSHIP DIAGRAM

SENIOR OFFICER APARTMENT



- FURNITURE
- SOFA
 - LOUNGE CHAIR
 - COFFEE TABLE
 - END TABLE W/LAMP
 - LAMP TABLE W/LAMP
 - DINING TABLE
 - 4 CHAIRS
 - 1 BOOK CASE
 - DESK
 - DESK CHAIR
 - 1 DESK LAMP
 - SINGLE BED
 - 2 CHESTS/DRESSERS
 - NIGHT STAND
 - LAMP

0-3
 SENIOR OFFICER'S
 MODULE
 0-3 AND ABOVE



LIVING	11'-0" x 20'-5"	=	256
BEDROOM	9'-6" x 11'-0"	=	105
KITCHEN	4'-0" x 9'-0"	=	36
BATH	5'-0" x 9'-0"	=	53
CLOSET	12'-6" x 2'-0"	=	25
			<u>455</u> NET SF
MAXIMUM NET SF			460 NET SF



- range w/oven
- sink w/dishwasher
- dishwasher
- refrigerator / freezer
- stainless steel counter top

INDIVIDUAL SPACE CRITERIA

BEDROOMS

Student Officers

Functions/Users

Should provide inviting, relaxing, and comfortable residential atmosphere conducive to studying. Rooms will house two officer students. Male and female personnel are housed on the same basis.

Size

330 net SF (including bathroom).

Furnishings/Equipment

One desk and chair per occupant. One bed per occupant. One lounge chair per occupant. Two wardrobes per room. One night stand with lamp per occupant. One bookshelf per occupant. Carpet. Venetian Blinds. Tack board. Bathroom should have mirror, medicine cabinet, and towel bars (one per occupant).

Adjacency/Accessibility/View

Should be convenient to dining facility, recreation room, and TV room. Should be securely lockable. Accessible via a common corridor or area that does not serve another major function. Access from public areas undesirable. Room windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms. Room dimensions should allow personal choice in furniture placement.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

120-VAC duplex wall outlets to serve radios, lamps, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom.

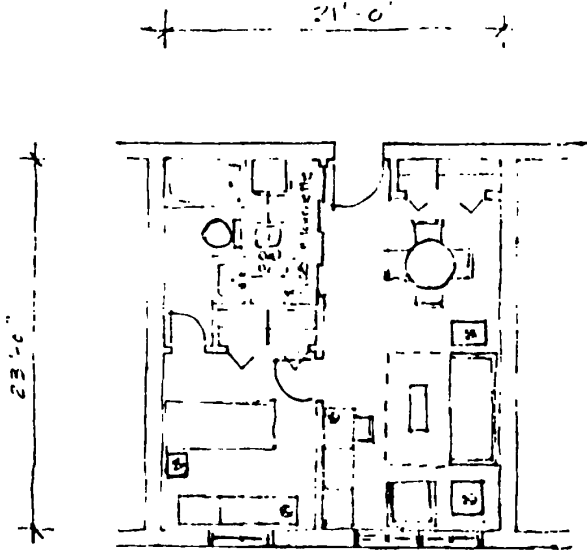
Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

INDIVIDUAL SPACE CRITERIA

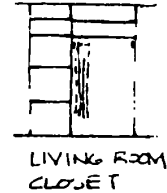
Plumbing

Bathroom should contain water closet, lavatory and shower. Shower stall should be large enough to accommodate a small built-in seat.

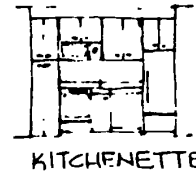


- FURNITURE
- SOFA
 - LOUNGE CHAIR
 - COFFEE TABLE
 - END TABLE W/LAMP
 - LAMP TABLE W/LAMP
 - DINING TABLE
 - 4 CHAIRS
 - 1 ROCK CACK
 - DESK
 - DESK CHAIR
 - 1 DESK LAMP
 - SINGLE BED
 - 2 CHESTS/DRESSERS
 - NIGHT STAND
 - LAMP

0 5
 SENIOR OFFICER'S
 MODULE
 0-3 AND ABOVE



LIVING	11'-0" x 20'-6"	=	236
BEDROOM	9'-6" x 11'-0"	=	105
KITCHEN	4'-0" x 9'-0"	=	36
BATH	5'-0" x 9'-0"	=	53
CLOSETS	12'-6" x 2'-0"	=	25
			455 NET SF
MAXIMUM NET SF			460 NET SF



- range w/oven
- sink w/garbage disposer
- dishwasher
- refrigerator w/ freezer
- stainless steel counter top

INDIVIDUAL SPACE CRITERIA

WATCHSTANDERS QUARTERS

Watchstander Officers. Required as needed depending upon installations mission.

Functions/Users

Should provide temporary sleeping quarters to house two watchstanders for special duty overnight assignments such as a ready-boat crew at a multi-mission station. When needed, at least two rooms shall be provided, one for female personnel and one for male personnel.

Size

330 net SF (including bathroom). Rooms repeat module size of student officer bedrooms.

Furnishings/Equipment

One desk and chair per occupant. One bed per occupant. One lounge chair per occupant. Two wardrobes per room. One night stand with lamp per occupant. Carpet. Drapes. Bathroom should have mirror, medicine cabinet, and towel bars (two per bathroom).

Adjacent/Accessibility/View

Should be near duty section. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable and durable. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

Telephone with intercom. PA speaker.

Electric Outlets

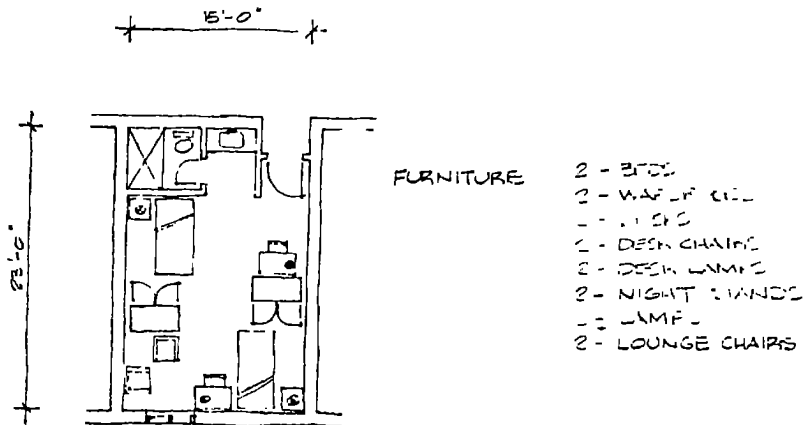
120-VAC Duplex wall outlets.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathrooms should have a water closet, lavatory and shower. Shower stalls should be large enough to accommodate a small built-in seat. Bathtubs with shower heads may be installed in female watchstanders quarters.



5
 WATCHSTANDER OFFICERS
 MODULE
 SEMI-PRIVATE ROOM

BEDROOM	15'-0" x 17'-6" =	263
BATH	10'-6" x 5'-0" =	53
ENTRY	4'-0" x 3'-0" =	12
		328 NET SF
MAXIMUM NET SF		330 NET SF

INDIVIDUAL SPACE CRITERIA

TRANSIENTS/RESERVES QUARTERS

Transient and Reserve Officers

Functions/Users

Serve as berthing for two permanent party personnel or reserve personnel on temporary duty.

Size

330 net SF (including bathroom). Room repeats module size of student officer bedrooms.

Furnishings/Equipment

One drop-leaf wall unit and desk chair per room. One bed per occupant. One lounge chair per occupant. Two wardrobes per room. One night stand with lamp per occupant. Carpet. Drapes. Bathroom should have mirror, medicine cabinet, and towel bars (one per occupant).

Adjacency/Accessibility/View

Should be convenient to recreation room and TV room. Should be securely lockable. Windows are required. Each bedroom should have a private bathroom (compartmented).

Spatial Definition

Ceiling height 8'-0" in rooms, 7'-6" in bathrooms.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained at high appearance levels. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

One telephone outlet.

Electric Outlets

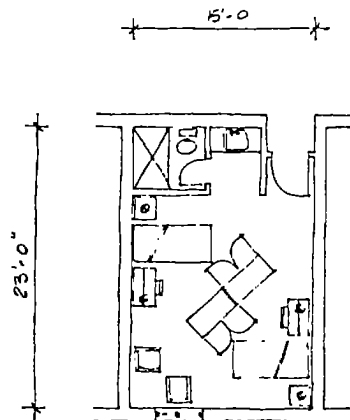
120-VAC duplex wall outlets to serve radios, lamps, calculators, cleaning equipment, etc. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathroom should contain water closet, lavatory and shower. Shower stall should be large enough to accommodate a small built-in seat.



- FURNITURE
- 2 - BEDS
 - 2 - WARDROBES
 - 1 - DROP LEAF WALL UNIT
 - 1 - DESK CHAIR
 - 1 - DESK LAMP
 - 2 - NIGHT LAMPS
 - 2 - LAMPS
 - 2 - LOUNGE CHAIRS

0 5
 TRANSIENT/RESERVE OFFICERS
 QUARTERS
 SEMI-PRIVATE ROOM

BEDROOM	15'-0" x 17'-6"	=	263
BATH	10'-6" x 5'-0"	=	53
ENTRY	4'-0" x 3'-0"	=	12
			<u>328</u> NET SF
MAXIMUM NET SF			330 NET SF

INDIVIDUAL SPACE CRITERIA

LOBBY

Required in all UPH complexes.

Functions/Users

Serves as the main entrance to UPH complex.

Size

150 net SF.

Furnishings/Equipment

Two to four lounge chairs on area rug. Venetian blinds. Bulletin board.

Adjacency/Accessibility/View

Should be adjacent and open to check-in desk of administrative offices. Should be adjacent to public toilets. Should be directly accessible from main entrance. Lobby shall be accessible by the physically handicapped. A vestibule (5'0" minimum width) should buffer the lobby entrance from the exterior entrance.

Spatial Definition

Ceiling Height 9'-0". Room dimensions not critical, may vary to suit architectural plan.

Durability/Maintenance

Minimum wear requirements. Surfaces should be stain resistant, cleanable. Materials must be durable, able to withstand high traffic. Quarry tile floor.

Acoustics

STC:48.

Lighting

Area lighting:30 FC fluorescent.

Communications

Public telephone. PA speakers.

Electric Outlets

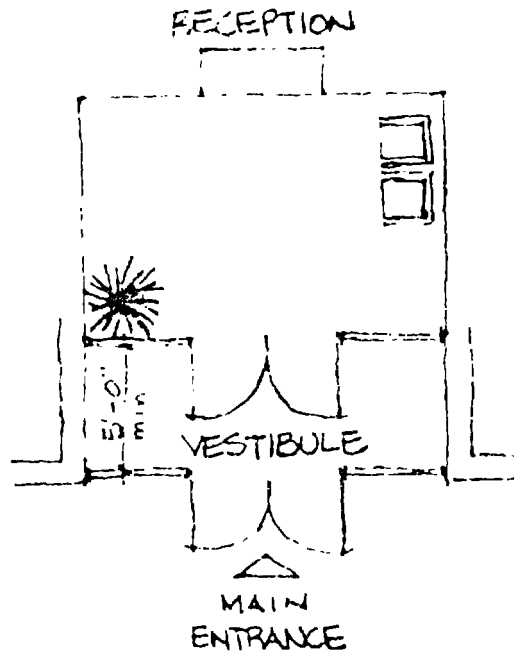
120-VAC duplex wall outlets for cleaning, equipment. Outlet for electric water cooler.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1.

Plumbing

Electric water cooler.



0 5

LOBBY
 150 NET SF MINIMUM,
 MAY VARY IN SIZE
 TO SUIT PLAN

VESTIBULE REQUIRED
 FOR ENERGY CONSERVATION,
 SF INCLUDED WITH
 CIRCULATION SPACE
 REQUIREMENTS

INDIVIDUAL SPACE CRITERIA

MAIN LOUNGE

Required in enlisted UPH complexes.

Functions/Users

Serves as waiting area for visitors and guests of UPH personnel.

Size

Determined by number of bedroom modules. 1-30 bedroom modules: minimum size shall be 150 net SF; over 30 modules: minimum size shall be 5 net SF per bedroom module.

Furnishings/Equipment

Sofas and lounge chairs. Card table and four chairs. End tables and lamps. Carpet. Venetian blinds.

Adjacency/Accessibility/View

Should be adjacent to lobby. Should be near public toilets and main entrance.

Spatial Definition

Ceiling height 8'-0". If room exceeds 400 SF, increase ceiling height to 9'-0".

Durability/Maintenance

High wear requirements. Floors should have cleanable, durable surface, easily maintained. Wall finishes should be cleanable and durable.

Acoustics

STC:48.

Lighting

Area lighting:30 FC. Task lighting:50 FC incandescent.

Communications

PA Speakers. Telephone with intercom.

Electric Outlets

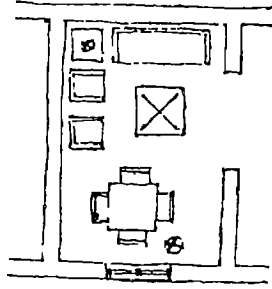
120-VAC duplex wall outlets for table lamps, cleaning equipment, etc. Switched receptacles for lamps. TV antenna outlet.

Heating/Ventilation/Air-Conditioning

Must have heating. Should have air-conditioning if justified by COMDTINST M11000.1. Ventilation should be adequate to void room of smoke and odors.

Plumbing

None.



0 5

MAIN LOUNGE
150 NET SF (MIN.)

SIZE DETERMINED BY
NUMBER OF MODULES.
1-30 MODULES, 150 NET
SF. OVER 30 MODULES,
5 NET SF/MODULE.

MAXIMUM SIZE ALLOWED
SHALL BE 600 NET SF.

INDIVIDUAL SPACE CRITERIA

ADMINISTRATION OFFICE

Required in all UPH complexes.

Functions/Users

Serves as the office for the UPH complex. Will be used by the officer of the day or master-at-arms.

Size

150 net SF.

Furnishings/Equipment

Office desk and chair. Two side chairs. Bookcase. Two-drawer file cabinet. Carpet. Venetian blinds.

Adjacency/Accessibility/View

Should be adjacent to and access controlled through reception desk. Should be adjacent to master-at-arms duty section. Should be securely lockable.

Spatial Definition

Ceiling Height 8'-0".

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained.

Acoustics

STC:48.

Lighting

Area lighting:30 FC. Task lighting:50 FC.

Communications

Telephone with intercom.

Electric Outlets

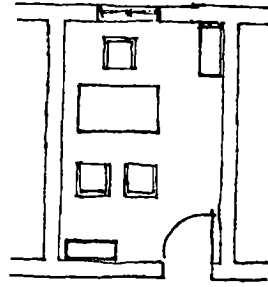
120-VAC duplex wall outlets.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1.

Plumbing

None.



° 6
ADMINISTRATION
OFFICE
150 NET SF

FURNITURE
DESK
CHAIR
LATERAL FILE
BOOKCASE
2 SIDE CHAIRS

INDIVIDUAL SPACE CRITERIA

ADMINISTRATION RECEPTION DESK

Required in all UPH complexes.

Functions/User

Serves as information desk for UPH complex. In most cases will act as security control point for building. Desk will probably be occupied 24 hours a day.

Size

150 net SF.

Furnishings/Equipment

Built-in two level counter. Typewriters. Master PA system. Desk and chair.

Adjacency/Accessibility/View

Should be adjacent and open to lobby. Must have view of main entrance. Must be adjacent and connected to administration office.

Spatial Definition

Ceiling Height 8'-0".

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained.

Acoustics

STC:48.

Lighting

Area lighting:30 FC. Task lighting:50 FC.

Communications

Telephone with intercom. Master PA station.

Electric Outlets

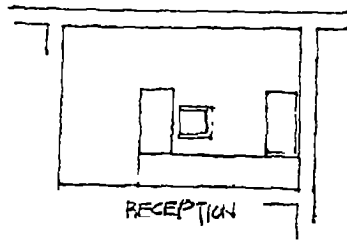
120-VAC duplex wall outlet. 120-VAC outlets required in desk.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1.

Plumbing

None.



0 5
ADMINISTRATION
RECEPTION DESK
150 NET SF

BUILT-IN RECEPTION COUNTER 42" HIGH
FURNITURE
DESK
CHAIR
LATERAL FILE

INDIVIDUAL SPACE CRITERIA

RECRUIT ADMINISTRATION

Required in recruit UPH complexes.

Functions/Users

Provides offices for recruit company commanders and their assistants. Also includes storage space and a toilet.

Size

Two private offices at 150 net SF each (one office for CO; one office for assistant CO). Administration office at 150 net SF per company. Storage at 30 net SF per company. Toilet at 30 net SF per company.

Furnishings/Equipment

Office desks and chairs. Side chairs. Bookcases. Two-drawer file cabinets. Wall supported shelving (12" to 18" deep) in storage. Toilet accessories. Carpet. Venetian blinds.

Adjacency/Accessibility/View

Should be located near squad bays.

Spatial Definition

Ceiling height 8'-0".

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable, durable, and easily maintained. Ceramic tile walls and floor in toilet.

Acoustics

STC:48.

Lighting

Offices area lighting:30 FC. Offices task lighting:50 FC. Storage area lighting:15 FC. Toilet area lighting:20 FC.

Communications

Telephones with intercom in offices. PA speakers.

Electric Outlets

120-VAC duplex wall outlets in offices. 120-VAC ground fault duplex wall outlet in toilet.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Offices should have air-conditioning if justified by COMDTINST M11000.1. Storage and toilet rooms will not be air-conditioned.

Plumbing

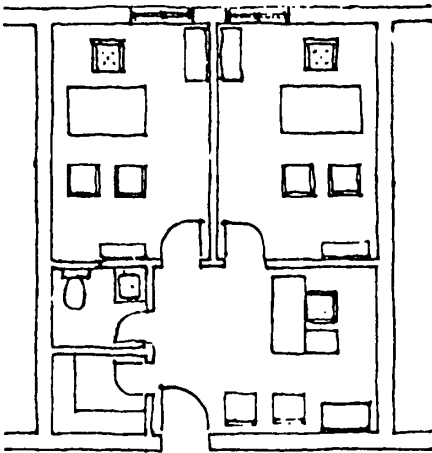
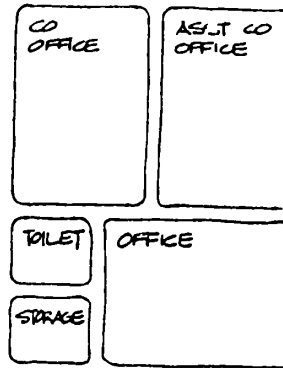
Toilet shall have sink and water closet.

RELATIONSHIP OF SPACES	TOILET	STORAGE	ADMIN OFFICE	ASST CO OFFICE
CO OFFICE	4	3	1	3
ASST CO OFFICE	4	3	1	
ADMIN OFFICE	4	1		
STORAGE	4			

SPACE RELATIONSHIP MATRIX

SPATIAL RELATIONSHIP DIAGRAM

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- 6 = MUST BE DISTANT



RECRUIT ADMINISTRATION

0 5
 RECRUIT ADMINISTRATION
 510 NET SF

INDIVIDUAL SPACE CRITERIA

DUTY SECTION (for Officer of the day or master-at-arms)

Required in enlisted UPH complexes.

Functions/Users

Should provide relaxing and comfortable atmosphere. Provides sleeping quarters for the Officer of the day or master-at-arms.

Size

330 net SF (including bathroom).

Furnishings/Equipment

One single bed. One wardrobe. One desk and chair. Two lounge chairs. Carpet. Drapes. Table and four chairs. End table with lamp.

Adjacency/Accessibility/View

Should be adjacent and connected to administration reception desk. Should have a private bathroom. Windows are required.

Spatial Definition

Ceiling Height 8'-0" in room, 7'-6" in bathroom.

Durability/Maintenance

High wear requirements. Carpets and wall finishes should be cleanable and durable. Ceramic tile walls and floor in bathroom.

Acoustics

STC:48.

Lighting

Area lighting:10 FC. Task lighting:50 FC. Bathroom:30 FC fluorescent.

Communications

Telephone with intercom.

Electric Outlets

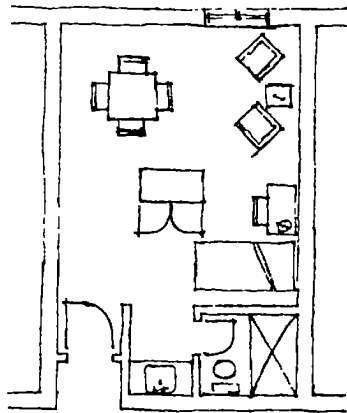
120-VAC duplex wall outlets. At least one outlet per wall. 120-VAC ground fault duplex wall outlet in bathroom. TV antenna outlet.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1. Windows shall be operable.

Plumbing

Bathroom should contain water closet, lavatory and shower. Shower stall should be large enough to accommodate a small built-in seat.



0 5
 DUTY SECTION

BEDROOM 270 NET SF
 BATH 60 NET SF

- FURNITURE
- BED
 - DESK
 - DESK CHAIR
 - WARDROBE
 - TABLE
 - 4 CHAIRS
 - 2 LOUNGE CHAIRS
 - END TABLE w/LAMP

INDIVIDUAL SPACE CRITERIA

PUBLIC TOILETS

Required in all UPH complexes.

Functions/Users

Mostly used by guests of UPH personnel. Public toilets located on first floor should be designed to accommodate the physically handicapped. Additional public toilets, especially those located above the first floor, need not be designed for barrier-free access.

Size

Men: 90 net SF. Women: 90 net SF. One set of public toilets required for every 40-50 bedroom modules.

Furnishings/Equipment

Handicapped equipped toilet facilities. Toilet accessories.

Adjacency/Accessibility/View

Should be adjacent to lobby or main lounge. Toilets should also be near recreation rooms. No view requirements.

Spatial Definition

Toilet stall minimum size is 3'6" x 6'-0". A 5'-0" diameter circle must exist in front of a sink. Ceiling height 8'-0".

Durability/Maintenance

High wear requirements. Surfaces should be scrubbable. Ceramic tile walls and floor.

Acoustics

No special requirements.

Lighting

Area lighting: 20 FC.

Communications

None.

Electric Outlets

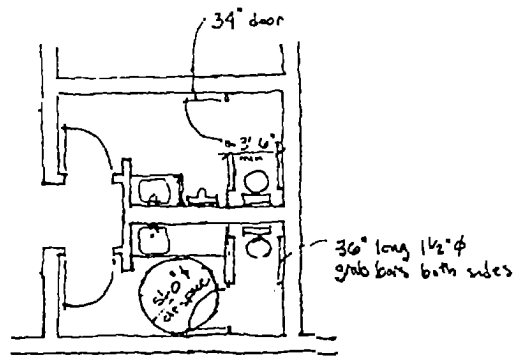
120-VAC ground fault duplex wall outlet.

Heating/Ventilation/Air-Conditioning

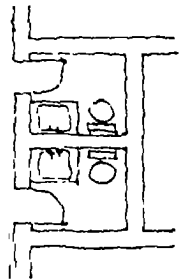
Must have heating and room ventilation. Space will not be air-conditioned.

Plumbing

Men's room shall have lavatory, water closet, and urinal. Women's room shall have sink and water closet.



0 5
 PUBLIC TOILETS
 BARRIER-FREE DESIGN
 MEN 90 NET SF
 WOMEN 90 NET SF



0 5
 TOILETS
 MEN 30 NET SF
 WOMEN 30 NET SF

INDIVIDUAL SPACE CRITERIA

RECREATION ROOM

Required in all UPH complexes except recruit.

Functions/Users

Should reflect comfortable, inviting, relaxing atmosphere for UPH personnel. Typical game areas to be provided: pool, table tennis, card games, electronic video games.

Size

20 net SF/room module. Minimum size: 600 net SF.

Furnishings/Equipment

Pool table. Table tennis table. Electronic video games. Table and four chairs. Lounge furniture. Carpet. Drapes. Storage facilities for games.

Adjacency/Accessibility/View

Easy, inviting access essential. Accessibility to general public undesirable. View of the outside highly desirable. Access to outside desirable. Adjacent to TV room.

Spatial Definition

Ceiling height 9'-0". If room area exceeds 1000 SF, increase ceiling height to 10'-0". Minimum floor dimensions 20'-0" x 30'-0".

Durability/Maintenance

High wear requirements. Floors should have cleanable, durable surfaces, easily maintained. Wall finishes should be cleanable and durable.

Acoustics

STC: 48 (if adjacent to bedrooms, increase STC to 52).

Lighting

Area lighting: 30 FC. Task lighting: 50 FC.

Communications

Telephone with intercom. PA Speakers.

Electric Outlets

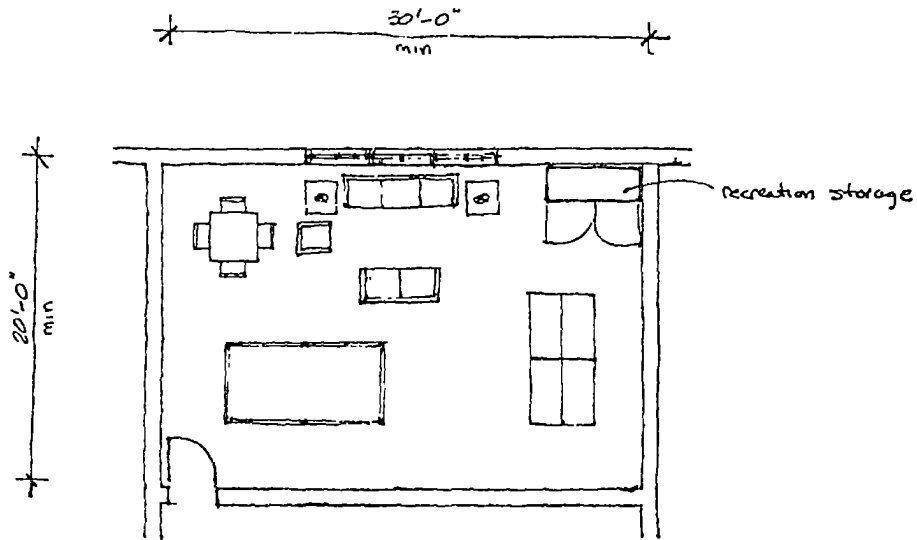
120-VAC duplex wall outlets for cleaning equipment, radios, stereos, electronic video games, etc.

