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**Civil Engineering**

**STANDARD FACILITY REQUIREMENTS**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 32-10, *Installations and Facilities*, Department of Defense (DoD) Instruction 4165.3, *Department of Defense Facility Classes and Construction Categories*, October 24, 1978, and portions of MIL-HDBK-1190, *Facility Planning and Design Guide, Part II, Technical Guidance*. It provides general guidance for developing standard facility requirements. It describes the facility requirements system, assigns responsibilities, and explains how to initiate and process new and revised standards for publication in the *Standard Facility Requirements Handbook* (previously AFM 86-2). Civil engineers should use the facility space allowances listed by category code in the *Handbook* to assign occupancy and to program new facilities.

**SUMMARY OF REVISIONS**

This revision aligns the instruction with AFPD 32-10. It updates organization symbols for offices of primary responsibility (OPR) and for technical advisors of standards by category code.

**1. Facility Requirements System:**

1.1. The Facility Requirements System develops and approves standards that define the type, number, and size support facilities. The system promotes economy and efficiency in using and developing facilities and helps to realize the following goals:

- Design standards for new and revised functional requirements.
- Maximum use of existing facilities.
- Standards of use to justify new facilities and occupying existing facilities.
- Comprehensive programming for the construction, operation, and maintenance of needed facilities.

1.2. The Facility Requirements System is built around the implementation and maintenance of the *Standard Facility Requirements Handbook* which provides guidance and standards for the type, number, and size of facilities the Air Force can use, occupy, or build to support its mission. A listing in the *Handbook* does not provide automatic justification for programming a facility or for including it on the base comprehensive plan. All available space must be considered when establishing a space deficiency and when justifying programming action. Procedures for modifying the *Handbook* are outlined in paragraph 3., paragraph 4., and paragraph 5. of this instruction. Approved standards published in the *Standard Facility Requirements Handbook* contribute to:

- Timely acquisition of facilities.
- Expedited construction program reviews and approvals.
- Expedited project design.
- Equitable space allocation in existing facilities. The published standards help divide limited assets among competing functions.
- Standardization of facility design. The Air Force realizes benefits not only in design and construction but also in program management and functional operations.

## 2. Responsibilities:

2.1. SAF/MI establishes facility requirements policy consistent with DoD policy and standards for facility requirements.

2.2. The Office of the Civil Engineer (HQ USAF/CE) through the Design Group of the Air Force Center for Environmental Excellence (HQ AFCEE/DG):

- Implements policies and establishes procedures for the facility requirements system.
- Monitors Air Force-wide programs leading to new or revised standard facility requirements to ensure all functional requirements are satisfied.
- Consults on architectural, engineering, and other design aspects of proposed facility requirements.
- Approves standard facility requirements.
- Prepares the *Standard Facility Requirements Handbook* and ensures it is current.

2.3. The OPRs listed in **Attachment 1** are the primary action offices for developing facility requirements. OPRs must ensure facility requirements supporting new and changing functions are identified early and timely action taken to develop, approve, and publish new standards.

2.4. Major commands, field operating agencies, Air National Guard (ANG), and the Air Force Reserve establish active programs to:

- Keep abreast of new missions, programs, or concepts that may generate new facility requirements.
- Develop or refine functional standards for the type, number, and size of facilities needed for mission support.
- Investigate current facility operations to determine if existing standards are adequate.

- Obtain approval of new or revised standard facility requirements for publication in the *Standard Facility Requirements Handbook* using the procedure outlined in paragraph 4. of this instruction.

2.5. Other echelons develop and submit proposals to OPRs to improve facility requirements standards and use facilities more efficiently.

2.6. Installation commanders determine the requirements for a specific facility based on standards published in the *Standard Facility Requirements Handbook* according to AFI 32-1021, *Planning and Programming of Facility Construction Projects*.

2.7. New systems or major modifications to existing systems, initiated under the AF Supplement to DoD Instruction 5000.2 , *Defense Acquisition Management Policies and Procedures*, often generate facility requirements. Program managers for these systems submit requirements to OPRs listed in **Attachment 1**. OPRs submit approved requirements to HQ AFCEE/DG for publication in the *Standard Facility Requirements Handbook*.

