



Air Force Corporate Facilities Standards

QUALITY PRINCIPLES



Installation Elements




Site Development



Facilities Exteriors



Facilities Interiors



Continuing the Air Force's operational success requires increased adaptability, creativity, and deliberate investments in capabilities and readiness. High performance and sustainable facilities are essential to maintain an agile, flexible, and ready force. To be effective, facilities must be appropriately planned, designed, built and operated. A principal objective is to support our highly sophisticated and capable Air Force by providing facilities that enhance mission capability and reduce total ownership costs. Air Force facilities are to be accommodating and efficient, while representing strength, innovation and resiliency.

QUALITY PRINCIPLES

After September 1947, when the Air Force was established as a separate service, the newly created department appointed the Stearns-Eisenhower Board to study options for the U. S. Air Force Academy. From 1948 as a board chairman through design and completion in 1958, President Dwight D. Eisenhower oversaw the creation of the academy and advocated for its progressive architecture and campus design. Detailed written quality principles and standards were established at the outset to ensure continuity in future facilities and to preserve the iconic quality and legacy of the original structures.

Honoring this rich tradition, the Air Force is pleased to present this most recent update of the Air Force Corporate Facilities Standards program (AFCFS), which governs facility design for all Air Force communities worldwide. AFCFS reinforces a key Air Force paradigm of "Battle Ready ... Built Right!" and manifests these ideals in the design of its facilities to advance mission accomplishment and by providing high quality working and living environments. AFCFS' Quality Principles emphasize the importance of efficiency in the design of highly functional, safe and comfortable environments within a climate of limited resources and evolving criteria.

The AFCFS program establishes an acceptable range of quality for Air Force facilities. Producing resource-efficient facilities with an appropriate level of quality requires a thorough understanding of systems, both the parts and the sum of the parts. Application of quality requires an understanding of long-term value while balancing resources with operations, technologies and wellness. Creative and proficient implementation of AFCFS principles will ensure delivery of facilities that advance operations and accurately represent Air Force culture: an architecture that promotes and supports integrity, service and excellence.

Cover Image
310th Space Wing Headquarters
Schriever AFB, Colorado
Jacobs, Architect

Photo Courtesy
Air Force Civil Engineer Center

Air National Guard Readiness Center
Camp Springs, Maryland
DMJM, Architect

Photo Courtesy Fennell Group



Facility Group 1

Air Force Postgraduate Dental School and Clinic

San Antonio, Texas

Hoefler Wysoki Architecture

Photo Courtesy

US Air Force Civil Engineer Center

PURPOSE AND FUNCTION

Air Force facilities have two essential purposes:

- 1) To efficiently support operations and mission accomplishment while facilitating productivity, inspiration and comfort,
- 2) To represent Air Force ideology and culture to personnel and to the public.

Facilities will be prudent, thoughtfully conceived, well-constructed, suitable for the climate, the context, the workforce, and will represent an appropriate level of quality as well as a sensible investment of taxpayer dollars.

Corporate-level guidance is defined initially in the AFCFS program. Guidance is subsequently defined in greater detail at the base level to promote local participation in the application and implementation of policy. Air Force bases, through the Base Civil Engineer, are required to create and maintain Installation Facilities Standards (IFS) to communicate base-level standards for an acceptable level of quality for facilities. The IFS is a component of the Installation Development Plan, replacing legacy Architectural Compatibility Plans.

“The purpose of architecture is to shelter and enhance man’s life on earth and to fulfill his belief in the nobility of his existence. . .”

—Eero Saarinen



Facility Group 1
CentCom Headquarters
MacDill AFB, Florida
Burns & McDonnell, Architect
Photo Courtesy Fennell Group

FACILITY HIERARCHY

Air Force facilities are stratified into groups, creating a hierarchy of quality influenced by their specific use and function and, often, their location on the base. Accordingly, each facility on an installation is designated with a Facility Group number. An appropriate level of quality is then defined for each facility group.