Heating/Ventilation/Air-Conditioning

Must have heating. Should have air-conditioning if justified by COMDTINST M11000.1. Ventilation should be adequate to void room of smoke and odors.

Plumbing

Electric water cooler in recreation room or nearby.



0 5

RECREATION ROOM
600 NET SF (MIN.)

SIZE DETERMINED BY
NUMBER OF MODULES.
1-30 MODULES, 600
NET SF. OVER 30 MODULES,
20 NET SF/MODULE.

IF REQUIREMENTS EXCEED
1200 NET SF, PROVIDE
TWO ROOMS.

INDIVIDUAL SPACE CRITERIA

TV ROOM

Required in all UPH complexes except recruit.

Functions/Users

Should reflect comfortable, inviting, and relaxing atmosphere for UPH personnel. Provides a space for quiet recreation and viewing TV.

Size

10 net SF/bedroom module. Minimum Size: 300 net SF

Furnishings/Equipment

TV set and stand. Lounge furniture. Tables and lamps. Carpet. Drapes (if blackout is desired).

Adjacency/Accessibility/View

Normally one TV room per floor. Should be adjacent and connected to recreation room. No view requirements to outside.

Spatial Definition

Ceiling Height 9'-0".

Durability/Maintenance

High wear requirements. Carpets should have cleanable, durable surface wall surfaces should be cleanable.

Acoustics

STC: 52.

Lighting

Area lighting: 20 FC. Task lighting: 50 FC.

Communications

Telephone with intercom. PA Speakers.

Electric Outlets

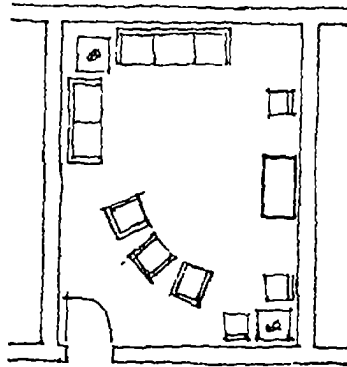
120-VAC duplex wall outlets for TV, lamps, and cleaning equipment. Switched receptacles for lamps. TV antenna outlet.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1.

Plumbing

None.



0 5

TV ROOM
300 NET SF (MIN.)

SIZE DETERMINED BY
NUMBER OF MODULES.
1-30 MODULES, 300
NET SF. OVER 30 MODULES,
10 NET SF/MODULE.

IF REQUIREMENTS EXCEED
600 NET SF, PROVIDE
TWO ROOMS.

INDIVIDUAL SPACE CRITERIA

READING LOUNGE

Required in student UPH complexes.

Functions/Users

Provide a quiet space for reading, letter writing, studying, etc.

Size

150 net SF.

Furnishings/Equipment

Four lounge chairs. Two end tables with lamp. Bookcase. Magazine rack. Carpet. Drapes.

Adjacency/Accessibility/View

Normally one per floor. Should be near recreation room, although acoustically separated from it. View of outside is desirable.

Spatial Definition

Ceiling height 8'-0".

Durability/Maintenance

High wear requirements. Carpets should have cleanable, durable surface that is easily maintained at high appearance level. Wall finishes should be cleanable and durable.

Acoustics

STC: 52.

Lighting

Area lighting: 30 FC. Task lighting: 50 FC.

Communications

PA Speaker. Telephone with intercom.

Electric Outlets

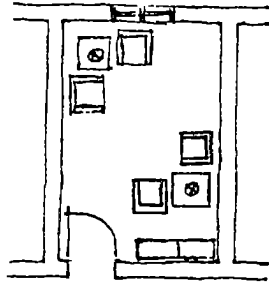
120-VAC duplex wall outlets. Switched receptacles for lamps.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Should have air-conditioning if justified by COMDTINST M11000.1.

Plumbing

None.



0 5
READING LOUNGE
150 NET SF

FURNITURE

- DESK
- DESK CHAIR
- 2 BOOKCASES
- 4 LOUNGE CHAIRS
- 2 END TABLES W/LAMP

INDIVIDUAL SPACE CRITERIA

RECRUIT DAY ROOM

Replaces recreation rooms, TV rooms, and reading lounges in a recruit UPH complex.

Functions/Users

Should reflect comfortable, inviting, and relaxing atmosphere for recruit personnel. Serves as recreation room, TV room, and writing room. Typical game areas to be provided games: pool, table tennis, and card games.

Size

430 net SF/squad bay. Minimum size: 1000 net SF.

Furnishings/Equipment

Pool tables. Tables tennis tables. Tables each with four chairs. Venetian blinds. Lounge furniture. Writing desks. Venetian blinds. TV set and stand.

Adjacency/Accessibility/View

Access to area shall be controlled. Accessibility by general public is undesirable. View of outside highly desirable. Emergency access to outside required.

Spatial Definition

Ceiling height 10'-0". If room area exceeds 3000 SF, increase ceiling height to 11'-0". Minimum floor dimension is 30'-0".

Durability/Maintenance

High wear requirements. Floors should have cleanable, durable surfaces that can be easily maintained. Wall finishes should be cleanable and durable.

Acoustics

STC: 52.

Lighting

Area lighting: 30 FC. Task lighting: 50 FC.

Communications

Telephone with intercom. PA speakers.

Electric Outlets

120-VAC duplex wall outlets for cleaning equipment, TV, radio, etc. TV antenna outlet.

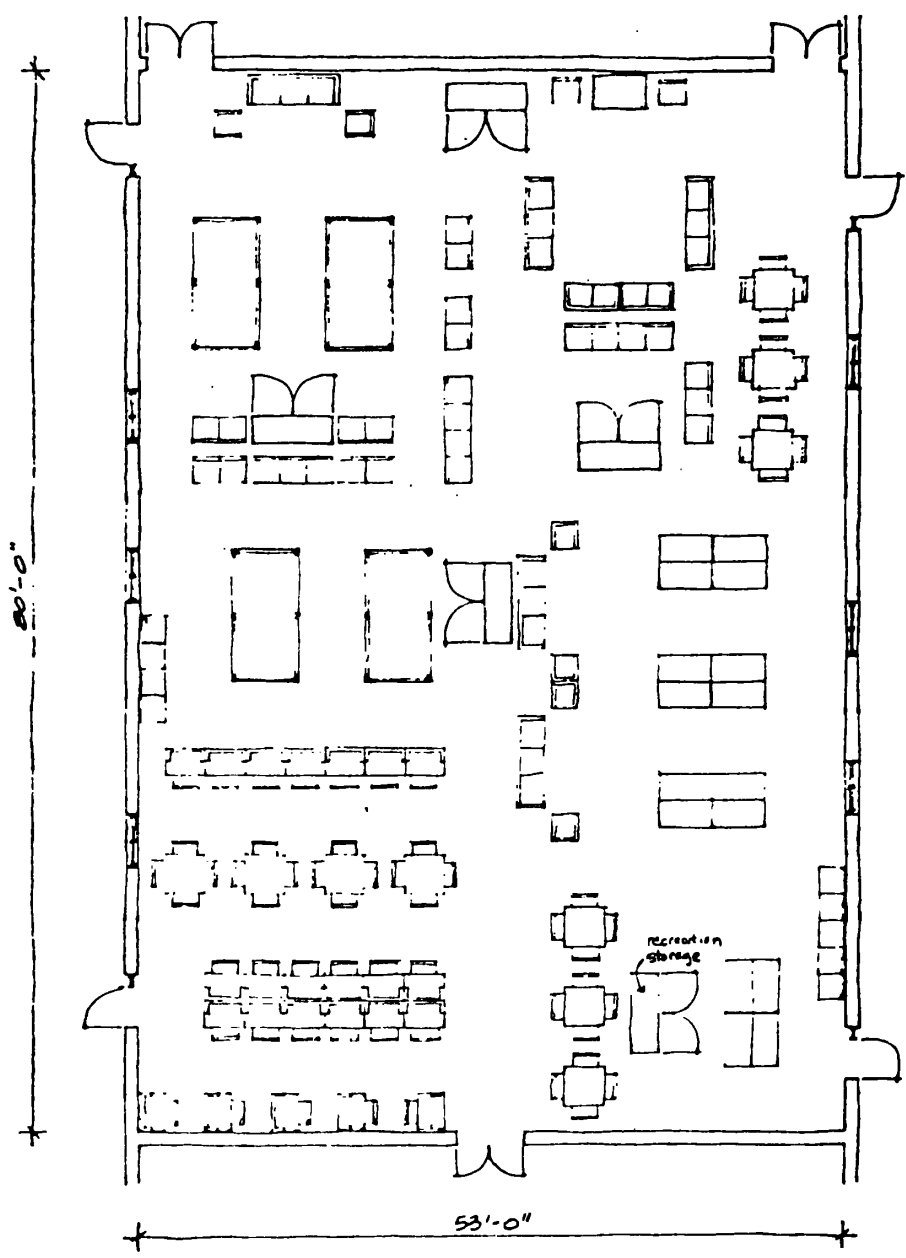
Heating/Ventilation/Air-Conditioning

Must have heating. Air-conditioning authorized if justified by COMDTINST M11000.1. Ventilation should be adequate to void room of smoke and odors.

Plumbing

Electric water cooler in recruit day room or nearby.

RECRUIT
DAY ROOM



INDIVIDUAL SPACE CRITERIA

RECRUIT CLASSROOM

Required in recruit UPH complexes.

Functions/Users

Provides classroom/lecture space for up to 120 recruits. Classroom shall be divisible into two 60-person instructional areas.

Size

60-person instructional area: 1800 net SF (two required).
Audio-visual storage room: 150 net SF. General storage: 250 net SF.

Furnishings/Equipment

Desks. Tables and chairs. Lecterns. Projection screen. Chalkboards. Rear-screen projectors (16 mm and slide). Overhead projector. Venetian blinds. Operable wall between the two classroom/lecture areas.

Adjacent/Accessibility/View

Access to area shall be controlled. Accessibility by general public undesirable. Each instructional area must have two means of emergency egress.

Spatial Definition

Ceiling height 11'-0" in classroom; 8'-0" in audiovisual room and storage room. Overall minimum floor dimension is 40'-0". Only one instructional area shall have projection screen. Classroom shall be divisible into two parts by an operable wall.

Durability/Maintenance

High wear requirements. Floors should have cleanable, durable surfaces that can be easily maintained. Wall finishes should be cleanable and durable.

Acoustics

STC: 48.

Lighting

Area lighting: 50 FC. Stage lighting: 100 FC.

Communications

Telephone with intercom in each instructional area. Telephone in audiovisual room. PA speakers.

Electric Outlets

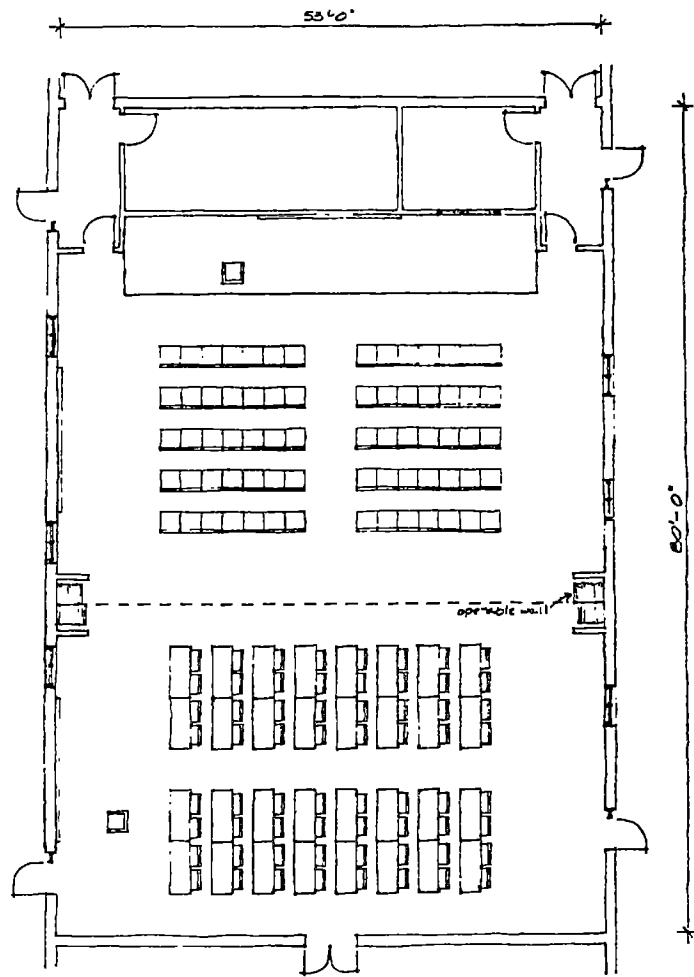
120-VAC duplex wall outlets for cleaning equipment. Floor receptacles for audio-visual equipment. TV antenna outlets.

Heating/Ventilation/Air-Conditioning

Must have heating and room ventilation. Air-conditioning authorized if justified by COMDTINST M11000.1.

Plumbing

None.



0 5 10
RECRUIT
CLASSROOM

INDIVIDUAL SPACE CRITERIA

VENDING AREA

Required in all UPH complexes except recruit.

Functions/Users

Used by personnel housed in UPH complex for the provision of snacks.

Size

60 net SF.

Furnishings/Equipment

Candy machine. Soda machine. Cigarette machine.

Adjacency/Accessibility/View

Minimum one per floor. Should be near recreation room, TV room or reading lounge. No view requirements.

Spatial Definition

Minimum floor dimension 5'-0". Ceiling height 8'-0".

Durability/Maintenance

Should be easy to clean.

Acoustics

STC: 48.

Lighting

Area lighting: 20 FC.

Communications

None.

Electric Outlets

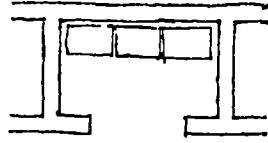
Two 120-VAC duplex wall outlets for vending machines.

Heating/Ventilation/Air-Conditioning

Room exhaust only.

Plumbing

None.



0 5
VENDING AREA
60 NET SF

INDIVIDUAL SPACE CRITERIA

LAUNDRY

Required in all UPH complexes except recruit.

Functions/Users

Provides washing and drying facilities for personal clothing of personnel assigned.

Size

1 washer per 15 occupants. 1 dryer per 15 occupants. Each washer or dryer requires 20 net SF each plus 80 net SF per laundry room.

Furnishings/Equipment

Washing machines. Clothes dryers. Ironing board. Laundry sink. Folding table.

Adjacency/Accessibility/View

Normally one per floor. Should be near bedroom area but usually separated.

Should be adjacent to linen closet. No view requirements.

Spatial Definition

Ceiling height 8'-0".

Durability/Maintenance

Floor should have a scrubbable, durable finish with positive slope to floor drain. Walls should have a hard mildew-resistant finish (such as epoxy paint).

Provide a waterproof pan underneath washing machines and laundry sink.

Acoustics

STC: 48.

Lighting

Area lighting: 30 FC.

Communications

None.

Electric Outlets

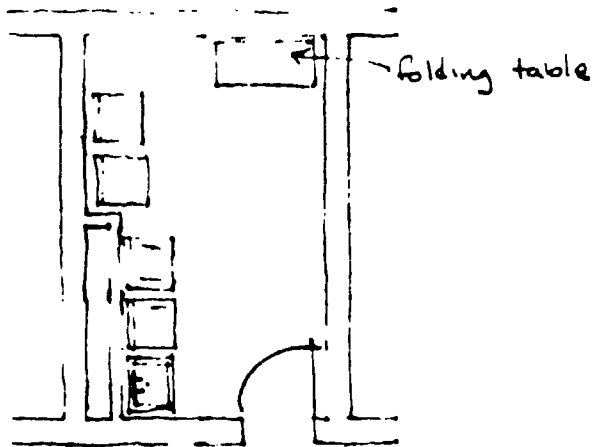
One 208-VAC single phase outlet for each dryer. One 120-VAC single phase outlet for each washer and for ironing board.

Heating/Ventilation/Air-Conditioning

Should have minimum heating. Exhaust fan should remove excess heat and steam. Each dryer should be vented outdoors. No air-conditioning.

Plumbing

Hot and cold water lines and waste drains for each washer. Laundry sink. Floor drain.



0 5
LAUNDRY

1 WASHER / 15 PERSONS
1 DRYER / 15 PERSONS

LAUNDRY REQUIRES 80
NET SF. PLUS 20 NET SF
PER WASHER AND 20
NET SF PER DRYER.

LAUNDRY ROOM ILLUSTRATED
IS SIZED FOR 16-30 PERSONS,
160 NET SF.

INDIVIDUAL SPACE CRITERIA

LINEN STORAGE

Required in all UPH complexes.

Functions/Users

Provides for storage and distribution of pillows, blankets, sheets, etc.

Size

50 net SF/8-12 bedroom modules.

Furnishings/Equipment

Built-in or movable shelving units (18" to 24" deep).

Adjacency/Accessibility/View

Normally one per floor. Should be adjacent to laundry. Should be accessible from corridor. Lockable. No view desired.

Spatial Definition

Minimum floor dimension 5'-0". Ceiling height 8'-0".

Durability/Maintenance

Painted walls and shelves. Floor should be easy to clean.

Acoustics

None.

Lighting

Area lighting: 10 FC.

Communications

None.

Electric Outlets

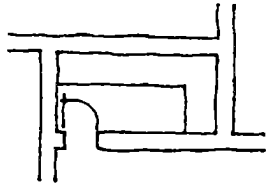
None.

Heating/Ventilation/Air-Conditioning

Should have room ventilation.

Plumbing

None.



0 5
LINEN STORAGE
50 NET SF

INDIVIDUAL SPACE CRITERIA

SEABAG STORAGE

Required in permanent party and student UPH complexes.

Functions/Users

Provides permanently housed UPH personnel with secure storage space for personal effects (seabags, suitcases, etc.) that are too bulky for storage in bedrooms.

Size

2-3 storage cubicles/bedroom module. 12 net SF/storage cubicle.

Furnishings/Equipment

Built-in cubicles (4'-0" x 4'-0" x 4'-0"). Each cubicle shall be lockable.

Adjacency/Accessibility/View

Should be directly accessible through interior corridor. Should be securely lockable to provide controlled entry. No view requirements.

Spatial Definition

Ceiling height minimum 8'-0". Each cubicle should provide 16 SF of horizontal storage space.

Durability/Maintenance

Durable construction of cubicles. Walls and floors should be easily cleaned.

Acoustics

None.

Lighting

Area lighting: 20 FC.

Communications

None.

Electric Outlets

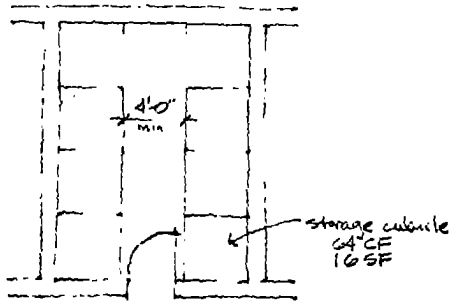
One 120-VAC, general purpose, single receptacle room light/switch combination outlet near door.

Heating/Ventilation/Air-Conditioning

Minimal heating to avoid freezing. Room exhaust.

Plumbing

None.



0 5
SEABAG STORAGE

ROOM SIZE DETERMINED
FROM NUMBER OF MODULES
IN THE UPH COMPLEX.
3-3 STORAGE W/ C.E./MODULE.
10 NET SF / STORAGE WHEEL.

200 SF FOR 8 BEDROOM MODULES
300 SF FOR 12 BEDROOM MODULES

INDIVIDUAL SPACE CRITERIA

BUILDING STORAGE

Required in all UPH complexes.

Functions/Users

Serves as distribution point for cleaning supplies. Storage space for vacuum cleaners.

Size

30 net SF.

Furnishing/Equipment

Wall-supported shelving (12" to 18" deep).

Adjacency/Accessibility/View

Minimum one per floor in bedroom area. Should be adjacent to janitor's closet. Should be lockable to control entry. No view requirements.

Spatial Definition

Minimum floor dimension 5'-0". Ceiling height 8'-0".

Durability/Maintenance

Painted walls and shelves. Hardened concrete floor.

Acoustics

None.

Lighting

Area lighting:15 FC.

Communications

None.

Electric Outlets

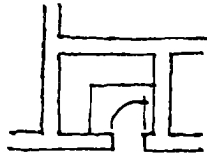
One 120-VAC, general purpose, single receptacle room light/switch combination outlet near door.

Heating/Ventilation/Air-Conditioning

Room exhaust only.

Plumbing

None.



0 5
BUILDING STORAGE
30 NET SF

INDIVIDUAL SPACE CRITERIA

JANITOR'S CLOSET

Required in all UPH complexes.

Functions/Users

Provides storage for cleaning equipment (waxers, mops, brooms, cleaning agents, etc).

Size

30 net SF.

Furnishings/Equipment

Storage shelves (12" deep). Mop hooks.

Adjacency/Accessibility/View

Minimum one per floor in bedroom area. Lockable doors. Extra width entry with hold-open door capability desirable. No view requirements. Should be adjacent to building storage.

Spatial Definition

Minimum floor dimension 5'-0". Ceiling height 8'-0".

Durability/Maintenance

Should be easy to clean and resistant to rough treatment, but need not be highly finished or attractive.

Acoustics

None.

Lighting

Area lighting: 15 FC.

Communications

None.

Electric Outlets

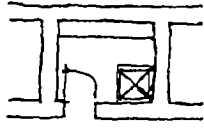
One 120-VAC, general purpose, single receptacle room light/switch combination outlet near door.

Heating/Ventilation/Air-Conditioning

Room exhaust only.

Plumbing

Service sink.



⁰ _____ ⁵
JANITOR'S CLOSET
30 NET SF

INDIVIDUAL SPACE CRITERIA

MECHANICAL EQUIPMENT ROOM

Required as needed in all UPH complexes.

Functions/Users

Provides space for mechanical and electrical equipment and controls.

Size

Varies according to type of services, climatic conditions, and local regulations. For planning purposes, square footage is included in the net to gross area computations.

Furnishings/Equipment

Mechanical equipment (HVAC and plumbing) and controls as required by mechanical system design. Electrical equipment and controls as required by electrical system design.

Adjacency/Accessibility/View

Should be on ground level and not adjacent to quiet spaces. Access should be by securely lockable exterior doors only. Wide entry should be provided for equipment installation or replacement. No view requirements.

Spatial Definition

Varies but should allow adequate space for installing and servicing equipment.

Durability/Maintenance

Materials should be damage and wear-resistant but need not maintain high appearance level.

Acoustics

As a major noise generator, room should be well isolated from spaces used by people. Vibration isolators should be provided on all mechanical equipment.

STC: 48.

Lighting

Area lighting: 15 FC fluorescent. Task lighting: 50 FC portable incandescent.

Communications

None.

Electric Outlets

One outlet for maintenance and cleaning equipment. Outlets as required for mechanical equipment.

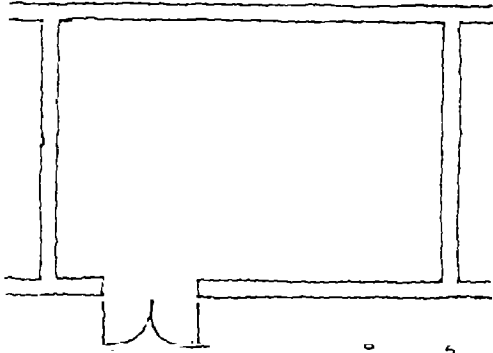
Heating/Ventilation/Air-Conditioning

Room ventilation required. Air-conditioning not authorized. Room ventilation should consider combustion air requirements of mechanical equipment.

INDIVIDUAL SPACE CRITERIA

Plumbing

Floor Drain. Other requirements will vary according to mechanical system design.



MECHANICAL EQUIPMENT ROOM
SIZE VARIES

INDIVIDUAL SPACE CRITERIA

ELEVATOR

Required in all UPH complexes exceeding two stories in height.

Functions/Users

Serves as a service elevator for moving furniture and equipment between building floors.

Size

Shaft size varies according to space required for elevator. Size will have to be based upon manufacturer's data. Machine room size will be based upon manufacturer's data. For planning purposes, square footage is included in the net to gross area computations.

Furnishings/Equipment

A 2500-lb freight elevator should satisfy most service requirements. Considering the limited number of stops, a hydraulic elevator is recommended as the most economical solution. Car speed of 100 to 125 FPM is recommended.

Adjacency/Accessibility/View

Should be centrally located and be easily accessible to an outside entrance. Should not be adjacent to quiet spaces. No view requirements.

Spatial Definition

Minimum car size is 5 ft x 7 ft x 8 ft high. Machine room ceiling height shall be 8'-0". Machine room floor area for a hydraulic elevator will vary according to particular equipment selected, but 10' x 8' is generally adequate. Pit depth shall be determined from manufacturer's data.

Durability/Maintenance

Materials should be damage and wear resistant but need not maintain high appearance.

Acoustics

Will be a major noise producer and so it should be acoustically treated.

STC: 48.

Lighting

Hoistway Lighting: as required by ANSI A17.1. Light required in center of hoistway. Lights required on car crosshead and under the car platform. Elevator pit lighting: as required by ANSI A17.1. Machine room lighting: 15 FC. Interior car lighting: 20 FC at car floor. Emergency lighting of 2 FC at the floor.

