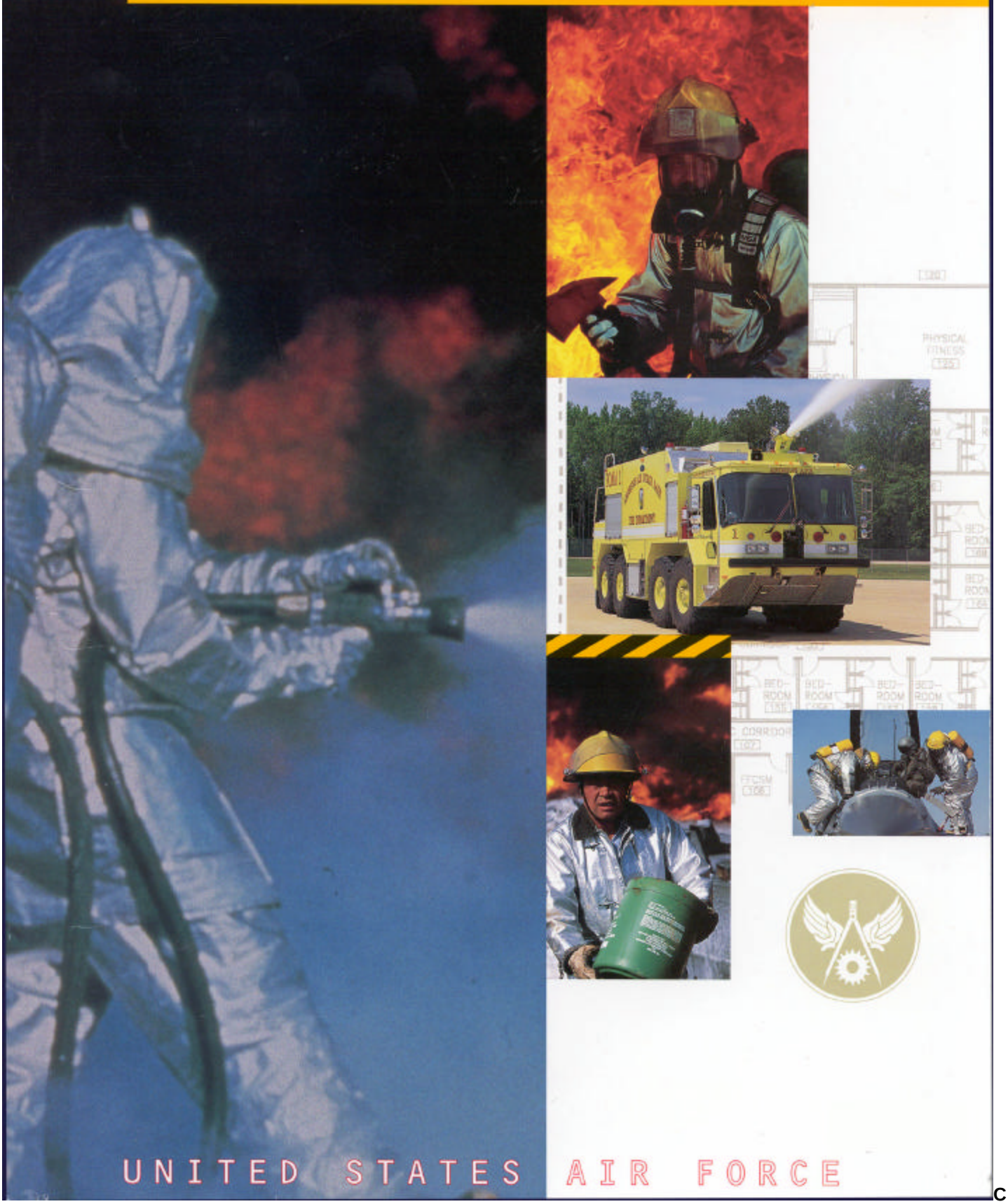
FIRE STATION DESIGN GUIDE



UNITED STATES AIR FORCE

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ommanders message:

We are dedicated to providing our firefighters first-rate fire stations. Those stations serve a dual purpose. First, they are emergency response facilities for firefighters who protect our people, aircraft, facilities and equipment 24 hours a day, 365 days a year. Just as important, the fire stations "home away from home" for our firefighters, who stand ready to respond to a wide variety of emergencies during many hours on duty.

We ask a lot of our firefighters - men and women who daily prove their readiness - to risk it all for us. In return, we will ensure they have a quality environment in which to work and live - that's what this guide is all about. Our Air Force standards are spelled out in this Fire Station Design Guide. It will be crucial to your success in improving mission capability and quality of life for our firefighters.

RONALD R. FOGLEMAN
GENERAL, USAF
COMMANDER

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THE CIVIL ENGINEER

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CHAPTER 1

A PURPOSE

This design guide provides the basic criteria to evaluate, plan, program. and design standardized Air Force fire station facilities for the United States Air Force. This information is intended to make wing commanders, base civil engineers, fire chiefs, and designers aware of the unique functional design requirements for the facilities, and to provide a basis for developing main and satellite fire station projects.

The upgrade and renovation of existing fire stations and the proper planning., programming, and design of new facilities will ensure the safety of all personnel and support our vision: "To Defend the United States Through Control and Exploitation of Air and Space."

B DESIGN GUIDE SCOPE AND USE

This design guide applies to existing and future fire stations. Criteria for determining project requirements, site evaluation and planning, and overall facility design should be used in addition to other Air Force and Department of Defense (DoD) documents. It is intended to supplement existing informational resources needed to identify project requirements and successfully prepare project designs. Further information on individual projects and design requirements must be obtained at the installation level.

This design guide is not intended to restrict designs to single-story facilities only. Site circumstances might require the use of two-story structures. If used, optimize a two-story facility by locating personnel assigned to operations functions on the first floor, and limit second story occupancy to the administrative, fire alarm communications center, and fire prevention functions.

1. PROJECT INITIATION. The information required to prepare a DD Form 1391, which initiates project development, is found in Chapter 2. This includes consideration of other space criteria, overall building size, site evaluation, and special factors to be included in the cost estimates.

When initiating a fire station renovation project, consider the building's structural stability, age, and space availability to accommodate all fire protection functions. The location of existing stations and the ability of fire fighting vehicles to meet required response times to the runways and overruns may dictate the need for a new fire station at a better location.

2. SITE SELECTION. Site selection is generally part of the comprehensive planning process and is completed prior to preparing a DD Form 1391 for an individual project. However, site selection decisions are often reviewed and sometimes revised based on the specific project developed in the 1391 phase. Guidance for this review is provided in Chapter 2, Section C, Site Evaluation Criteria.

3. PROJECT DEFINITION. The Requirements and Management Plan (RAMP) defines the program for design of an individual Military Construction (MILCO-N) project. It includes functional requirements, design criteria, and cost information. The material in this design guide provides the basis for preparing a RAMP, which requires the area programming guidance found in Chapter 2, plus the site design, building design, and building systems concepts in Chapter 3. In addition, any unique local requirements concerning the building project, design criteria, architectural compatibility, and technical systems should be included in the RAMP.

4 DESIGN. Chapters 2 through 5 of the fire station design guide cover all design phases, from space programming to complete design. Space programming is defined in Chapter 2, with design phase guidance specific to Air Force fire stations. Concept designs should conform to the overall project design considerations covered in Chapter 3, including building organization and circulation criteria. Preliminary and working drawings should reflect the functional area and space criteria outlined in Chapter 4. Through an illustrative design in Chapter 5, an example of a typical fire station building project is featured to help explain programming and design guidance. Note that the floor plans shown in Figures 5-A and 5-B are examples only to illustrate layout concepts.

Chapter 6 provides the user with recommendations of interior materials and finishes.

C. FIRE STATION OVERVIEW. Fire stations support the Air Force firefighters' mission to provide fire protection to flightline and facilities on base and fire prevention education and training.

Space requirements vary for main and satellite fire stations. The number and types of fire fighting vehicles housed at each station are determined by the type of aircraft they support and the fire-flow demand, required to extinguish structural fires. These factors also dictate the number of personnel required to operate these vehicles.

All new fire stations should have a conceptual planning study and headquarters civil engineering approval prior to continuing with the project program and design.

Specific functional requirements and design criteria are determined by a variety of governmental entities, along with regional and local standards. Refer to the General References section.

To support the firefighters' mission, it is crucial that the design of all fire station facilities accommodate the equipment, the numerous unique functional requirements, and safety of the fire fighting personnel.

CHAPTER 2

When planning and programming for fire stations, functions fall into three main categories: maintenance and apparatus, which includes fire protection vehicle storage, maintenance, repair and supply support; administration and training; and the general residential and "living" areas, which should be separate from business functions. A fourth category is an annex area for the Air Force Reserves or Air National Guard that contains elements of all three categories combined into one area.

A. FUNCTIONS
SPACE CRITERIA

1 MAINTENANCE AND APPARATUS.
• APPARATUS ROOM. Enclosed area to house fire protection vehicles.
• MAINTENANCE, REPAIR, STORAGE, AND SUPPORT. Area for vehicle maintenance office and vehicle maintenance parts, fire fighting agent storage, hose storage and drying area, fire extinguisher shop, self-contained breathing apparatus shop (SCBA), protective-clothing lockers, laundry, and tire storage. Areas also for general storage, medical storage, janitorial areas, mechanical/electrical/telephone/compressor rooms, and circulation. Include disinfecting facilities for emergency medical equipment.

2 ADMINISTRATION AND TRAINING.
- ALARM COMMUNICATION CENTER. Area for communications control room, kitchenette, private rest room, emergency operations center, and telecommunications/computer room.
- TRAINING FACILITIES. Space for educational training and physical fitness. Office for training, testing room, computer simulator, and audiovisual storage.
- ADMINISTRATION. Entrance/reception area including administration offices, chief's bedroom, rest room, and storage.

3 RESIDENTIAL AND LIVING AREAS.
- LIVING QUARTERS. Includes private bedrooms, personal lockers physical therapy room, rest rooms/showers, and laundry.
- RECREATION / DINING. Space for television viewing, quiet study, day room, kitchen, kitchen storage, serving line, and vending and dining area.

4 . U.S. AIR FORCE RESERVE COMMAND /AIR NATIONAL GUARD. An AF Reserve/ANG Annex is provided in the fire station but is separate from the station's administrative and dormitory areas. This area includes spaces for administration, equipment storage/maintenance, locker/protective clothing, and training and testing. The area is funded by the U.S. Air Force Reserves or Air National Guard (AFRES/ANG).

B. SPACE CRITERIA
1. PLANNING CONSIDERATIONS. Development of space criteria should take into consideration:
a . Existing fire station facilities on base and their adequacies relative to current and future needs.
b . The potential for retention and renovation of existing facilities, additions, or complete new construction projects.
c. The existing and proposed missions of the base.
d. Current and projected base population to be served by the proposed facility.

2. **STANDARD FACILITY REQUIREMENTS**. Follow Air Force regulations for fire station space allowances.

3. **RECOMMENDED SPACES AND SIZES**. Table 5-B and Table 5-C provide examples of recommended functional areas and spaces for main and satellite fire stations. The total square feet shown in both tables are examples based upon specific equipment sets and administrative staffing as listed in Table 5-A . The sizes for areas and spaces are recommendations and may be modified using these criteria as a guide for individual projects.

Main stations are designed and constructed as the primary fire station. If a main fire station's location prevents firefighters from meeting critical response time requirements for crash or structural fires, a satellite fire station is constructed. Main fire stations will have all functions, sized appropriately, as indicated in this guide. At a small installation, a main fire station will also have all functions but will be sized appropriately.

While many activities take place at the main fire stations, such as fire prevention training and fire extinguisher servicing, the satellite fire stations serve critical response needs only.

4. DESIGN ISSUES AND RELATIONSHIPS. In developing the space criteria, consider the issues of overall project design discussed in Chapter 3. General functional relationships between the elements of a fire station include station access and parking.

C. **SITE EVALUATION CRITERIA**

1 .**LOCATION**. Provide visual identity and access from a major roadway. Fire station site plans should include provisions for the following:

a. Access to flightline, as applicable
b. Vehicular turning radius
c. Apparatus driveway d Point of entry - front door
e. Visitor parking
f. Personnel parking
g. Delivery/service entrance
h. Maintenance/storage area
i. Expansion Landscaping
k. Signage

See Figure 2-A for an example main fire station site plan located on a flightline.

2. **SITE SIZE**.

a. Select a site large enough to provide adequate space for exterior functions and vehicles, taking into account the frontage onto the flightline.
b. Prepare a preliminary site design to ensure the basic building and site criteria can be accommodated.

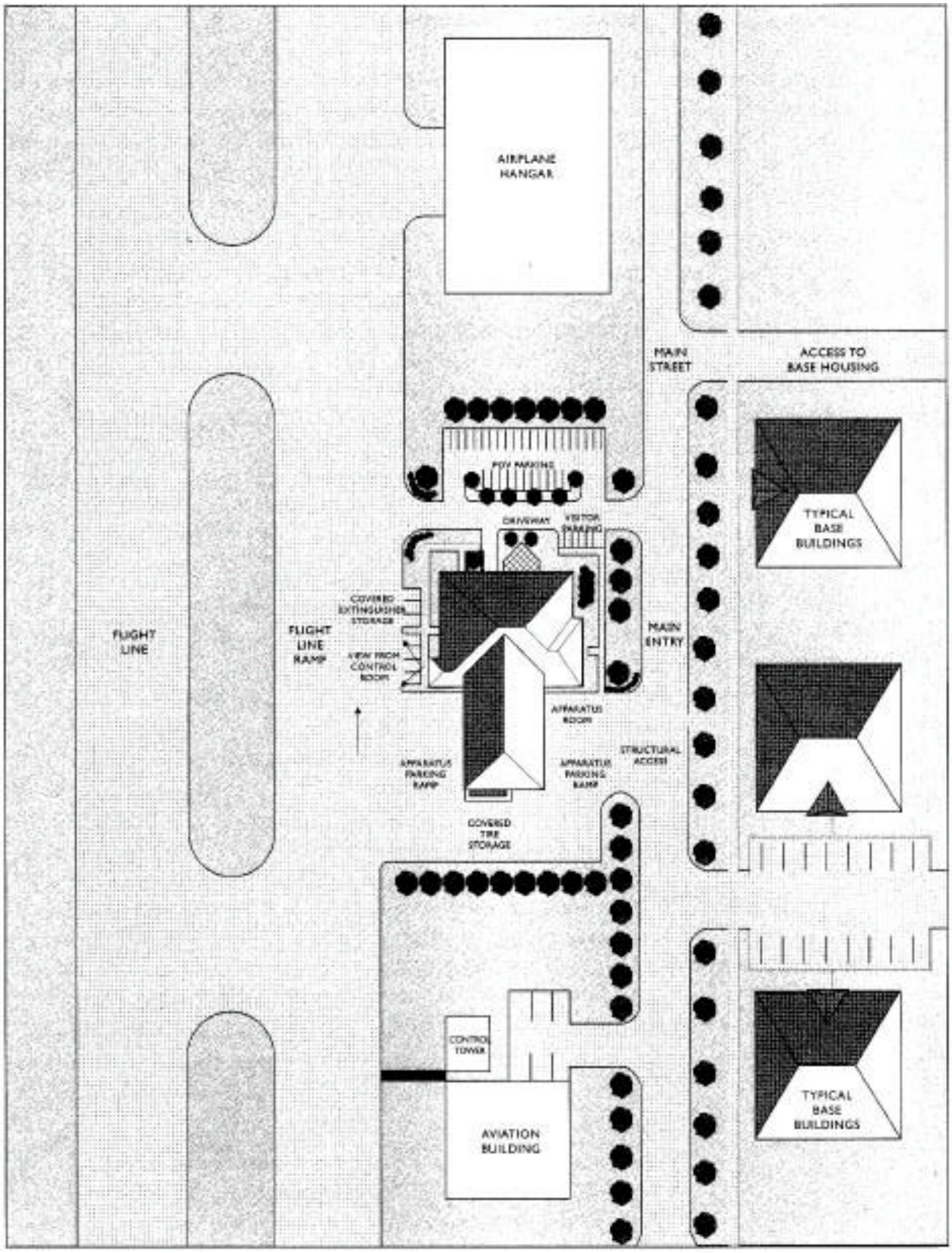


Figure 2-A: Main fire station site plan.

3. **ACCESS AND VISIBILITY**.
a. Ensure that fire-fighting vehicle response times to the flightline, runways, and facilities meet the 3-minute time requirement for aircraft emergencies. In two-story facilities, locate operations personnel on the first floor and limit second floor occupancy to administrative, fire-communications center, and fire prevention personnel. Bases with dual runways or poorly located main fire stations that cannot respond in time, need to pursue the addition of a satellite fire station to supplement existing emergency response services.
b. Provide convenient access for both firefighters and the general public.
c. Choose a site with a prominent and visible location.
d. The flightline should be visible from the communications control room.

4. **UTILITY SUPPLY REQUIREMENTS**.
a. The fire station should be located near major utilities, including water, sewage, electricity, telephone, and gas lines.
b. See sections on site utilities and building systems design in Chapter 3 for specific service requirements.

5. **SITE CHECKLIST**.
a . Is the facility located outside explosives safety clear zones?
b . Does the facility site meet clearance requirements and planning criteria for airfield support facilities?
c . Is the proposed site on designated prime or unique farmlands?
d . Is the proposed site on designated wetlands or flood plains?
e . Is project coordination with appropriate state and area-wide clearinghouse/agencies required?
f . Is the facility site in a compatible land use area?
g . Does construction require excessive site work?
h . Are utilities readily available and adequate?
i. Is project coordination with the regional Federal Aviation Administration required?
j. Is the project located in a former waste disposal area, landfill site, fuel saturated area, or other site identified in the Installation Restoration Program?

D. **SPECIAL PROJECT COSTS**
In addition to the usual cost-estimating considerations, the following special factors also should be considered when establishing initial project cost projections. See relevant sections of Chapters 3 and 4 for discussion of specific design requirements for each factor.
a. Clear span, height, and structural floors in apparatus room.
b. Kitchen equipment requirements and special construction items such as public address system equipment, sprinkler systems, exhaust extraction svstems, and telecommunications equipment.
C. Numerous plumbing fixtures throughout the facility can result in high plumbing costs.
d Noise transfer reduction between major spaces such as sleeping quarters and apparatus room may significantly impact project costs.
e The mechanical system has to satisfy particular zone control criteria.
f Heavy-duty exterior paving for fire-fighting vehicles parking and driveways can create additional costs.

