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## **UNIFIED FACILITIES CRITERIA (UFC) PROGRAM AND SECURITY ENGINEERING CRITERIA**

**NAVFAC Far East  
Presented by: Richard Cofer, P.E.  
Naval Facilities Engineering Command Atlantic  
Capital Improvements Business Line  
Engineering Criteria and Programs**

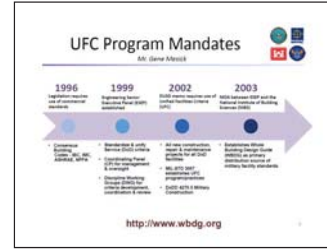
**September 2019**

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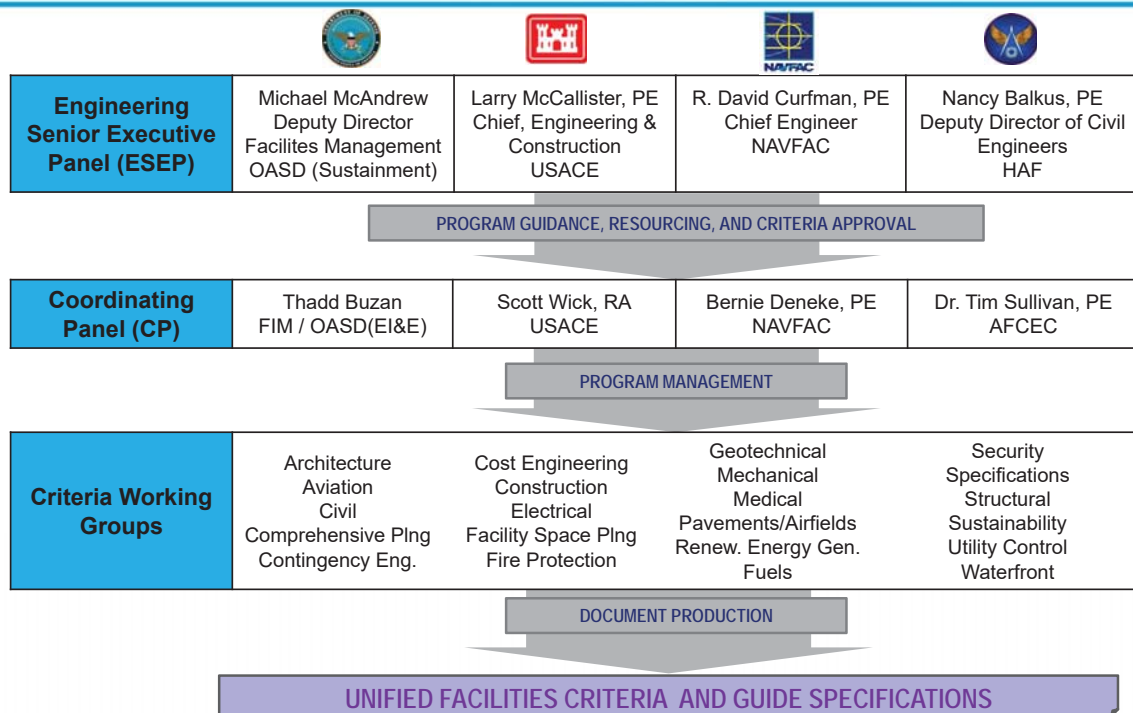
# UFC Program Authority