Communications

Telephone required within cab. Telephone required in machine room.

Electric Outlets

120-VAC duplex wall outlets required in elevator pit and in machine room. A duplex receptacle shall be provided on top of the car.

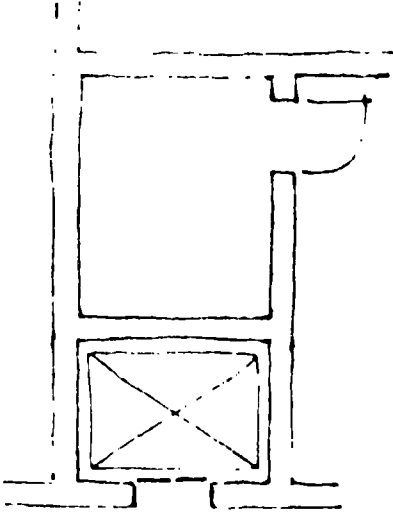
INDIVIDUAL SPACE CRITERIA

Heating/Ventilation/Air-Conditioning

Heating and ventilating for the machine room to maintain temperature limits of 85 to 90 degrees F. Car ventilation fan capacity of 400 CFM. Hoistway shall be ventilated.

Plumbing

Floor drain in elevator pit.



a s
ELEVATOR
HOISTWAY AND
MACHINE ROOM

NOTES: DEPTH OF PIT : 3'-6" TO 4'-0"
OVERHEAD : 12'-6" TO 14'-0"

INDIVIDUAL SPACE CRITERIA

RECRUIT UPH COMPLEX

UPH facilities for enlisted recruits will be programmed and designed for Coast Guard training centers. These UPH complexes will be the largest size of facilities constructed to house Coast Guard personnel. The character of these buildings should reflect a highly structured, military atmosphere. This is the typical recruit's introduction to military service, therefore, the recruit UPH complex must be consonant with Coast Guard training techniques of recruit personnel.

In support of the repeatable design policy as outlined by COMDTINST 11010.9, a standardized 60-person squad bay module and a standardized core unit have been developed. The squad bay is attached to the central core in four wings, three stories in height.

The sizes and makeup of spaces within a recruit UPH facility vary from project to project depending upon the number of people to be housed. Basic requirements for the following types of spaces were described earlier in this chapter:

- Squad Bays
- Central Bathrooms
- Lobby
- Main Lounge
- Administration
- Recruit Administration
- Duty Section
- Public Toilets
- Recruit Day Room
- Recruit Classroom
- Linen Storage
- Building Storage
- Janitor's Closet

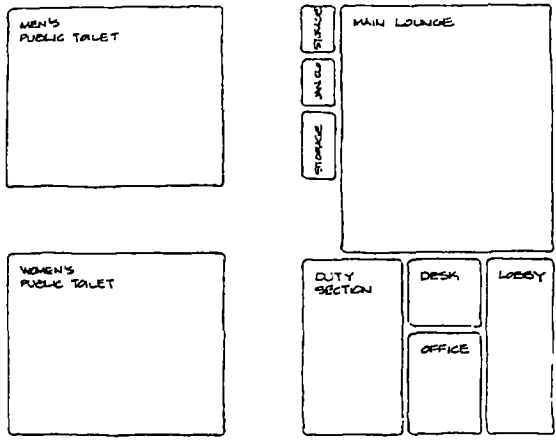
The space relationship matrix and the spatial relationship diagram show the interrelationship between various spaces. A sample layout for a standardized recruit UPH complex having 10 squad bays (600 persons) is shown.

The sample layout of spaces suggests just one of the possibilities available, however, designers should not be restricted to the spatial relationship diagram depicted as long as proposed layouts meet adjacency and other criteria.

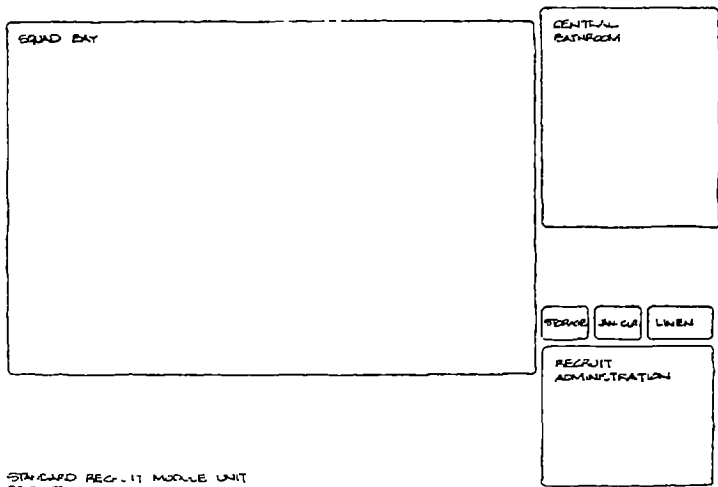
RELATIONSHIP OF SPACES WITHIN THE FACILITY	JUNIOR'S CLOSET	BLDG STORAGE	LINEN STORAGE	CLASSROOM	DAY ROOM	PUBLIC TOILETS	DUTY SECTION	RECRUIT ADMIN	ADMINISTRATION	MAIN LOUNGE	LOBBY	CENTRAL BATHS
SQUAD BAYS	3	3	3	5	5	5	4	3	4	4	4	1
CENTRAL BATHS	3	3	4	5	5	5	4	4	4	4	4	
LOBBY	4	4	4	3	3	1	2	4	2	1		
MAIN LOUNGE	3	4	4	3	3	2	3	5	3			
ADMINISTRATION	4	4	4	4	4	5		4				
RECRUIT ADMIN	4	4	4	4	4	4	4					
DUTY SECTION	3	3	2	5	5	4						
PUBLIC TOILETS	2	4	4	3	3							
DAY ROOM	3	4	5	5								
CLASSROOM	3	4	5									
LINEN STORAGE	4	4										
BLDG STORAGE	2											

SPACE
RELATIONSHIP
MATRIX

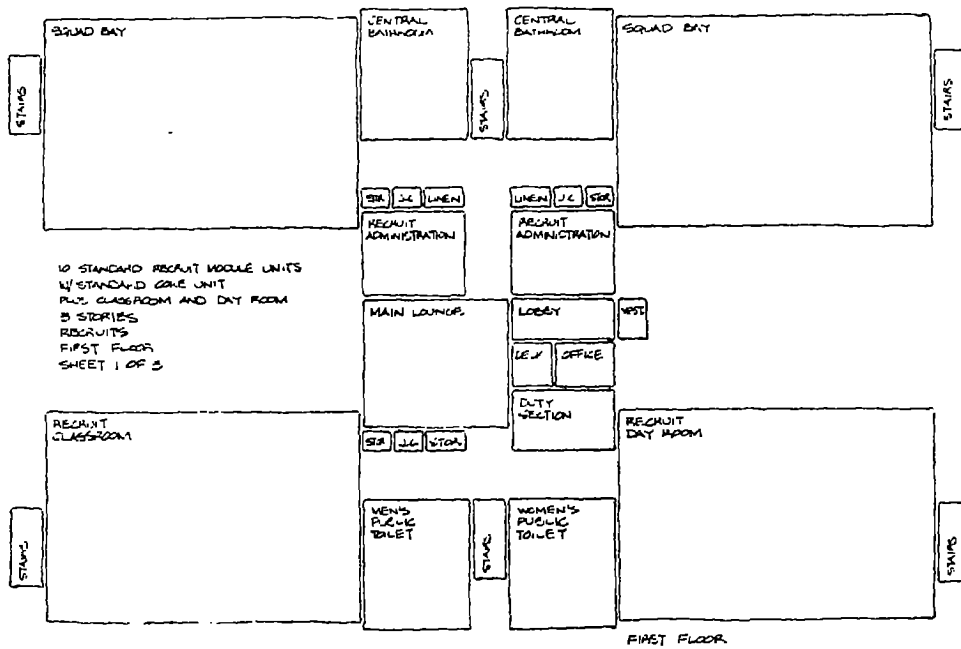
- 1 - ADJACENT AND CONNECTED
- 2 - ADJACENT
- 3 - CLOSE
- 4 - NO SPECIFIED RELATIONSHIP
- 5 - MAY BE DISTANT
- 6 - MUST BE DISTANT

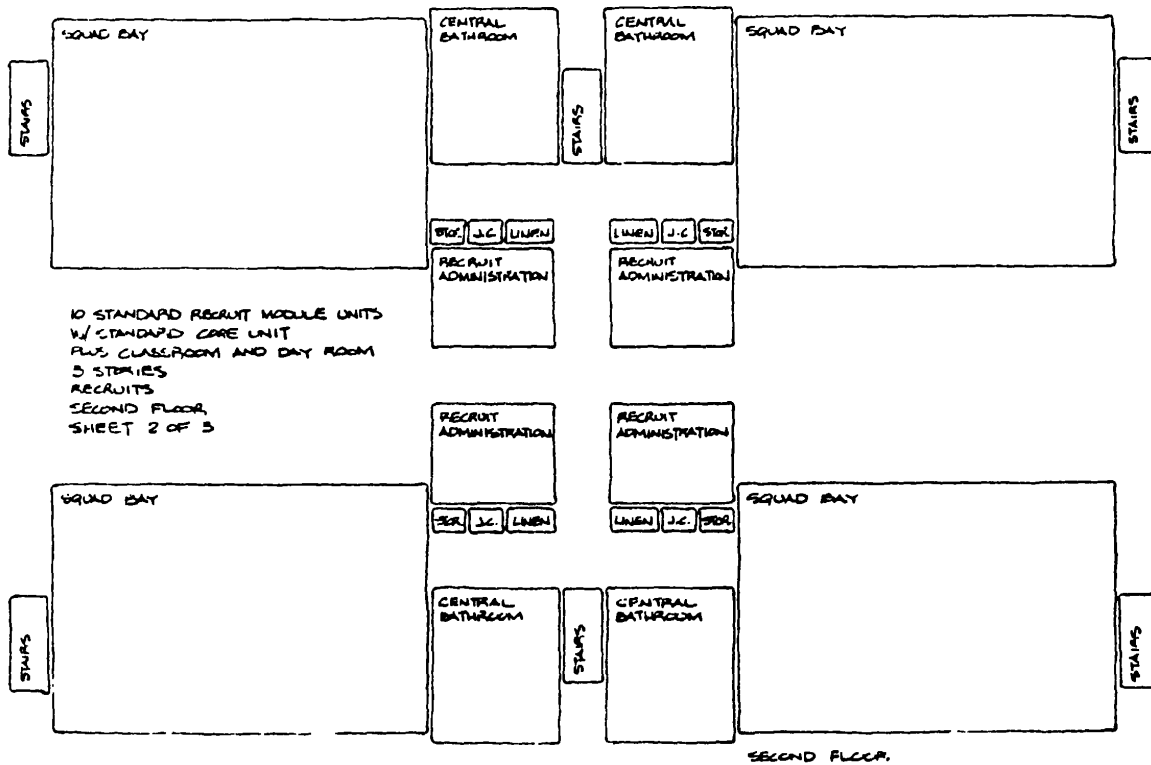


STANDARD REC-11 UNIT
REQUIRE



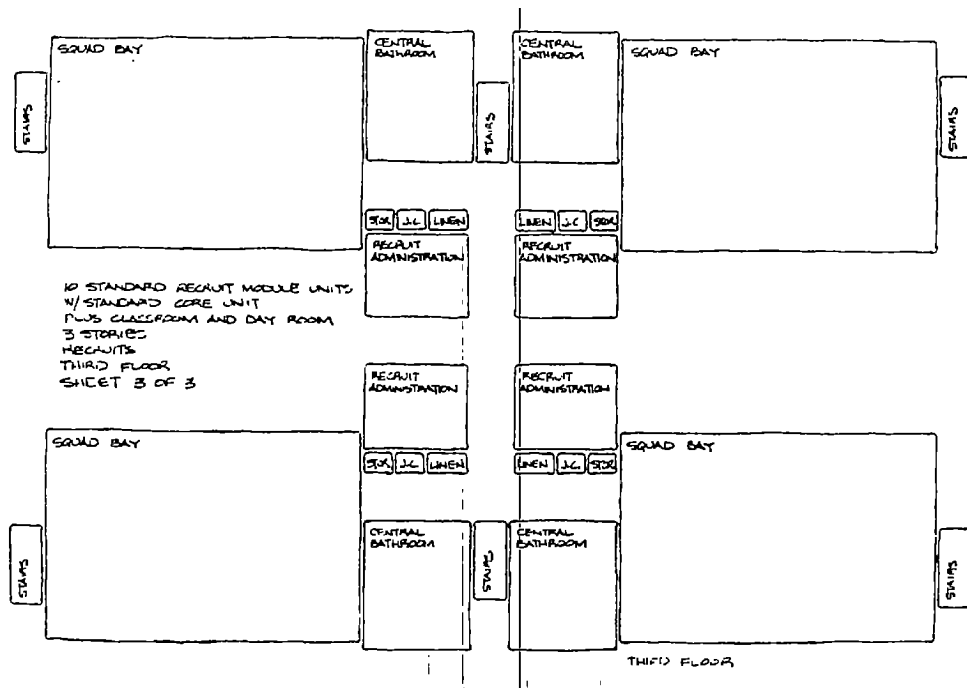
STANDARD REC-11 MODULE UNIT
REQUIRE





10 STANDARD RECRUIT MODULE UNITS
 W/ STANDARD CORE UNIT
 PLUS CLASSROOM AND DAY ROOM
 3 STAIRS
 RECRUITS
 SECOND FLOOR
 SHEET 2 OF 3

SECOND FLOOR.



INDIVIDUAL SPACE CRITERIA

ENLISTED PERMANENT PARTY UPH COMPLEX

UPH facilities for enlisted permanent party will probably be accomplished in small housing complexes containing under 30 bedrooms, each bedroom housing one to three persons based upon rank. Most occupants will be approximately 18 to 30 years of age. The facility is their home so it should provide a relaxing and comfortable atmosphere.

In support of the repeatable design policy as outlined by COMDTINST 11010.9, standardized 8 and 12 unit bedroom modules and a standardized core unit have been developed. The standardized core unit can support up to 30 bedroom modules before modification is necessary. The bedroom modules can be added to the core in one to three wings, and one or two stories in height.

The sizes and configuration of spaces within an enlisted permanent party UPH facility vary from project to project depending upon the number of people to be housed. Basic requirements for the following types of spaces were described earlier in this chapter:

- Bedrooms
- Bathrooms
- Lobby
- Main Lounge
- Administration
- Duty Section
- Public Toilets
- Recreation Room
- TV Room
- Vending Area
- Laundry
- Linen Storage
- Seabag Storage
- Building Storage
- Janitor's Closet

The space relationship matrices and the spatial relationship diagrams show the interrelationships between spaces. Sample layouts for standardized facilities having the following number of bedrooms are shown:

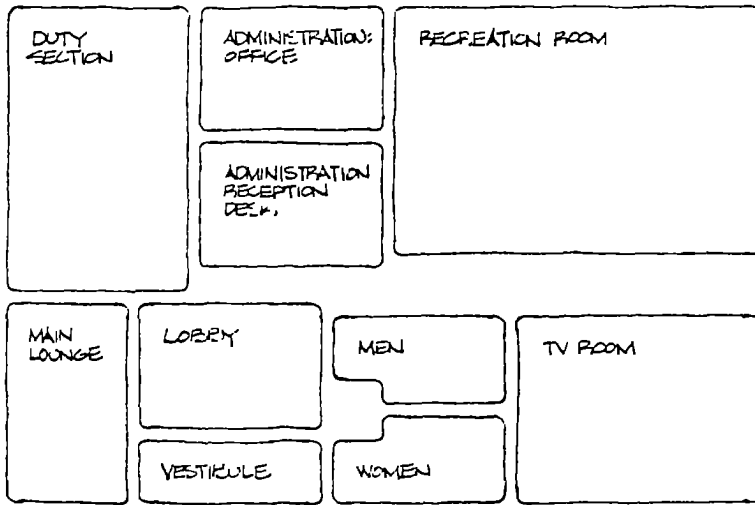
- 8 (8 to 24 persons)
- 12 (12 to 36 persons)
- 16 (16 to 48 persons)
- 20 (20 to 60 persons)
- 24 (24 to 72 persons)
- 28 (28 to 84 persons)

The sample layouts of spaces suggest just some of the possibilities, however, designers should not be restricted to these possibilities as long as proposed layouts meet adjacency and other criteria. Larger enlisted permanent party UPH complexes will be similar to enlisted students UPH facilities.

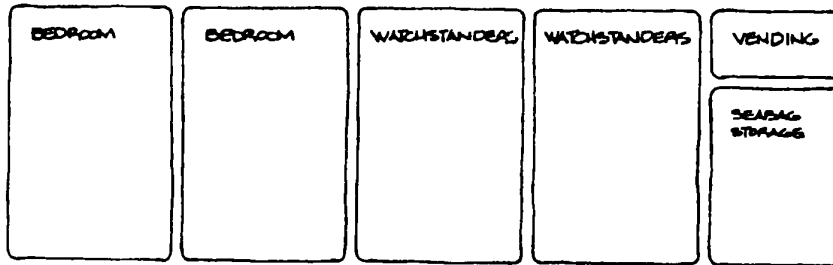
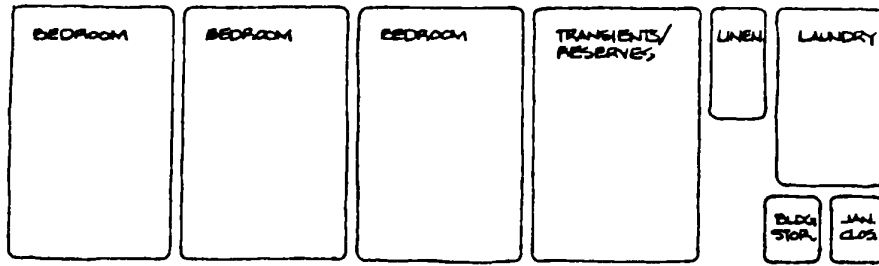
ENLISTED PERMANENT PARTY UPH	JANITOR'S CLOSET	BLDG STORAGE	SEPARATE STAFF	LINEN STORAGE	LAUNDRY	VENDING AREA	TV ROOM	RECREATION ROOM	PUBLIC TOILETS	DUTY SECTION	ADMINISTRATION	MAIN LOUNGE	LOBBY	BATHROOMS
BEDROOMS	3	3	3	3	3	3	5	5	5	4	4	4	4	4
BATHROOMS	3	3	4	4	4	4	5	5	5	4	4	4	4	
LOBBY	4	4	4	4	4	4	3	3	1	2	2	1		
MAIN LOUNGE	3	4	4	4	4	4	3	3	2	5	3			
ADMINISTRATION	4	4	4	4	4	4	4	4	3	1				
DUTY SECTION	3	3	4	2	4	4	5	5	4					
PUBLIC TOILETS	2	4	4	4	3	4	3	3						
RECREATION ROOM	3	4	4	4	3	3	3							
TV ROOM	3	4	4	4	3	3								
VENDING AREA	3	4	4	4	3									
LAUNDRY	2	3	3	1										
LINEN STORAGE	4	4	4											
BENEFIT STORAGE	4	4												
BLDG STORAGE	2													

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- MUST BE DISTANT

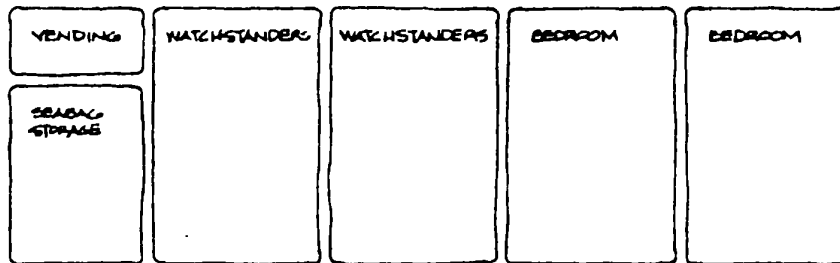
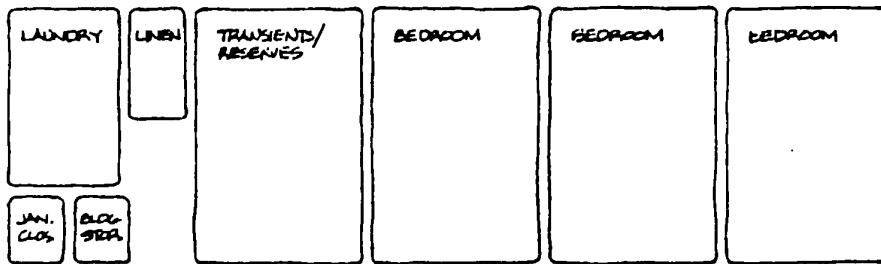
SPACE RELATIONSHIP MATRIX



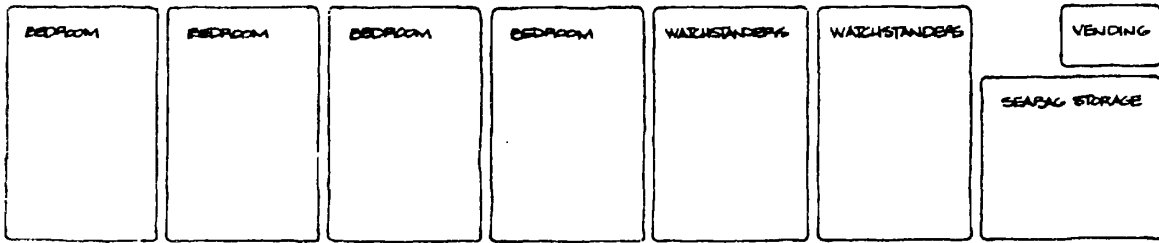
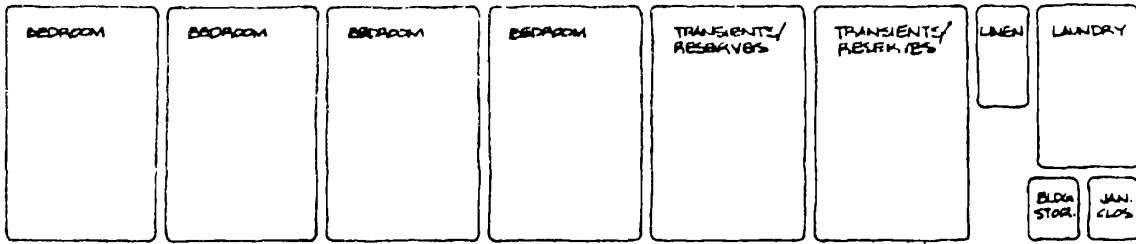
STANDARD CORE UNIT
1-20 MODULES
ENLISTED PERMANENT PARTY



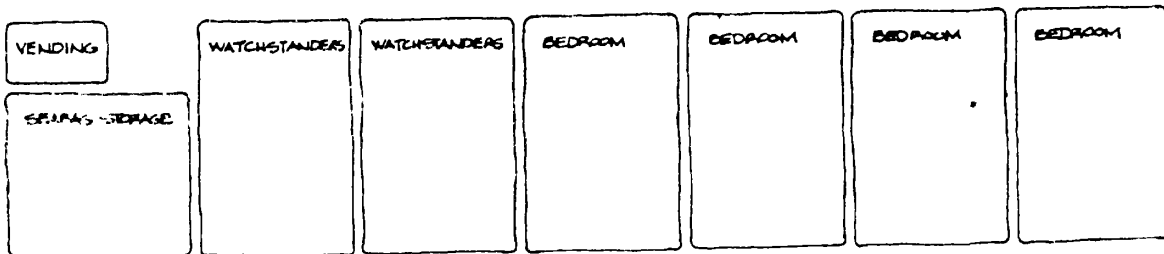
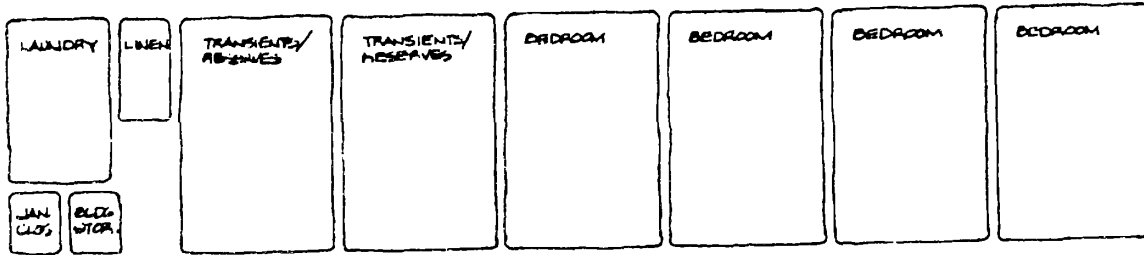
STANDARD & MODULE UNIT
ENLISTED PERMANENT PARTY