CHAPTER 3

A. **SITE DESIGN**

1. **SITE SELECTION**. This is generally part of the comprehensive planning process and is completed prior to DD Form 1391 preparation for an individual project. Refer to Chapter 2, Section C, Site Evaluation Criteria, for specific issues regarding fire stations. See Figure 2-A for the main fire station site plan.

2. SITE ORGANIZATION.

a. Locate the facility to comply with standard Air Force and federal directives to ensure fire-fighting vehicle response times to aircraft emergencies on the flight line and runways.

b. Use dominant or attractive natural or built features of the site and its surroundings to help organize the site design. These may include items such as major ground forms, distinct landscapes, or patterns of existing structures.

c. Preserve and take advantage of natural site features such as topography foliage and rock outcroppings. Use landscape elements to help define the site and main entry and to present an attractive image for the facility.

d. Organize the site design to be compatible with the site planning and style of adjacent existing structures.

e. Locate the building to reflect local climatic conditions. For example, provide protection from undesirable winds and glare, expose activity areas to the sun in cold climates and shade from excessive sun in warm climates, and orient operable windows to take advantage of summer breezes.

f. Locate the building to take advantage of passive solar heating and day lighting of administrative and recreation/dining areas.

g. Provide separate roof-covered open parking spaces with windbreaks adjacent to the apparatus room access pavement for all required vehicles not authorized space in the apparatus room.

3. **ACCESS DESIGN**.

a. Ensure that dimensions of access roadways and service entrances accommodate vehicle sizes anticipated for fire station operations.

b. Provide privately owned vehicle (POV) parking spaces based on the total positions assigned, including 8- and 24-hour positions, and all U.S. Air Force Reserve fire department positions.

c. Provide five additional visitor parking spaces at main fire stations and two spaces at satellite fire stations.

d. Locate parking areas so they do not dominate the main entrance and public image of the facility.

e. Apparatus parking ramps should be designed to support the weight of vehicles defined in Table 4-A.

f. POV parking surfaces should be asphalt or concrete.

4. **SITE UTILITIES**.

a. Provide water, sanitary sewer, storm drainage system, plus natural gas, steam service, or fuel oil system, whichever is used.

b. Provide electric, telephone, and fire alarm and sprinkler systems.

5**. LANDSCAPING**.

a. Provide landscaping that is low maintenance using only planting materials from the approved installation plant list.

b. Landscape design should incorporate native and indigenous plants to extent possible and include, where necessary, a water-conserving irrigation system.

c. Select trees and shrubs that produce little or no debris because of the proximity to the flight line.

d. The growth characteristics of selected plant material should be assessed when considering line of sight requirements to flight pavements and facilities.

e. Landscape lighting should not interfere or be a distraction to aircraft movement at night.

f. Avoid using plants that produce fruits or nuts that attract unwanted animals and birds to the airfield environs.

B. BUILDING DESIGN

1. **BUILDING ORGANIZATION AND CIRCULATION**.

a. Main Fire Station

- Alarm communications center
    - Communications control room
    - Kitchenette/private rest room
    - Emergency response center
    - Telecommunications/computer room

- Apparatus room
- Training facilities
    - Training room
    - Assistant chief for training office
    - Audiovisual storage
    - Fire-fighting computer simulation model
    - Testing/training
    - Physical fitness
- Living quarters
    - Private bedrooms
    - Personal lockers
    - Physical therapy room
    - Rest rooms/showers
    - Laundry
- Recreation/dining
    - Recreation room
    - Day room
    - Vending
    - Kitchen
    - Kitchen storage
    - Serving line
    - Dining area
- Administration
    - Entrance/reception
    - Fire chief's office
    - Fire chief's conference room
    - Fire chief's bedroom
    - Assistant chief for operations an readiness' office
    - Assistant chief for operations' office
    - Assistant chief for operations' bedroom
    - Rest room
    - Station captain's office/bedroom
    - Assistant chief for technical services' office
    - Technical services staff office
    - Technical services aids and storage
    - Administration storage
- Maintenance, repair, storage, and support
    - Vehicle maintenance office
    - Vehicle maintenance parts and tools
    - Fire-fighting agent storage
    - Hose storage and drying
    - Fire extinguisher maintenance/repair and storage
    - SCBA maintenance and repair
    - Protective clothing lockers
    - Protective clothing laundry
    - Outdoor tire storage
    - General supply
    - Medical storage
    - Janitor's closet
    - Mechanical/electrical/telephone/ compressor room
    - Public and private corridors
    - Disinfecting facilities
    -
- AF Reserve/ANG Annex
    - Administrative
    - Equipment storage/maintenance room
    - Locker/protective clothing area

- Reserve certification/testing area

b. Satellite Fire Station

- Alarm communications center
  - Communications control room
  - Private rest room
  - Telecommunications/computer room

- Apparatus room
- Training facilities
  - Physical fitness
- Living quarters
  - Private bedrooms
  - Station captain's bedroom
- Recreation/dining
  - Recreation room
  - Day room/training room
  - Vending
  - Kitchen
  - Kitchen storage
  - Personal lockers
  - Rest rooms/showers
  - Laundry
  - Serving line
  - Dining area
- Administration
  - Station captain's office/bedroom
  - Administration storage
- Maintenance, repair, storage, and support
  - Fire-fighting agent storage
  - Hose storage and drying
  - Protective clothing lockers
  - Protective clothing laundry
  - General supply
  - Janitor's closet
  - Mechanical/electrical/ telephone/compressor room
  - Public and private corridors

Figure 3-A: Main fire station functional area relationships

c. Design the administrative and personnel living areas to reduce noise impact from the apparatus room, vehicle access ramps, and flightline.
d. Include circulation in all the functional areas. Use corridors as required for visual privacy or security.

2. **ARCHITECTURAL CHARACTER AND INTERIOR DESIGN**. The architectural and interior designs of the fire station must be integrated. Both involve functional analysis and consideration of the appropriate environmental character, building organization and circulation, and supervision and flexibility requirements, as well as finishes and furnishings.
a. The design should reflect the regional and local base architectural style or character. Review the base Architectural Compatibility Guide to ensure the design complements existing architecture.
b. Create a theme that applies continuously to the entire facility design from an overall architectural statement to specific interior design.
c. The fire station should present a cohesive architectural image. Continuity of space should be reinforced by space planning, building form, and development of elevation, materials, and details.
d. Be sensitive to the natural flow of sequenced spaces. Circulation paths should accommodate personnel and equipment.
e. Living quarters should have residential character.

Drive-through stalls allow aircraft rescue and fire fighting (ARFF) and structural vehicles to respond to both flightline and structural emergencies.

3. **SUPERVISION AND SECURITY**. The security of the fire station after business hours is controlled from the communications control room. The main entrance and apparatus room require monitoring by a security camera. Provide an intrusion detection alarm system.

4. **FLEXIBILITY AND EXPANSION POTENTIAL**.
a. Design of the fire station should accommodate change and expansion without over-designing the initial project.
b. Apparatus room should be designed to allow for the addition of fire protection vehicle stalls.
c. Training facilities should allow flexible layout of furnishings.

5. **HANDICAPPED ACCESS**. All functional areas, including parking spaces, entrances, corridors, rest rooms, pay phones, and door hardware must be barrier-free and accessible to the physically handicapped in accordance with appropriate accessibility standards**.**

6. **SPECIAL CONSIDERATIONS FOR RENOVATIONS**.
a . All design and building organization and circulation criteria apply to renovation projects, as well as new construction.
b. Renovation areas should be phased, with functions ongoing in the operating fire station.
c. Transform the image of the existing structure, inside and outside, to reinforce its identification as a fire station. This may require substantial façade renovation and interior redesign to achieve the appropriate quality and character.

7. **SIGNAGE**.
a. Provide exterior and interior signage in accordance with Air Force and MAJCOM standards.
b. Regulation signs should be located where specific warning or prohibitory information is required.
c. Provide clearly identified handicapped access and signage.

8. **TELEC0MMUNICATIONS**. For the type and quantity of telecommunications, lines, equipment and computer cabling., contact the base communications squadron.

a. Data
- Pre-wire for computers and printers. Pre-wire for three workstations in satellite fire stations.
- Provide pre-wiring for civil engineering data automation systems in all offices, training, emergency response rooms, and the fire extinguisher shop.
- Provide a system of empty raceways with pull wire, outlets, and cabinets for future telephone installations.

b. Telecommunications
• Provide a telephone equipment room inside the building, separate from the mechanical room.
• Provide pre-wiring for multi-line telephones throughout the station.
• Provide for equipment capable of receiving telecommunications display devices for hearing-impaired calls.
• Provide for telephones in offices, private rooms, quarters, day room, apparatus, training, emergency response rooms, and fire extinguisher shop.
• Provide wall-mounted public telephones with acoustical panels near the day room.
• Pre-wire the communications control room including crash net lines, emergency fire reporting lines, and direct lines for telephones.

• Provide pre-wiring for the fire crash and base radio systems.
• Provide built-in or modular cabinets and desks for at least six work stations in the communications control room at main fire stations and two workstations at satellite fire stations.
• Locate the central intercom console in the communications control room.
• Provide an internal communications system throughout the facility with the following features:
• Hands-free phone
• Two-way intercom throughout the facility capable of addressing all rooms or a single room at one time, with on/off switches for speakers at selected rooms
• Speakers for outside recreation areas and front and rear of stalls
• Ceiling-mounted speakers
• Tone alert feature interconnected to the primary crash network
• Telephones capable of accessing public address system
• Two-way intercom between the main entrance and the communications control room.

c. Video
• Pre-wire for cable TV in the day rooms, dining areas, training room, alarm communications room, all sleeping rooms, and offices.
• Provide cabling to training area for Fire and Emergency television network (FETN) or equal cable system. Other areas to be cabled as an option.
• FETN viewed through video cassettes or direct link with optional satellite located on fire station roof.

- **Provide video conferencing capability**

C. **BUILDING SYSTEMS**

1. **STRUCTURAL**.
a. Select an economical structural system based on facility size, projected load requirements, and local availability of materials and labor. Consideration must also be given to wind, snow, seismic, geologic, frost line, and other site specific conditions.
b. Select and design the structural system based on analysis of projected future needs. Future expansion requirements should be easily and economically accommodated. However, do not over-design the initial construction.
c. Design building structural modules to reflect space requirements, economy, and subsystem dimensions (e.g., ceiling grid, masonry units, framing members, etc.). Consider clear-span versus multi-column supported roof structures for apparatus rooms.

2. **HEATING, VENTILATING, AND AIR CONDITIONING**.
a. Provide heating, ventilating, and air conditioning (HVAC) systems.
b. The station should be ventilated to prevent infiltration of fuel vapors and exhaust fumes from the apparatus room and the flightline into the administrative and personnel living spaces. Vehicle exhaust removal may be area specific or source specific.
c. Provide a night setback system for the HVAC system.
d. Provide carbon monoxide alarms and automatic ventilation in apparatus bays.
e. Provide zone controls for maintaining different environmental conditions in all functional areas and for operating systems in areas of the facility when other areas are closed.
f. Provide tamper-proof temperature sensors with remote adjustment.
g. An active solar space heating system and/or domestic hot water heating system should be considered only if the major command's solar assessment for the particular base results in a savings investment ratio of greater than one.
h. The HVAC system should be designed and constructed for easy maintainability and operation.

3. **ENERGY MONITORING**.
a. Perform a life-cycle cost analysis of available energy sources in accordance with the appropriate standards. The uniform present worth factor and the fuel escalation rates should be the latest published by the Department of Energy. The selected system's total energy consumption should not exceed the DoD total energy budget figures.
b. Provide for connection to the base energy monitoring and control system.

4. **PLUMBING**.

a. Provide domestic hot and cold water, sanitary and storm drainage, plus propane or natural gas systems.
b. Provide hot and cold water bibs for every two vehicle bays.
c. Provide eye wash and shower in the apparatus room, extinguisher shop, and vehicle maintenance areas.
d. Provide hot water temperature at 41C (105F) for general use, and 60C (140F) to kitchen for normal use and 82C (180F) for dishwashing purposes.
e. Provide floor drains in rest rooms, laundry, janitor's closets, kitchens, and two in the protective clothing laundry room.
f. Provide shut-off valves at all fixtures.
g. Provide a drinking fountain in the apparatus bay and electric water cooler near the entrance reception area.
h. Provide two air compressors, one dedicated for the SCBA and the other shared by fire extinguisher maintenance and the apparatus room. Intake air must be located away from the following:
• Any contaminated air source
• Vehicular exhaust fumes
• Emergency generator
• Rest room and kitchen exhaust
• Mechanical exhausts
i. Provide frost-free hose bibs on all exterior walls if required by local climatic conditions.
j. Provide metering for gas and water service.
k. Provide grease traps for kitchen drains.
l. Provide oil separators at drains in apparatus rooms, protective clothing laundry, and maintenance areas.

5. **ELECTRICAL POWER**.
a. Provide electric service and distribution equipment, including metering, wiring and electrical devices. Provide for telecommunications and data wiring, fire alarms, and intrusion detection system.
b. Provide automatic emergency generator with capability to power all doors and lighting in apparatus room, bedrooms, rest rooms, day/dining rooms, and other areas based on local needs.
c. Provide emergency power hook-up for kitchen equipment if the fire station is to be used as an essential feeding facility.
d. Provide uninterrupted power supply (UPS) to support full operation of all equipment, including data automation, alarm communications room, and electric pin-pad cipher lock.
e. Provide special power outlets and circuits for all user-furnished equipment as required.
f. Include an auto-shutoff timer-for all cooking appliances.

6. **LIGHTING**.

a. General lighting should be fluorescent with low temperature, energy-efficient ballasts and lamps, as applicable.
b. Provide interior and exterior lighting control systems, including ambient light dimmers and multiple switching for low ambient light levels and energy conservation.
c. Rate incandescent lighting lamps at 2,500 hours.
d. Provide high-intensity discharge (HID) lighting for the apparatus room parking apron to permit exterior servicing and maintenance of vehicles during evening hours.
e. Training room lighting should be fluorescent, supplemented with incandescent accent lighting. Provide multiple switching and dimming controls for low ambient light levels and energy conservation.
f. Provide master-lighting, override controls in the communications control room for the private rooms, sleeping quarters, and apparatus room.
g. Provide red strobe lighting on facility interior and exterior to alert fire-fighters of an emergency response.
h. At parking areas and walkways, use HID light sources controlled by combination time clock/photo cells.
i. Provide night lighting in apparatus room and corridors.
j. Provide low ambient floor lighting in sleeping room corridors.

7. **FIRE PROTECTION**.
a. Facilities should be designed for Type B occupancy, noncombustible construction with fire protection systems.
b. Provide an automatic sprinkler system throughout with smoke detectors in all sleeping areas. Smoke detector activation sounds an alarm throughout the fire station.
c. Heat detectors are hard-wired to the fire alarm system and activate the alarm throughout.
d. Provide a fire detection/suppression annunciator panel for the building in the alarm communications center.
e. The annunciator panel should indicate the location of detectors that have activated.
f. Provide audible and visual fire alarm systems in personnel sleeping areas. Tone should gradually increase in volume with a strobe light.

g. Provide appropriate fire protection at food preparation facilities. Protected openings between such areas and adjacent dining areas are not required.

CHAPTER 4

A. **GENERAL**

1. This chapter presents specific criteria applicable to the design of each functional area of the fire station. Primary design considerations for each functional area are presented indicating the anticipated:
a. Use and performance
b. Space organization and character
c. Relationship between spaces of its components

2. Specific criteria are provided concerning the following:
a. Size and critical dimensions
b. Furnishings and equipment
c. Technical requirements

3. For additional technical requirements, refer to the general considerations presented in Chapter 3, Section C, Building Systems.

4. The criteria in this chapter apply to both main and satellite facilities.

5. Specific guidance for both sizes of prototypical facilities is presented with recommendations for space sizes and capacities, supplemented by standard use and size factors as appropriate. These recommendations should be modified during design of an individual project to reflect local program requirements and capacity needs.

6. For specific projects, the space requirements and sizes should be based on the required personnel and vehicles for each installation. Actual, authorized, or funded positions fluctuate annually based on funding and overall Air Force manpower strength requirements; these numbers normally are less than the minimum required and should not be used to scope space requirements.

B. **ALARM COMMUNICATIONS CENTER**

1. **PRIMARY DESIGN CONSIDERATIONS**.

a. Use and Performance
• Alarm Communications Center - Design for maximum survivability and operability during natural disasters and all contingency threat conditions.
• Communications Control Room - Provide an enclosed, secure room for communications control.
• Kitchenette/Private Rest Room - Provide a kitchenette/private rest room within the confines of the communications control room.
• Emergency Response Center - Design a room for eight persons to use in real-world emergency situations.
• Telecommunications/Computer Room - Provide a room for the computer, telephone switch, and UPS.

b. Space Organization and Character

• The fire alarm communications center should have an unobscured view of the apparatus parking ramp and flightline.
• Design the fire alarm communications center to restrict outside noise level.

c. Relationship Between Spaces

• Provide visibility of the apparatus ramp.
• Provide a closed circuit video camera system to monitor the main entrance and the apparatus room from the communications control room.
• Main fire stations have the option of a raised access floor with under floor HVAC.
• Option for a pass-through window from the communications control room to the emergency response center.
• In satellite fire stations, provide direct access from the communications control room to station captain's office.
• The kitchenette/private restroom is not shared with the public or other administrative personnel.
• Provide a door between the communications control room and the telecommunications/computer room.

2. **COMMUNICATIONS CONTROL ROOM**.

a. Size and Critical Dimensions

• Refer to Tables 5-B or 5-C for space sizes.
• Design to accommodate six persons in a main fire station.
• Design to accommodate two persons in a satellite fire station.
• Do not locate communications control room in towers.