**3. Developing Standard Facility Requirements.** OPRs will coordinate with command headquarters for facilities in which they have a primary interest to:

- Acquire a good understanding of the function.
- Explore combining or integrating the proposed facility requirement with other requirements.
- Help civil engineers turn functional needs into design and planning standards by investigating:
  - The number of personnel and types of organizations using the facility.
  - Time, and scheduling of assigned workload.
  - Environmental control.
  - Major equipment or material used in the facility.
  - Site location or master plan.
  - Safety considerations.
  - Cost considerations to achieve functional requirements.
  - Standards used by other government organizations for comparable facilities.
  - Environmental protection requirements.
- Establish the most accurate means of measuring and expressing the requirements to support the function; for example, square feet per person, per vehicle, per aircraft; one each per organizational unit; square yard per total factors.
- Obtain AFCEE support for translating design and planning standards into design proposals and drawings to determine the needed type, number, and size of facilities and their configuration and functional layout.

**4. Procedures for Submitting Proposed Standards for Publication in the *Standard Facility Requirements Handbook*:**

4.1. MAJCOM headquarters OPRs submit proposed standards to the appropriate Air Staff OPR listed in **Attachment 1**.

4.2. Air Staff facility OPRs listed in **Attachment 1** submit proposed standards to HQ AFCEE/DG for evaluation and implementation (preparation for publication). Include a draft *Standard Facility Requirements Handbook* text and supporting documentation.

4.2.1. The draft *Standard Facility Requirements Handbook* text of the proposed standards must include the preferred facility nomenclature, proposed space allowances or other quantitative facility requirement, and explain:

- Why the facility is needed to support Air Force missions, programs, responsibilities, or activities. (Reference basic publications.)
- The principal activities or tasks supported by the facility. (Identify the type of organization performing the work.)
- The facility's major physical components and special features influencing space or other quantitative requirements.
- Other important features.

4.2.2. The supporting documentation must explain in detail the descriptions and standards expressed in condensed form in the *Standard Facility Requirements Handbook* text and how facility space requirements, or other quantitative limits, were derived.

## **5. Submitting Proposed Changes to DoD or Interagency Standards:**

5.1. The Office of the Secretary of Defense has established maximum space allowances for certain facilities (primarily administrative, community, and personnel support) which by new construction or changed use may not be exceeded without advance approval. The *Handbook* indicates which category code facility standards are DoD controlled. OSD also approves or implements standards developed through interagency action to standardize certain facilities (such as NAVAIDs.)

5.2. Air Staff facility requirements OPRs listed in **Attachment 1** and facility requirements OPRs in the ANG and the Air Force Reserve are responsible for obtaining desired changes to standards under DoD control. OPRs will:

- Coordinate proposals with HQ USAF/CE before submitting them to OSD or other Services. ANG and USAFR OPRs will also cross-coordinate proposals of mutual interest before coordinating them with HQ USAF/CE. Send proposals to HQ AFCEE/DG for processing through HQ USAF/CE to DoD.
- Keep detailed records on the development and approval of the revised standards.
- Notify HQ AFCEE/DG when OSD approves revised standards.

**6. Space Allowances.** For all other facilities, except those in paragraph 5. , the sizes and scopes are guidance and may be exceeded. When the projects or actions require construction or change in use and require HQ USAF/CE approval under 32-series policy directives, the writer of the project documents must explain and justify the need to exceed published allowances. When the projects or actions do not require

HQ USAF/CE approval, increases beyond the scopes shown may be made when approved by the MAJCOMs. AFI 32-1021 and 32-9002, *Use of Real Property Facilities*, provide guidance to the MAJCOMs.

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The Civil Engineer

## Attachment 1

### OFFICES OF PRIMARY RESPONSIBILITY

Use this attachment to determine which OPRs develop requirements standards for the following types of facilities (see the *Standard Facility Requirements Handbook* for facility descriptions).

#### **A1.1. FACILITY CLASS 1, Operational and Training Facilities:**

##### **A1.1.1. Category Group 11, Airfield Pavements, OPRs:**

- AFCESA/EN for runway, taxiway, apron, paved shoulder, helicopter pad, warm-up/holding pad, blast deflector, and aircraft arresting system support.
- HQ USAF/LGM for the following pads: arming, disarming, dangerous cargo, power check, calibration, and aircraft wash rack.
- HQ USAF/LGT for dangerous cargo pads.