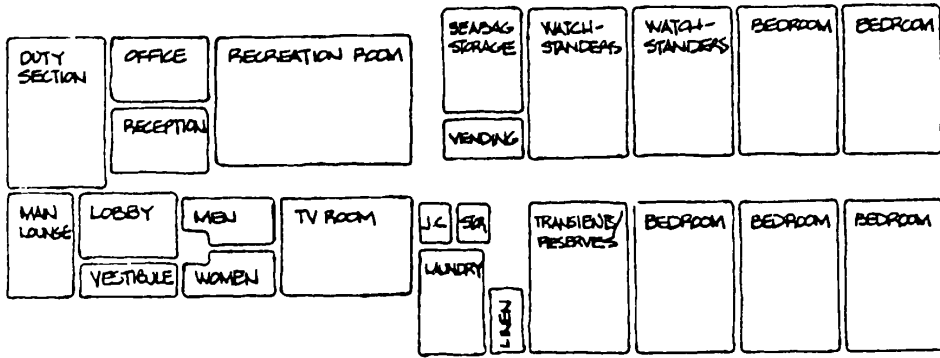
STANDARD & MODULE UNIT
ENLISTED PERMANENT PARTY
OPPOSITE HAND



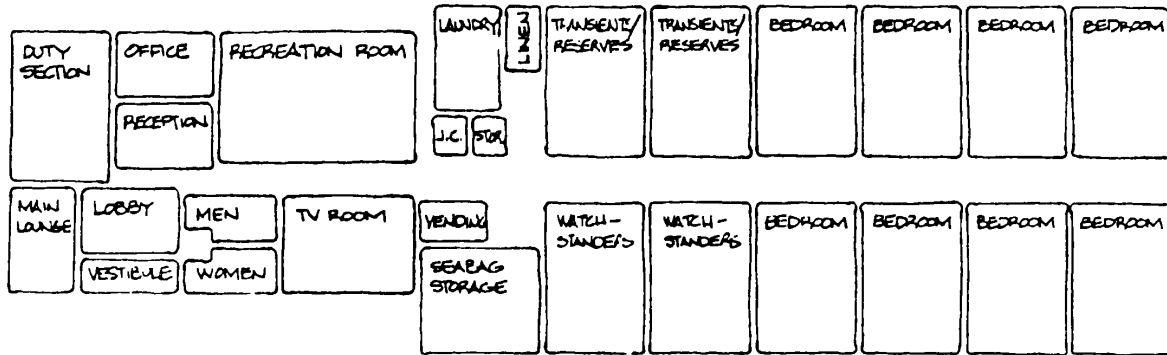
STANDARD 12 MODULE UNIT
ENLISTED PERMANENT PARTY



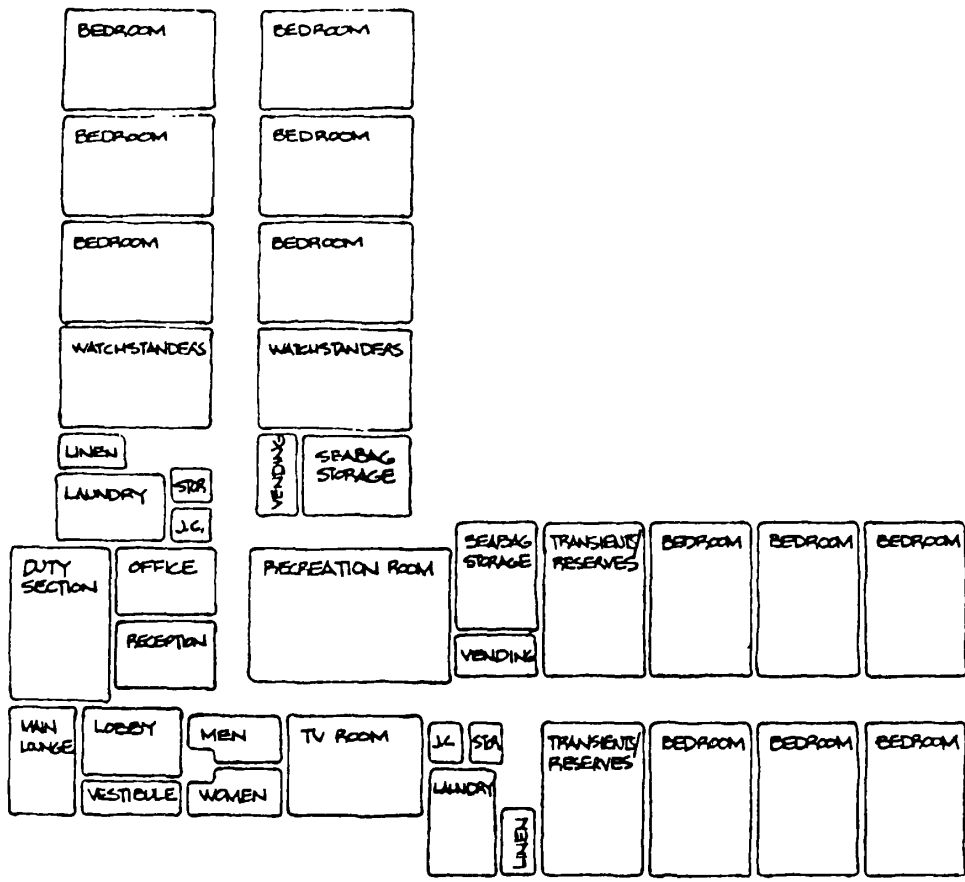
STANDARD 12 MODULE UNIT
ENLISTED PERMANENT PARTY
OPPOSITE HAND



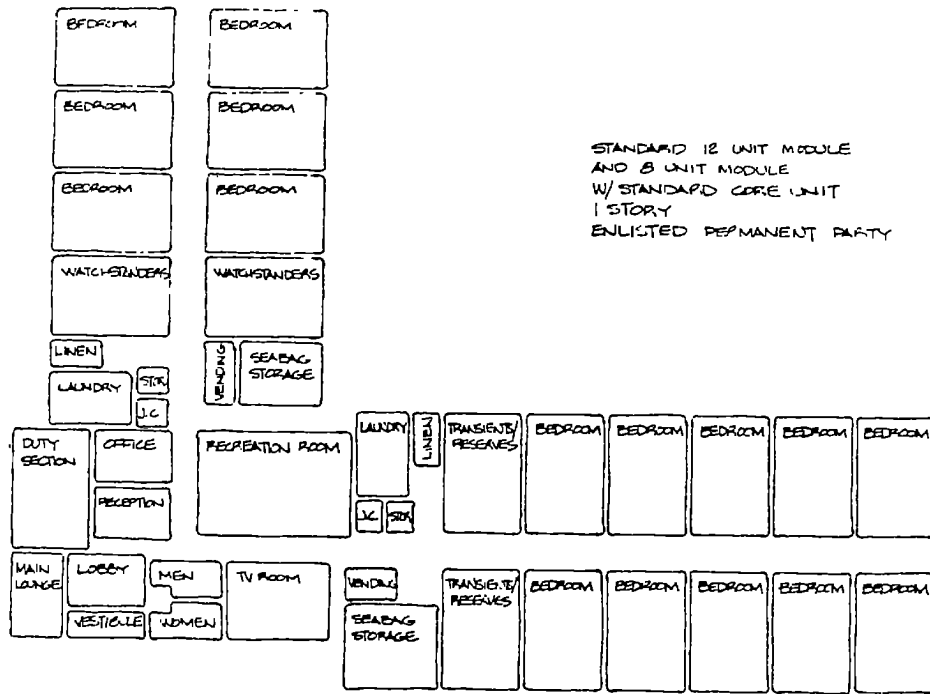
STANDARD 8 MODULE UNIT
 W/ STANDARD CORE UNIT
 1 STORY
 ENLISTED PERMANENT PARTY

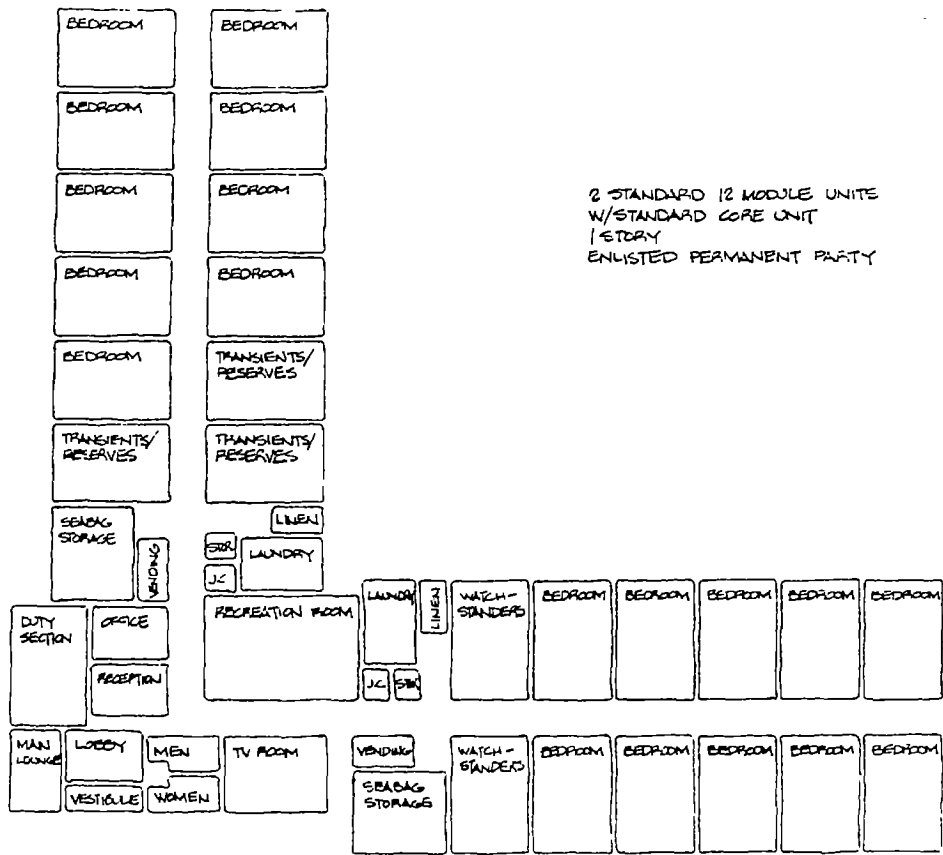


STANDARD 12 UNIT MODULE
 W/ STANDARD CORE UNIT
 1 STORY
 ENLISTED PERMANENT PARTY

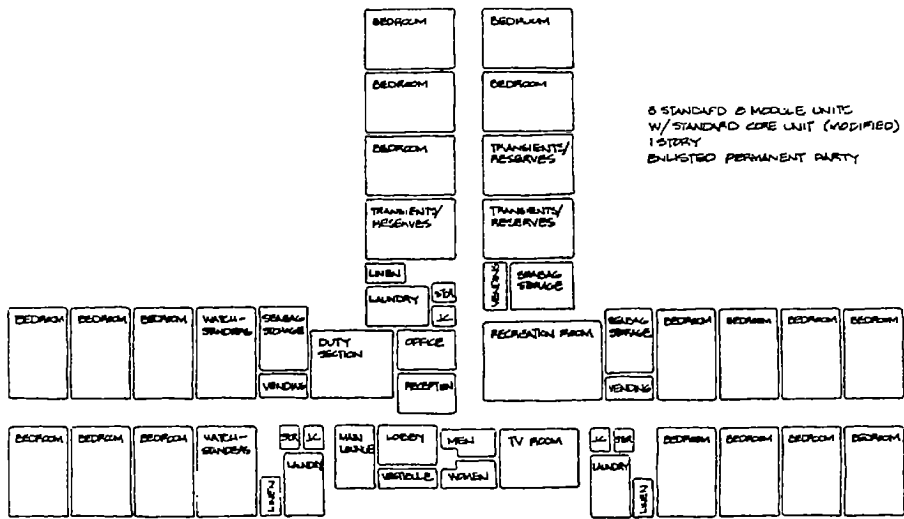


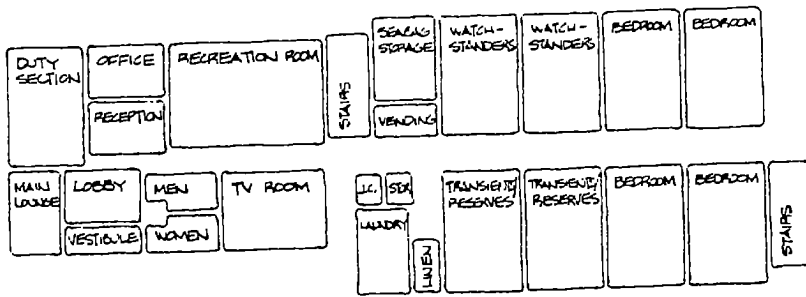
2 STANDARD B MODULE UNITS
 W/ STANDARD CORE UNIT
 1 STORY
 ENLISTED PERMANENT PARTY





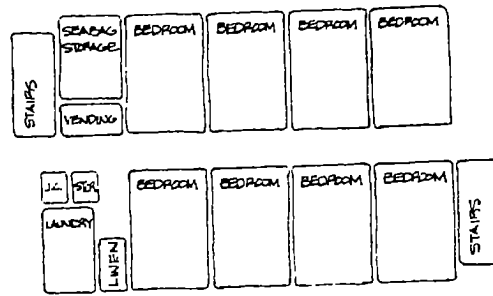
2 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNIT
 1 ETDRY
 ENLISTED PERMANENT PARTY



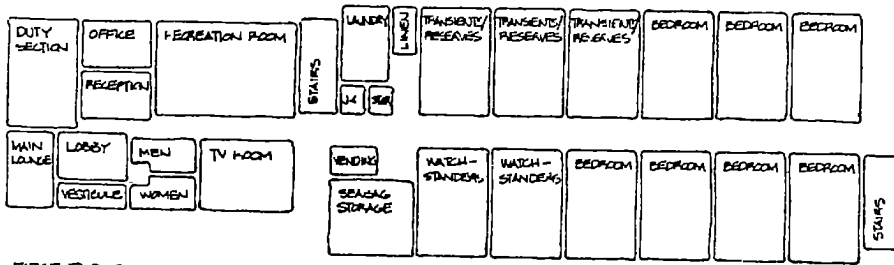


FIRST FLOOR

2 STANDARD & MODULE UNITS
 W/STANDARD CORE UNIT
 2 STORIES
 ENLISTED PERMANENT PARTY

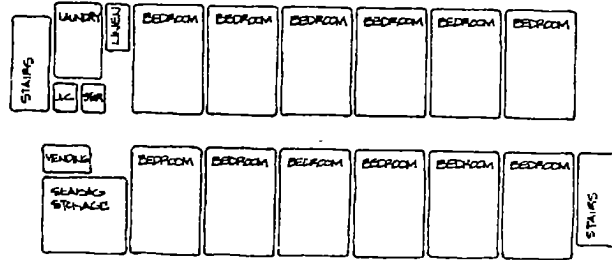


SECOND FLOOR



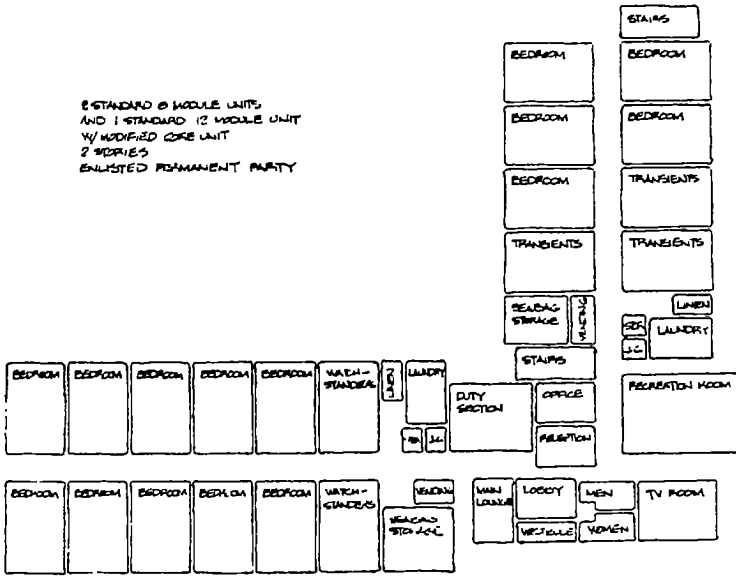
FIRST FLOOR

2 STANDARD 12 MODULE UNITS
 1 STANDARD CORE UNIT
 2 STORIES
 ENLISTED PERMANENT PARTY



SECOND FLOOR

8 STANDARD 6 MODULE UNITS
 AND 1 STANDARD 12 MODULE UNIT
 1/4 MODIFIED CORE UNIT
 2 BARRACKS
 ENLISTED PERMANENT PARTY



FIRST FLOOR



SECOND FLOOR

INDIVIDUAL SPACE CRITERIA

ENLISTED STUDENTS UPH COMPLEX

UPH facilities for enlisted students will be programmed and designed for Coast Guard training centers. UPH complexes will be larger in size (36 or more bedrooms) than those facilities normally constructed at operational stations. Each bedroom will house three people approximately 18 to 30 years of age. This facility is their temporary home since most training courses will not exceed 20 weeks.

In support of the repeatable design policy as outlined by COMDTINST 11010.9, a standardized 12-unit bedroom module and three standardized core unit modules have been developed. The core units are based on 36, 72, and 108 bedroom modules. The bedroom modules can be added to the core in one to three wings, and two or three stories in height.

The sizes and configuration of spaces within an enlisted students UPH facility vary from project to project. Basic requirements for the following types of spaces were described earlier in this chapter:

- Bedrooms
- Bathrooms
- Lobby
- Main Lounge
- Administration
- Duty Section
- Public Toilets
- Recreation Room
- TV Room
- Reading Lounge
- Vending Area
- Laundry
- Linen Storage
- Seabag Storage
- Building Storage
- Janitor's Closet

The space relationship matrices and the spatial relationship diagrams show the interrelationships between spaces. Sample layouts for standardized facilities having the following number of bedrooms are shown:

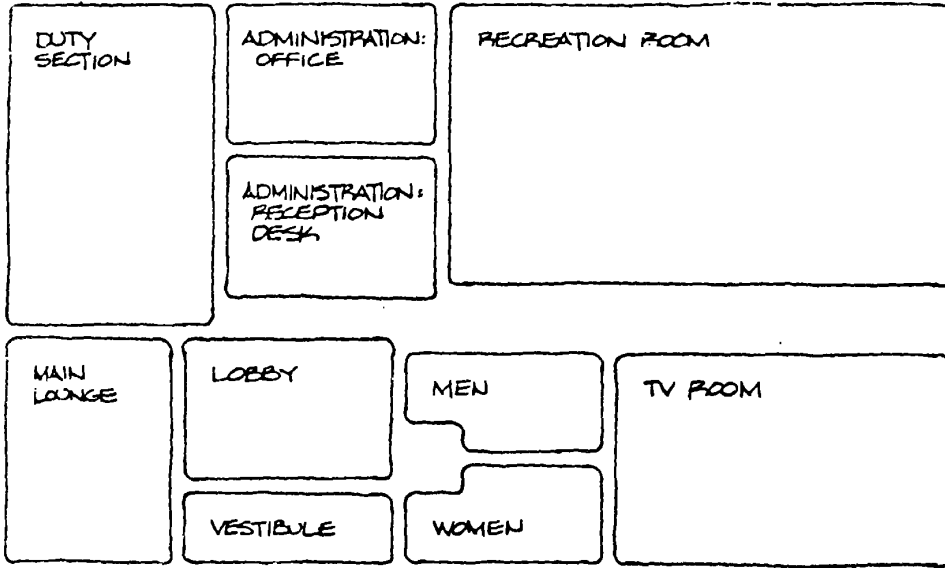
- 36 (108 persons)
- 72 (216 persons)
- 108 (324 persons)

The sample layouts of spaces suggest just some of the possibilities, however designers should not be restricted to these possibilities as long as proposed layouts meet adjacency and other criteria.

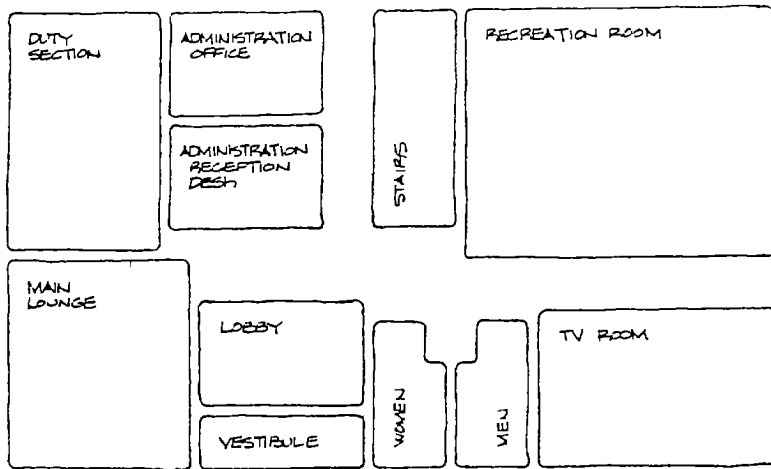
ENLISTED STUDENTS UPH	JANITORY CLOSET	BLDG STORAGE	SEATING STORAGE	LINEN STORAGE	LAUNDRY	VENDING AREA	READING LOUNGE	TV ROOM	RECREATION ROOM	PUBLIC TOILET	DUTY SECTION	ADMINISTRATION	MAIN LOUNGE	LOBBY	BATHROOMS
BEDROOMS	3	3	3	3	3	3	3	5	5	5	4	4	4	4	1
BATHROOMS	3	3	4	4	4	4	4	5	5	5	4	4	4	4	
LOBBY	4	4	4	4	4	4	4	3	3	1	2	2	1		
MAIN LOUNGE	3	4	4	4	4	4	5	3	3	2	5	3			
ADMINISTRATION	4	4	4	4	4	4	4	4	4	3	1				
DUTY SECTION	3	3	4	2	4	4	4	5	5	4					
PUBLIC TOILETS	2	4	4	4	3	4	3	3	3						
RECREATION ROOM	3	4	4	4	3	3	5	3							
TV ROOM	3	4	4	4	3	3	6								
READING LOUNGE	3	4	4	4	3	3									
VENDING AREA	3	4	4	4	3										
LAUNDRY	2	3	3	1											
LINEN STORAGE	4	4	4												
SEATING STORAGE	4	4													
BLDG STORAGE	2														

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- 6 = MUST BE DISTANT

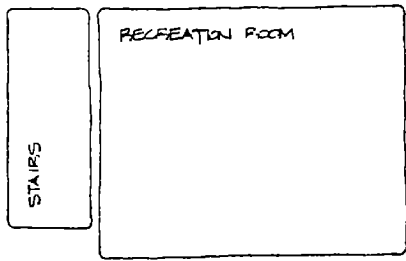
SPACE RELATIONSHIP MATRIX



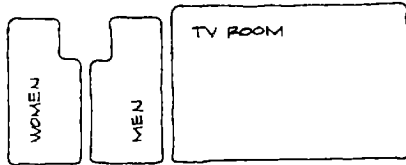
STANDARD CORE UNIT
36 MODULES
ENLISTED STUDENTS



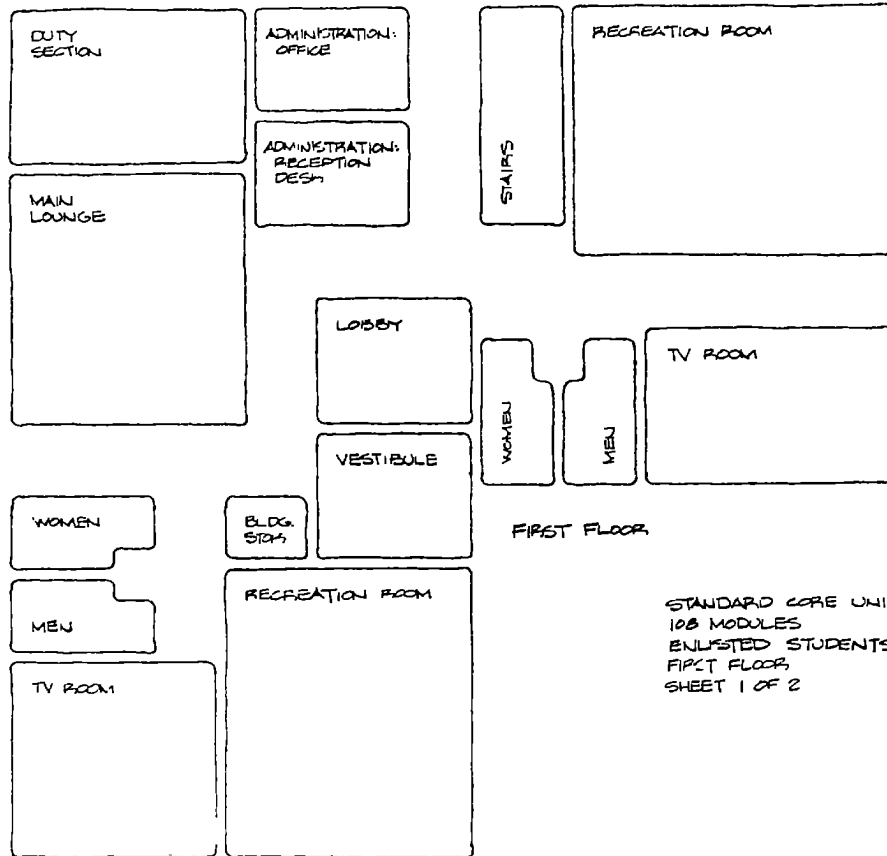
FIRST FLOOR

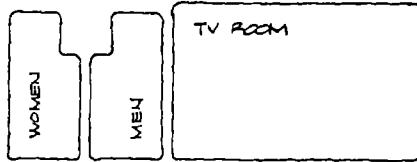
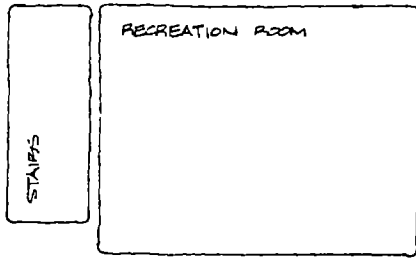