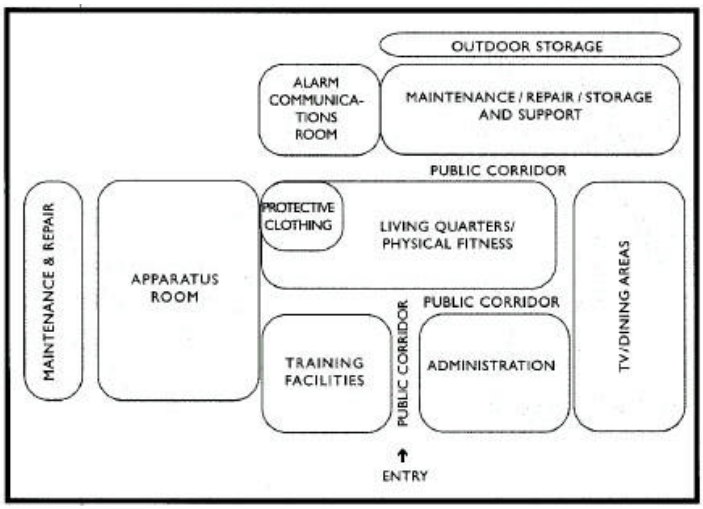


Figure 4-A: Alarm communications center functional area relationships

b. Furnishings and Equipment

• Furnish with a state-of-the-art control center console**.**
• Install modular system components for the work station with computer screens mounted in sloped console surfaces.
• Install tinted windows with blinds in office communications control room.
• Provide for a foot pedal activated crash net radio.
• Provide for a state-of-the-art recording system for all emergency telephone and radio conversations.
• Provide hurricane shutters in areas prone to severe weather.
• Provide a TV monitor to view the apparatus room and the main entrance.
• Provide switches to the apparatus room overhead doors, opening the doors-not closing them.
• Provide for a wall-mounted base grid coordinate map.
• Provide a map rack system for other utility maps.
• Provide for task lighting at consoles.
• Provide ergonomically designed seating.
• Provide safes for classified technical manuals.

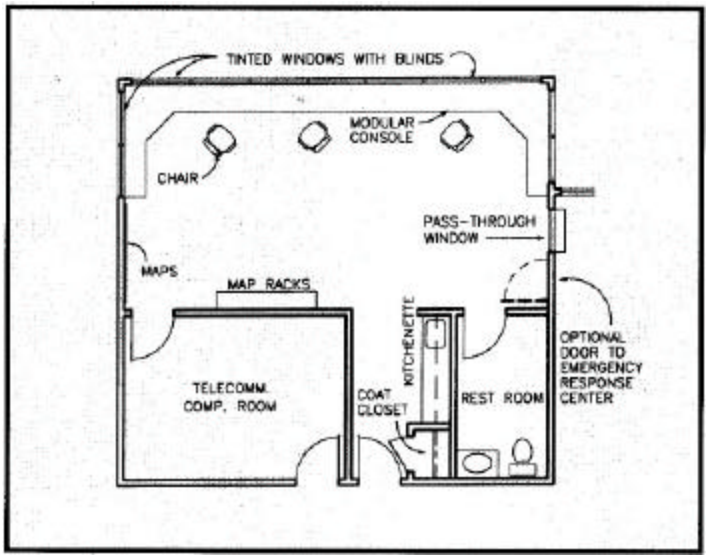


Figure 4-B: Main fire station communications control room.

c. Technical Requirements
• Provide separate environmental control equipment including HVAC for the communications control room.
• Provide walls with a minimum Sound Transmission Class (STC) rating of 45 for the communications control room.
• Provide a secured line for a fax machine.
• Provide space for Emergency Information Systems (EIS) computer area.
• Provide simultaneous light control and audible alert to all of the fire station including administration, technical services, and sleeping areas.
• Provide a pin pad/cipher type electric lock or strike with a remote push button release. Also provide manual key override of the lock to gain access to the communications control room in an emergency. Electric lock or strike to be connected to the UPS.

The communications control room should feature a state-of-the-art control console and ergonomically designed seating for personnel.

3. KITCHENETTE/ PRIVATE REST ROOM.
a. Size and Critical Dimensions
• Refer to Tables 5-B or 5-C for space sizes.
• Provide private rest room without kitchenette in satellite fire station.
• Provide a handicapped-accessible rest room without a shower.
• Locate within the communications control room.
• Private rest room for alarm communications operator only.
• Provide a small coat closet with a clothes rod and shelf.

b. Furnishings and Equipment
• In the kitchenette, provide base and wall cabinets with a bar sink.
• Furnish with a microwave oven, under-counter refrigerator, coffee maker and hot plates.

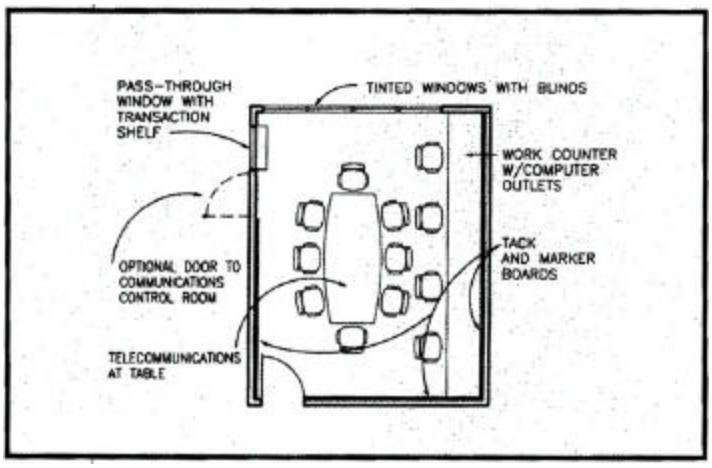


Figure 4-C: Emergency operations center

4. EMERGENCY OPERATIONS CENTER
a. Size and Critical Dimensions
• Refer to Table 5-B for space size.

• Design to accommodate an eight-person conference table and work counter for four individuals.

b. Furnishings and Equipment
• Furnish with boat-shaped conference table and work counter.
• Consider providing a pass-through window from the communications control room to the emergency response center.

c. Technical Requirements
• Provide walls with a minimum STC rating of 45.
• Provide for a total of eight telecommunications, computer and electrical outlets, with four at the work counter and four at the table.

Furnish the emergency operations center with a conference table and a work counter.

5 TELECOMMUNICATIONS/COMPUTER ROOM

a. Size and Critical Dimensions
• Refer to Tables 5-B or 5-C for space sizes.
• Additional space may be required for EIS.

b. Furnishings and Equipment
• Provide for a mini-frame computer system.
• Provide for various PCs as required.
• Provide for the telephone switch.
• Provide for a UPS system to support the fire alarm communications center.
• Provide floor to ceiling painted plywood panels for installing the telecommunications cables.
• Option of raised access floor at main fire stations.

c. Technical Requirements
• Locate the computer room adjacent to the communications control room.
• Wire functional areas in the fire station for local area network (LAN) computers as required.
• Provide separate environmental control equipment including air conditioning for the telecommunications/computer room.
• Provide surge protection and clean power for all computer room equipment.
• Utility systems should include sufficient redundancy to allow for equipment maintenance and contingencies 24-hours a day.
• Provide fiber optics backbone between the main fire station and the satellite fire station.
• Provide an electric strike or manual cipher lock to the telecommunications/computer room from the corridor.

c. APPARATUS ROOM

1. PRIMARY DESIGN CONSIDERATIONS.
a. Use and Performance
• Used for parking fire protection vehicles and is sometimes used for performing maintenance on the vehicles. At some facilities, the vehicles back into the bay.
• Provide interior stall space for emergency vehicles.
• If new construction, provide drive-through bays for crash and structural trucks.

• Aircraft rescue and fire-fighting vehicles (ARFF) face the flightline directly behind the overhead doors. Structural fire-fighting vehicles as well as other vehicles are parked in spaces behind ARFF vehicles facing out the structural side of the drive-through bays.
• Provide a bay for an aerial ladder vehicle, when authorized.
• One drive-through apparatus bay is authorized for the fire chief's and assistant chief's vehicles.

b. Space Organization and Character
• Provide exits from the apparatus room directly to the outside, in accordance with the applicable building codes.
• Design the apparatus room to include a drive-through washing and maintenance bay. Separate this maintenance bay from the other bays.

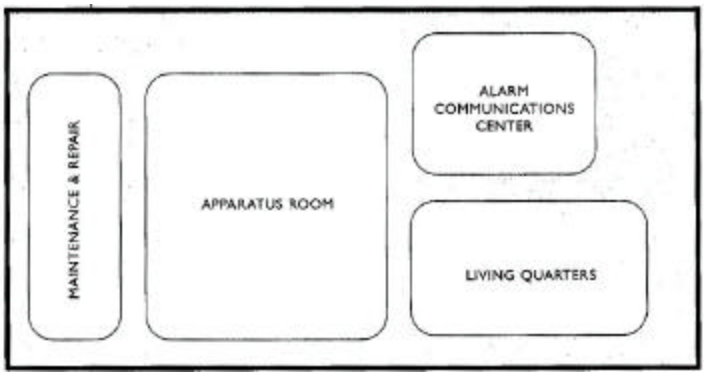


Figure 4-D: Apparatus room functional area relationships

c. Relationship Between Spaces
• The apparatus room should be located near the living quarters.
• Locate maintenance shop areas and fire-fighting agent storage adjacent to the apparatus room.

2. APPARATUS ROOM - MAIN FIRE STATION.

a. Size and Critical Dimensions
• Refer to Table 5-B for space size.
• A minimum of six drive-through bays are required in the main fire station.
• Provide at least one drive-through vehicle bay with the required overhead door size and clear ceiling height to accommodate the P-15 vehicle, where assigned.
• Design all other drive-through bays to accommodate P-23 vehicles.
• Design drive-through bays long enough for vehicles to be back-to-back.

Figure 4-D: Apparatus room functional area relationships

The apparatus room is used for fire protection vehicle parking and maintenance. New facilities should provide drive-through bays.

Provide the following minimum dimensions at each vehicle:
1800 mm (6 ft) between vehicles and the fire station structure
2100 mm (7 ft) between vehicles (side to side)
2400 mm (8 ft) between vehicles (rear to rear)
1500 turn (5 ft) between vehicles and overhead doors

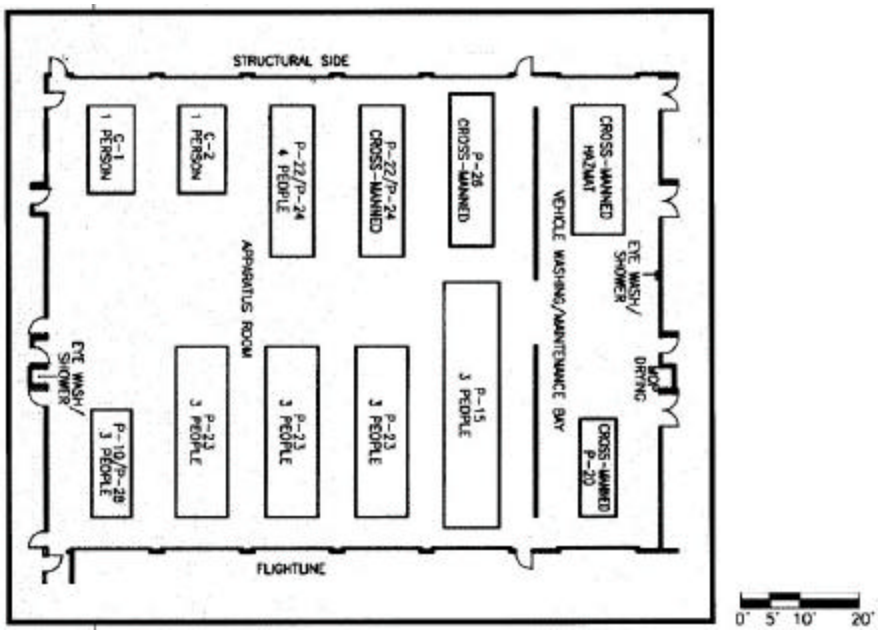


Figure 4-E: Main fire station apparatus room

Ceiling height should mean the clear height below any structural member, light fixtures, heating equipment, overhead doors in open position.
For fire stations housing both ARFF vehicles and structural fire-fighting vehicles, use a minimum fourteen foot width door size and a minimum clear ceiling height for ARFF vehicles.

b. Furnishings and Equipment

- Fire-fighting vehicles are authorized under Table of Allowance-019. This should be validated against projected vehicle requirements.
- Provide 4.2 m (14 ft) heavy-duty, insulated apparatus room doors at all locations subject to low temperatures.
    - Equip doors with a signaling system to indicate when they are fully raised. The red and green indicators should be located on the driver's sides, mounted 1800 rum (6 ft) above finished floor.
    - In cold climates, install in-floor heating below the overhead doors to minimize doors freezing to the pavement.
    - Doors may be equipped with radio-operated closing devices activated from the vehicles.
    - Equip doors with automatic reverse and/or electric eye devices that activate when the door contacts an obstruction.
    - Do not provide personnel doors in the overhead doors.
    - Provide a manual means to open overhead doors in case of power failure.

c. Technical Requirements

- Design concrete floors to support vehicle weights shown in Table 4-A.
- Provide an emergency eye wash fountain and shower.
- Provide a foot-operated mop sink.
- Provide an indoor mop hanging rack in vehicle washing and maintenance bay.
- Provide minimum 75 mm (3 in) diameter water service with 62 mm (2.5 in) diameter National Standard Threads ball-valved outlet to each vehicle.
- Locate electrical outlets 900 mm (36 in) above the floor.
- Provide a minimum of one standard hot and cold water garden hose bib for every two vehicle bays.
- Provide low pressure compressed air system on self-retracting lines at each vehicle space for servicing vehicle tires, brakes and operating air tools. This compressor is shared with the extinguisher maintenance shop. Refer to extinguisher maintenance area.

VEHICLE NUMBER	VEHICLE TYPE	WEIGHT KG	WEIGHT LBS	LENGTH M	LENGTH FT	WIDTH M	WIDTH FT	HEIGHT M	HEIGHT FT
P-10	Rescue Truck	3,600	8,000	9.7	31.7	2.8	9.3	2.6	8.5
P-28	Heavy Rescue	16,400	36,000	8.6	28.8	3.0	9.8	3.1	10.2
P-15	ARFF	59,000	130,860	13.8	45.2	3.1	10.0	4.2	13.8
P-18	Water Tanker	25,000	54,000	9.6	31.7	2.8	9.3	3.3	10.8
P-19	ARFF	14,700	32,500	10.2	33.3	3.1	10.0	3.8	12.5
P-20	ARFF	5,000	10,900	10.2	33.3	3.2	10.7	2.3	7.5
P-21	Ladder Truck	31,000	68,700	14.7	48.3	2.8	9.3	3.7	12.0
P-22	Pumper	14,600	32,300	9.6	31.7	2.8	9.3	3.3	10.8
P-23	ARFF	34,700	77,900	9.6	31.7	2.9	9.6	3.6	11.8
EAAD** P-23	ARFF	36,000	80,900	9.6	31.7	2.9	9.6	4.8	15.8
P-24	Pumper	16,300	36,700	9.6	31.7	2.8	9.3	3.3	10.8
P-26	Water Tanker	31,000	70,000	14.5	47.5	2.8	9.3	3.7	12.0
P-27	Mini Pumper	4,900	11,000	9.6	31.7	2.8	9.3	2.5	8.2

TABLE 4-A **EAAD - elevation agent application device

- Provide self-retracting electric drop cords between vehicle spaces for drop light and battery hookup.
- Utility systems should include sufficient redundancy to allow for equipment maintenance and contingencies because the fire station is operational 24 hours a day.
- Heat the apparatus room with a radiant tube type heating system (natural gas or electric).
- Hot water heating is an option at bases where a central system plant is used to heat building.
- Provide for overhead ventilation of vehicle exhaust from apparatus room.
- Provide instant-start fluorescent lighting in the apparatus room for safety purposes.
- Provide a non-skid apparatus room floor impervious to fuels (diesel fuel, JP-4 and JP-8), fire-fighting chemicals and various automotive lubricants. The floor surface should not be affected by the weight of the vehicle or subject to it being pulled by the tires. Do not use paint for a non-skid surface.
- Place a trench drain parallel to the centerline of each vehicle. All apparatus room drains should have a fine grate cover and be connected to an approved oil/water separator prior to interconnection to the sanitary sewer.
- Floors should be sloped to the trench drains. ,

3. APPARATUS ROOM - SATELLITE FIRE STATION.

a. Size and Critical Dimensions

• Refer to Table 5-C for space size.
• Stations that normally house a single fire vehicle should be designed for a minimum of two drive-through vehicle bays.
• Refer to main fire station apparatus room for additional notes on size and critical dimensions.

b. Furnishings and Equipment

Refer to main fire station apparatus room for additional notes.

c. Technical Requirements

Refer to main fire station apparatus room for additional notes.

Satellite fire stations, that may be located away from the flightline, are designed to supplement the emergency response needs of main fire stations.

D. TRAINING FACILITIES

1. PRIMARY DESIGN CONSIDERATIONS.

a. Use and Performance

Training Room - Provide space for ongoing training in fire-fighting issues and techniques. This space may also be used for fire prevention briefings.

• Assistant Chief for Training Office - Provide an office for the assistant chief for training.
• Audiovisual Storage - Provide an audiovisual storage room, which also functions as a rear-screen projection room. Use of rear-screen projection is optional.
• Fire-fighting Computer Simulation Model (FFCSM) - Provide an enclosed room to house the computer simulator.
• Testing/Training - A separate space for independent study and/or independent testing.
• Physical Fitness - Provide both indoor and outdoor space for physical fitness activities.

b. Space Organization and Character
• Training room should have a level floor surface to accommodate various table and chair layouts**.**
• Physical fitness room should be a large, open room to accommodate various-sized equipment.

c. Relationship Between Spaces

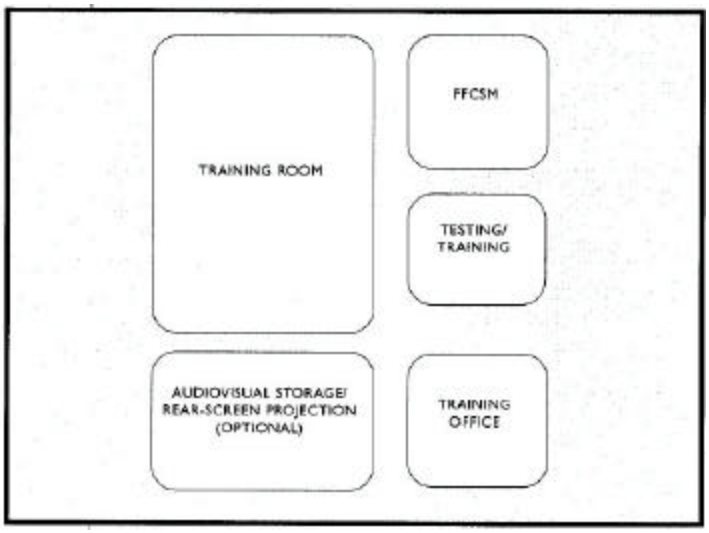


Figure 4-F: Training facilities functional area relationships.