The highest levels of quality for buildings and their features, materials and details are assigned to Facility Group 1. These are the most prominent facilities on an Air Force installation. Examples of Group 1 include headquarters buildings, medical facilities, base entrance gates and chapels. Facilities in Group 1 will display a dignified architectural character using long-lasting substantial materials and refined detailing, but without excessive ornamentation. Group 2 facilities are designed to be less prominent than Group 1 with a visual character that represents a professional image using moderate detailing; the excessive use of architectural features and extravagant materials is inappropriate. Group 3 is reserved for industrial uses and Group 4 is for family housing.

The value of materials and refinement of architectural detailing is directly associated to a building's group number, which is essentially based on a building's operations and prominence on an installation.



Facility Group 2
Base Operations Facility
Minot AFB, North Dakota
Leo A Daly, Architect
*Photo Courtesy
US Air Force Civil Engineer Center*



Facility Group 3
F-22 Hangar
Hickam AFB, Hawaii
Burns & McDonnell, Architect
*Photo Courtesy
US Air Force Civil Engineer Center*



Facility Group 4
Family Housing, Facility Group 4
MacDill AFB, Florida
Torti Gallas and Partners, Architect
*Photo Courtesy
US Air Force Civil Engineer Center*

“The details are not the details. They make the design.”
—Charles Eames



Facility Group 1
 Santa Maria Visitor Center
 Vandenberg AFB, California
 Fennell Group, Architect
 Photo Courtesy
 US Air Force Civil Engineer Center

FACILITY QUALITY

Air Force facilities shall have a level of quality appropriate for their Facility Group designation. Building sites, architectural features, materials and detailing should appropriately reflect the desired quality related to the facility group number.

Extravagance is inappropriate. Designs are to be cost-effective, integrating economy into building systems that visually express an appropriate level of quality. Each facility design will be responsive to its site and immediate surroundings, to the local climate and to the local context by employing regionally appropriate features and materials.

Highly durable, low-maintenance materials and details are to be provided for all facility groups. Facilities are to be designed to withstand use associated with operations as well as climatic forces and weathering. The required level of quality is to be maintained when integrating antiterrorism/ force protection measures.



Facility Group 2
 F-35 Academic Training Center
 Luke AFB, Arizona
 Burns & McDonnell, Architect
 Photo Courtesy
 US Air Force Civil Engineer Center



Facility Group 3
 Maintenance Hangar
 Reno, Nevada
 H+K Architects
 Photo Courtesy
 US Air Force Civil Engineer Center



Facility Group 4
 Family Housing
 Whiteman AFB, Missouri
 Design West Architects
 Photo Courtesy
 US Air Force Civil Engineer Center

“Quality is never an accident. It is always the result of intelligent effort.”
 —John Ruskin



FACILITY DISTRICTS

To create and maintain visual continuity for sites and facilities on Air Force installations, "Facility Districts" may be designated. A Facility District is a unique visual zone with a distinguishable architecture and readily identifiable boundaries. A district's consistent visual character is typically discerned in similar form, scale and materials. Examples of Facility Districts include historical areas, flight lines, housing areas or campuses.

Facility Districts express visual coherence and continuity, which may elevate the overall level of visual quality without additional costs. Sites and buildings within a Facility District will comply with quality standards for each Facility Group and the base's Installation Facilities Standards.

Facility District

Family Housing, Facility Group 4
MacDill AFB, Florida
Torti Gallas and Partners, Architect
Photo Courtesy US Air Force Civil Engineer Center



SITE DEVELOPMENT

Grounds and landscaping will complement the architecture and will be expressive of an integrated whole, consistent with the respective facility group or district. Landscape materials will be sustainable and comprised of indigenous species that reduce reliance on potable water resources for irrigation. Existing site resources, such as mature trees, will be preserved wherever practical.

Utilities, infrastructure and other site elements will utilize an integrated design approach to align on-site engineered systems with the environment. Sites and climate, including local and regional contexts, will be analyzed to optimize a building's orientation, configuration and massing. Preference will be given to previously disturbed/developed areas.

FACILITY DESIGN

Design and engineering of facilities will incorporate innovative and resourceful methods, systems, technologies and materials appropriate to the Facility Group, operational type and locale. Considerations include selection of materials and details, integrated on-site energy and water management, energy resiliency, climate responsive design strategies, climate resiliency, architectural compatibility, antiterrorism/force protection, and reduced ongoing operations, energy and maintenance costs.