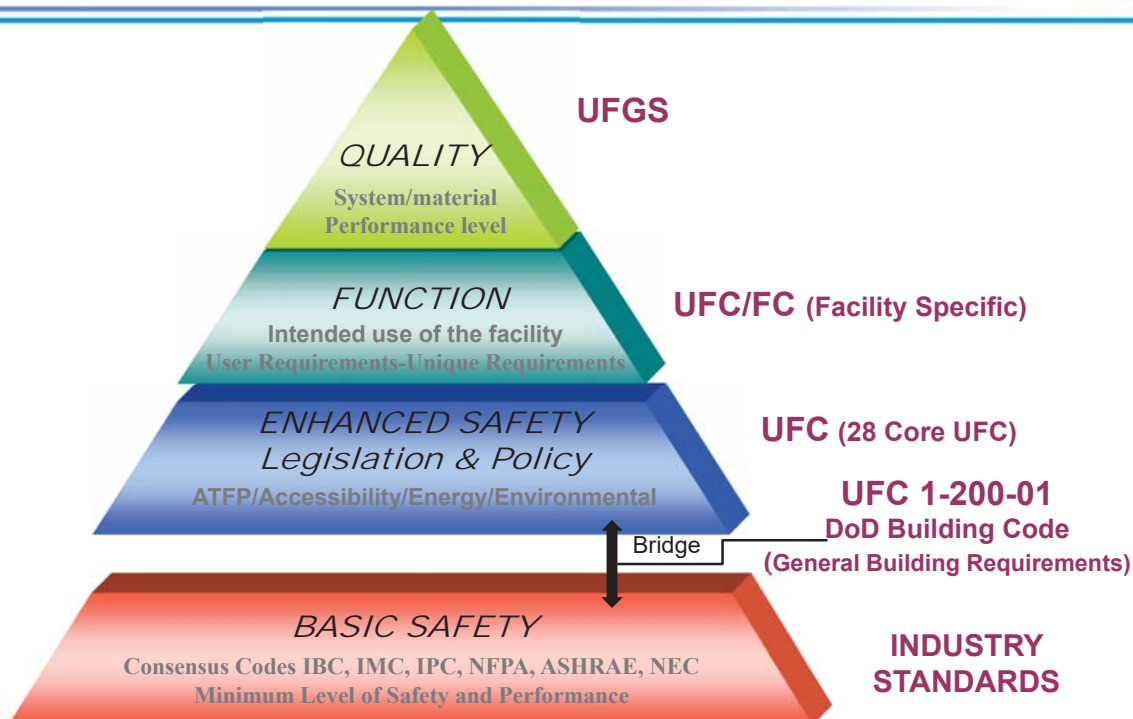


- **Use commercial standards (1996)**
  - IBC, IMC, ASHRAE, etc.
- **Engineering Senior Executive Panel (ESEP) established (1999)**
  - **Standardize and Unify Service Criteria**
    - Fullest extent practical
  - **Coordinating Panel (CP)**
    - Management & oversight
  - **Discipline Working Groups (DWG)**
    - Criteria development, coordination & review
- **DUSD Memo: Department of Defense Unified Facilities Criteria (2002)**
  - “..are to be used by the Military Departments, the Defense Agencies, and DoD Field Activities..”
  - **MIL-STD 3007 STANDARD PRACTICE FOR UFC and UFGS**
    - UFC program/practices
- **MOA between ESEP and the National Institute of Building Sciences (NIBS)**
  - **Whole Building Design Guide (WBDG)** as primary distribution source of military facility standards
- **MIL-STD 3007 STANDARD PRACTICE FOR UFC and UFGS**
  - Major Revision - **Underway – Final Date TBD**