• Physical fitness room does not require direct adjacency to the training room.
• Locate the assistant chief for training office adjacent to the training room.
• Training room should be located away from the private bedrooms.
• Training room may be the day room in satellite fire stations.

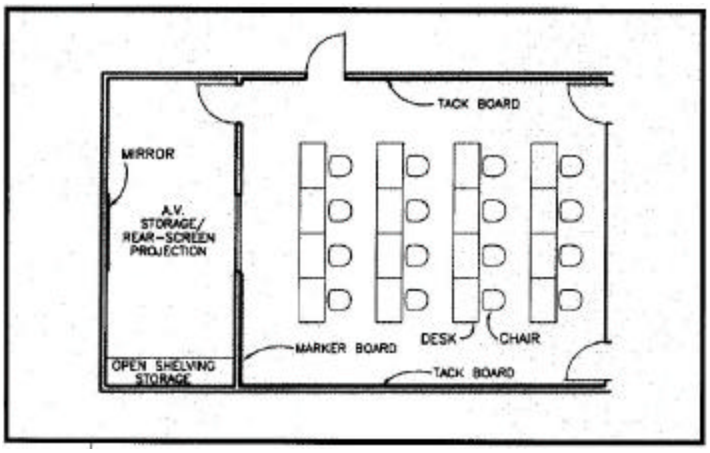


Figure 4-G: Training room and audiovisual storage. Rear projection room is optional.

• Locate outdoor fitness areas near the apparatus room so the firefighters are always near the vehicles.
• Provide for basketball and/or volleyball areas.

The training room is used for ongoing education in fire fighting issues and techniques and may be used for fire prevention briefings.

2- TRAINING ROOM.
a. Size and Critical Dimensions
• Refer to Table 5-13 for space sizes.
• Provide 1.9 M2 (20 sf) of training room space for each 8-hour and 24-hour position required at the station. Where six or fewer position exist, 11.2 m2 (120 sf) should be added to the day room..
• Provide access to the training room from the base side of the fire station**.**
b Furnishings and Equipment
• Furnish with movable desks and chairs.
• Provide for overhead, slide, and video projection.
c. Technical Requirements
• In the training room, use fluorescent lighting. Supplement with incandescent accent lighting. Provide multiple switching and dimming controls for low ambient light levels and energy conservation.
• Provide walls with a minimum STC rating of 45.
• Provide electrical and data outlets as required.
• Provide viewing window between testing and training office.

3- ASSISTANT CHIEF FOR TRAINING OFFICE.
a. Size and Critical Dimensions
- Refer to Table 5-13 for space size.

b Furnishings and Equipment
- Furnish with a desk, chair, credenza, and two guest chairs.

c Technical Requirements
- Provide lockable door.

4. AUDIOVISUAL STORAGE.
a. Size and Critical Dimensions
• Refer to Table 5-13 for space size.
• Space also functions as rear-screen projection room.
b Furnishings and Equipment
• Heavy-duty adjustable steel shelving
• Provide for rear-screen projection.
c Technical Requirements
• Provide walls with a minimum STC rating of 45.
• Audiovisual, electrical, and computer outlets as required.
• Provide lockable door.

5 FIRE:FIGHTING COMPUTER SIMULATION MODEL.
a . Size and Critical Dimensions
- Refer to Table 5-13 for space size.

b . Furnishings and Equipment
- Design for two multiple personal computers and monitors with CD ROM. These PCs may be stored on a movable cart.

c. Technical Requirements
- Provide walls with a minimum STC rating of 45.

6.-TESTING/TRAINING.
a . Size and Critical Dimensions
• Refer to Table 5-B for space sizes.
• Area for individual testing and training.
b . Furnishings and Equipment
- Provide desk, chair, and task lighting.

c . Technical Requirements
- Provide computer outlets for testing.
- Provide glass in the door for supervision.
- Flooring in weight room should be rubberized

The physical fitness room should feature a full height and width mirror along wall of the room to aid in training.

7. PHYSICAL FITNESS.
a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes.

b. Furnishings and Equipment
- Design for the following equipment:
    - Multi-station exercise set
    - Free-weights
    - Exercise mats
    - Tread mills
    - Stair stepper machines

- Stationary bikes
- Rowing machines

- Provide full height and width mirror along one wall of room.
- Provide computer stations for physical fitness evaluations.
- Install floor consisting of interlocking cushion mats suitable for use with free-weights.
- Provide for storage of exercise mats.
- Provide for ceiling-mounted television.

c. Technical Requirements

- Provide appropriate electrical outlets for equipment.
- Provide an exhaust fan in the physical fitness room.

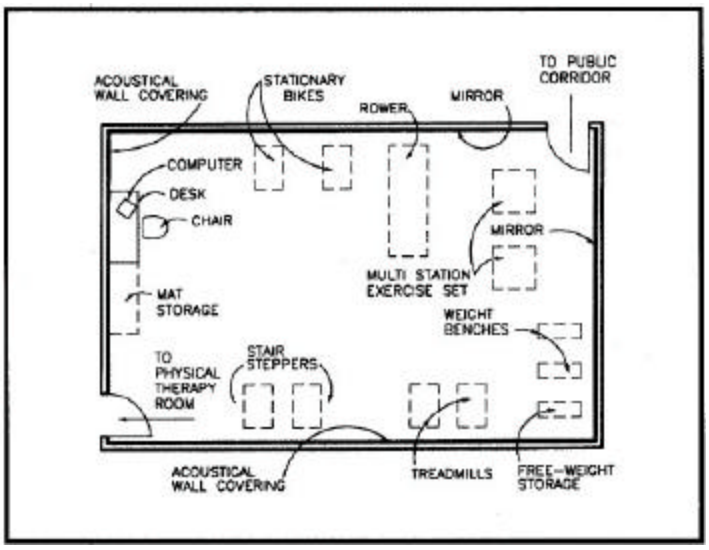


Figure 4-H: Physical fitness room

E. Living Quarters

1 PRIMARY DESIGN CONSIDERATIONS.

a. Use and Performance

• Private Bedrooms - Private sleeping rooms for persons on 24-hour shifts.
• Personal Lockers - Storage area for casual or physical fitness clothes and personal items.
• Physical Therapy Room - For coed therapeutic use by fire-fighting personnel.
• Rest Rooms/Showers - Separate private rest rooms/shower rooms for male and female firefighters.
• Laundry - Used for the laundering of physical fitness and duty uniform clothing.

b. Space Organization and Character

• Organize the space to flow from public to semi-private to private spaces.
• The spaces should be informal and relaxed., more residential than institutional in character.

c. Relationship Between Spaces

• Locate bedroom areas on the same level and as close as possible to the apparatus room. ~~0~~ Exits should not open directly into the apparatus room
• The restroom/shower area should be adjacent to both the private bedrooms and personal locker areas and be accessible via a private corridor.
• Access to the Physical therapy room is via private corridor.
• Locate bedrooms away from both recreational/dining areas and maintenance, repair, storage, and support areas.

2 PRIVATE BEDROOMS.

a. Size and Critical Dimensions

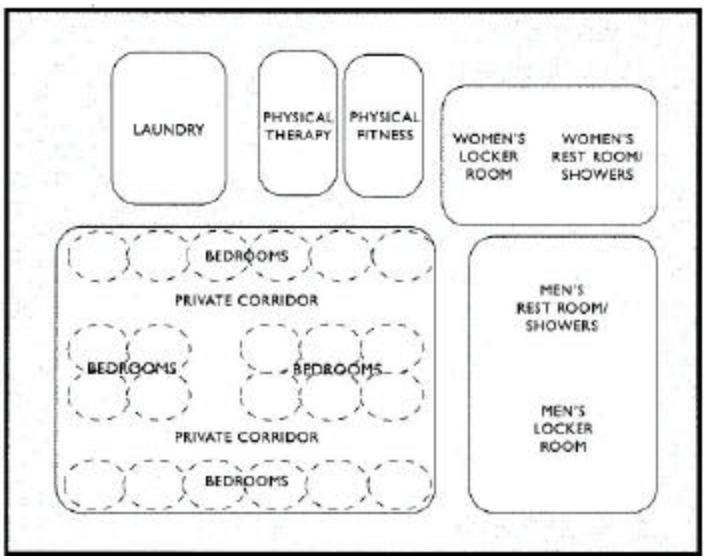


Figure 4-1: Living quarters functional area relationships

• Refer to Tables 5-B or 5-C for space sizes.
• Determine space for bedroom with closet for duty uniforms, based on 10.2 net m^2 (110 sf) for each 24-hour position.

b. Furnishings and Equipment

• Minimum furniture and equipment requirements for bedrooms are as follows:
• One bed
• One night stand
• One desk and chair
• One lamp
• Two lockable closets (one for each shift)
• Provide storage for pillows and linens under the bed.

c. Technical Requirements

• Divide sleeping area into bedrooms with one person per room.
• Exit from each room should lead to a private corridor.
• Provide low ambient lighting in private corridors.
• Provide walls with minimum STC rating of 45.
• Provide intercom system from each bedroom and the communications control room.
• Provide visual and audible alarms in each bedroom, controlled from the communications control room.
• Provide for cable television.

Private bedrooms should be designed for relaxation and comfort as the firefighter's "home away from home."

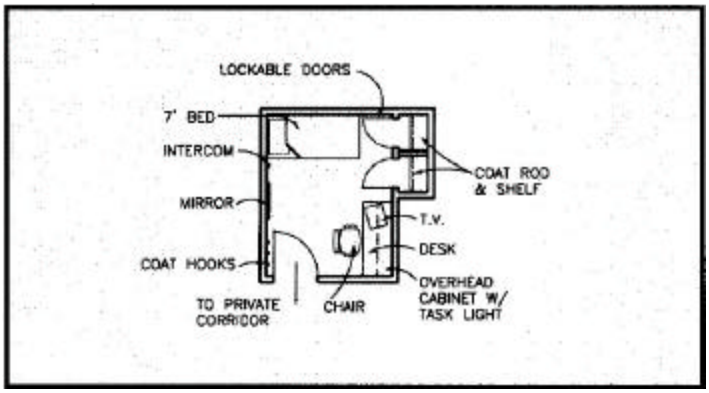


Figure 4-J Private bedroom

3. PERSONAL LOCKERS.
a. Size and Critical Dimensions
• Refer to Tables 5-13 or 5-C for space sizes.
• Provide one locker per person assigned to the fire station for personal items.
• Provide 1800 mm (6 ft) clearance in front of locker areas for circulation and benches.
b. Furnishings and Equipment
• Install 600 x 600 mm (24 x 24 in) single-tier metal louvered lockers with shelves, clothes, hooks, integral combination lock/handle and numbers.
• Gang lockers together with integral base and sloped tops.
• Provide manufacturer's standard hardwood bench.
c. Technical Requirements
• Protective clothing is not to be stored in these lockers.
• Provide visual and audible alarms in each locker room, controlled from the communications control room.

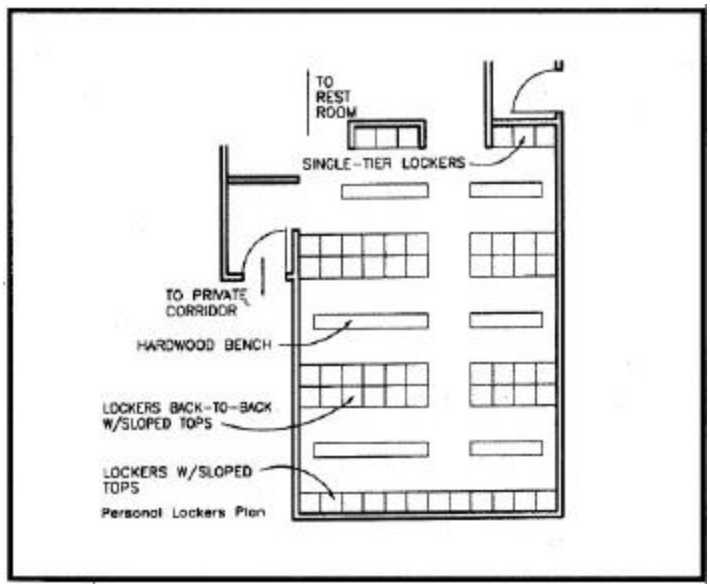


Figure 4-K:
Personal Lockers Plan

4 PHYSICAL THERAPY ROOM.
a . Size and Critical Dimensions
• Refer to Table 5-B for space sizes.
b. Furnishings and Equipment
• Provide self-contained coed sauna and hydro therapeutic whirlpool.
• Provide access from living quarters via private corridor.
c. Technical Requirements
• Provide visual as well as audible alarms in physical therapy room, controlled from the communications control room.

5. REST ROOMS/SHOWERS.

a. Size and Critical Dimensions
• Refer to tables 5-B or 5-C for space sizes.
• Use applicable codes to establish criteria for numbers of water closets, lavatories, and urinals.
• Separate rest room and shower space should be provided for male and female personnel.

Use applicable codes to establish criteria for the number of water closets, Lavatories, and urinals in rest rooms.

• Rest room and shower facilities for female personnel should be based on five percent of the total personnel.
• These facilities must be accessible via the corridor and locker rooms; they are for use by fire-fighting personnel only.
b Furnishings and Equipment
• Install all plumbing fixtures per code.
• Locate shower heads at 2100 Lam (7 ft).
• Men - Water closets, lavatories, urinals, soap dispensers, paper towel dispenser and disposal units, paper holders, grab bars, mirrors, coat hooks, and partitions.
• Women - Same as men, minus urinals, plus sanitary napkin dispenser and disposal units.

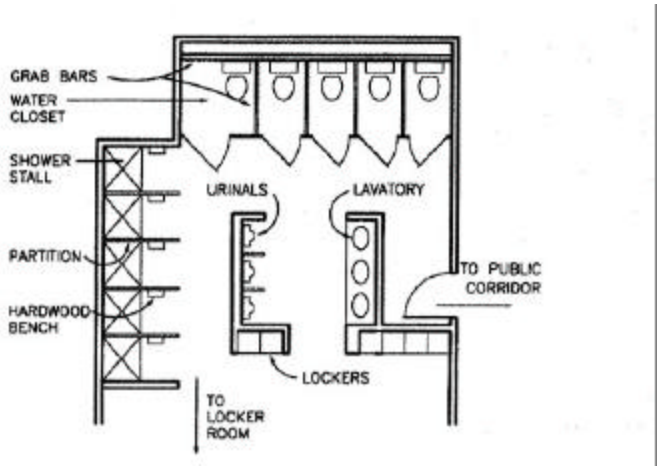


Figure 4-L:
Rest room plan

• Install lavatory sinks in countertop. Provide lever handle controls or electronic sensors at water faucets.
• Provide individual fiberglass shower stall enclosures.
c. Technical Requirements
• Provide handicapped- accessible rest room.
• Provide a minimum STC rating of 45 between rest rooms and adjacent public or private spaces.
• Finish floors with non-skid ceramic tile.
• Finish walls with ceramic tile.
• Provide individual drying area.

6 LAUNDRY.
a. Size and Critical Dimensions
• Refer to tables 5-13 or 5C for space sizes.
b. Furnishings and Equipment
• Specify heavy-duty top loading washer and front loading dryer.

• Furnish a table for folding clothes, etc.
• Provide a service sink with hot and cold water service.
c. Technical Requirements
• Laundry is for cleaning physical fitness and duty uniform clothes only.
• Refer to protective clothing laundry section for cleaning of protective clothing.
• Provide mechanical, and electrical connections as required.

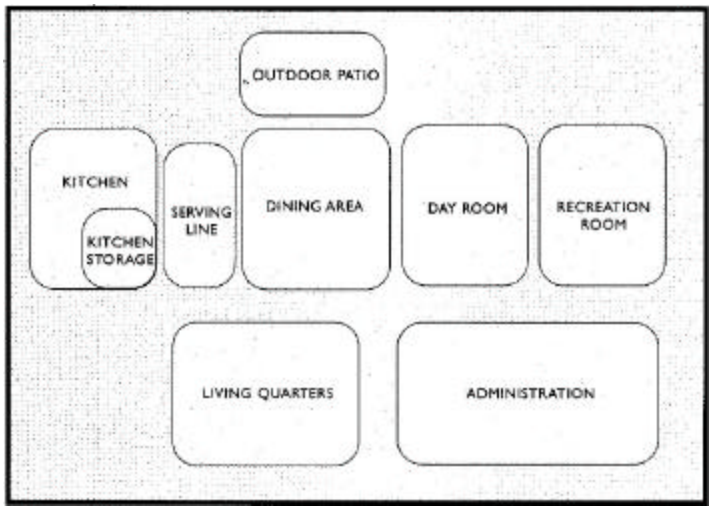


Figure 4-M: Recreation/dining functional area relationships

F. RECREATION/ DINING
1 PRIMARY DESIGN CONSIDERATIONS
a . Use and Performance
• Recreation Room - Area for television viewing.
• Day Room - Provide a room for quiet activities.
• Vending - Provide alcove area for soda/snack vending and coffee machines.
• Kitchen - Area equipped with light commercial equipment for use by contract food service in preparing and serving meals. May be used by fire-fighting personnel after hours.
• Kitchen Storage - Area for storage of paper dining items, staple food items, and cooking utensils.
• Serving Line - Area for selecting, ordering and waiting for food to be prepared.
• Dining Area - Table and chair, and booth seating in dining room for fire station personnel only.

b. Space Organization and Character
• The spaces should be informal and relaxed, more residential than institutional in character.
• Organize kitchen area and serving line to flow from tray pickup to ordering to cashier.
• The day room may be an extension of the dining area.

c. Relationship Between Spaces
• Locate the recreation and dining areas near the living quarters.
• Locate kitchen and serving line adjacent to the dining area.
• Provide outdoor dining and barbecue area with privacy enclosure.
• Locate kitchen storage adjacent to the kitchen.
• Recreation and day room to be separate, but in close proximity

2- RECREATION ROOM.
a. Size and Critical Dimensions
• Refer to Tables 5-13 and 5-C for space sizes.
• Provide a minimum 23.2M2 (250 sf) for recreation room in all stations, plus 0.9 M2 (10 sf) for each 24-hour position.

b. Furnishings and Equipment
• Provide for wide-screen color television.
• Furnish with durable and comfortable seating areas.
• Furnish with coffee and end tables for magazines, drinks, etc.

c. Technical Requirements
• Provide for daylighting control.
• Provide for television cable installation.
• Provide energy-efficient lighting with dimming system.