STANDARD CORE UNIT
72 MODULES
ENLISTED STUDENTS



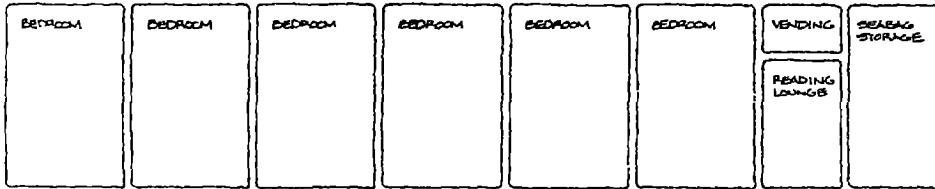
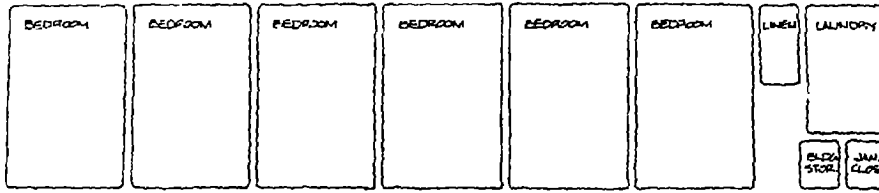
SECOND FLOOR



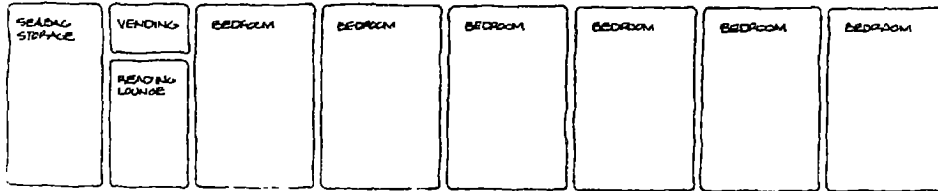
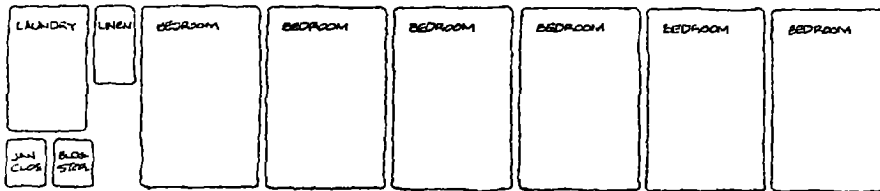


SECOND FLOOR

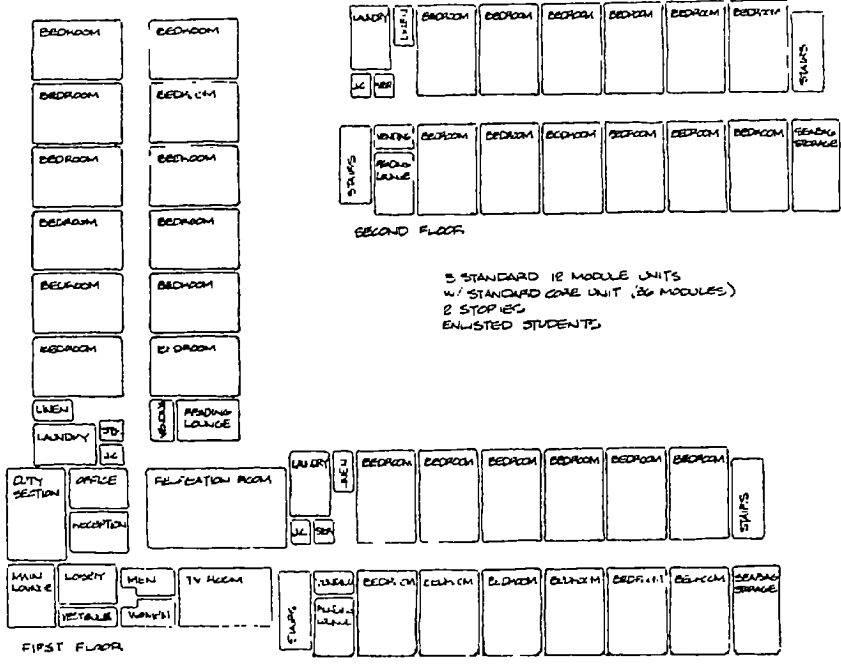
STANDARD CORE UNIT
DB MODULES
ENLISTED STUDENTS
SECOND FLOOR
SHEET 2 OF 2



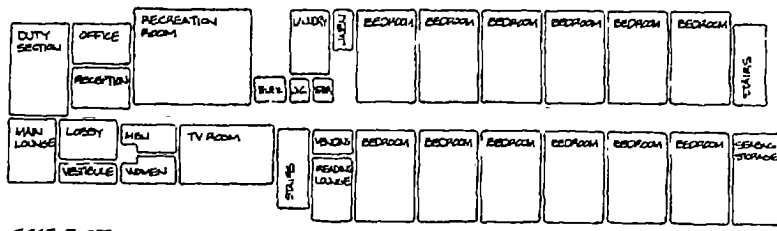
STANDARD 12 MODULE UNIT
ENROLLED STUDENTS



STANDARD 12 MODULE UNIT
ENROLLED STUDENTS
OFF-SITE HOUSING

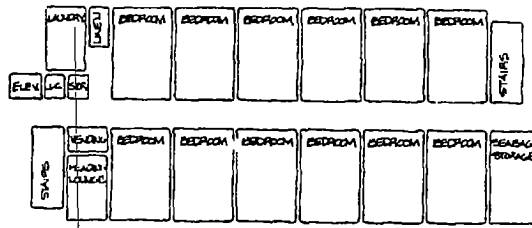


5 STANDARD 12 MODULE UNITS
 4 STANDARD CORE UNIT (26 MODULES)
 2 STAFF
 ENLISTED STUDENTS

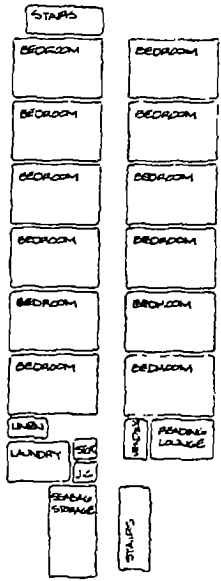


FIRST FLOOR

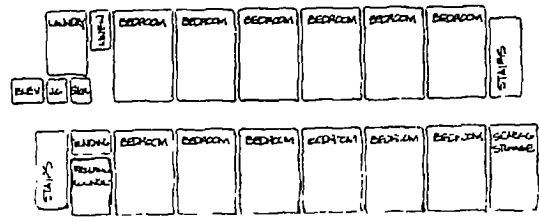
- STANDARD 12 MODULE UNITS
 W/STANDARD CARE UNIT (26 MODULES)
 3 STORES
 ENLISTED STUDENTS



SECOND FLOOR
 AND
 THIRD FLOOR

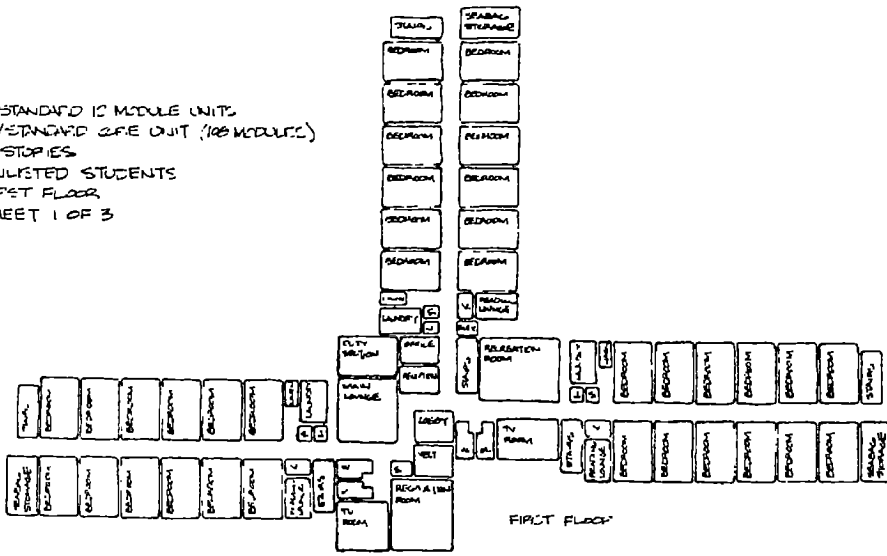


6 STANDARD 12 MODULE UNITS
 W/ STANDARD CORE UNIT (72 MODULES)
 3 STORIES
 ENLISTED STUDENTS
 THIRD FLOOR
 SHEET 3 OF 3

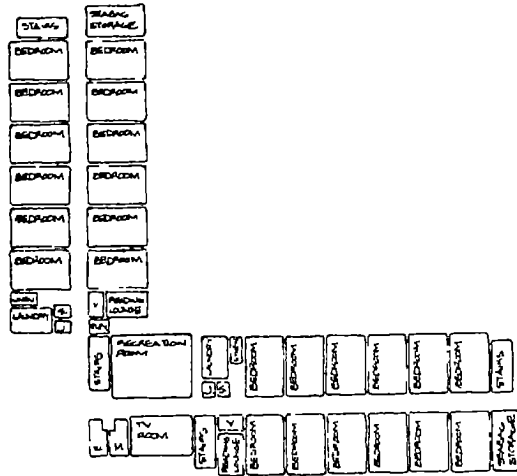


THIRD FLOOR

7 STANDARD 10 MODULE UNITS
 W/STANDARD CARE UNIT (100 MODULES)
 3 STORIES
 ENLISTED STUDENTS
 FIRST FLOOR
 SHEET 1 OF 3

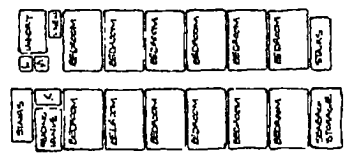
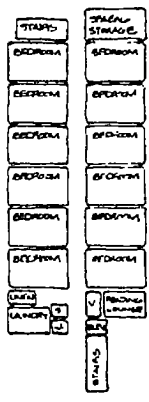
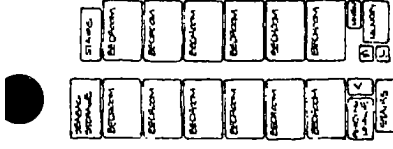


9 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNIT (100 MODULES)
 3 STORIES
 ENLISTED STUDENTS
 SECOND FLOOR
 SHEET 2 OF 3



SECOND FLOOR

9 STANDARD 10 MODULE UNITS
 W/ STANDARD CORE UNIT (100 MODULES)
 3 STORIES
 ENLITED STUDENTS
 THIRD FLOOR
 SHEET 3 OF 3



THIRD FLOOR

INDIVIDUAL SPACE CRITERIA

OFFICER PERMANENT PARTY UPH COMPLEX

UPH facilities for permanent party officers will most likely be accomplished in small housing complexes or as adjuncts to small enlisted permanent party UPH facilities. Each module is a complete apartment containing living spaces, kitchen, and bathroom. An efficiency or studio apartment shall be provided to junior officers and a one-bedroom apartment shall be provided to senior officers. This facility is their home and should provide a relaxing and comfortable atmosphere. The most important aspect in the design is the separation of private and public spaces (i.e. the creation of private living modules and public recreational modules).

In support of the repeatable design policy as outlined by COMDTINST 11010.9, a standardized 6 unit apartment module and a standardized core unit module have been developed. The standardized core unit can support up to 36 apartment modules before modification is necessary. The standard apartment module consists of 5 junior officer apartments and 1 senior officer apartment. The apartment modules can be added to the core in one to three wings, and one to three stories in height.

The sizes and configuration of spaces within an officer permanent party UPH facility vary from project to project depending upon the number of people to be housed.

Basic requirements for the following types of spaces are described elsewhere in this chapter:

- Apartment Modules
- Lobby
- Administration
- Public Toilets
- Recreation Room
- TV Room
- Vending Area
- Laundry
- Linen Storage
- Seabag Storage
- Building Storage
- Janitor's Closet

The space relationship matrices and the spatial relationship diagrams show the interrelationships between spaces. Sample layouts for standardized facilities having the following number of apartments are shown:

- 6 (6 persons)
- 12 (12 persons)
- 24 (24 persons)
- 36 (36 persons)
- 54 (54 persons)

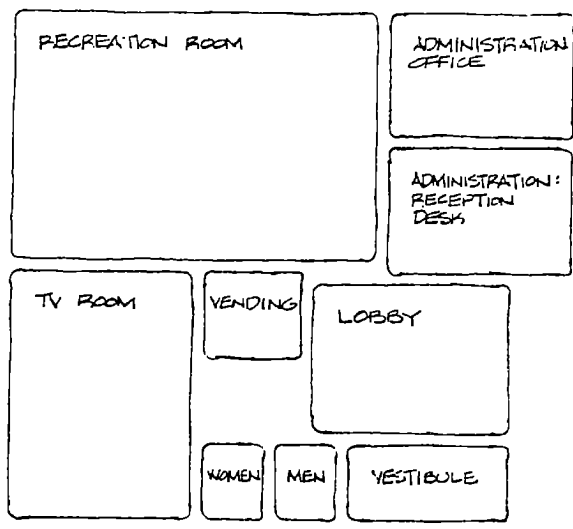
INDIVIDUAL SPACE CRITERIA

The sample layouts of spaces suggest just some of the possibilities, however, designers should not be restricted to these variations as long as proposed layouts meet adjacency and other criteria. While not within the scope of this publication, it should be noted that officer dining facilities would probably be co-located with the UPH complex.

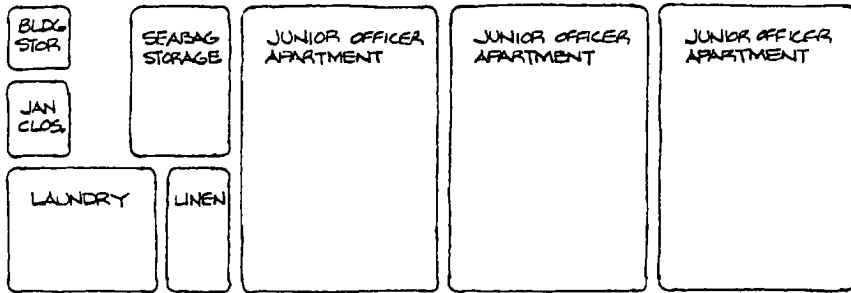
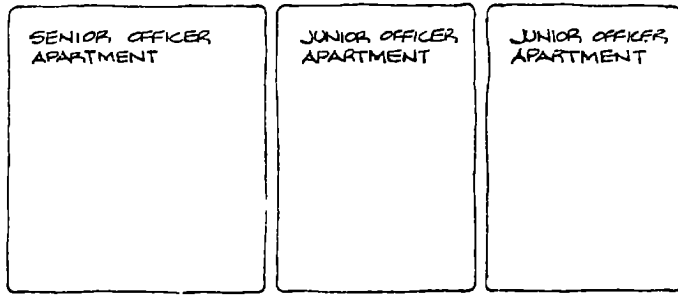
OFFICER PERMANENT PARTY UPH	JANITOR'S CLOSET	BLDG STORAGE	SEABAG STORAGE	LINEN STORAGE	LAUNDRY	VENDING AREA	TV ROOM	RECREATION ROOM	PUBLIC TOILETS	ADMINISTRATION	LOBBY
RELATIONSHIP OF SPACES WITHIN THE FACILITY											
APARTMENTS	4	4	3	4	4	4	5	5	5	4	4
LOBBY	4	4	4	4	4	4	3	3	1	2	
ADMINISTRATION	4	4	4	4	4	4	4	4	3		
PUBLIC TOILETS	2	4	4	4	3	4	3	3			
RECREATION ROOM	3	4	4	4	3	3	3				
TV ROOM	3	4	4	4	3	3					
VENDING AREA	3	4	4	4	3						
LAUNDRY	2	3	3	1							
LINEN STORAGE	4	4	4								
SEABAG STORAGE	4	4									
BLDG STORAGE	2										

SPACE RELATIONSHIP MATRIX

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIC RELATIONSHIP
- 5 = MAY BE DILTANT
- 6 = MUST BE DILTANT

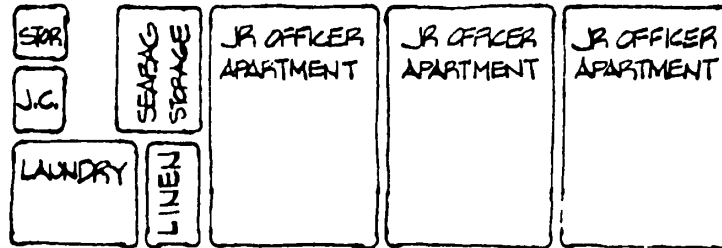


STANDARD CORE UNIT
OFFICER, PERMANENT PARTY

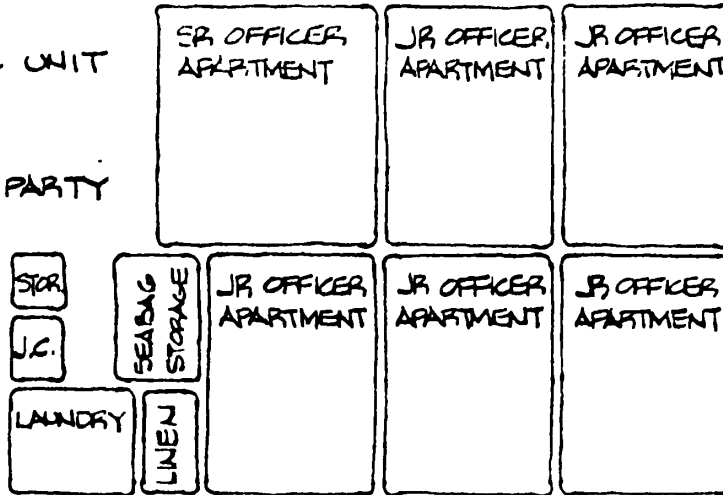


STANDARD 6 MODULE UNIT
OFFICER, PERMANENT PARTY

STANDARD 6 MODULE UNIT
 1 STORY
 OFFICER PERMANENT PARTY

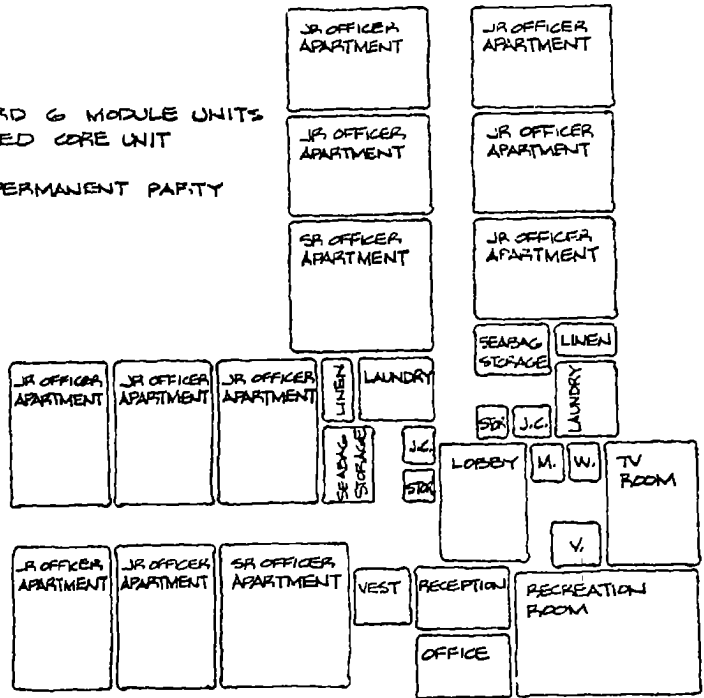


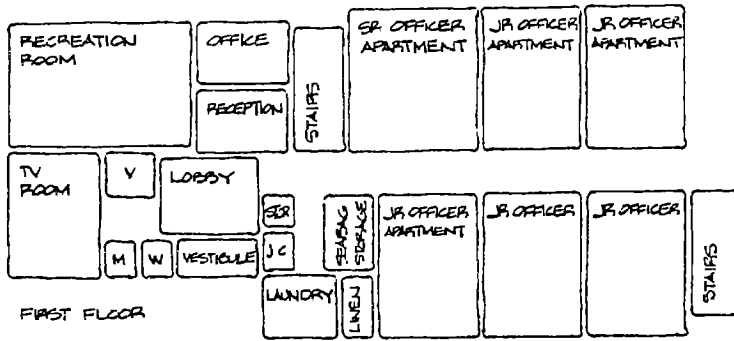
MODIFIED 6 MODULE UNIT
 EXTERIOR ENTRANCES
 1 STORY
 OFFICER PERMANENT PARTY



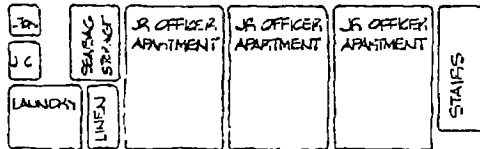
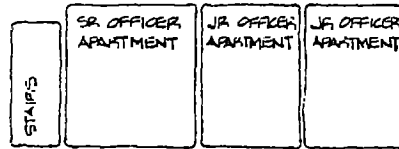
NOTE : STANDARD CORE UNIT
 NOT INCLUDED. RECREATIONAL
 SPACE LOCATED EITHER WITH
 DINING FACILITY OR WITH EN-
 LISTED RECREATIONAL SPACE.
 INCLUSION OF CORE UNIT WOULD
 EXCEED MAXIMUM ALLOWABLE
 SQUARE FEET

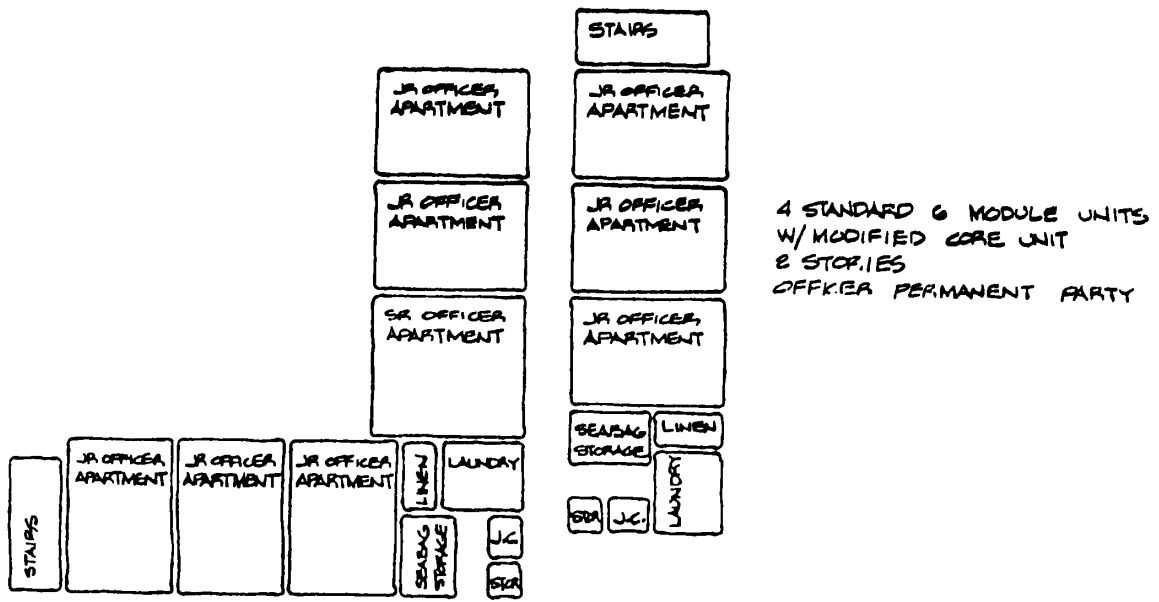
2 STANDARD 6 MODULE UNITS
W/ MODIFIED CORE UNIT
1 STORY
OFFICER PERMANENT PARTY





2 STANDARD 6 MODULE UNITS
 W/STANDARD CORE UNIT
 2 STORIES
 OFFICER PERMANENT PARTY

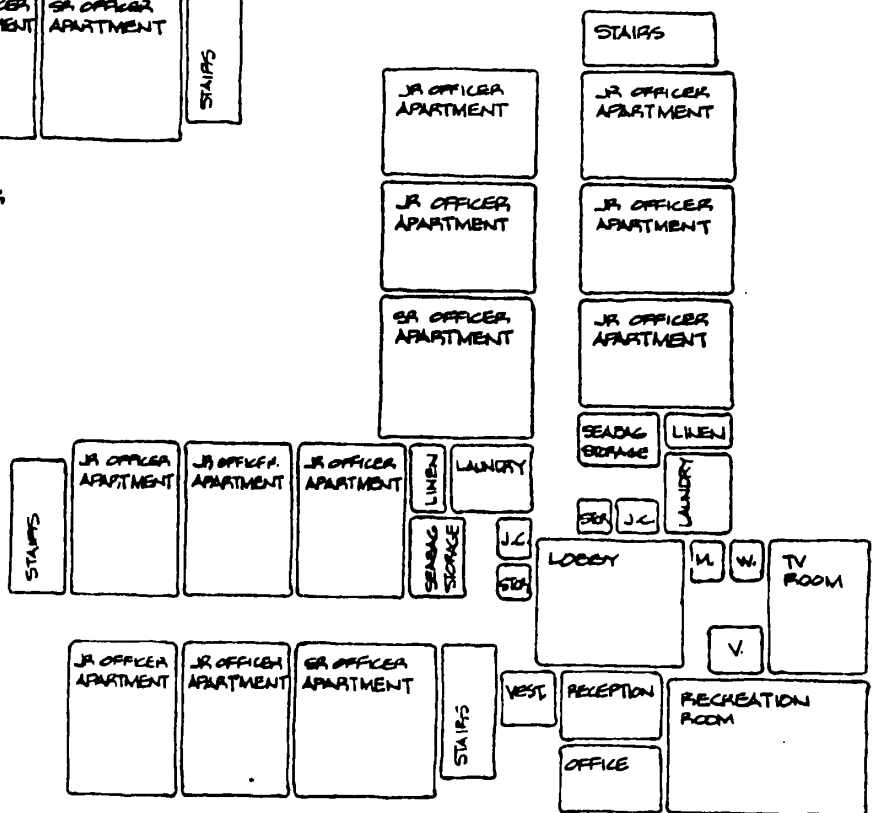




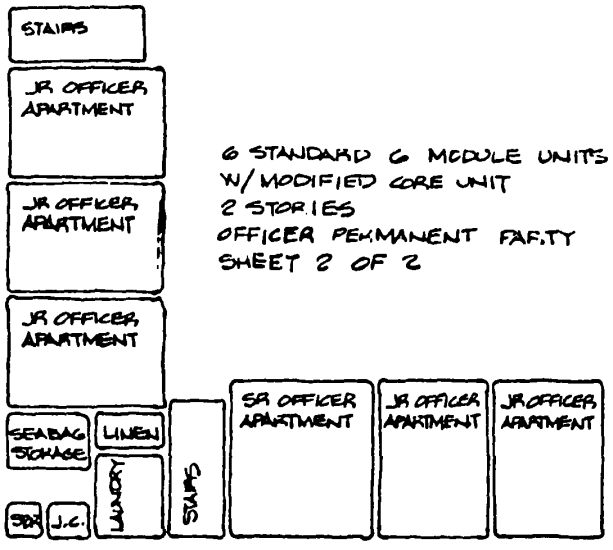
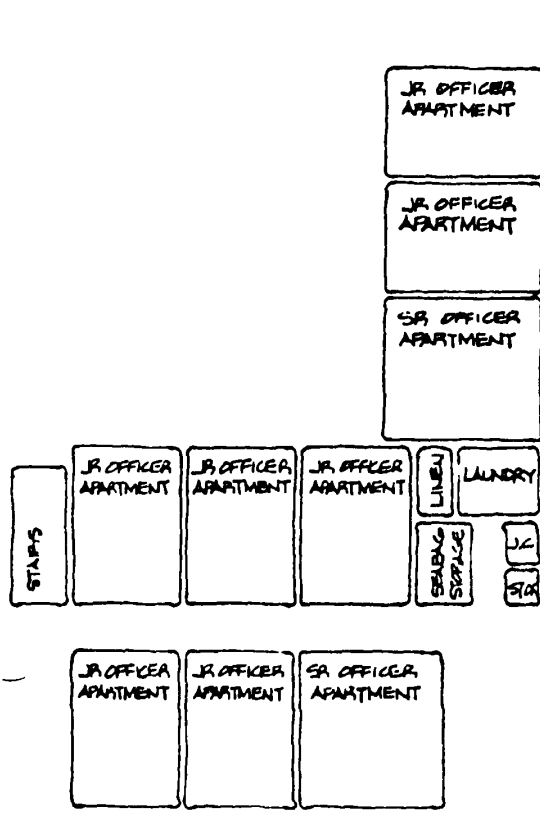
4 STANDARD 6 MODULE UNITS
 W/ MODIFIED CORE UNIT
 2 STORIES
 OFFICER PERMANENT PARTY