A1.1.1.1. Advisers to AFCESA/EN; HQ USAF/XOO for runways, taxiways, arm-disarm pads, and arresting systems; HQ USAF/LGM on facility requirements for pads and their design.

##### **A1.1.2. Category Group 12, Liquid Fueling and Dispensing Facilities, OPRs:**

- HQ USAF/LGSS for quantitative operating and storage requirements.
- AFCESA/EN for design standards for liquid fueling and dispensing facilities.

##### **A1.1.3. Category Group 13, Communications, Navigational Aids and Airfield Lighting:**

- HQ AFCESA/ENE is OPR and HQ USAF/XOO (Principal advisor).
- HQ AFC4A is OPR for communications facilities.

##### **A1.1.4. Category Group 14, Land Operational Facilities, OPRs:**

- HQ AFCESA/DXS for explosive ordnance disposal facilities.
- HQ USAF/XOO for aircraft shelter, aerial delivery facility, audiovisual facilities, operations facilities, weather facilities, base photo laboratory, and squadron operations.
- HQ USAF/LGM and HQ USAF/XOO are co-OPRs for helicopter rescue and recovery hangar.
- HQ USAF/INY for photo reconnaissance lab.
- HQ USAF/LGT for air freight and passenger terminals.
- AFCESA/DF for fire station.
- HQ AFSPA/SPX for security police facilities.

**A1.1.4.1. Principal Advisers.** HQ AWS for weather facilities, HQ AMC for terminals.

##### **A1.1.5. Category Group 15, Waterfront Operational Facilities (Not Included).**

##### **A1.1.6. Category Group 16, Harbor and Coastal Operational (Not Included).**

##### **A1.1.7. Category Group 17, Training Facilities, OPRs:**

- SAF/PACE, for Band Center.
- HQ AETC/TTY for AETC training and educational facilities.

- HQ AFOSP/SPO for small arms, machine gun, and grenade launcher ranges.
- HQ USAF/XOO for the following facilities when not operated by AETC: flight training, flight simulator, and aircraft range.
- HQ USAF/LGM for munitions loading crew training.
- HQ USAF/INY for intelligence training.
- HQ USAF/IGD for safety education.
- AFCESA/DF for firemen training.
- HQ USAF/DPPE for NCO Education Center.

## **A1.2. FACILITY CLASS 2, Maintenance and Production Facilities:**

### **A1.2.1. Category Group 21, Maintenance Facilities, OPRs:**

- OPR is HQ USAF/LGM, except AFCESA/DM for base engineer facilities, and HQ USAF/LGT for vehicle maintenance facilities.
- HQ AFMC (Principal Advisor). Maintenance facilities include shops for a wide variety of activities and the principal users advise HQ USAF/LGM on requirements.

### **A1.2.2. Category Group 22, Production (Not Included).**

## **A1.3. FACILITY CLASS 3, Research, Development and Test Facilities:**

### **A1.3.1. Category Group 31, Science Laboratories (Not Included).**

## **A1.4. FACILITY CLASS 4, Supply Facilities:**

**A1.4.1. Category Groups 41 through 45, Supply Facilities-Liquid Fuel Storage , Explosives Storage, Covered Storage, Open Storage.** OPR is HQ USAF/LGS for all open and covered storage facilities except facilities listed in following:

- SAF/AAIP for forms and publications warehouse.
- HQ AFMSA/SGSF for medical war readiness.
- AFSA/SEGS for explosive safety aspects of explosives storage facility requirements. AFSA/SEGS also shares policy responsibility with HQ USAF/LGX for all facilities and activities involving explosives.
- HQ AFCESA/EN for liquid storage facilities and oxygen storage and generating facilities (HQ USAF/LGS for quantitative requirements).
- AFSVA/SVQF for troop subsistence and housing supply/storage.
- HQ AFCESA/DM for base engineer open storage.

## **A1.5. FACILITY CLASS 5, Hospital and Medical Facilities:**

### **A1.5.1. Category Group 51, Medical Facilities:**

- HQ AFMSA/SGSF is OPR. Standards are subject to OSD review and approval.

## **A1.6. FACILITY CLASS 6, Administrative Facilities:**

**A1.6.1. Category Group 61, Administrative Facilities, OPRs:**

- The OPR for administrative facilities other than headquarters facilities (610-2XX) is the office representing the facility's primary user. For example, HQ USAF/LGS is OPR for Base Supply Administration and HQ USAF/SCMB is OPR for Data Processing Installation. HQ USAF/CE coordinates HQ USAF actions on headquarters facilities (610-2XX) and on the administrative space standards established by OSD.