The recreation room should be designed for comfort, as well as durability.

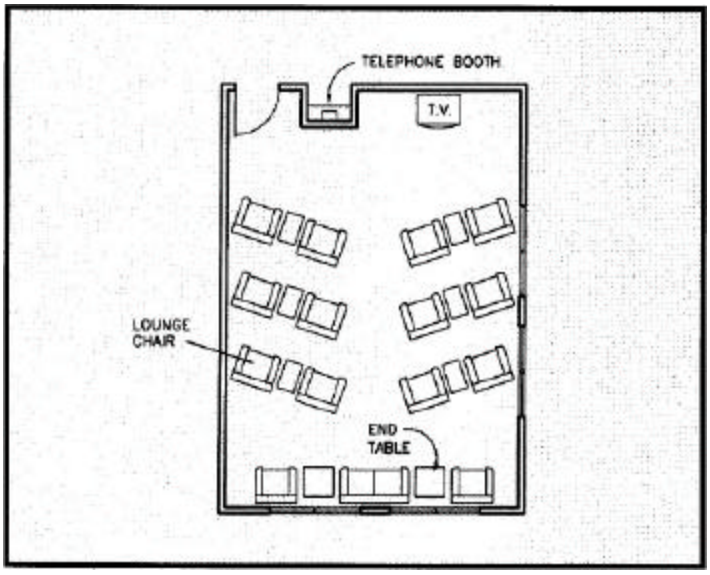


Figure 4-N: Recreation room

3. DAY ROOM
   a. Size and Critical Dimensions
      • Refer to Tables 5-B or 5-C for space sizes
      • Provide a minimum 18.6 n12 (200 sf) for day room in all stations plus 0.9 in 2 (10 sf) for each 24-hour position
   b. Furnishings and Equipment
      • Furnish with durable and comfortable seating areas
      • Furnish with coffee and end tables for magazines, drinks, etc
      • Design areas for in-door recreational activities

   c. Technical Requirements
      • In satellite fire, stations, the day room may also function as the training area
      • Provide for computer and electrical outlets as required for use as a training room

4. VENDING.
   a. Size and Critical Dimensions
      • Refer to Tables 5-B and 5-C for space sizes

• Vending area could be located in an alcove off the corridor

b. Furnishings and Equipment

• Provide for soda, snack, and ice machines

c. Technical Requirements

• Provide dedicated circuits as required.

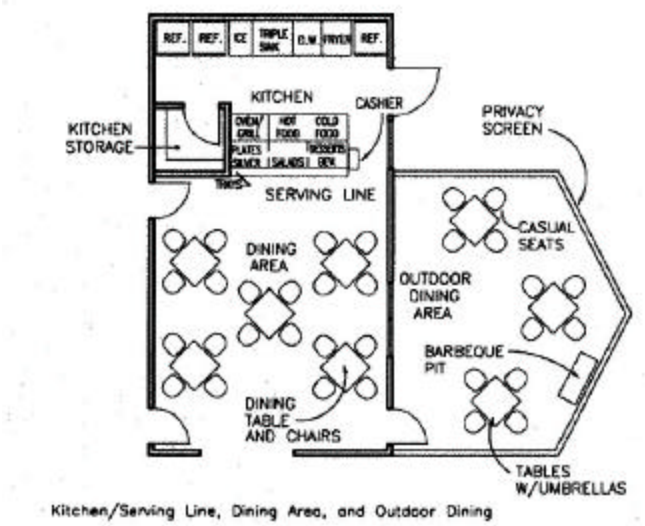


Figure 4-0: Kitchen, dining area, and outdoor dining

5. KITCHEN

a. Size and Critical Dimensions

• Refer to Tables 5-B or 5-C for space sizes

• Provide a minimum 18.6M2 (200 sf) for a kitchen area

• If kitchen facilities are to be used for purposes other than firefighter in-station meal program, the area is authorized under Category Code 723-388

b. Furnishings and Equipment

The kitchen area should be open and have adequate seating for crews and day shift personnel. Layout and size should accommodate the various food serving options that exist at bases.

• Equipment requirements should be determined by food services and fire protection management.

• Provide either fight commercial or residential kitchen equipment as follows:

• Worktable-countertop

• Built-in stove with oven

• Grill with hood

• Deep fat fryer

• Triple sink with garbage disposal

- Heavy-duty commercial dishwasher
- Ice machine
- Lockable refrigerator with freezer, 0.7 M3 (25 cubic feet) for food service use only
- Two refrigerators/freezers for firefighter personnel food

c. Technical Requirements

- Plumbing fixtures to be stainless steel
- Provide range hoods, air ventilation, and fire suppression systems as required by applicable building codes
- If the contract food service in-station meal program is maintained, provide commercial cooking equipment
- Provide residential cooking equipment at satellite fire stations

6. KITCHEN STORAGE

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes

b. Furnishings and Equipment
- When a full-service commercial kitchen is planned, provide locker space for the food service personnel
- Provide open shelving storage space for paper products, cups, plates, napkins, tablecloths, etc

c. Technical Requirements
- Open shelving to be heavy duty

7. SERVING LINE

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes
- Provide a minimum 9.3 M2 (100 sf) for a serving line for the in-station meal program

b. Furnishings and Equipment
- Serving line equipment includes:
  - Tray storage bins
  - Silverware storage bins
  - Four entree serving lines, with steam heat or ice trays
  - Plate storage bin located behind serving line
  - Sneeze guards above food display racks
  - Glass storage tray
  - Carbonated beverage dispensers

c. Technical Requirements
- Equipment should be stainless steel

8. DINING AREA

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes
- Determine dining space on the number of tables required to seat personnel with four persons per table with minimum of 3.7 in, (40 sf) per table
- Area does not include space for the serving line or food preparation
- Option to provide an outdoor dining patio and barbecue area with privacy wall in addition to the required indoor dining area

b. Furnishings and Equipment
- Furnish durable, good quality dining tables and chairs

c. Technical Requirements
- Provide walls with a minimum STC rating of 35

G. ADMINISTRATION

1. PRIMARY DESIGN CONSIDERATIONS

a. Size and Critical Dimensions
- Entrance/Reception - An area to receive guests and visitors

• Fire Chief's Office - A private office room
• Fire Chief's Conference Room - Private conference room shared with assistant fire chiefs
• Fire Chief's Bedroom - Provide a separate bedroom for the fire chief sharing an adjacent restroom
• Assistant Chief for Operations and Readiness' Office - A private office adjacent to the conference room
• Assistant Chief for Operations' Office - A private office with adjacent bedroom
• Assistant Chief for Operations' Bedroom - Provide a separate bedroom sharing the adjacent restroom
• Rest Room - Provide rest room for administrative and public use
• Station Captain's Office/Bedroom - Provide a private office with a bedroom alcove. This person performs detail work for the assistant chief for operations
• Assistant Chief for Technical Services' Office - A private office adjacent to technical services staff room
• Technical Services Staff Office - An office with workstations and work counter
• Technical Services Aids and Storage - Storage room for technical service manuals and brochures
• Administration Storage - Provide area for office supplies and general files

b. Space Organization and Character

• The space should have a businesslike character
• Offices should be grouped together in an administration area, separate from the other fire station functional areas

c. Relationship Between Spaces

• The conference room should be located between the assistant chief for operations and readiness' office and the fire chief's office
• Bedrooms should be adjacent to the fire chief's office and the assistant chief for operations' office
• Locate the administration rest room between the fire chief and assistant chief's bedrooms
• Locate the station captain's office/bedroom separate from the administrative area near the crew

2. ENTRANCE/RECEPTION

a. Size and Critical Dimensions

• Refer to Tables 5-B or 5-C for space sizes

b. Furnishings and Equipment

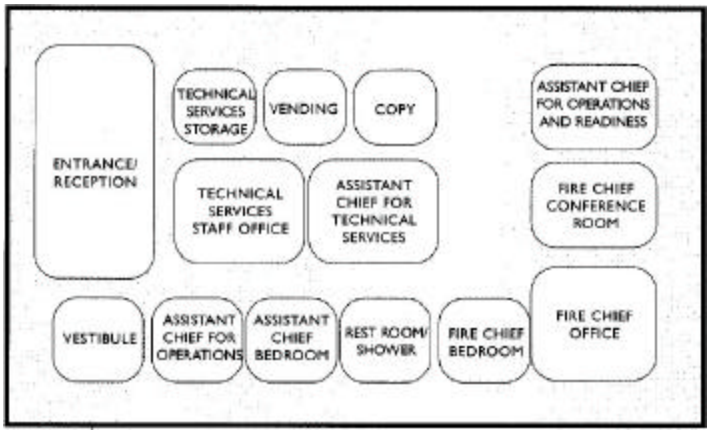


Figure 4-P: Administration functional area relationships

• Provide for an administrative/receptionist workstation with a transaction counter
• Provide a private pay phone area for personal calls
• Furnish the waiting area with comfortable and durable seating
• Provide built-in lighted trophy display case with lockable glass doors

c. Technical Requirements

• Provide a TV camera for surveillance of the entrance reception vestibule from the communications control room
• Provide for computer data outlets and the fire station administration telephone line at the administrative/ receptionist workstation

3. FIRE CHIEF'S OFFICE

a. Size and Critical Dimensions

• Refer to Table 5-B for space size

b. Furnishings and Equipment

• Furnish with a desk, office chair, credenza, bookcase, and guest chairs

c. Technical Requirements

The fire chief's office should be furnished with a desk, credenza, bookcase, and guest chairs. Provide telecommunications and computer outlets as required.

• Provide a minimum STC rating of 35 in the walls
• Provide a lockable door
• Provide telecommunications and computer outlets as required

4. FIRE CHIEF'S CONFERENCE ROOM

a. Size and Critical Dimensions

• Refer to Table 5-B for space size

b. Furnishings and Equipment

• Furnish with a conference table and eight chairs
• Provide marker and tack boards

c. Technical Requirements

• Provide a minimum STC rating of 35 in the walls
• Provide telecommunications and computer outlets as required

5. FIRE CHIEF'S BEDROOM

a. Size and Critical Dimensions

- Refer to Table 5-B for space size
- A private bedroom for the fire chief is authorized in the main fire station

b. Furnishings and Equipment

- Provide the following equipment:
  - One bed
  - One night stand
  - One desk and chair
  - One lamp
  - Two lockable closets, one with a clothes rod and shelf and the other with six adjustable shelves
  - Storage for pillows and linens under the bed

c. Technical Requirements

- Provide light controls and audible alert to the bedroom from the communications control room for emergency response notification
- Provide a lockable door
- Provide telecommunications and computer outlets as required
- Provide for cable television
- Provide a minimum STC rating of 45 in the walls

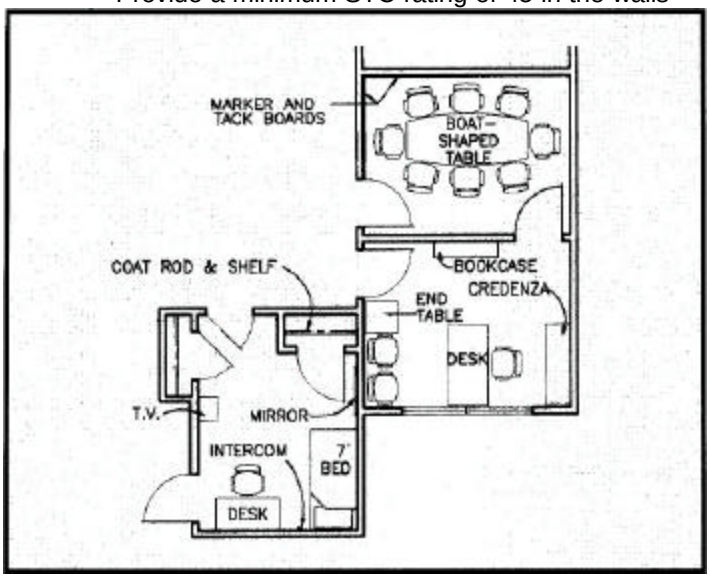


Figure 4-Q: Fire chief's office, conference room, and bedroom

6. ASSISTANT CHIEF FOR OPERATIONS AND READINESS' OFFICE

a. Size and Critical Dimensions

- Refer to Table 5-B for space size

b. Furnishings and Equipment

- Furnish with desk, chair, guest chair, and bookcase

c. Technical Requirements

- Provide a minimum STC rating of 35 in the walls
- Provide a lockable door
- Provide telecommunications and computer outlets as required

7. ASSISTANT CHIEF FOR OPERATIONS' OFFICE

a. Size and Critical Dimensions

- Refer to Table 5-B for space size

b. Furnishings and Equipment

- Furnish with desk, chair, guest chair, and bookcase

c. Technical Requirements

- Provide a minimum STC rating of 35 in the walls
- Provide telecommunications and computer outlets as required
- Provide a lockable door

8. ASSISTANT CHIEF FOR OPERATIONS' BEDROOM

a. Size and Critical Dimensions

- Refer to Table 5-B for space size
- A private bedroom for the assistant chief for operations is authorized in the main fire station

b. Furnishings and Equipment

- Provide the following equipment:

  - One bed
  - One night stand
  - One desk and chair
  - One lamp
  - Two lockable closets, both with a clothes rod and shelf
  - Storage for pillows and linens under the bed

c. Technical Requirements

- Provide light controls and audible alert to the bedroom from the communications control room for emergency response notification
- Provide for cable television
- Provide a minimum STC rating of 45 in the walls
- Provide a lockable door
- Provide telecommunications and computer outlets as required

9. REST ROOMS

a. Size and Critical Dimensions

- Refer to Table 5-B for space size
- Consider the option of having two separate restrooms, one for public use and one for personnel use

b. Furnishings and Equipment

- Provide a shower stall, water closet, and lavatory sink

c. Technical Requirements

- Locate the rest rooms between the fire chief's and assistant chief for operations and readiness' bedrooms

- Provide handicapped-accessible rest rooms
- Provide a minimum STC rating of 35 in the walls

10. STATION CAPTAIN'S OFFICE/BEDROOM

a. Size and Critical Dimensions

- Refer to Tables 5-B or 5-C for space sizes
- At the satellite fire station, provide a separate office and bedroom

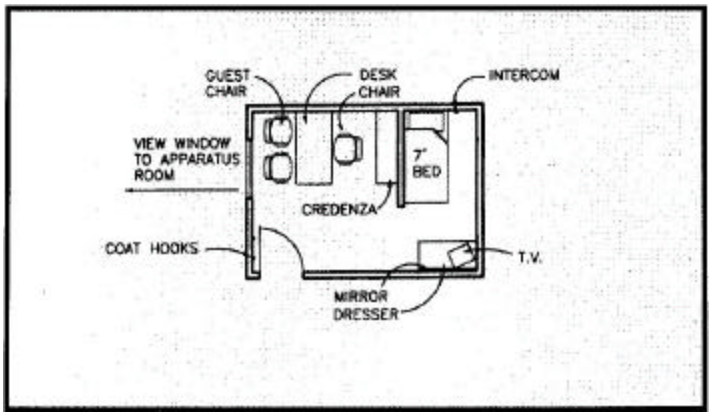


Figure 4-R: Station captain's office/private bedroom

b. Furnishings and Equipment

- Furnish with desk, chair, guest chairs, and bookcase
- Furnish a Murphy bed or a sleeping alcove

c. Technical Requirements

- Provide a lockable door
- Provide telecommunications and computer outlets as required
- Provide a minimum STC rating of 45 for the walls

11. ASSISTANT CHIEF FOR TECHNICAL SERVICES' OFFICE

a. Size and Critical Dimensions

- Refer to Table 5-B for space size

b. Furnishings and Equipment

- Furnish with a desk, chair, guest chairs, and a bookcase

c. Technical Requirements

- Provide a lockable door
- Provide telecommunications and computer outlets as required
- Provide a minimum STC rating of 35 for the walls

12. TECHNICAL SERVICES STAFF OFFICE

a. Size and Critical Dimensions

- Refer to Table 5-B for space size
- Provide 6.0 M2 (65 sf) for each fire prevention staff position

b. Furnishings and Equipment

- Provide a furniture system for workstations
- Provide five tier high-lateral files 900 or 1100 mm (36 or 42 in) wide with cabinet above for manuals
- Provide a work surface with task lighting for drawing review
- Furnish with flat files for drawings. Provide for tube storage of drawings and specifications
- Provide a technical services library with full height bookcase

c. Technical Requirements

- Provide task lighting
- Provide a lockable door
- Provide telecommunications and computer outlets as required

13. TECHNICAL SERVICES AIDS AND STORAGE

a. Size and Critical Dimensions

- Refer to Table 5-B for space size

b. Furnishings and Equipment

- Provide five tier high-lateral files 900 mm or 1100 mm (36 or 42 in) wide
- Provide open shelving for fire prevention educational material.

c. Technical Requirements

- Provide a lockable door

14. ADMINISTRATION STORAGE

a. Size and Critical Dimensions

- Refer to Tables 5-B or 5-C for space sizes

b. Furnishings and Equipment

- Provide space for a printer, copy machine, and fax machine
- Adjustable shelving for office supplies, copier paper, etc.

c. Technical Requirements

- Provide a lockable door

H. MAINTENANCE, REPAIR, STORAGE AND SUPPORT

1. PRIMARY DESIGN CONSIDERATIONS

a. Use and Performance

- Provide for disinfecting facilities and storage areas when required to be in the fire station
- Vehicle Maintenance Office - Provide a mechanic's office if maintenance occurs in the fire station. Otherwise, this room could be used as a labor union office.