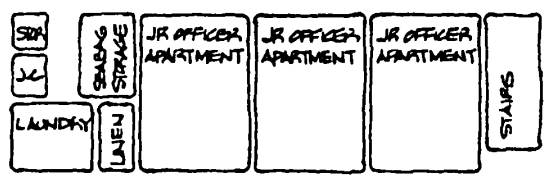
SECOND FLOOR



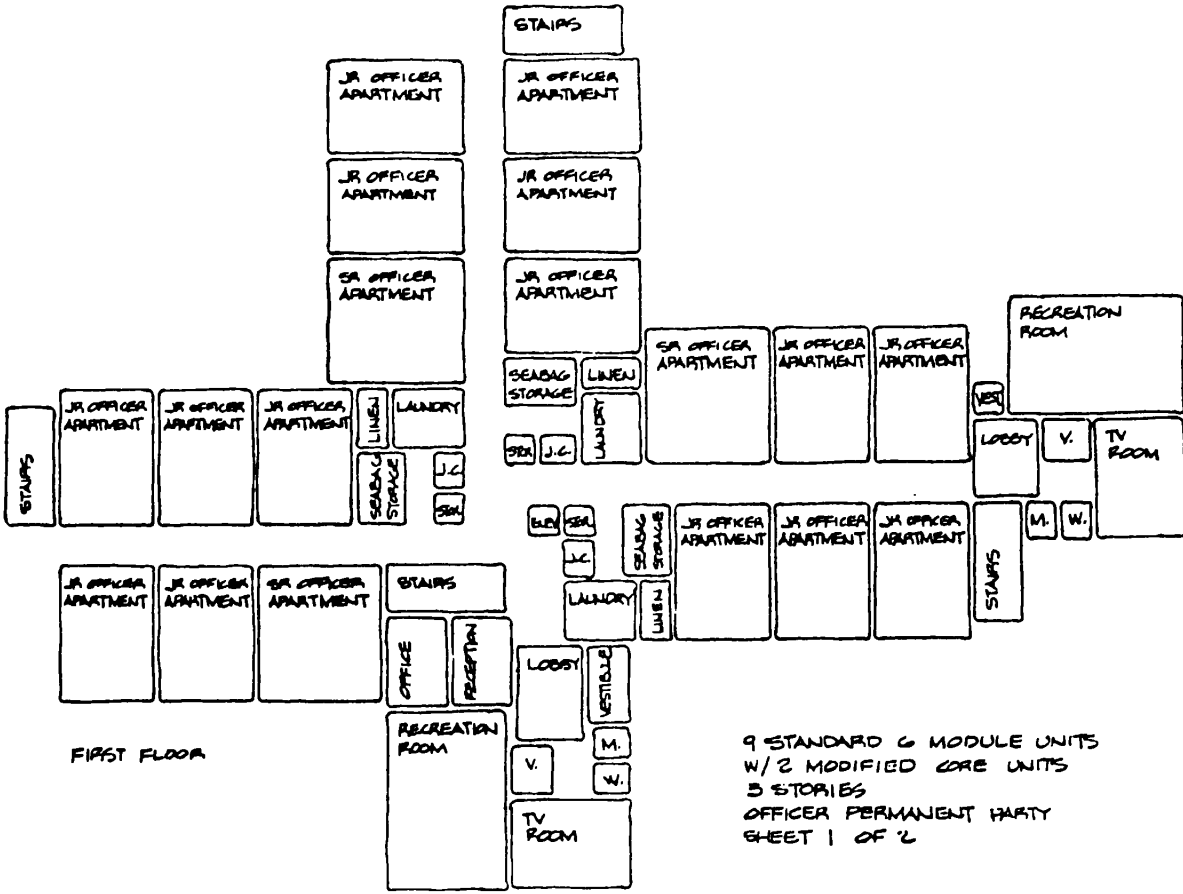
FIRST FLOOR

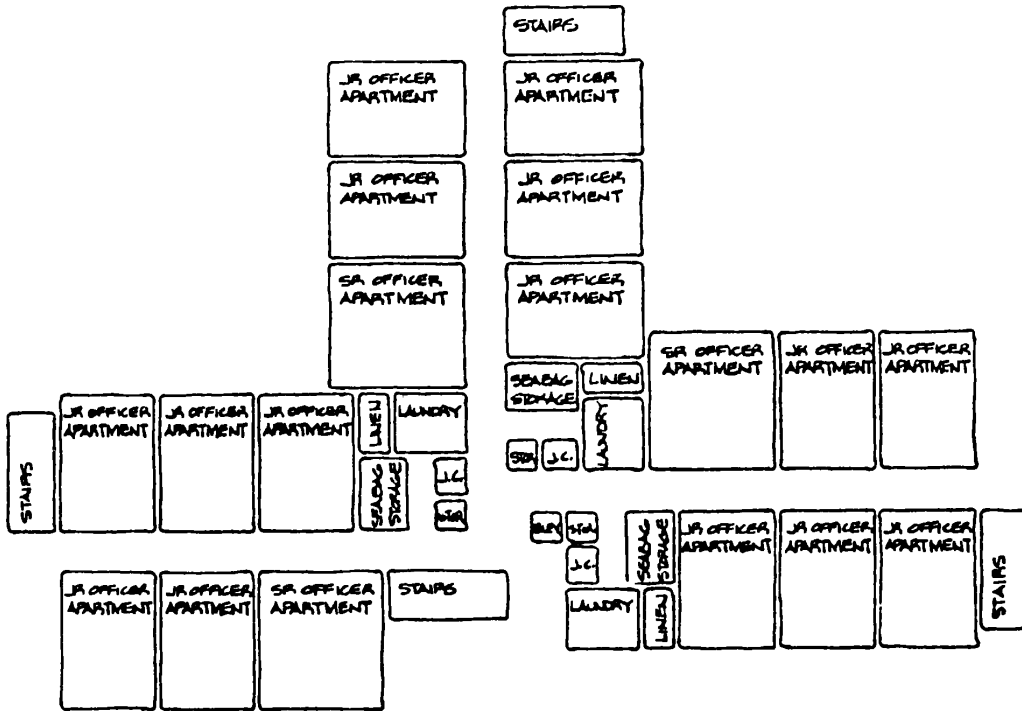


6 STANDARD 6 MODULE UNITS
 W/MODIFIED CORE UNIT
 2 STORIES
 OFFICER PERMANENT PARTY
 SHEET 2 OF 2



SECOND FLOOR.





SECOND FLOOR
AND
THIRD FLOOR

9 STANDARD 6 MODULE UNITS
W/2 MODIFIED CORE UNITS
3 STORIES
OFFICER, PERMANENT PARTY
SHEET 2 OF 2

INDIVIDUAL SPACE CRITERIA

STUDENT OFFICER UPH COMPLEX

UPH facilities for student officers will be programmed and designed for Coast Guard training centers. Usually these UPH complexes will be larger in size than those facilities constructed at operational stations. Each bedroom will house two student officers. This facility is their temporary home since most training courses will not exceed 20 weeks.

In support of the repeatable design policy as outlined by COMDTINST 11010.9, a standardized 12-unit bedroom module and four standardized core unit modules have been developed. The core units are developed around 24, 48, 72, and 96 bedroom modules. The bedroom modules can be added to the core in two to four wings, and two or three stories in height.

The sizes and configuration of spaces within a student officer UPH facility vary from project to project depending upon the number of people to be housed. Basic requirements for the following types of spaces were described earlier in this chapter:

- Bedrooms
- Bathrooms
- Lobby
- Administration
- Public Toilets
- Recreation Room
- TV Room
- Reading Lounge
- Vending Area
- Laundry
- Linen Storage
- Seabag Storage
- Building Storage
- Janitor's Closet

The space relationship matrices and the spatial relationship diagrams show the interrelationships between spaces. Sample layouts for standardized facilities having the following number of bedrooms are shown:

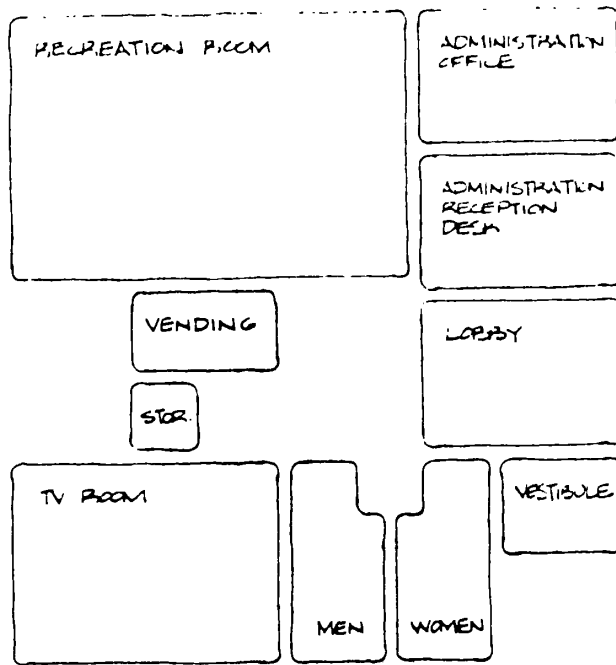
- 24 (48 persons)
- 48 (96 persons)
- 72 (144 persons)
- 96 (192 persons)

The sample layout of spaces suggest just some of the possibilities, however, designers should not be restricted to these variations as long as proposed layouts meet adjacency and other criteria.

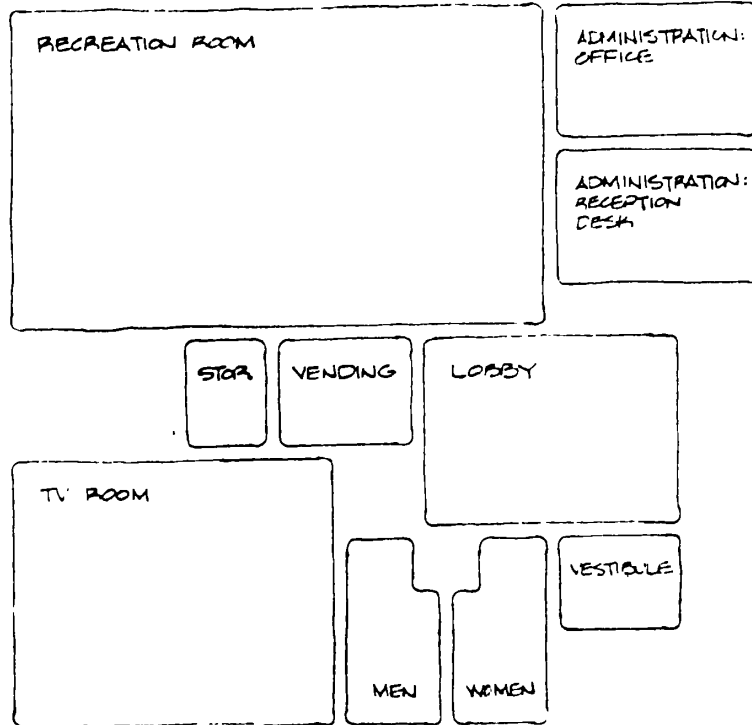
STUDENT OFFICER, UPH	JANITOR'S CLOSET	BLDG STORAGE	SEABAG STORAGE	LINEN STORAGE	LAUNDRY	VENDING AREA	READING LOUNGE	TV ROOM	RECREATION ROOM	PUBLIC TOILETS	ADMINISTRATION	LOBBY	BATHROOMS
RELATIONSHIP OF SPACES WITHIN THE FACILITY													
BEDROOMS	3	3	3	3	3	3	3	5	5	5	4	1	1
BATHROOMS	3	3	4	4	4	4	4	5	5	5	4	1	
LOBBY	4	4	4	4	4	4	4	3	3	1	2		
ADMINISTRATION	4	4	4	4	1	4	4	4	4	3			
PUBLIC TOILETS	2	4	4	4	3	4	3	3	3				
RECREATION ROOM	3	4	4	4	3	3	5	3					
TV ROOM	3	4	4	4	3	3	6						
READING LOUNGE	3	4	4	4	3	3							
VENDING AREA	3	4	4	4	3								
LAUNDRY	2	3	3	1									
LINEN STORAGE	4	4	4										
SEABAG STORAGE	4	4											
BLDG STORAGE	2												

- 1 = ADJACENT AND CONNECTED
- 2 = ADJACENT
- 3 = CLOSE
- 4 = NO SPECIFIED RELATIONSHIP
- 5 = MAY BE DISTANT
- 6 = MUST BE DISTANT

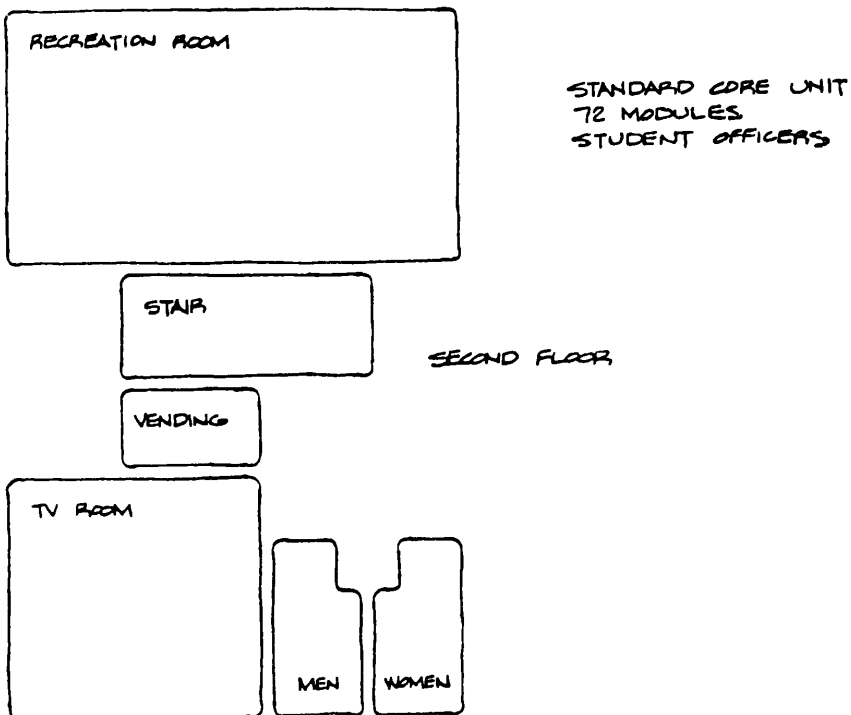
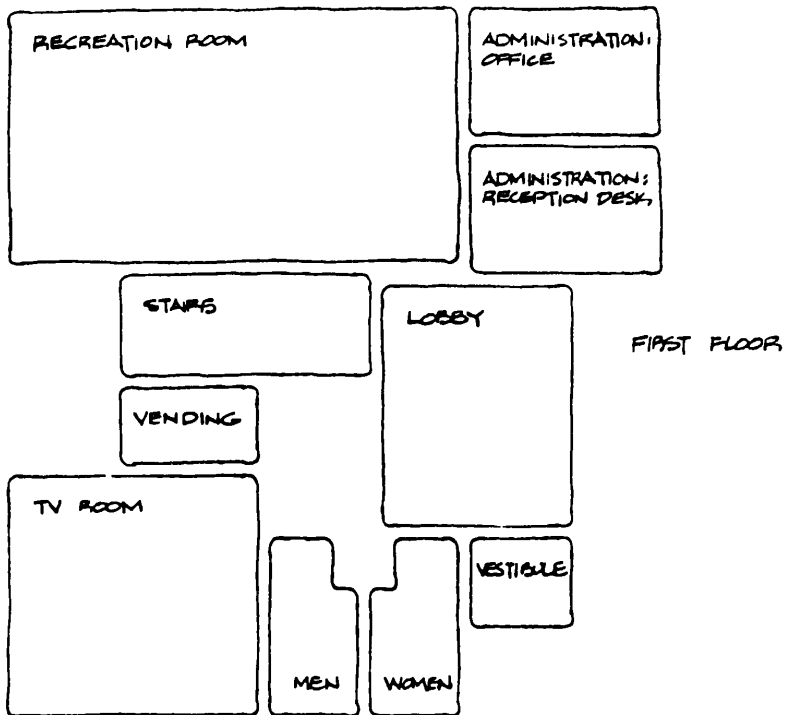
SPACE
RELATIONSHIP
MATRIX.

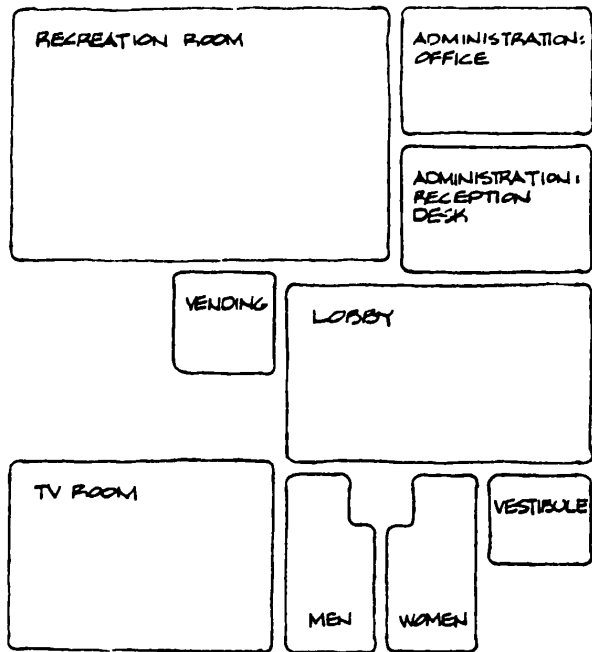


STANDARD CORE UNIT
24 MODULES
STUDENT OFFICERS



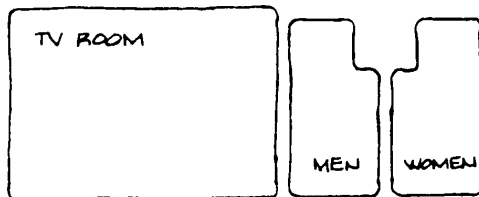
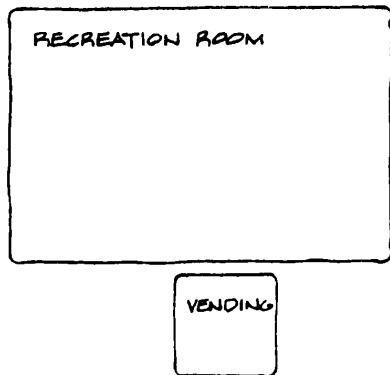
STANDARD CORE UNIT
48 MODULES
STUDENT OFFICERS



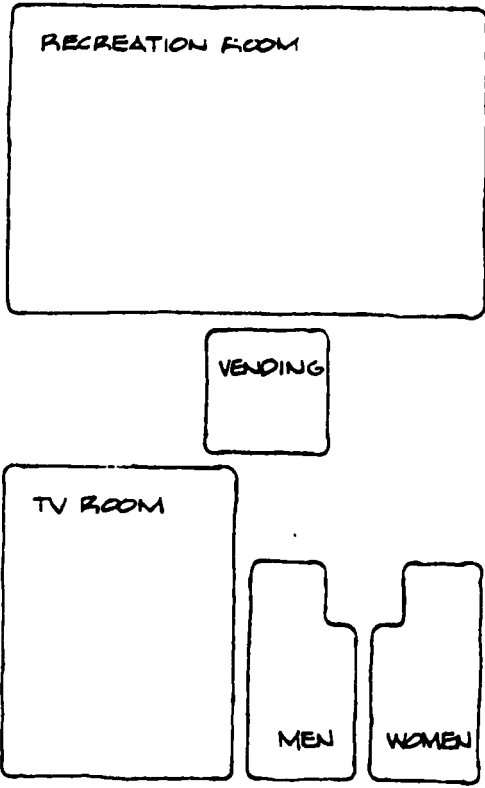


FIRST FLOOR

STANDARD CORE UNIT
 96 MODULES
 STUDENT OFFICERS
 SHEET 1 OF 2

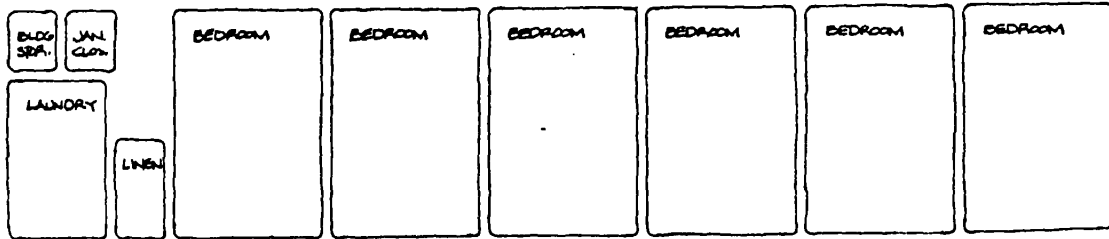
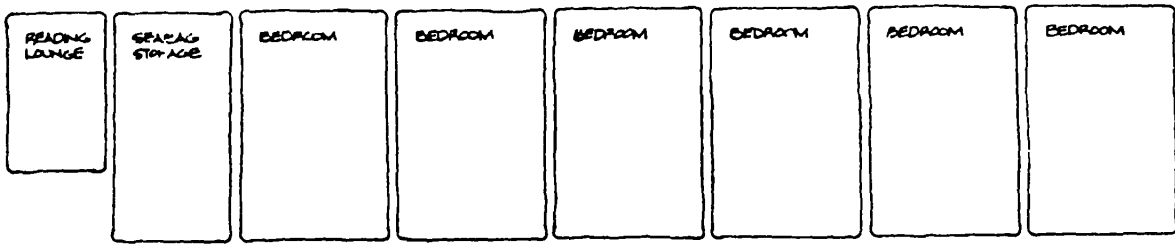


SECOND FLOOR

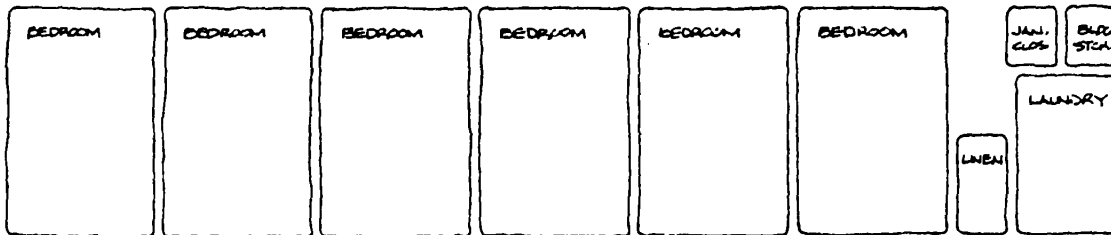
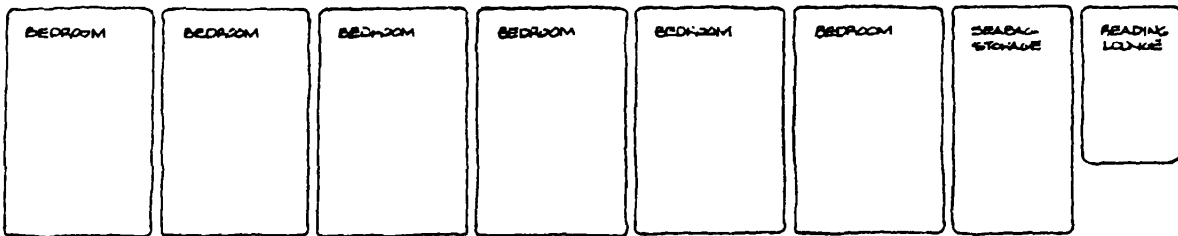