**A1.7. FACILITY CLASS 7, Housing and Community Facilities:**

**A1.7.1. Category Group 71, Family Housing.** The OPR is HQ USAF/CEH. OSD controls OSD establishes standards for facilities in this category group.

**A1.7.2. Category Group 72, Unaccompanied Personnel Housing.** The OPR is HQ USAF/CEH. Standards for airmen dormitories, officers, quarters, and airmen dining halls.

**A1.7.3. Category Group 73, Personnel Support and Service Facilities, OPRs:**

- AFSVA/SVQF for bakery, laundry, dry-cleaning facility, and clothing store.
- HQ USAF/DPPE for education center and dependent school facilities.
- SAF/AAI for post offices.
- HQ USAF/HC for chapel facilities.

A1.7.3.1. OSD controls standards for facilities in category group 73 except clothing stores and security police facilities.

**A1.7.4. Category Groups 74 and 75, Welfare and Recreational Facilities, Interior and Outdoor.** AFSVA/SVQF is OPR for all facilities in groups 74 and 75 except the following:

- SAF/FMPB for credit union and bank.
- HQ DeCA/DF for commissary.
- HQ AAFES for exchange facilities and base theater.
- HQ USAF/DPC for base restaurant and civilian employee welfare facilities.

A1.7.4.1. OSD controls standards in category groups 74 and 75.

**A1.8. FACILITY CLASS 8, Utilities and Ground Improvements:**

**A1.8.1. Category Group 81 through 89, Utilities and Ground Improvements.** AFCESA/EN is OPR for all facilities in this class except the following:

- HQ USAF/LGM is OPR for parking areas for refueling vehicles, and support equipment (SE), and for air munitions demolition and burning facility. (AFSA/SEV advises LGM on the latter requirement.)
- HQ AFSPA/SPP and AFCESA/EN are Co-OPRs for private-vehicle parking compound. The compound contains abandoned and impounded vehicles (AFOSP responsibility) and recreation vehicles (AFCESA/EN responsibility acting as representative of base commanders but not as representative of the facility operators.)
- HQ AFSPA/SPP is OPR for security and boundary fences, security alarm systems, and security lighting.

- AFCESA/DF is OPR for fire protection facilities (includes all installed fire suppression equipment.)
- OPRs for Non-organizational Vehicle Parking, 852-262, vary according to the OPR for the building or facility requiring parking space. For example, AFCESA/DM is OPR for parking space requirements at dormitories. The standards are controlled by OSD.
- HQ USAF/LGT is OPR for parking for vehicle operations facilities.

**A1.8.2. Advisers to AFCESA/EN:**

- AFSA/SEV advises on safety lighting at aircraft alert aprons.
- HQ USAF/LGM advises on apron flood lighting.

**A1.9. FACILITY CLASS 9, Real Estate: AFREA.**

**A1.10. Facility Classes 1 through 8--ANG/USAFR Facility Requirements.** OPRs are HQ NGB/CE and HQ USAFR/CE. OSD controls these standards.

**A1.11. Facilities Not Described in *Standard Facility Requirements Handbook*.** ADE-RE-008 contains a complete listing of all facility category codes. Additional information is available from the Air Force Real Estate Agency (AFREA), 172 Luke Avenue, Suite 104, Bolling AFB DC 20332-5106.

## **Attachment 2**

### **DETERMINING MILITARY STRENGTH**

**A2.1.** Unless otherwise noted, the space requirements are based upon the projected military strength of the installation. In determining the military strength of an installation consider the following:

A2.1.1. When the installation regularly serves a substantial number of military transients (such as technicians, trainees, or students) add the average daily strength, based on a firm projection of the total yearly load of such transients to the projected military strength of the installation.

A2.1.2. When the transient load is clearly seasonal, rather than continuous year round, base the average daily strength on a firm projection of the total seasonal load. Additionally, when supporting other installations in the vicinity, add the projected military strength of such satellite installations to the strength of the host installation.

A2.1.3. When a number of installations or concentrations of military personnel are close to one another, such as in a metropolitan area, the total of facilities provided is governed by, the aggregate military strength in the area.