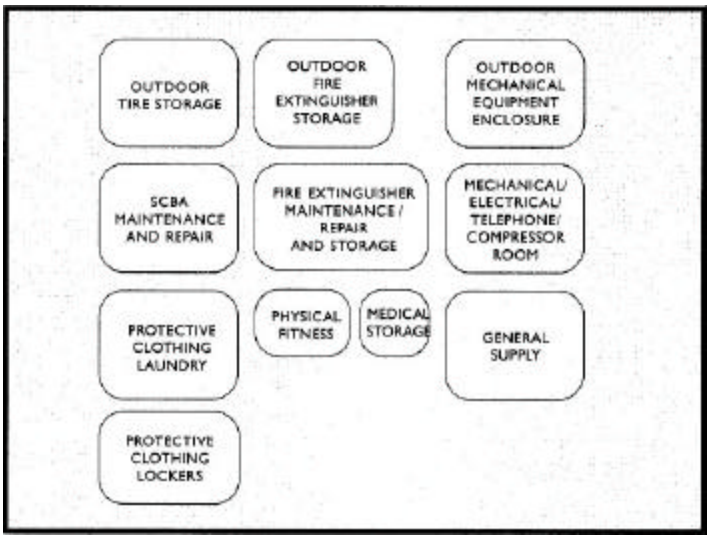


Figure 4-S: Maintenance, repair, storage, and support area functional relationships

• Vehicle Maintenance Parts and Tools - Provide a supply parts room if maintenance occurs in the fire station.

• Fire-fighting Agent Storage - Area for storage of 200 liter (55 gal), or 20 liter (5 gal) containers of agent; actual amount of agent determined by local requirements.

• Hose Storage and Drying - Provide an area for hose storage. Provide hose dryer if required.

• Fire Extinguisher Maintenance/Repair and Storage - Provide area for maintenance and repair.

• SCBA Maintenance and Repair - Provide space to store parts and perform maintenance on breathing apparatuses.

• Protective Clothing Lockers - Lockers for fire-fighting clothing only. May be located above apparatus room on a mezzanine level.

• Protective Clothing Laundry - Provide a decontamination room for protective clothes and for medical decontamination.

• Outdoor Tire Storage - Provide a covered outside area with racks for vertical storage of tires.

• General Storage - Lockable storage for general purpose items.

• Medical Storage - Lockable storage must be sized to handle the volume of required emergency medical supplies.

• Janitor's Closet - Provide an area with mop sink and storage for janitorial equipment and supplies.

• Mechanical/Electrical/Telephone/Compressor Room - Provide an enclosed room to house the mechanical, electrical, and compressor equipment.

• Public and Private Corridors - Provide for adequate circulation with 1800 mm (6 ft) wide public corridors and 1200 mm (4 ft) wide private corridors.

• Disinfecting Facilities - Fire departments that provide emergency medical operations should provide disinfecting facilities for cleaning emergency medical equipment.

b. Space Organization and Character

• Should be organized in close proximity to apparatus room.

• Working support areas should meet NFPA cleanliness requirements.

c. Relationship Between Space

• The protective clothing laundry and locker areas should be adjacent to each other and accessible from the exterior and/or apparatus room.

• Maintenance areas should be adjacent to the apparatus room.

• Fire-fighting agent storage should be located adjacent to the apparatus room.

2. VEHICLE MAINTENANCE OFFICE

a. Size and Critical Dimensions

• Refer to Table 5-B for space size.

• Provide this office for daily minor fire vehicle maintenance performed in the fire station.

• Directly adjacent to maintenance bay and the vehicle maintenance parts and tools room.

b. Furnishings and Equipment

• Provide a desk, chair, and file area in the office.

c. Technical Requirements

• Provide telecommunications and computer outlets as required.

3. VEHICLE MAINTENANCE PARTS AND TOOLS

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.
- Design additional space to support major fire vehicle maintenance/repair and parts cleaning equipment, jacks stands, tires, parts holding area, etc.

b. Furnishings and Equipment
- 600 mm (24 in) deep adjustable heavy-duty shelving.
- Bins for parts.
- Workbench for tools.

c. Technical Requirements
- Doors should be lockable.
- Directly adjacent to maintenance bay.

4. FIRE-FIGHTING AGENT STORAGE

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.
- Fire-fighting agent storage will be provided in all stations based on the vehicles assigned that station.

b. Furnishings and Equipment
- Provide space for a foam trailer to be used for foam storage: 3800 liter (1,000 gal) in trailer and 1500 liter (400 gal) in storage area.
- Provide space for 200 liter (55 gal) drums or the equivalent 20 liter (5 gal) containers.

c. Technical Requirements
- Foam storage outside requires a covered area.

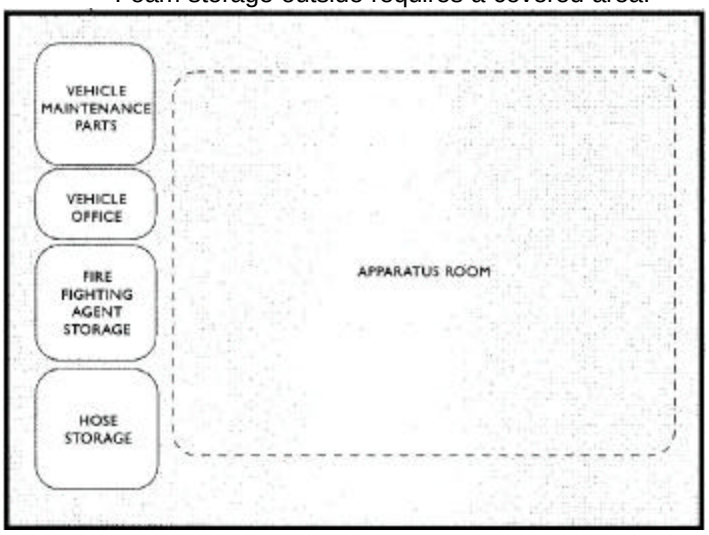


Figure 4-T: Vehicle maintenance functional area relationships

5. HOSE STORAGE AND DRYING

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes.

b. Furnishings and Equipment
- Provide one oven for hose drying if required by climatic conditions.
- Provide racks for roll-up hose storage.

c. Technical Requirements
- Provide an area to lay out hoses for drying or for a drying oven.
- Size oven to contain 15.0 m (50 ft) and 30.0 m (100 ft) sections of 125 mm (5 in) diameter hose.
- Refer to Tables 5-B or 5-C for space sizes.

Provide racks for roll-up hose storage and an area to lay out hoses for drying or oven drying

6. FIRE EXTINGUISHER MAINTENANCE/REPAIR AND STORAGE
   a. Size and Critical Dimensions
      • Refer to Table 5-B for space size.
      • Provide 37.2M2 (400 sf) for fire extinguisher maintenance if work is contracted.
      • Provide an outside covered storage area to store fire extinguishers awaiting repair or pick up. Size to be determined by local requirements.
   b. Furnishings and Equipment
      • Design access for extinguisher delivery away from the apparatus room access pavements.

Fire extinguisher repair space should include a workbench, safety cage, scales, spare parts bin, and dry chemical extinguisher recharge kit

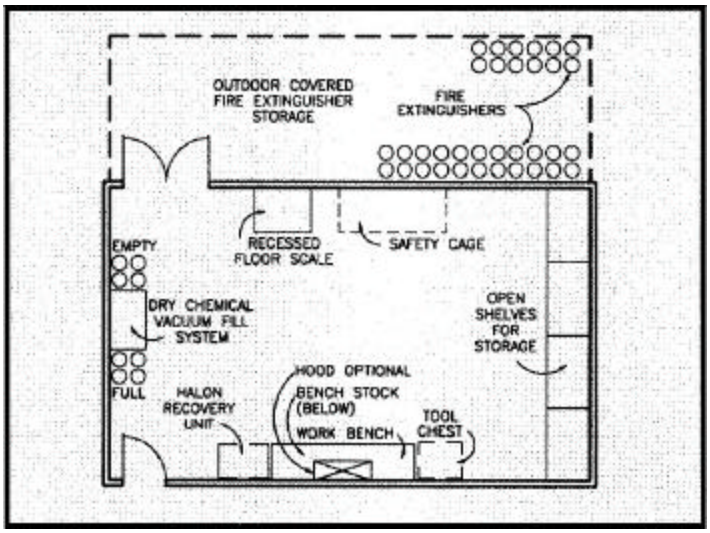


Figure 4-U: Extinguisher repair

      • Provide a storage area for fire extinguishers, especially foam and flight line extinguishers:
         • 20% back-up extinguishers

- 10% broken extinguishers
- 10% fixed-holding area for extinguishers on wheels

- Provide eyewash fountains in the extinguisher maintenance area.
- Provide a hood and exhaust system in the extinguisher maintenance area.
- Provide a double-leaf or roll-up door for delivery of extinguishers.
- Space should be provided to accommodate:
  - Workbench
  - Safety cage for recharging extinguishers
  - Spare parts bin
  - Flammable storage locker
  - Agent and nitrogen storage
  - Dry chemical extinguisher recharge kit
  - Floor scale
  - 680 kg (1,500 lb) cylinder for halon recovery

c. Technical Requirements
- Design should comply with Air Force regulations.
- Provide for dry chemical, halon recovery.
- Provide telecommunications and computer outlets.

7. SELF-CONTAINED BREATHING APPARATUS MAINTENANCE AND REPAIR

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.
- Provide a separate room for SCBA.

b. Furnishings and Equipment
- Provide storage space for 6 to 10 sets of SCBA.
- Provide storage for regulators and bottles.

Design the SCBA maintenance and repair area to store 30 sets of apparatus, along with a mask pressure testing machine

- Provide for mask pressure checking machine.
- Provide dedicated air compressor.

c. Technical Requirements
- Provide a lockable area to maintain air regulators.
- Provide computer outlets to the SCBA maintenance area.
- Provide clean air intake if reservicing of SCBAs is performed in this area.
- Provide telecommunications and computer outlets.

8. PROTECTIVE CLOTHING LOCKERS

a. Size and Critical Dimensions
- Refer to Table 5-B or 5-C for space size.
- Provide 0.56 inch (6 sf) per authorized person for protective clothing locker space. (In existing stations, provide room or mezzanine; new stations should include a locker room.) Locker space is authorized for Individual Mobility Augmentee type positions.
- Locate lockers near the apparatus bay

b. Furnishings and Equipment

• Provide open wire mesh metal lockers sized 600 mm (24 in) wide by 600 mm (24 in) deep by 1800 nun (6 ft) high.

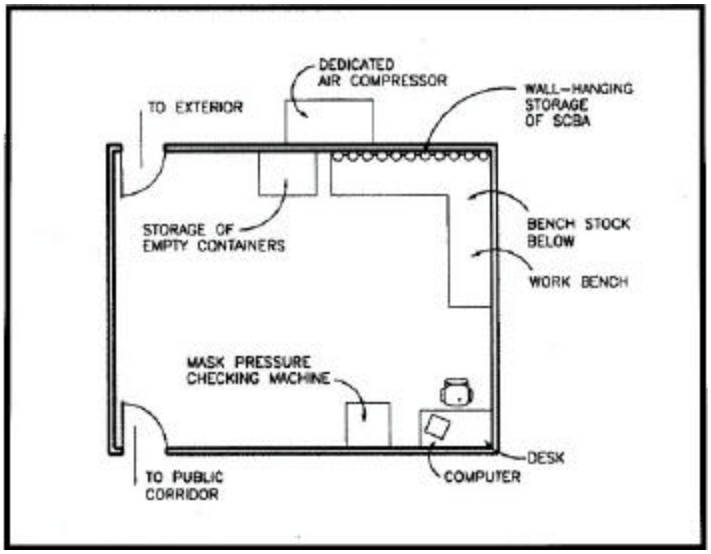


Figure 4-V: Self-contained breathing apparatus

Wire mesh lockers permit free air circulation, keeping the firefighters' protective clothing ready for any emergency

• Protective clothing includes jacket, pants, boots, hood, and SCBA.

• Should have shelves, clothes hooks, and an integral combination lock handle.

c. Technical Requirements

• Requires negative pressure in room for gases emitted while protective clothing is stored.

• Not for storage of civilian clothes.

• Design lockers to permit free air circulation around and through clothing. When enclosed lockers are used, the front and sides must be of an open design.

• Provide area near the apparatus room.

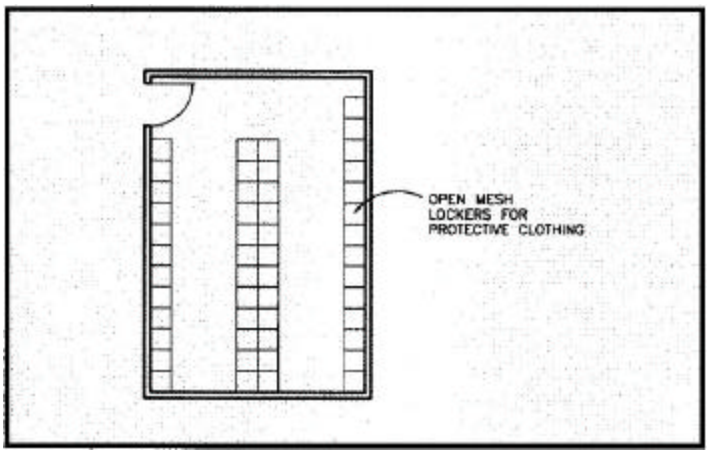


Figure 4-W: Protective clothing lockers

9. PROTECTIVE CLOTHING LAUNDRY
   a. Size and Critical Dimensions
      • Refer to Tables 5-B or 5-C for space sizes
      • Equipment must accommodate washing 4 to 10 sets of bunkers at one time
   b. Furnishings and Equipment
      • Provide a 2400 min (8 ft) by 1200 min (4 ft) stainless steel work table to test hazardous material suits for leaks.
      • Provide a compartmental stainless steel sink and a drip dry rack.
      • Provide two industrial washers/dryers for protective clothing.
      • Provide stainless steel hanging tub for scrubbing down the personnel protection equipment per NFPA.
   c. Technical Requirements
      • Specify nonporous fixtures and finishes and stainless steel equipment .
      • Provide an oil/water separator for wastewater from washers, sinks, and floor drains.
      • Provide spray nozzle to wash down rubber suits.
      • Provide compressed air hose to blow up rubber suits.
      • Room requires negative air pressure for gases emitted while protective clothing is stored.
      • Provide access to apparatus room or exterior entrance to protective clothing laundry, so contaminated garments are not brought into the fire station.
      • Provide HVAC make-up air interconnected to dryer operations.

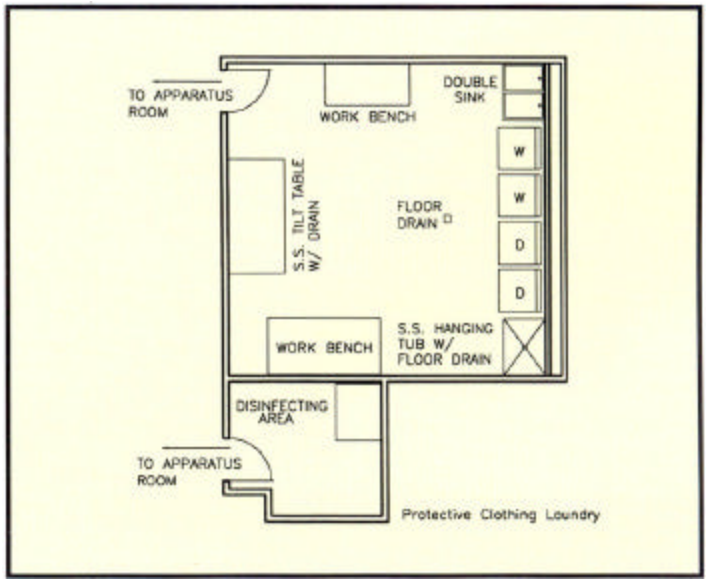


Figure 4-X: Protective clothing laundry

10. OUTDOOR TIRE STORAGE
   a. Size and Critical Dimensions
      • Refer to Tables 5-B or 5-C for space sizes.
      • Provide covered outdoor space for one tire/wheel for each authorized vehicle.

b. Furnishings and Equipment
- Provide tire rack or tire wheel wells to store tires in vertical position.

c. Technical Requirements
- Provide access to storage areas from interior and exterior of station.
- Provide visual screening for outside storage area.

11. GENERAL STORAGE

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes.

b. Furnishings and Equipment
- Heavy-duty shelving for supplies.
- Provide desk, chair, and file cabinets.

c. Technical Requirements
- Provide lockable door.
- Provide access from interior and exterior of station.
- Provide adjacent area to handle the volume of stock items.
- Provide telecommunications and computer outlets as required.

12. MEDICAL STORAGE

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.

b. Furnishings and Equipment
- Provide open steel shelving for gowns, gloves, and other emergency medical supplies.

c. Technical Requirements
- Comply with NFPA requirements.
- Provide lockable door.

Provide an enclosure wall and gate to screen outdoor storage from public view

13. JANITOR'S CLOSET

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes.
- Provide one janitor's closet in the living area of the station.

b. Furnishings and Equipment
- Floor-mounted mop sink.
- Shelving for janitorial supplies.
- Hooks for cleaning and maintenance equipment storage.

c. Technical Requirements
- Provide hot and cold water for mop sink.
- Do not locate electric panels in janitor's closet.
- Provide a water-resistant, easily maintained floor material, sloped to a floor drain.

14. MECHANICAL/ELECTRICAL/TELEPHONE/COMPRESSOR ROOM

a. Size and Critical Dimensions

- Refer to Tables 5-B or 5-C for space sizes.

b. Furnishings and Equipment
- Requirements include the following:
  - A generator
  - Air compressor equipment
  - Hot water heat (dual with rapid reheat)
  - Forced air conditioning system
  - Electrical panels
  - Fire-suppression system control
  - Telephone switch and panels

c. Technical Requirements
- Locate diesel fuel outside of building.
- Include sufficient utility system redundancy to allow for equipment maintenance and contingencies for 24-hour-a-day operations.
- Do not air condition the mechanical room.
- STC rating of 47 to 52, depending on the adjacent use.
- Provide a 1-hour rated enclosure if combustible fuel is used in the mechanical room.
- Provide a lockable door, entered from the outside.
- Slope floor toward floor drain.
- Provide concrete pad or other vibration isolation mass for air compressor, if required.
- Provide exterior access.

15. PUBLIC AND PRIVATE CORRIDORS

a. Size and Critical Dimensions
- Refer to Tables 5-B or 5-C for space sizes.
- Provide 1800 mm (6 ft) wide public main corridors.
- Provide 1200 mm (4 ft) wide private corridors.
- Circulation should be approximately 25 percent of the total space excluding the apparatus room.
- Exterior wall space should not exceed 7 percent of the total space.

b. Furnishings and Equipment
- Not applicable

c. Technical Requirements
- Doors from sleeping areas, training room, dining room, and recreation rooms should swing outward but not restrict the width of the corridor.
- All corridor doors leading toward the apparatus room should swing in the direction of travel.