FIRST FLOOR

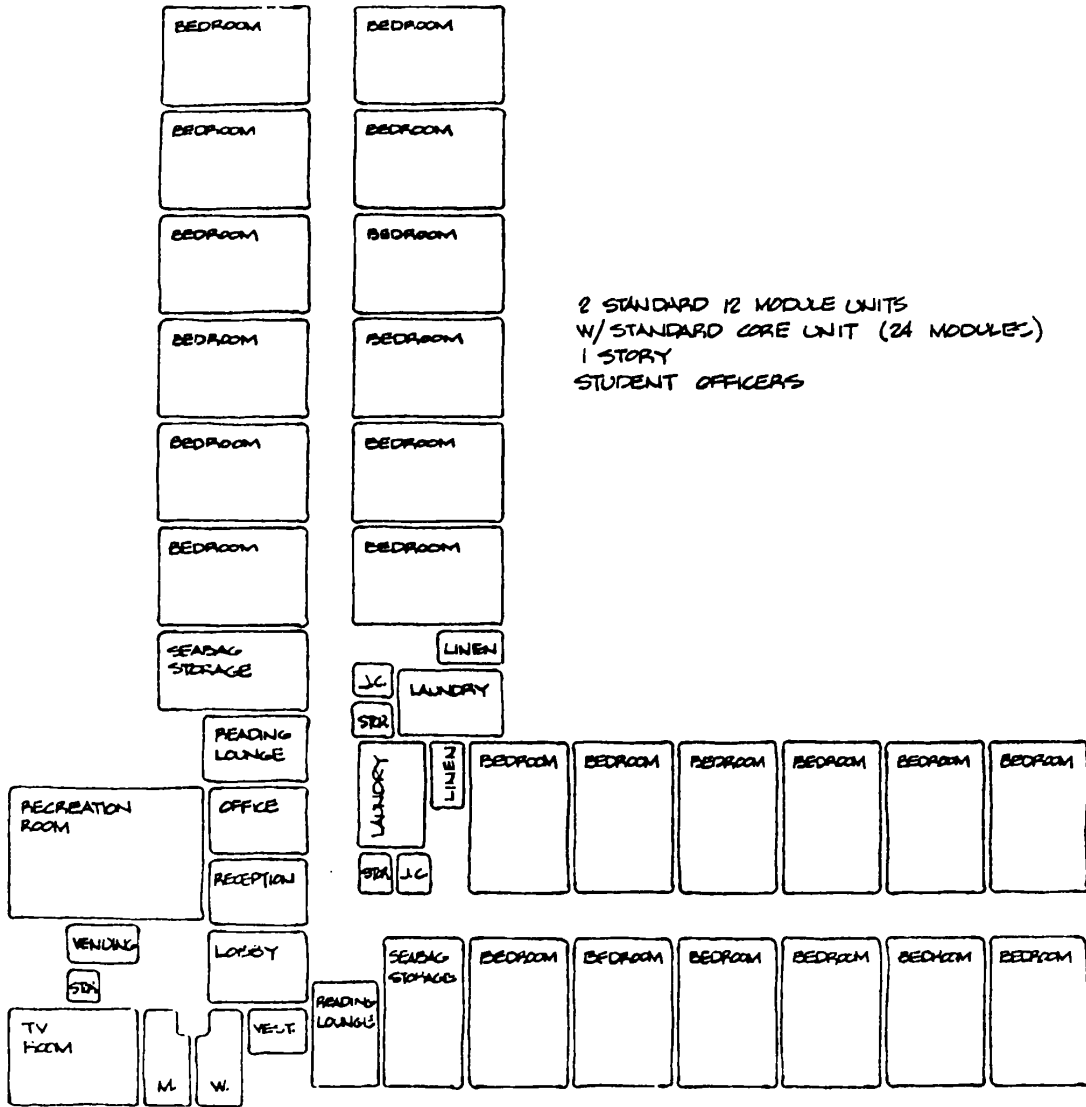
STANDARD SATELLITE CORE UNIT
96 MODULES
STUDENT OFFICERS
SHEET 2 OF 2

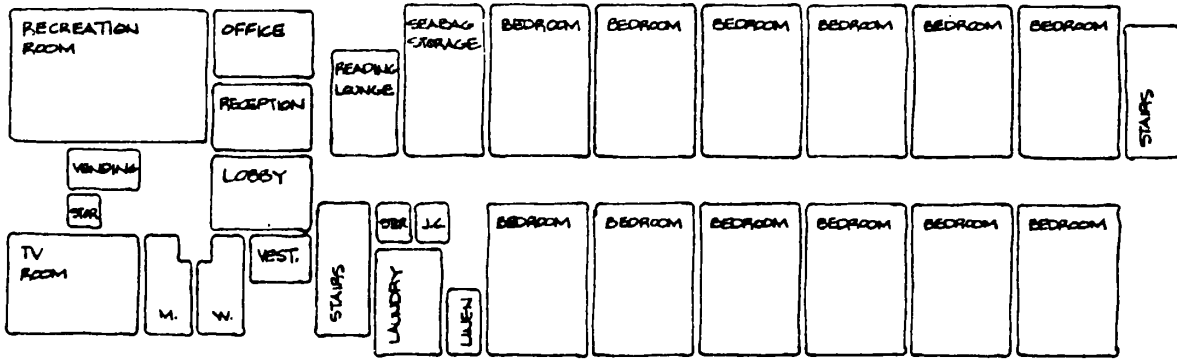


STANDARD 12 MODULE UNIT
STUDENT OFFICERS

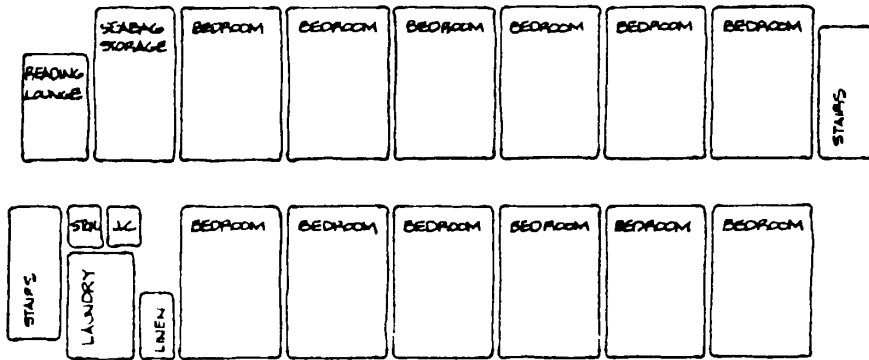


STANDARD 12 MODULE UNIT
STUDENT OFFICERS
OPPOSITE HAND



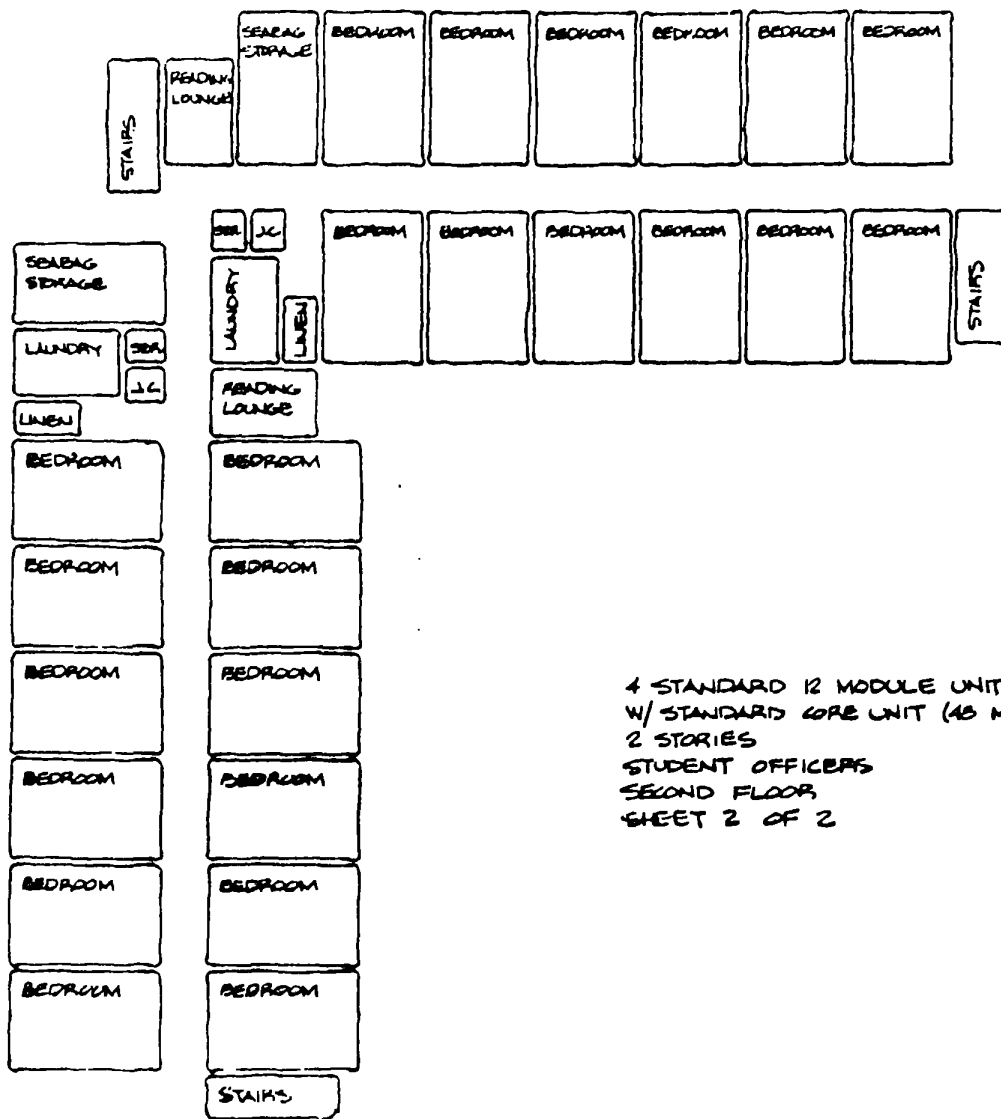


FIRST FLOOR



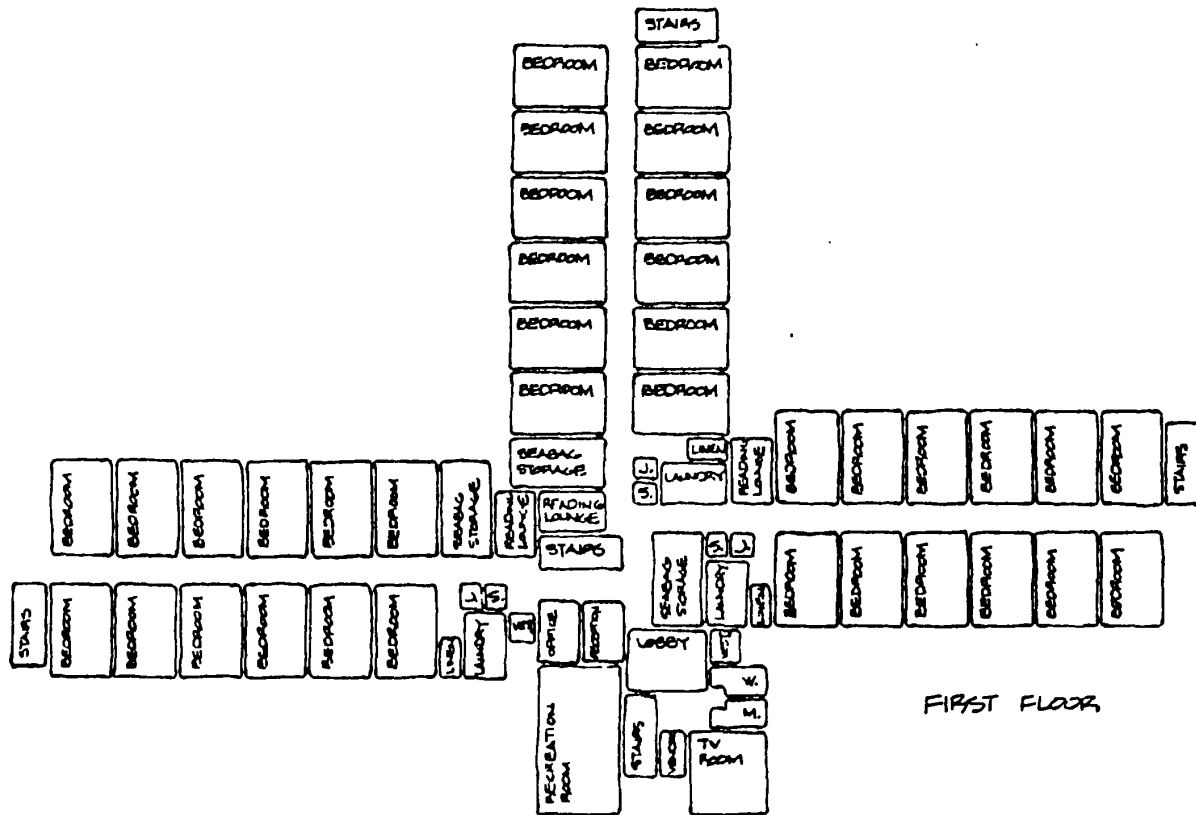
SECOND FLOOR

2 STANDARD 12 MODULE UNITS
 W/ STANDARD CORE UNIT (24 MODULES)
 2 STORIES
 STUDENT OFFICERS



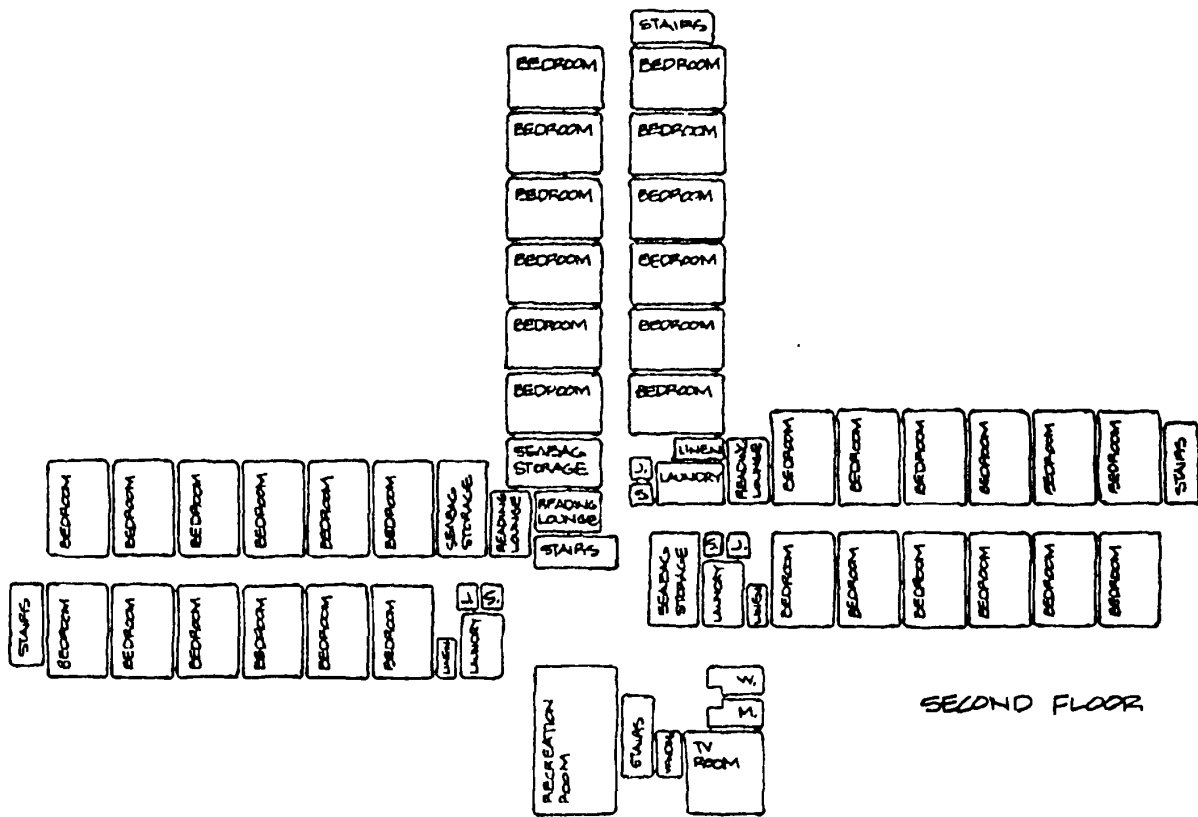
4 STANDARD 12 MODULE UNITS
 W/ STANDARD CORE UNIT (18 MODULES)
 2 STORIES
 STUDENT OFFICERS
 SECOND FLOOR
 SHEET 2 OF 2

SECOND FLOOR

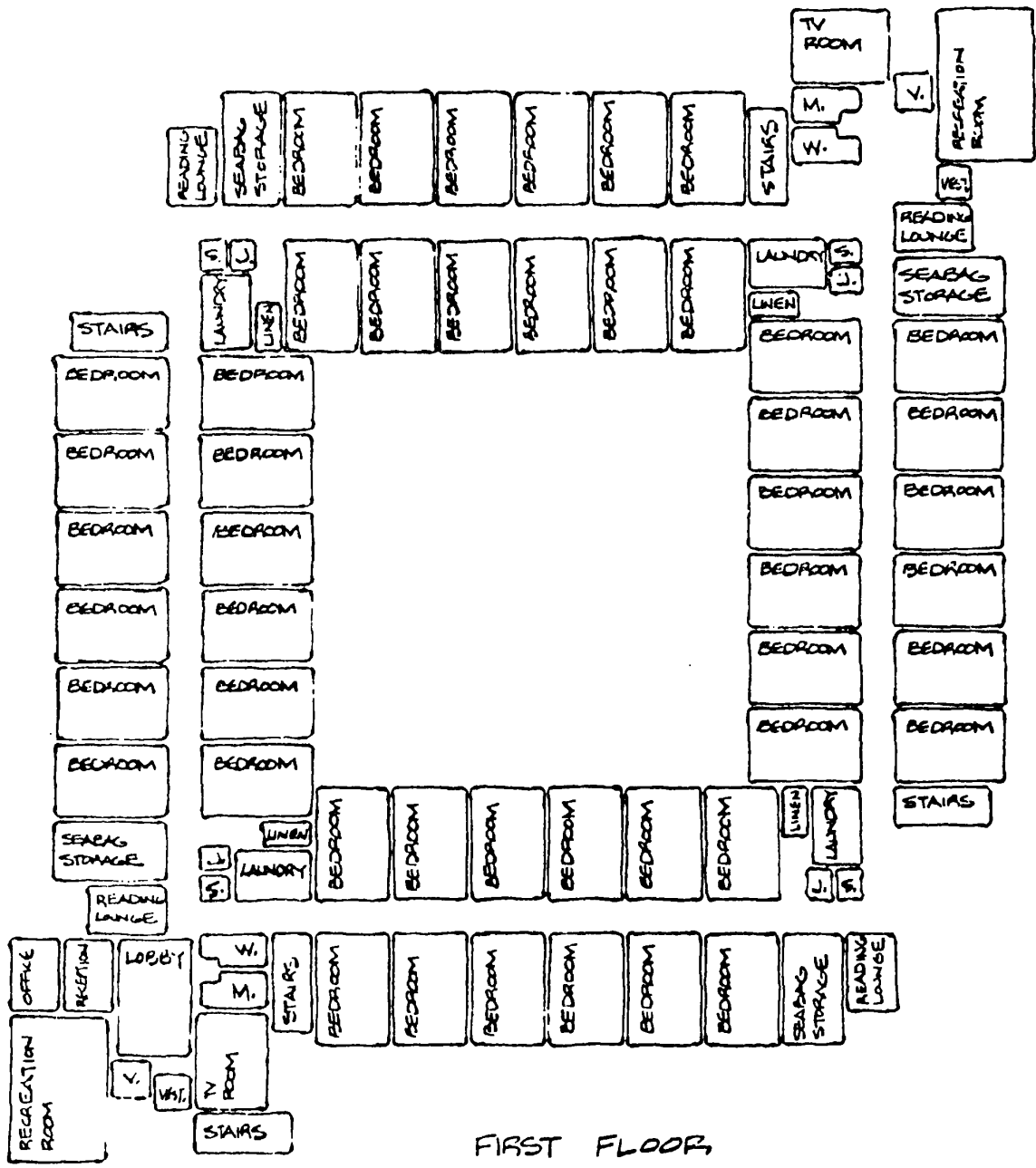


FIRST FLOOR

6 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNIT (72 MODULES)
 2 STORIES
 STUDENT OFFICERS
 FIRST FLOOR
 SHEET 1 OF 2

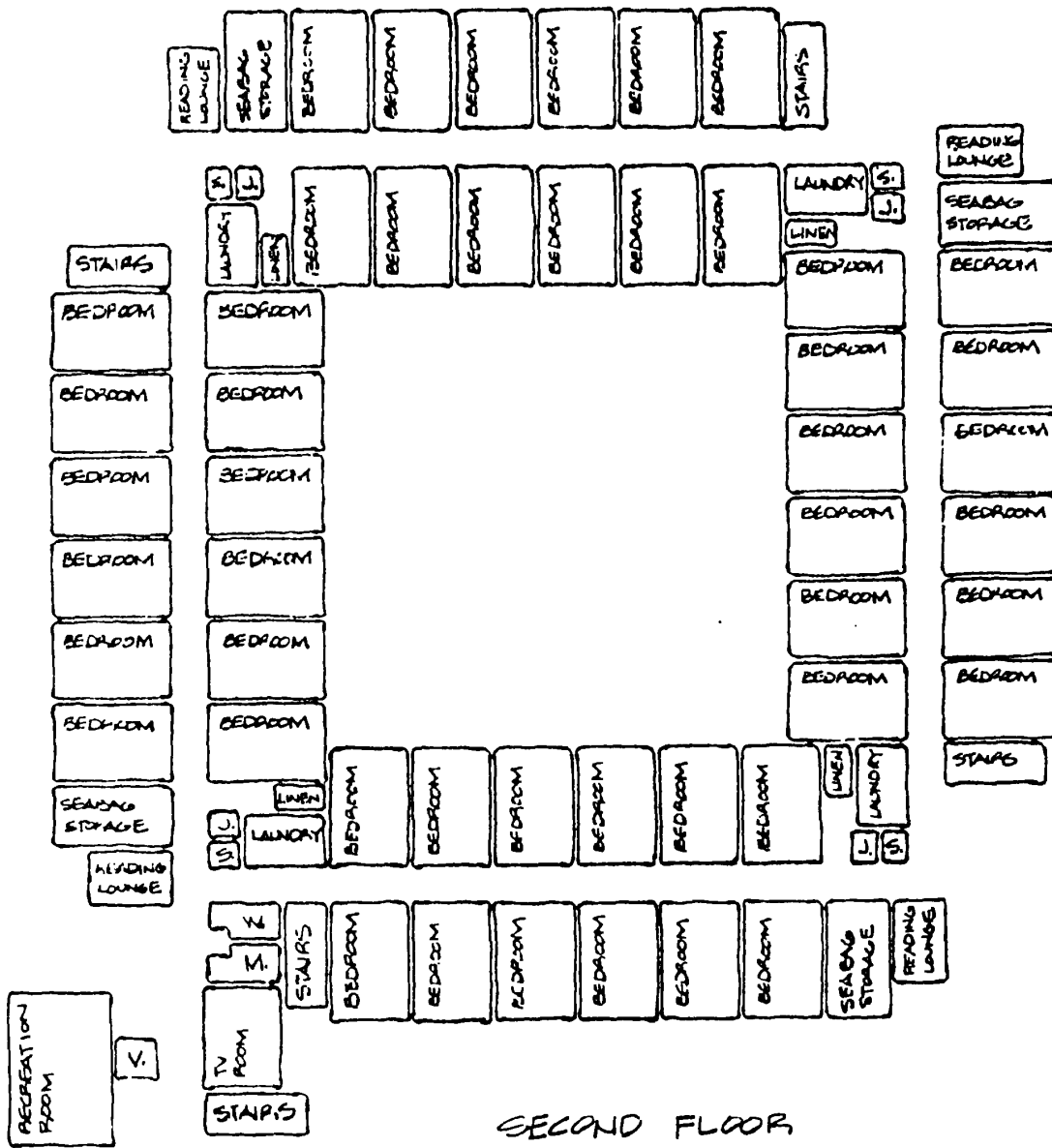


6 STANDARD 12 MODULE UNITS
 W/ STANDARD CORE UNIT (72 MODULES)
 2 STORIES
 STUDENT OFFICERS
 SECOND FLOOR
 SHEET 2 OF 2

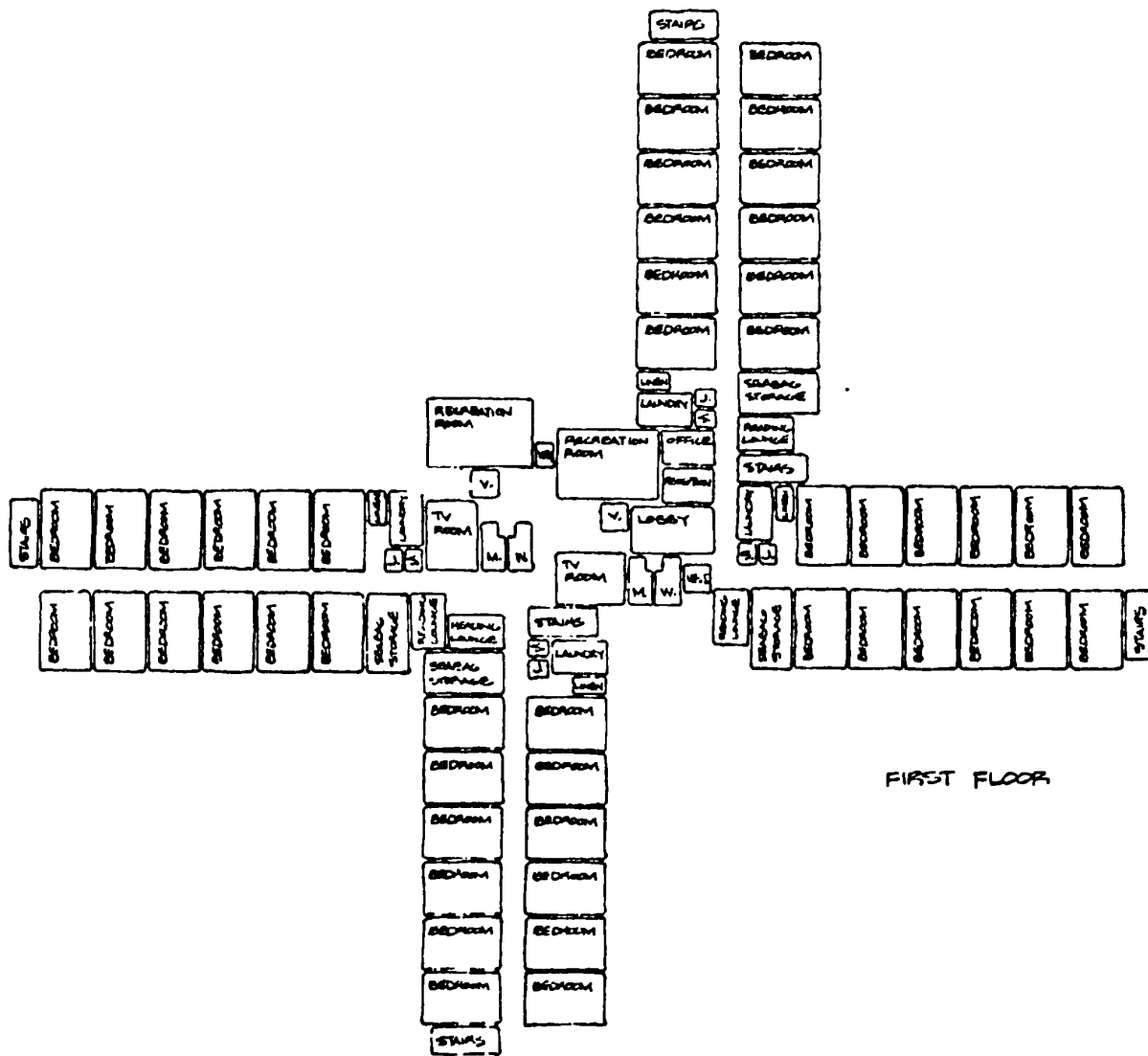


FIRST FLOOR

8 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNITS (96 MODULES)
 2 STORIES
 STUDENT OFFICERS
 FIRST FLOOR
 SHEET 1 OF 2