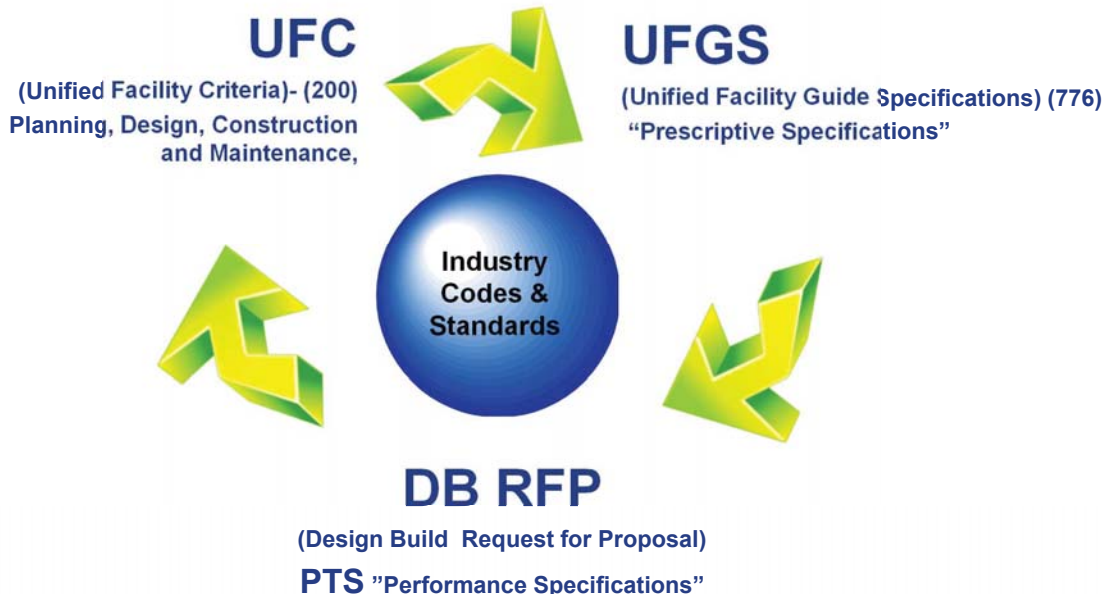


# UFC Program Organization





Criteria Integration



# UFC 1-200-01 DoD Building Code (General Building Requirements)



- **Purpose:**

- Provides general building requirements, establishes the use of consensus building codes and standards, identifies key core UFC, and identifies unique military criteria.

- **Applicability**

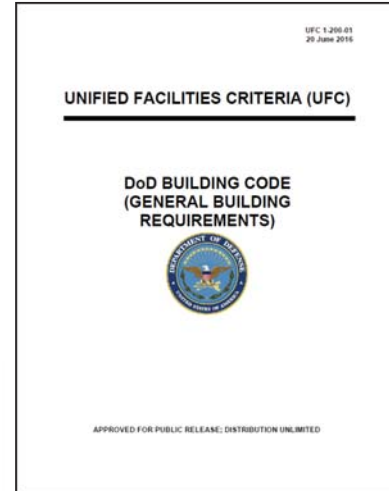
- This UFC applies to the design and construction of new and renovated Government-owned facilities for the Department of Defense (DoD).

- **Lead Agency: Navy**

- Point of contact: Kathleen Reid

- **Current Document Status:**

- Published 2016 ([www.wbdg.org](http://www.wbdg.org))