Whenever possible, sites and buildings will be compatible with surroundings thus forming a part of the overall community. The design of buildings and sites will undergo a comprehensive process of understanding and balancing requirements that will be incorporated into a cohesive and inspiring whole. The Air Force Civil Engineer Center (AFCEC) will evaluate facility designs on the basis of functionality and efficient performance, and on how well the design follows AFCFS. Designs are to be highly functional yet flexible to meet changing operational requirements while enduring heavy use and climatic forces over time. Air Force buildings are to be accommodating and efficient, while representing virtue, strength, innovation and resiliency.

SAFETY AND SECURITY

Providing safe and secure working and living environments for all personnel, staff and visitors is paramount. Designs and construction will meet or exceed all antiterrorism/force protection standards and specifications. Architects and engineers will be incessantly challenged to develop methods, materials and solutions to thoughtfully integrate security measures into overall designs without compromising visual quality.

SUSTAINABILITY

Buildings and sites will comply with federal guidelines for High Performance and Sustainable Buildings (HPSB). These include:

- Employ Integrated Design Principles
- Optimize Energy Performance
- Protect and Conserve Water
- Enhance Indoor Environmental Quality
- Reduce Environmental Impact of Materials
- Promote Sustainable Location and Site Development

Cost-effective passive and design strategies and features are encouraged. Climate responsive design solutions for shading, heating and cooling will be integrated into facility and site designs. Building orientation, which directly impacts energy efficiency and performance, is a principal consideration and will integrate High Performance and Sustainable Building strategies for form and demarcation, thermal envelopes and components. Architectural features will be environmentally functional to provide protection from inclement weather, to buffer winds and to promote natural ventilation, summer shading and winter solar gain as applicable for the locale.

Materials selection as well as construction, maintenance and operations practices will be sustainable. Particular attention will be given to the local context, specifically to enduring architectural features and use of regional materials in response to local climatic conditions. Levels of quality will be integrated with features, materials and details that satisfy stipulations for High Performance and Sustainable Buildings (HPSB) and Air Force Sustainable Design and Development (SDD) guidance.

Facility Group 1
Ambulatory Care Center
JBSA Lackland AFB, Texas
HDR, Architect

Photos Courtesy Fennell Group



Edward J. Peterson Museum
Colorado Springs, Colorado
Earle A. Deits, Architect

Photo Courtesy Fennell Group

ARCHITECTURE AND ENGINEERING

Architects and engineers, who are skilled in addressing the local climate and context, will be engaged to ensure an emphasis on High Performance and Sustainable Buildings and an expression of Air Force ideals.

CONSTRUCTION AND CRAFTSMANSHIP

Construction professionals will be engaged throughout the process to ensure foremost implementation of the design. The Air Force is committed to using the best construction practices and craftsmanship possible, within budget constraints, and to selecting the most experienced and credentialed building contractors.

OPERATIONS AND MAINTENANCE

Operations & maintenance (O&M) professionals will be engaged throughout the design and construction process. Facilities will be economical to operate & maintain, and will utilize durable materials that are suitable for the application. Designs will be based on life-cycle cost analysis that considers long-term operations, utility use and maintenance concerns. Design intent and features will be maintained throughout the life of the facility using the best stewardship practices. O&M personnel will be trained on maintaining the performance of building systems.

HISTORICALLY SIGNIFICANT PROPERTIES

The Air Force is proud of its heritage and is committed to preserving its historical, cultural and architectural legacy. All possibly significant AF facilities and archaeological sites are evaluated against specific criteria spelled out in the National Historic Preservation Act regulations at 36 CFR 60.4. Historical or archaeologically significant properties are determined to be eligible for listing in the National Register of Historic Places (NRHP).

“We shape our buildings; thereafter they shape us.”
—Winston Churchill

This Air Force Corporate Facilities Standards document is available on the World Wide Web and is printed in limited quantities to promote environmentally responsible practices.

This document is printed on 100% post-consumer waste fiber, which is manufactured with non-polluting wind-generated electricity and certified by Green Seal for Forest Stewardship Council (FSC) standards.

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