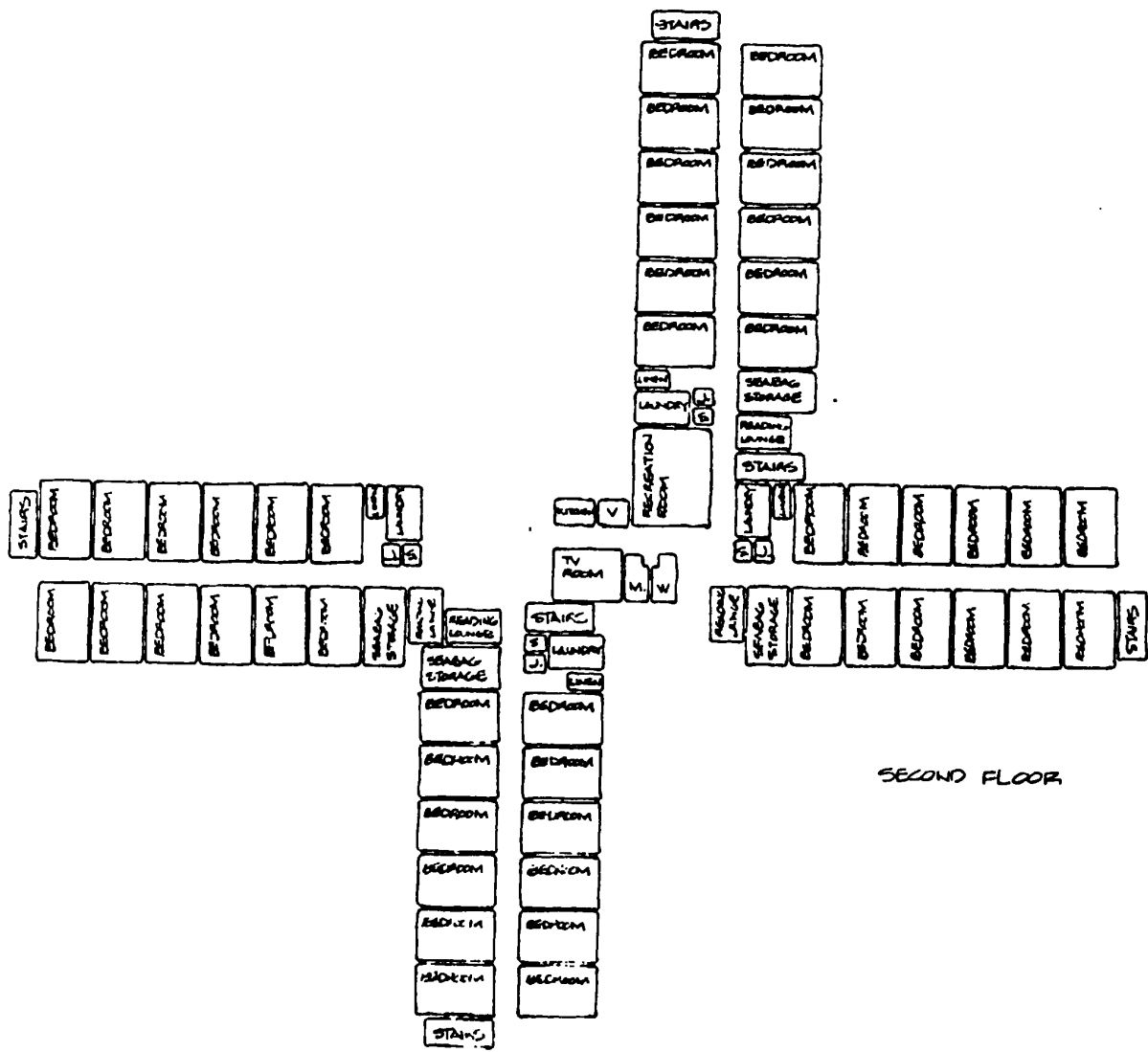


8 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNITS (96 MODULES)
 2 STORIES
 STUDENT OFFICERS
 SECOND FLOOR
 SHEET 2 OF 2



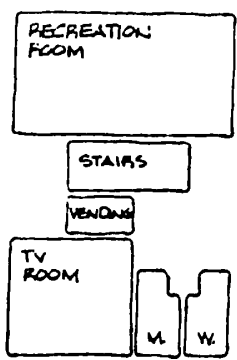
FIRST FLOOR

8 STANDARD 12 MODULE UNITS
 W/ STANDARD CORE UNITS (96 MODULES)
 2 STORIES
 STUDENT OFFICERS
 FIRST FLOOR
 SHEET 1 OF 2

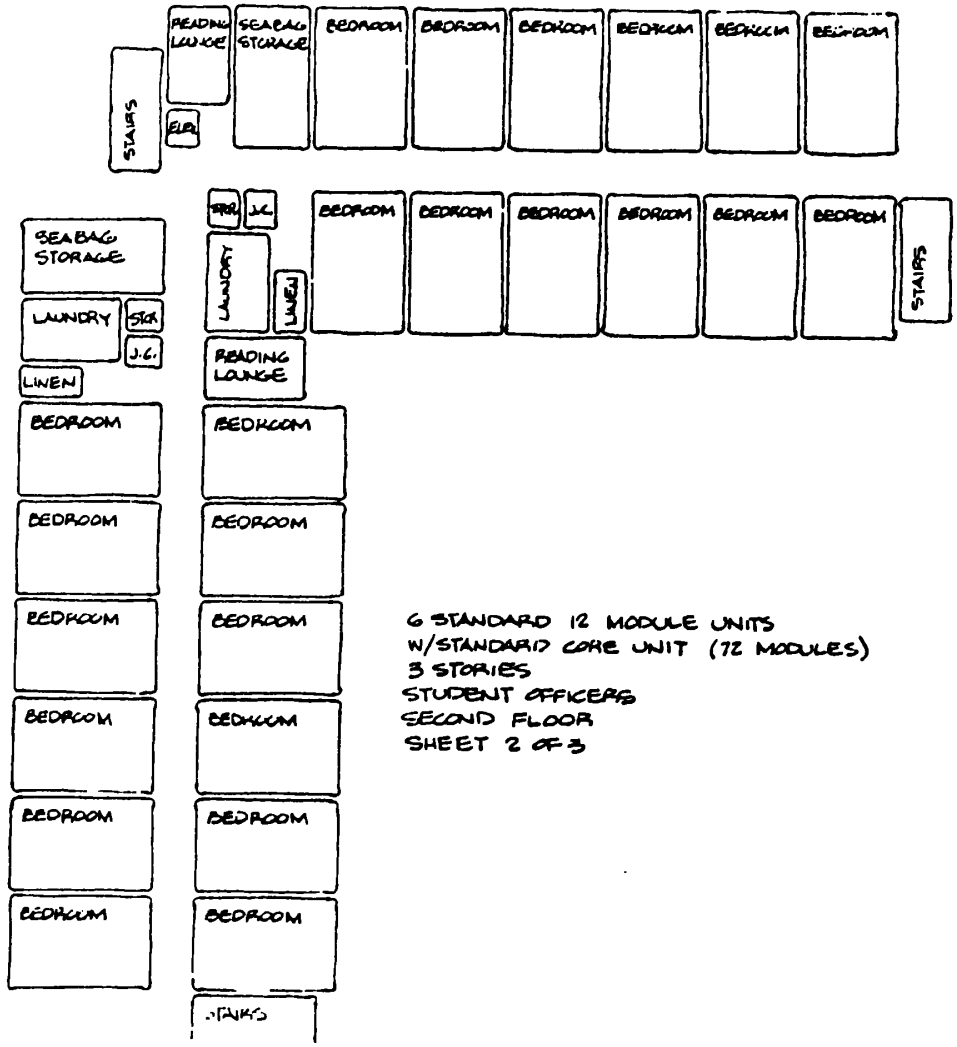


SECOND FLOOR

8 STANDARD 12 MODULE UNITS
 W/STANDARD CORE UNITS (96 MODULES)
 2 STORIES
 STUDENT OFFICERS
 SECOND FLOOR
 SHEET 2 OF 2

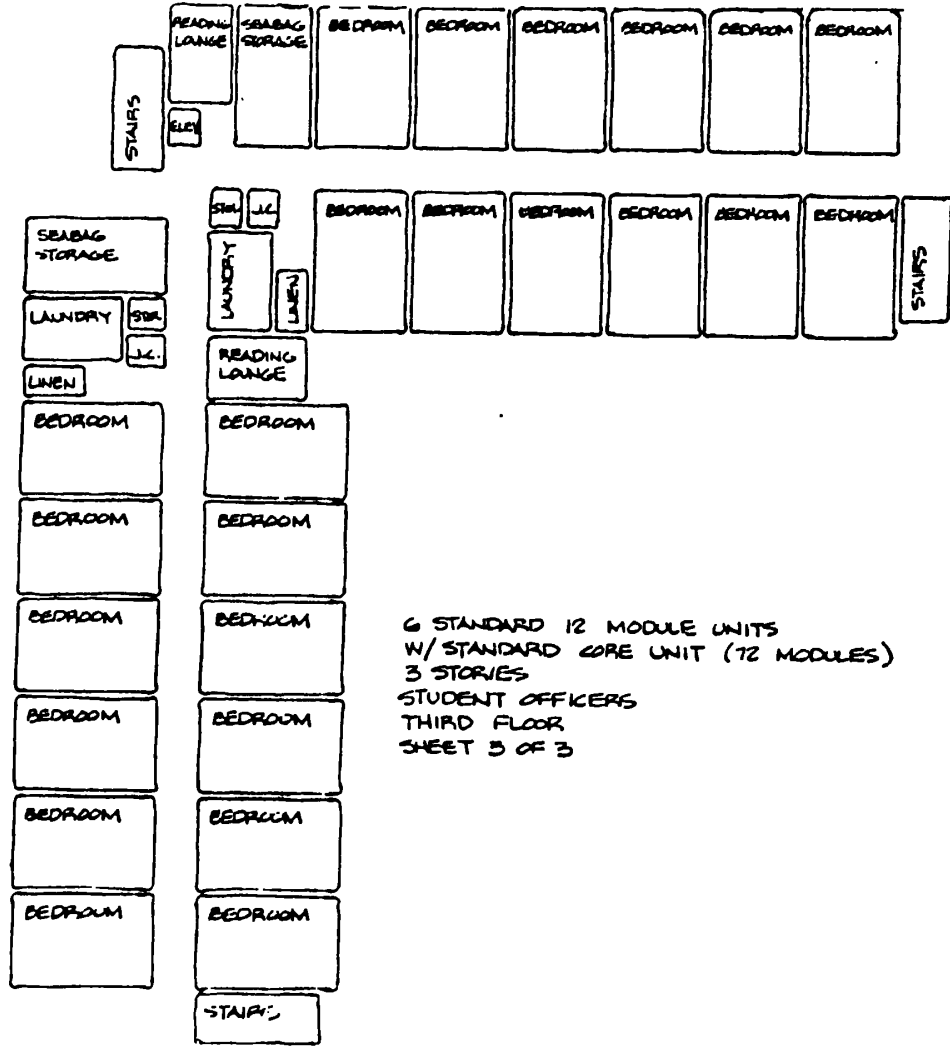


SECOND FLOOR



6 STANDARD 12 MODULE UNITS
W/STANDARD CORE UNIT (72 MODULES)
3 STORIES
STUDENT OFFICERS
SECOND FLOOR
SHEET 2 OF 3

THIRD FLOOR



6 STANDARD 12 MODULE UNITS
W/ STANDARD CORE UNIT (12 MODULES)
3 STORIES
STUDENT OFFICERS
THIRD FLOOR
SHEET 3 OF 3

INDIVIDUAL SPACE CRITERIA

STANDARD UPH COMPLEXES

For the user's convenience, a chart based on the space allocation lists, the space relationship matrices, and the spatial relationship diagrams has been developed for sizing standard UPH complexes. The purpose of the chart is to give quick reference to gross square feet requirements once the building type, number of stories, number of modules, and number of wings have been determined. The chart may also be entered based on number of persons to be housed.

If a complex is designed for mixed usage (i.e., permanent party and students), this chart should not be used. An individual allocation list for that project should be completed.

STANDARD
UPH
COMPLEXES

		ONE STORY								TWO STORIES						THREE STORIES										
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	1	2	3	4	5	6					
721-15	RECRUITS	MODULES													4	6									7	10
		WINGS													3	4									3	4
		PERSONS													240	360									420	600
		GROSS SF (000)													310	550									620	860
721-10	ENLISTED PERMANENT PARTY	MODULES	8	12	16	20	24	24	36	16	24	28	36	48	60	72	36	72	108	144						
		WINGS	1	1	2	2	2	3	3	1	1	2	2	2	3	3	1	2	3	4						
		PERSONS	24	36	48	60	72	72	108	48	72	84	108	144	180	216	108	216	324	432						
		GROSS SF (000)	69	88	111	132	149	154	213	111	149	173	203	287	349	415	213	415	618	820						
721-20	ENLISTED STUDENTS	MODULES								24			36	48	60	72	36	72	108	144						
		WINGS								1			2	2	3	3	1	2	3	4						
		PERSONS								72			108	144	180	216	108	216	324	432						
		GROSS SF (000)								153			219	295	359	427	219	427	636	844						
724-10	OFFICER PERMANENT PARTY	MODULES	6	12	18	24				12	24	36	48				18	36	54	72						
		WINGS	1	2	3	4				1	2	3	4				1	2	3	4						
		PERSONS	6	12	18	24				12	24	36	48				18	36	54	72						
		GROSS SF (000)	35	70	105	159				70	159	228	297				125	218	317	450						
724-20	STUDENT OFFICERS	MODULES				24				24			48	72	96	36	72	108	144							
		WINGS				2				1			2	3	4	1	2	3	4							
		PERSONS				48				48			96	144	192	72	144	216	288							
		GROSS SF (000)				147				147			279	418	556	212	418	628	838							

ENLISTED UPH COMPLEXES

WITH STANDARD MODULAR WINGS (8 OR 12 ROOMS PER WING); 1 TO 4 WINGS; 1 TO 3 STORIES

CORE	30 MODULE CORE						36 M.G.			72 MODULE CORE								108 MODULE CORE												
	8	12	16	20	24	28	36	54	72	90	108	144	180	216	252	288	324	360	432	504	576	648	720	792	864	936	1008	1080	1152	
PERSONS PER ROOM	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	
(# OF WINGS) - (# OF ROOMS)	1-8	1-12	2-8	1-8	3-8	2-8	4-8	3-12	5-8	4-8	6-8	2-8	7-8	5-12	8-8	4-8	9-8	5-8	10-8	7-12	11-8	4-8	8-8	5-8	4-8	13-8	5-8	6-12	9-12	12-12
(# OF WINGS) - (# OF ROOMS)					2-12	1-12	2-12		2-8	1-8	2-12	3-12	4-12	2-12	3-12	1-8	5-12	6-12	4-12	3-12	6-12		5-12							

KEY:
 number of modular wings 1-8 rooms per wing
 e. to get 8 modules need 1 modular wing containing 8 rooms.

5-8
 4-12
 6-8
 4-12
 3-8
 6-12

OFFICER, PERMANENT PARTY UPH COMPLEXES

WITH STANDARD MODULAR WINGS (6 APARTMENTS PER WING);
1 TO 4 WINGS; 1 TO 3 STORIES

CORE	NONE	1 STANDARD CORE					2 STANDARD CORES					
APARTMENTS	6	12	18	24	30	36	42	48	54	60	66	72
JR OFFICERS	5	10	15	20	25	30	35	40	45	50	55	60
SG OFFICERS	1	2	3	4	5	6	7	8	9	10	11	12
(# OF FLOORS)- (# OF WINGS)	1-1	1-2	1-3	1-4	1-5	2-3		2-4	3-3	2-5		3-4
(# OF FLOORS)- (# OF WINGS)		2-1	3-1	2-2		3-2						2-6

KEY:

number of floors 2-3 number of wings per floor
i.e. to get 36 apartments need 2 floors and 3 wings
per floor with 6 apartments per wing.

STUDENT OFFICER UPH COMPLEXES

WITH STANDARD MODULAR WINGS (12 ROOMS PER WING);
1 TO 4 WINGS; 1 TO 3 STORIES

CORE	24 M.C.	48 M.C.	72 M.C.	96 M.C.						
MODULES	12	24	36	48	60	72	84	96	108	144
PERSONS <small>2 per room</small>	24	48	72	96	120	144	168	192	216	288
(# OF FLOORS)- (# OF WINGS)	1-1	1-2	1-3	1-4	2-1	2-3	3-2	2-4	3-3	3-4
(# OF FLOORS)- (# OF WINGS)		2-1	3-1	2-2		3-2				

KEY:

number of floors 2-2 number of wings per floor
i.e. to get 48 modules need 2 floors and 2 wings
per floor with 12 rooms per wing.

ILLUSTRATIVE DESIGNS

GENERAL

Chapter 5 illustrates criteria applications in the form of three example designs for UPH facilities. These example designs correspond to the following size of facilities:

- Enlisted permanent party; 24 modules; 24-72 persons
- Enlisted students; 72 modules; 216 persons
- Officer permanent party; 12 modules; 12 persons

Each example is based upon planning, programming, and design criteria presented in Chapters 2, 3, and 4.

Alternative design styles are indicated by various elevation schemes.

The following illustrations are presented for each size facility:

- Area tabulations
- Schematic diagram
- Illustrative site plan
- Floor plan
- Elevations
- Sections

ILLUSTRATIVE DESIGNS

Illustrative Designs to be published later.

APPENDIX

REFERENCES

Coast Guard Publications

CG-233 Telecommunications Manual
CG-263 Coating and Color Manual
CG-368-3 NBC Defense Preparedness Plan
M5312.11 Staffing and Standards Manual
M11000.1 Civil Engineering Manual
M11000.3 Water Supply and Waste Water Disposal Manual
M11000.6 Shore Facilities Energy Management Manual
M11010.6 Shore Facilities Planning Manual
M11010.11 Facility Category Codes
M11012.3 Multi-Mission Station Design Guide
M11101.13 Housing Manual
M16010.1 Planning and Programming Manual
COMDTINST 5560.3 Personnel Parking Facilities Program
CG-ECV-2-82 Guide for Restoring and Preserving Old and Historic Properties
CG-ECV-1-83 Barrier Free Design

Navy Publications

NAVFAC DM-1 Architecture
NAVFAC DM-36.1 Unaccompanied Personnel Housing
NAVFAC DM-36.2 Unaccompanied Enlisted Quarters
NAVFAC DM-36.3 Unaccompanied Officer Quarters
NAVFAC P-80 Facility Planning Factor Criteria for Navy and Marine Corps Shore Installations
NAVFAC P-442 Economic Analysis Handbook
NAVFAC P-457 Planning and Design of Outdoor Sports Facilities

Other Publications

ANSI Standards
ASHRAE Bulletins
ASHRAE Handbook of Fundamentals
ASHRAE Systems Guide
BOCA Basic Building Code
Illuminating Engineering Society (IES) Lighting Handbook
National Electrical Code (NEC)
National Fire Protection Association (NFPA) codes
Standard Building Code
Underwriter's Laboratories (UL)
Uniform Building Code (UBC)

APPENDIX

GLOSSARY/LIST OF ABBREVIATIONS AND ACRONYMS

AC&I--acquisition, construction, and improvement

AC&I Data Sheet--the initial document which identifies a problem which potentially may require a capital investment to solve; submitted by district or headquarters unit commanders

AC&I Project Proposal Report (AC&I PPR)--a document submitted by district commanders in support of capital investment projects at their shore facilities; gives design and engineering concepts, cost estimates, status of land, engineering alternatives considered, analysis of costs, analysis of benefits, discussion of environmental effects

BOQ--bachelor officers quarters

Contract Documents--the third phase in the design process occurring after the design development phase; consists of the project working drawings and specifications

CPM--critical path method

dB--decibel

Design Development--the second phase in the design process occurring after schematic design and before contract documents; the purpose is to fix and describe the size and character of the entire project

Development Plan (DP)--a document from a district or headquarters unit that shows in narrative and graphic form the present composition of a shore facility, its activities, functions, and purposes; proposes timely, efficient, orderly development to meet its planned operational and support workload; prepared for major shore facilities that normally require multi-year AC&I funding; precedes preparation of a resource change proposal or AC&I project proposal report

ELECTRONALT--electronic alternation request; documents the definitive electronics requirements for a proposed project

FC--footcandles

Gross Area--the outside to outside dimension of floor space; includes all walls, partitions, circulation areas, and mechanical spaces

HVAC--heating, ventilation, and air-conditioning

Individual Space Criteria -detailed architectural, engineering, and interior design data on spaces listed in space allocations list

NEC--national electric code

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Net Area--the clear inside floor space as measure between faces of walls or partitions; excludes wall and partition thickness, stairways, corridors, and mechanical equipment rooms

NFPA--national fire protection association

Planning Proposal (PP)--a document from a district or headquarters unit recommending establishment of new facilities or a change in existing plans, facilities, or methods of operation; normally proceeds preparation of a resource change proposal or AC&I project proposal report

Program--a major Coast Guard endeavor defined in terms of specific actions and resource allocations required to reach an objective

Program Director--the flag officer or civilian office chief at headquarters who is immediately responsible to the Commandant for the overall management of a program; is responsible for the effective, efficient accomplishment of program objectives through short and long range planning/programming or personnel and material resources

Program Manager--the staff officer at headquarters designated by and responsible to the program director for the detailed management of a program

Resource Change Proposal (RCP)--a document used by a program director, prepared by a program manager, and submitted to the Chief of Staff; it requests a change in resources within a specific time frame that begins in a future year

Schematic Design--the first phase in the design process occurring after the facility program and before design development; is used to assist the client in graphically understanding the program; often more than one solution is prepared listing of facility spaces and square feet required to perform its function

Space Relationship Matrix--a matrix establishing the relative interrelationships between spaces listed on the space allocations list

Spatial Relationship Diagram--a bubble diagram graphically solving the space relationship matrix

STRUCTALT--structure alteration request; documents the proposed course of action and sets forth definitive engineering requirements of a project as well as a proposed design and construction schedule

UPH--unaccompanied personnel housing