Emergency shower/ eyewash and gang foot-activated hand washing stations should be in open, easily accessible areas

16. DISINFECTING FACILITIES

a. Size and Critical Dimensions
- Fire departments that provide basic life support and advanced life support emergency medical services are authorized one disinfecting area within the fire station. Each base is required to have one disinfecting area. Refer to table 5-B for space size
- Locate disinfecting area adjoining the protective clothing laundry room.

b. Furnishings and Equipment
- Provide stainless steel equipment and fixtures including triple-container sink, rack shelving, and a work counter.

c. Technical Requirements
- Room must comply with NFPA 1581.

I. U.S.AIR **FORCE RESERVE COMMAND**/AIR NATIONAL GUARD

1. PRIMARY DESIGN CONSIDERATIONS

a. Use and Performance
- These spaces are separately funded by the Reserve and Air National Guard.
- Administrative - Provide a large open office to be subdivided with a furniture system. (May be combined with certification/testing room.).
- Locker/Protective Clothing Area - Expanded metal panel lockers for fire protective clothing only.
- Equipment Storage/Maintenance Room - A large room with shelves, a workbench, industrial sink, compressed air, and associated services.
- Reserve Certification/Testing Area - A room to be used for study, computer-based training, and testing. (May be combined with administrative area.)

b. Space Organization and Character
- The space should have a business-like character.
- Reserve chief officer's locker space may be added to the fire chief officer's bedroom and shower (provided it is separately funded by the Reserve and Guard units).

c. Relationship Between Spaces
- Locate the AFRES/ANG office and protective clothing lockers in a separate win, of the main fire station.
- If both the AFRES and ANG are at the same base, separate facilities are required for both; each is separately funded.

2. AFRES/ANG FIRE CHIEF'S OFFICE

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.
- Locate all AFRES/ANG offices and locker space in a single fire station for unit integrity.

b. Furnishings and Equipment
- Provide a desk, chair, credenza, guest chairs, and bookcase.

c. Technical Requirements
- Provide a lockable door.
- Provide a minimum STC rating of 35 in the walls.
- Provide telecommunications and computer outlets as required.

3. AFRES/ANG ASSISTANT CHIEF FOR OPERATIONS AND READINESS' OFFICE

a. Size and Critical Dimensions
- Refer to Table 5-B for space size.

b. Furnishings and Equipment
- Furnish with a desk, office chair, credenza, bookcase and guest chair.

c. Technical Requirements
- Provide a minimum STC rating of 35 in the walls.
- Provide a lockable door.
- Provide telecommunications and computer outlets as required.

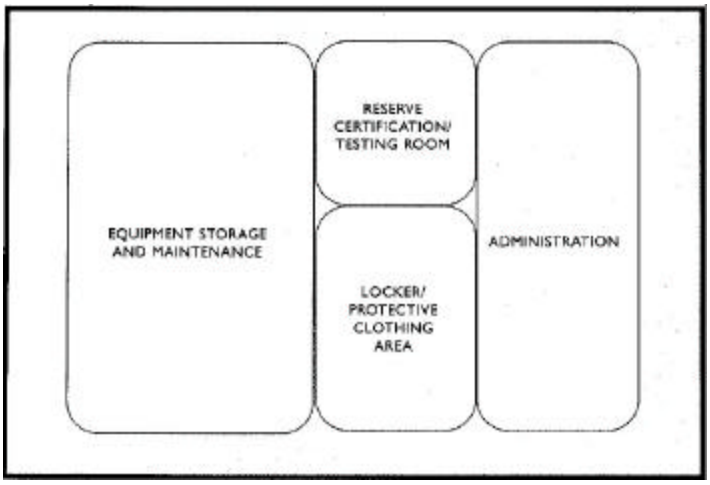


Figure 4-Y: AFRC/ANG functional area relationships

4. AFRES/ANG LOCKER/PROTECTIVE CLOTHING AREA
   a. Size and Critical Dimensions
      • Refer to Table 5-B for space size.
      • Separate locker space is provided for fire protection teams assigned to active Air Force installations. All Reserve/ANG locker space will be located in a single fire station for unit integrity.
      • Provide 0.74 net m, (8 net sf) per authorized person for protective clothing, locker space. (Provide a roof or mezzanine at existing stations; new stations should include a locker room.)
   b. Furnishings and Equipment
      • Provide open wire mesh metal lockers sized 450 mm (18 in) wide by 450 mm (18 in) deep by 1800 mm (6 ft) high.
      • Protective clothing includes jacket, pants, boots, hoods, and SCBA.
      • Should have shelves, clothes hooks, and integral combination lock handle.
   c. Technical Requirements
      • Requires negative pressure in room for gases emitted while protective clothing is stored.
      • Reserve locker space for fire-fighting clothes, not for storage of civilian clothes.
      • Design lockers to permit free air circulation around and through clothing. When enclosed lockers are used, the front and sides must be of an open design.

5. EQUIPMENT STORAGE AND MAINTENANCE AREA
   a. Size and Critical Dimensions
      • Refer to Table 5-B for space size.
      • Separate lockable storage space is required for Reserve/ANG fire teams. This space will be located in a single fire station for unit integrity.
   b. Furnishings and Equipment
      • Provide shelving, holders/brackets, compressed air, industrial sink with hot and cold water, and drainage facilities.

   c. Technical Requirements
      • Provide a lockable door.
      • Provide a minimum STC rating of 35 in the walls.
      • Provide overhead door to accommodate forklift and built-up pallets.
      • Provide floor drain.

6. RESERVE CERTIFICATION/TESTING
   a. Size and Critical Dimensions
      • Refer to Table 5-B for space size.
      • Space required to be located in a single fire station adjacent to other Reserve/ANG spaces.
      • Space for 2-person computer work centers per 12 firefighters authorized.
   b. Furnishings and Equipment
      • Provide library bookshelves, computer work stations, chairs, work surfaces, and combination TV/VCR at each workstation.
      • Furnishings to match other areas of the fire station
   c. Technical Requirements

- Provide a lockable door.
- Provide STC rating of 45 in walls.
- Provide telecommunications and computer outlets as required.

The number and type of fire fighting vehicles housed at each station are determined by the type of aircraft they support and the fire flow demand required to extinguish structural fires

CHAPTER 5

A. INTRODUCTION

This chapter presents illustrative designs for fire stations based on example space criteria for hypothetical bases and sites. The criteria represents typical local operations and space requirements, with realistic architectural solutions that might be appropriate for an individual Air Force base.

The illustrative designs and space requirements are not definitive building layouts. Each base should develop its own space criteria and design solution appropriate to local functions, operating patterns, size requirements, site constraints, and desired architectural character.

B. EXAMPLE MAIN FIRE STATION

DESIGN STATEMENT. The main fire station typically is the fire department's primary facility. For purposes of the illustrative design, shown in main fire station plan Figure 5-A and Space Criteria Table 5-B, the total personnel is 63, comprised of a maximum of 13 people on an 8-hour shift and a maximum of 25 people on each of two 24-hour shifts. This total is calculated by multiplying the 24-hour manpower requirement by the Air Force fire protection manpower factor of 2.58 (See Table 5-A). The building houses 12 vehicles requiring six drive-through stalls.

C. EXAMPLE SATELLITE FIRE STATION

DESIGN STATEMENT. Satellite fire stations are required when vehicle response time cannot be achieved from a main fire station. For purposes of the illustrative design, as shown in Figure 5-B and Space Criteria Table 5-C, the total number of personnel at the fire station is 11, which includes four people on each of two 24-hour shifts. This figure is calculated by multiplying the 24-hour manpower requirement by the Air Force fire protection manpower factor of 2.58 (See Table 5-A). The building houses two vehicles that require two drive-through stalls.

MAIN FIRE STATION ADMINISTRATION PERSONNEL

FIRE CHIEF	1
ASST FIRE CHIEFS	4
ALARM COMMUNICATIONS CENTER OPERATIONS	5
TECHNICAL SERVICES	2
ADMINISTRATIVE ASSISTANT	1
TOTAL	13

MAIN FIRE STATION FIRE-FIGHTING PERSONNEL

VEHICLE NO.	NO. OF CREW	JOB DESCRIPTION
P-23	3	Crew Chief, Driver, Lineman
P-23	3	Crew Chief, Driver, Lineman
P-10/28	3	Crew Chief, Driver, Crew Member
P-15	3	Crew Chief, Driver, Lineman
P-19	3	Crew Chief, Driver, Lineman
P-22	4	Crew Chief, Driver, 2 Firefighters
Total No of Crew 19 x 2.58 = 50 (to obtain total no. of firefighters per shifts)		

SATELLITE FIRE STATION FIRE-FIGHTING PERSONNEL

P-22	4	Crew Chief, Driver, 2 Firefighters
Total No of Crew 4 x 2.58 = 50 (to obtain total no. of firefighters per shifts)		

EXAMPLE MAIN FIRE STATION SPACE CRITERIA
BASED ON 63 PERSONS AND 12 VEHICLES

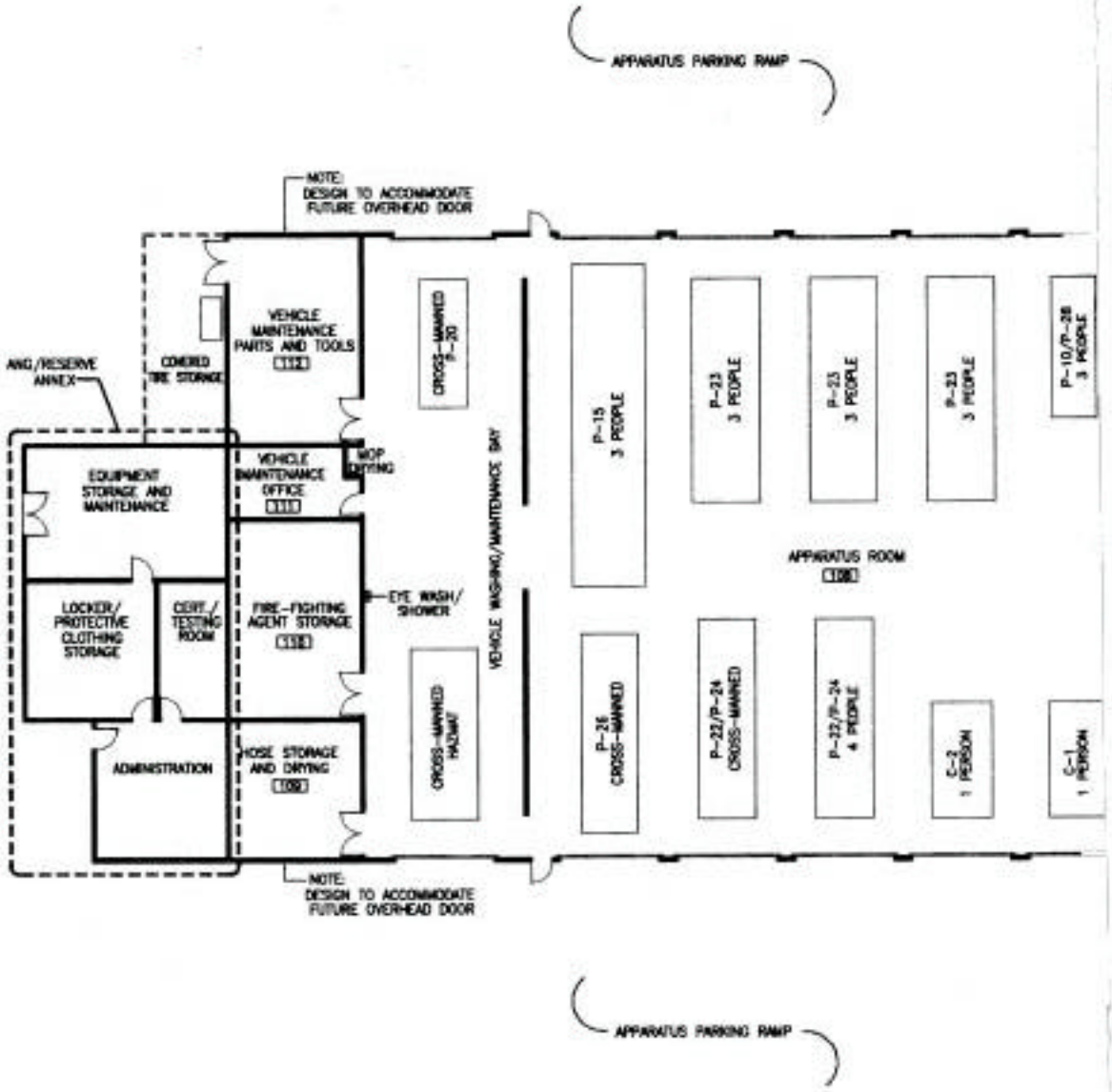
COMPONENT	NET SM	NET SF
Alarm Communications Center		
Communications Control Room	37.0	(400)
Kitchenette	6.5	(70)
Private Rest Room	7.4	(80)
Telecommunications/Computer Room	19.0	(200)
Subtotal Alarm Communications Center	99.0	(1,070)
Apparatus Room		
Six Bays/Twelve Vehicles	909.0	(9,780)
Subtotal Apparatus Room	909.0	(9.780)
Training Facilities		
Training Room	63.0	(680)
Assistant Chief for Training Office	12.0	(130)
Audiovisual Storage	22.0	(240)
Fire-fighting Computer Simulation Model	9.3	(100)
Testing/Training	9.3	(100)
Physical Fitness	70.0	(750)
Subtotal Training Facilities	186.0	(2,000)
Living Quarters		
Private Bedrooms (110 SF per bedroom)	225.0	(2,420)
Personal Lockers	50.0	(540)
Physical Therapy Room	21.0	(230)
Rest Rooms/Showers	65.0	(700)
Laundry	24.0	(260)
Subtotal Living Quarters	386.0	(4,150)
Recreation/Dining		
Recreation Room	53.0	(570)
Day Room	45.0	(480)
Vending	4.6	(50)
Kitchen	19.0	(200)
Kitchen Storage	4.6	(50)
Serving Line	9.3	(100)
Dining Area	33.0	(360)
Subtotal Recreation/Dining	168.0	(1,810)
Administration		
Vestibule	7.4	(80)
Entrance/Reception	35.0	(380)
Fire Chief's Office	14.0	(150)
Fire Chief's Conference Room	12.0	(130)
Fire Chief's Bedroom	12.0	(130)
Assistant Chief for Operations and Readiness' Office	12.0	(130)
Assistant Chief for Operations' Office	12.0	(130)
Assistant Chief for Operations' Bedroom	15.0	(160)

Rest Room	14.0	(150)
Station Captain's Office/Bedroom	16.0	(170)
Assistant Chief for Technical Services' Office	12.0	(130)
Technical Services Staff Office	12.0	(130)
Technical Services Aids and Storage	4.6	(50)
Administration Storage	2.8	(30)
Administration Open Office	14.0	(150)
Copy	4.6	(50)
Coats	2.8	(30)
Subtotal Administration Areas	**203.0**	**(2,180)**

Maintenance, Repair, Storage and Support		
Vehicle Maintenance Office	14.0	(150)
Vehicle Maintenance Parts and Tools	40.0	(430)
Fire-fighting Agent Storage	28.0	(300)
Hose Storage and Drying	23.0	(250)
Fire Extinguisher Maintenance/Repair and Storage	61.0	(660)
SCBA Maintenance and Repair	48.0	(520)
Protective Clothing Lockers	32.0	(340)
Protective Clothing Laundry	56.0	(600)
* Outdoor Tire Storage	20.0	(220*)
* Outdoor Fire Extinguisher Storage	46.0	(500*)
* Outdoor Mechanical Equipment Enclosure	47.0	(510*)
General Supply	41.0	(440)
Medical Storage	20.0	(220)
Janitor's Closet	4.6	(50)
Mechanical/Electrical/Telephone/Compressor Room	33.0	(360)
Public and Private Corridors (25% excluding Apparatus Room)	355.0	(3,820)
Disinfecting Facilities (include with the protective Clothing laundry room)	14.0	(150)
Subtotal Maintenance, Repair, Storage and Support	770.0	(8,290)
AFRES/ANG		
** AFRES/ANG Administrative Area	21.0	(230*)
** AFRES/ANG Equipment Storage/Maintenance Room	28.0	(300**)
** AFRES/ANG Lockers/Protective Clothing Area	21.0	(230***)
** AFRES/ANG Certification/Testing Room (may be part of Administration)	14.0	(150**)
Subtotal AFRES/ANG	85.0	(910)
TOTAL GROSS AREA MAIN FIRE STATION	2805.0	(30,190)

* Outdoor area not included
** Optional if funded by AFRES/ANG
♦ Increase by 9.3 M2 (100 sf) for each additional 12 authorizations above 24
♦ ♦ Increase by 4.6 M2 (50 sf) for each additional 12 authorizations above 24
♦ ♦ ♦ Increase by 0.74 M2 (8 sf) for each authorization above 24

FIGURE 5-A MAIN FIRE STATION PLAN



This plan is only an example of a main station plan and actual layout plans should be based upon individual station requirements and local conditions.

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FIGURE 5-A MAIN FIRE STATION PLAN

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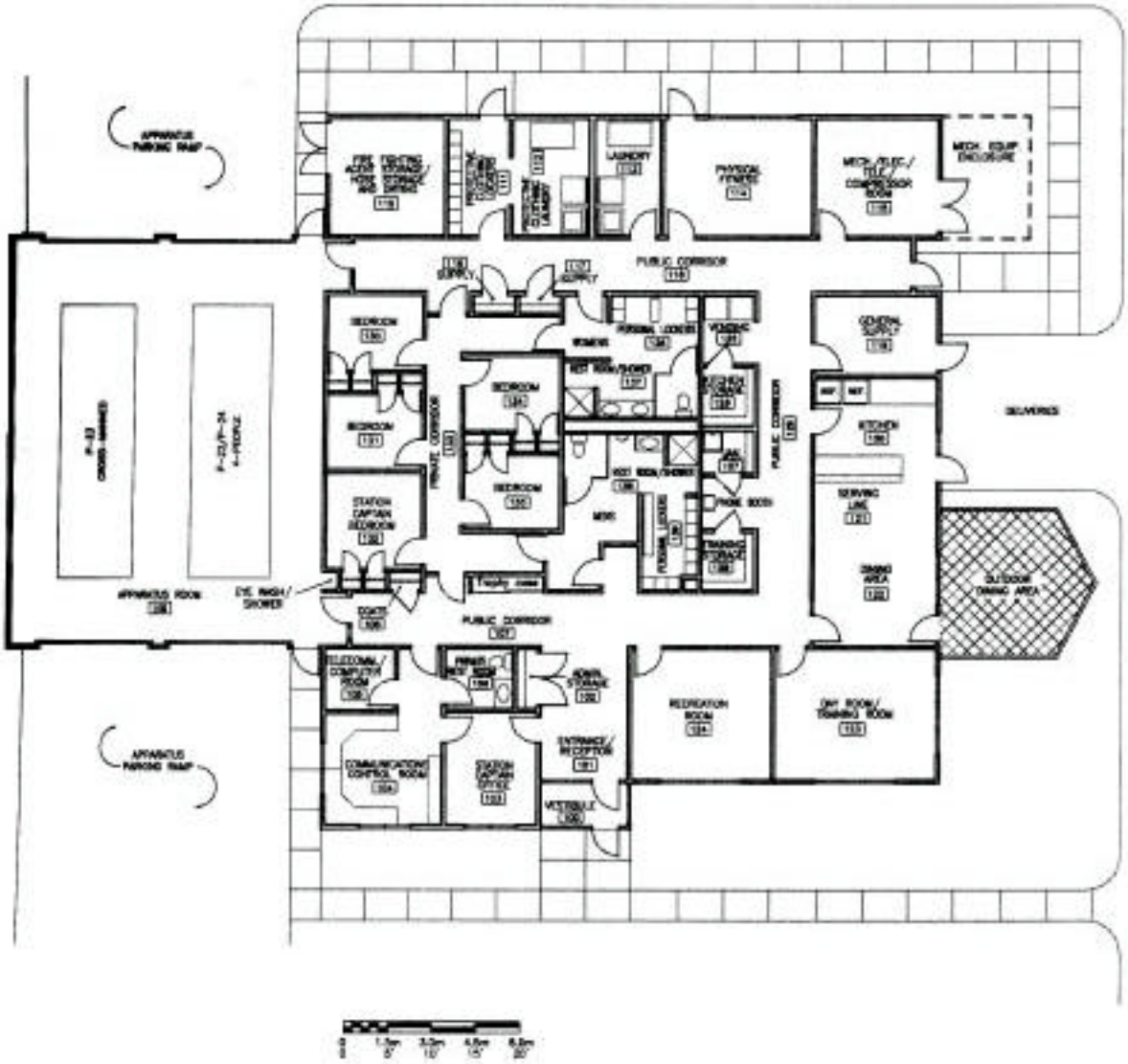
EXAMPLE SATELLITE FIRE STATION SPACE CRITERIA
BASED ON 11 PERSONS AND 2 VEHICLES

Alarm Communications Center	NET SM	NET SF
Communications Control Room	19.0	(200)
Private Rest Room	5.6	(60)
Telecommunications/Computer Room	4.6	(50)
Subtotal Alarm Communications Center	29.0	(310)
Apparatus Room		
Two Bays/Two Vehicles	170.0	(1,830)
Subtotal Apparatus Room	170.0	(1,830)
Training Facilities		
Training Room Included in the Day Room	0	(0)
Physical Fitness	20.0	(220)
Subtotal Training Facilities	20.0	(220)
Living Quarters		
Private Bedrooms	41.0	(440)
Station Captain's Bedroom	12.0	(130)
* Personal Lockers	21.0	(230)
Rest Rooms/Showers	28.0	(300)
Laundry	9.3	(100)
* Personal Lockers in Rest Room are Optional		
Subtotal Living Quarters	111.0	(1,200)
Recreation/Dining		
Recreation Room	24.0	(260)
Day Room/Training Room	24.0	(260)
Vending	1.9	(20)
Kitchen	15.0	(160)
Kitchen Storage	4.6	(50)
Serving Line	9.3	(100)
Dining Area	14.0	(150)
Subtotal Recreation/Dining	93.0	(1,000)
Administration		
Vestibule	5.6	(60)
Entrance/Reception	19.0	(200)
Station Captain's Office	12.0	(130)
Administration Storage	3.7	(40)
Training Storage	5.6	(60)
Coats	0.9	(10)
Subtotal Administration	46.0	(500)
Maintenance, Repair, Storage and Support		
Fire-fighting Agent Storage and Hose Storage and Drying	17.0	(180)
Protective Clothing Lockers	9.3	(100)
*,** Protective Clothing Laundry	11.0	(120)
General Supply	18.0	(190)
Janitor's Closet	2.8	(30)
Supply Closet	1.9	(20)
Mechanical/Electrical/Telephone/Compressor Room	14.0	(150)
Public and Private Corridor (25% excluding Apparatus Room)	90.0	(970)
Subtotal Maintenance, Repair, Storage and Support	164.0	(1,760)
TOTAL SATELLITE FIRE STATION	634.0	(6,820)

*Optional if protective clothing Laundry can be done in main station.
**If the distance between a satellite station and its main station is too great, a disinfecting area is authorized at 14.0 M2 (150 sf). Normally this is collocated with the Protective Clothing Laundry, if practical.

FIGURE 5-B SATELLITE FIRE STATION PLAN



This plan is only an example of a satellite station plan and actual layout plans should be based upon individual station requirements and local conditions.

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CHAPTER 6

A. GENERAL

Finish materials and furnishings should be selected through the use of professional interior design services. Selections should be based on anticipated use, maintenance qualities, life-cycle cost, fire and other life safety requirements, as well as aesthetic qualities. Coordinate materials, finish, color, and texture selections to complement the overall building design and image. Select colors and finishes to express professionalism, warmth, and a strong, positive image. Select local materials to the greatest extent practical. Ensure that carpets and other finish materials comply with applicable criteria.

B. COLORS AND FINISHES

Use colors and finishes of surface materials to highlight and differentiate spaces. For example, the maintenance area requires extremely durable and easy-to-maintain finishes. See Finish Schedule, Table 6 A. The designer should consider environmental and climate issues when selecting a color scheme.

Permanent and semi-permanent surface materials, such as tile, carpet, and the majority of the wall coverings, should be in neutral color tones. Accent colors can be used on surfaces which can be easily changed.

FLOOR COVERING - Seven flooring choices are available, depending on the finish required.

- VINYL COMPOSITION TILE - Use in service, janitorial, and maintenance areas and other high-soil areas. Benefits are ease of maintenance and durability.

- PORCELAIN TILE - Use in high-maintenance areas where extreme durability is required and where water and moisture are present. Can be used for both indoor and outdoor projects.

- CERAMIC TILE - Use in areas where water and moisture are present, such as rest rooms and janitor's closets. Provides ease of maintenance and durability.

- CARPET TILE (GENERAL PURPOSE) - For general use wherever carpet is required. It is easy to install, and the overall pattern conceals stains and traffic wear. Provides easy replacement, storage, and flexibility.

- CARPET TILE (STATIC RESISTANT) - Use in telecommunications or computer rooms.

- CARPET TILE (BORDER) - May be used as an accent in public areas, such as hallways and reception rooms, or wherever a definition of space is required.

- BROADLOOM CARPET - Use in offices, conference rooms, and dining area.

    - BASE - Standard vinyl base will be used throughout most projects. It provides ease of maintenance and durability.

- ACOUSTICAL WALL COVERING - Use AWC-1 as an overall wallcovering; i.e., in telecommunications/computer room and fitness room where additional acoustical treatment is desired.

- VINYL WALL COVERING - Two choices of covering are available:

    - VWC- I - Use as an overall wall covering; i.e., in private corridors, offices, training rooms, and recreation areas where an upgraded finish is desired.

    - VWC-2 - Use as an overall wall covering; e.g., in public corridors, vending, dining areas, and main reception areas where there is public traffic and more durability is required.

- MINI BLINDS - Can be used in all projects where window treatment is required. Use one color to provide an overall uniform appearance. Blinds should be neutral.

- PAINT - Where ease of maintenance is necessary and drywall/vinyl covering are not options, paint is recommended.

• OVERALL PAINT COLOR - Select one color to use on walls, columns, and doors. Use semigloss paint at door frames and trim and areas that require frequent cleaning, i.e. kitchens, bathrooms.

• CEILING TILE - Use 600 by 600 mm (2 x 2 ft) standard or regular svstem. Base standards should be established for plumbing, electrical, and mechanical fixture selections.

Understated excellence is the standard. Extravagant accessories must be avoided. Keep selections simple to maintain continuity.

C. FURNITURE

Furniture is an integral part of the overall building design and image. Coordinate furniture selection for consistency with finish materials, textures, and colors of architectural elements.

Choose furniture that is durable, comfortable, and flexible. A furniture system is recommended for all administrative areas.

D. FINISH SCHEDULE

Table 6-A shows the large fire station finish schedule, including the floor, base, walls, and ceiling finishes. Functional areas for the satellite fire station are indicated with asterisks

Fire station interior design should coordinate materials, finish, color, and texture selections to complement the overall building design and image. Colors and finishes should reflect professionalism, warmth, and a strong, positive image

FINISH SCHEDULE – MAIN FIRE STATION

ROOM NO.	FUNCTIONAL AREA NAME	FLOOR	BASE	WALLS	CEILING	NOTES PG 65
100	Vestibule*	PED-1	VB-1	VWC-2	ACT-1	5
101	Entrance/Reception*	CPT-2	VB-2	VWC-2	ACT-1	
102	Asst. Chief for Training Office	CPT-2	VB-1	PT-1	ACT-1	
103	Training Room*	CPT-2	VB-1	VWC-1	ACT-1	
104	Audiovisual Storage	CPT-2	VB-1	PT-1	ACT-1	
105	Testing/Training	CPT-2	VB-1	PT-1	ACT-1	
106	Fire-fighting Computer Simulation Model	CPT-2	VB-1	PT-1	ACT-1	
107	Public Corridor*	CPT-1	VB-1	VWC-2	ACT-1	
108	Apparatus Room*	CONC	N/A	PT-3	EXP	6
109	Hose Storage and Drying*	CONC	N/A	PT-3	EXP	6
110	Fire-fighting Agent Storage*	CONC	N/A	PT-3	EXP	6
111	Vehicle Maintenance Office	VCT-1	VB-2	PT-1	AT-1	
112	Vehicle Maintenance Parts & Tools	CONC	N/A	PT-3	EXP	6
113	Communications Control Room*	CPT-1	VB-1	PT-1	ACT-1	
113A	Kitchenette	VCT-1	VB-2	PT-1	ACT-1	
114	Telecommunications/Computer Room	CPT-2	VB-1	AWC-1	ACT-1	
115	Private Rest Room*	CT-1	CT-1	PT-3	PT-4	1
116	Emergency operations center	CPT-2	VB-1	PT-1	ACT-1	
117	SCBA Maintenance and Repair	VCT-1	VB-2	PT-1	ACT-1	
118	Fire Extinguisher/Maintenance/Repair and Storage	VCT-1	VB-2	PT-1	ACT-1	
119	Mech/Elec/Tele/Comp Room*	CONC	VB-2	PT-1	EXP	
120	Public Corridor*	VCT-1	VB-2	VWC-2	ACT-1	
121	Protective Clothing Laundry*	CT-3	CT-3	PT-3	PT-4	1
122	Laundry*	CT-3	CT-3	PT-3	ACT-1	1
123	Private Corridor	CT-3	CT-3	VWC-1	ACT-1	
124	Physical Therapy Room	CT-3	CT-3	PT-3	PT-4	
125	Physical Fitness*	MAT-1	VB-2	AWC-1/	ACT-1 MR-1	2
126	Medical Storage	CONC	VB-2	PT-1	EXP	
127	Janitor's Closet*	CONC	VB-2	PT-1	EXP	
128	Public Corridor*	VCT-1	VB-2	VWC-2	ACT-1	
129	General Supply*	CONC	VB-2	PT-1	EXP	
130	Kitchen*	CT-3	CT-3	PT-3	PT-4	
131	Kitchen Storage*	CT-3	CT-3	PT-1	PT-4	
132	Dining Area*	CPT-2	VB-1	VWC-2	ACT-1	
132A	Serving Line*	CT-3	CT-3	VWC-2	ACT-1	
133	Day Room*	CPT-2	VB-1	VWC-1	ACT-1	
134	Television Room*	CPT-2	VB-1	VWC-1	ACT-1	
135	Asst Chief for Operations and Readiness Fire Chief's Office	CPT-2	VB-1	VWC-1	ACT-1	
136	Fire Chief's Conference Room	CPT-2	VB-1	VWC-1	ACT-1	
137	Fire Chief's Office	CPT-2	VB-1	VWC-1	ACT-1	
138	Fire Chief's Bedroom	CPT-2	VB-1	PT-1	ACT-1	
139	Rest Room	CT-1	CT-1	CT-2	PT-4	1,3
140	Asst Chief for Operations' Bedroom	CPT-2	VB-1	PT-1	ACT-1	
141	Asst Chief for Operations' Office	CPT-2	VB-1	PT-1	ACT-1	
142	Public Corridor*	CPT-1	VB-1	VWC-2	ACT-1	1,3
143	Technical Services Staff Office	CPT-2	VB-1	PT-1	ACT-1	
144	Asst Chief for Tech Services' Office	CPT-2	VB-1	PT-1	ACT-1	
145	Administration Storage	CPT-2	VB-1	PT-1	ACT-1	
146	Coats*	CPT-2	VB-1	PT-1		
147	Administration Open Office	CPT-2	VB-1	VWC-2	ACT-1	

148	Technical Services Aids & Storage	CPT-2	VB-1	PT-1	ACT-1	
149	Vending*	VCT-1	VB-2	VWC-2	ACT-1	
150	Copy	CPT-2	VB-1	VWC-2	ACT-1	
151	Station Captain's Office/Bedroom*	CPT-2	VB-1	VWC-1	ACT-1	
152	Protective Clothing Lockers*	VCT-1	VB-2	PT-1	PT-4	
153	Private Corridors*	CPT-1	VB-1	VWC-2	ACT-1	
154-175	Private Bedrooms*	CPT-2	VB-1	PT-1	ACT-1	
176	Private Corridor*	CPT-1	VB-1	VWC-1	ACT-1	
177	Personal Lockers*	CT-1	CT-1	CT-2	PT-4	1,3
178	Rest Rooms/Showers*	CT-1	CT-1	CT-2	PT-4	1,3
179	Rest Rooms/Showers*	CT-1	CT-1	CT-2	PT-4	1,3
180	Personal Lockers*	CT-1	CT-1	CT-2	PT-4	1,3
181	Disinfecting Area	PRT-1	PRT-1	PT-3	ACT-1	1

AFRES/ANG

	Administrative Area	CPT-2	VB-1	WVC-1	ACT-1	
	Certification/Testing Room	CPT-2	VB-1	VWC-1	ACT-1	
	Locker/Protective Clothing Area	VCT-1	VB-1	PT-1	PT-4	
	Equipment/Maintenance Storage	CONC	VB-1	VB-2	EXP	

*Rooms which are included in the satellite fire station

FINISH SCHEDULE KEY NOTES:

1. Provide water-resistant gypsum board ceiling and walls.
2. Provide a full-length mirror on two walls and acoustical wall covering on the other walls.
3. Provide ceramic wall tile to the ceiling.
4. Provide porcelain tile a minimum of 900 mm (3 ft) in front of the serving line.
5. Exterior building materials may be introduced into the vestibule.
6. Provide wall construction of concrete masonry units.
7. The station captain's office and bedroom are separate functional areas in the satellite fire station.

FINISH SCHEDULE ABBREVIATIONS:

ACT-1 600 x 600 mm (2 x 2 ft) acoustical ceiling tile
AWC-1 Acoustical wall covering
CONC Seated concrete
CPT-1 Static resistant carpet tile
CPT-2 Regular carpet tile
CT-1 Ceramic floor tile and coved base
CT-2 Ceramic wall tile
CT-3 Non-skid ceramic tile with coved base
EXP Exposed structure
MAT-1 Interlocking exercise mat
MR-1 Full-length mirror
PED-1 Recessed walk-off ped mat
PT-1 Flat latex paint
PT-3 Epoxy paint
PT-4 Ceiling white epoxy paint
VB-100 mm (4 in) straight vinyl base
VB-2 100 nun (4 in) covered vinyl base
VCT-1 Vinyl composition tile
VWC-1 Vinyl Wall Covering type 1
VWC-2 Vinyl Wall Covering type 2

GENERAL REFERENCES

AIR FORCE CATEGORY CODE 730-142 - Fire Stations
AFI 32- 1024, Standard Facility Requirements
AFPAM 32-1097, Sign Standards
AFPD 23-3, Air Force Energy Management
AFI 32-7060, Interagency and Intergovernmental Coordination for Environmental Planning
AFI 32- 1021, Planning and Programming of Facility Construction Projects
AF1 32- 1026, Planning and Design of Airfields
AFI 32-1023, Design and Construction Standards and Execution of Facility Construction Projects
AFI 31-209, Protection of USAF Resources
AFMAN 91-201, Explosives Safety Standard
AFOSHST 48-19,Hazardous Noise Exposure
ETL 93-2, Dormitory Criteria for Humid Areas
ANSI A117.1, Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped
UBC, Uniform Building Code
DID FORM 1391, Military Construction Project Data
DoD 4270.1 M, Construction Criteria Manual
DoDI 6055.6, Department of Defense Fire Protection Program
MILHDBK-1190, Military Building Code
MILHDBK-1008, Military Handbook-Fire Protection for Facilities (CURRENT EDITION) Engineering Design and Construction
NFPA, National Fire Protection Association
NFPA 13, Standard for Sprinkler Systems
NFPA 17A, Standard for Wet Chemical Extinguishing Systems
NFPA 72, Standard for Fire Protection Signaling Systems
NFPA 96, Standard for Installation of Equipment for the Removal of Smoke and Grease Laden Vapors
NFPA 101, Life Safety Code
NFPA 403, Standard for Aircraft Rescue and Fire-fighting Services at Airports
NFPA 1500, Standard for Fire Department Occupational Safety and Health Program
NFPA 1581, Standard for Fire Department Infection Control Program
ALLOWANCE SOURCE, US Air Force Vehicle Allowance
USPH, PHS, Publication 934, Food Service Manual
OTHER
- USAF Commanders' Guide to Facility Excellence
- The Air Force Pricing Guide
- Base Architectural Compatibility
- USAF Landscape Design Guide
- USAF Interior Design Handbook

ETL 94-3, Air Force Carpet Standards

THE CIVIL ENGINEER
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