## Core UFCs



### 1-200-01 DoD Building Code (General Building Requirements)

#### 1-200-02 High Performance and Sustainable Building Requirements

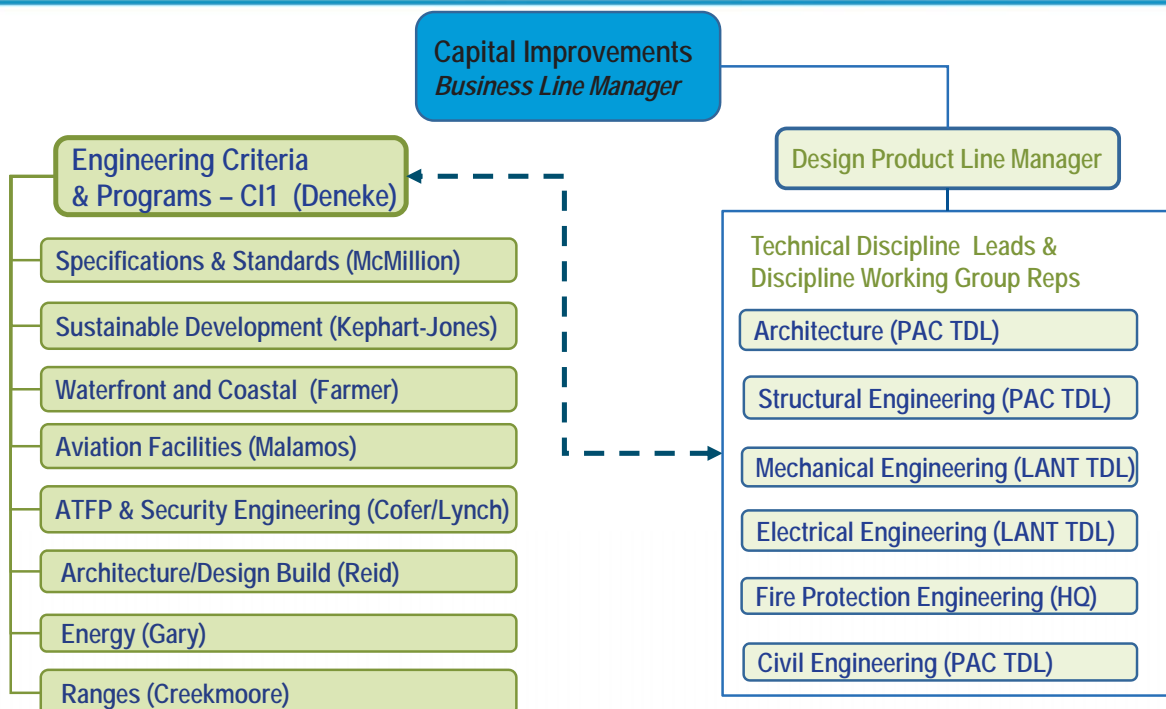
3-101-01 Architecture	3-501-01 Electrical Engineering
3-110-03 Roofing	3-520-01 Interior Electrical Systems
3-120-10 Interior Design	3-530-01 Interior & Exterior Lighting & Controls
3-201-01 Civil Engineering	3-540-01, Engine-Driven Generator Systems for Backup Power Applications
3-210-10 Low Impact Development	3-550-01 Exterior Power Distribution
3-220-01 Geotechnical Engineering	3-560-01 Electrical Safety
3-230-01 Water Storage, Distribution, & Transmission	3-580-01 Telecommunications Building Cabling Systems Planning and Design
3-230-03 Water Treatment	3-600-01 Fire Protection Engineering
3-240-01 Wastewater Collection	4-010-01 DoD Minimum AT Standards
3-301-01 Structural Engineering	4-021-01 Mass Notification Systems
3-310-04 Seismic Design for Buildings	
3-401-01 Mechanical Engineering	
3-410-01 Heating Ventilation and Air Conditioning	
3-420-01 Plumbing Systems	
3-400-02 Engineering Weather Data	

# Criteria – UFC & UFGS



26	<b>Core UFCs</b>	Consists of general building requirements, high performance mandates, and discipline specific systems found in most all buildings. Focus on building code compliance, life safety, legislation compliance, & performance
29 4	<b>Facility Type UFC</b> <b>Facility Type FC</b>	(Fitness Centers ,CDCs, Fire Stations, etc.): Tri-Service and Navy Only. Focus on mission, function, space, amenities, and QOL.
126	<b>Specialty UFCs</b>	Less frequent usage but contains important unique requirements (Piers, mooring, dockside utilities, ranges, master planning, airfield pavements & drainage, petroleum fuel facilities, boiler control systems, security engineering, cathodic protection, & etc.)
776	<b>UFGS</b>	Quality intended for 40-55 year service life. TOC and lessons learned based.

# Organization





ABOUT | SITE MAP | CONTACT | CREATE ACCOUNT | LOGIN | SEARCH WBDG

DESIGN RECOMMENDATIONS | PROJECT MANAGEMENT - O & M | **FEDERAL FACILITY CRITERIA** | CONTINUING EDUCATION | ADDITIONAL RESOURCES



DoD Page Link

**THE GATEWAY TO UP-TO-DATE INFORMATION ON INTEGRATED 'WHOLE BUILDING' DESIGN TECHNIQUES AND TECHNOLOGIES**

The goal of 'Whole Building' Design is to create a successful high-performance building by applying an integrated design and team approach to the project during the planning and programming phases.

**WBDG UPDATES**

**SUSTAINABLE DESIGN OBJECTIVE**

This section pertains to environmental performance of building elements and strategies.

**Related topics:**

- Optimize Site Potential
- Optimize Energy Use
- Protect and Conserve Water
- Optimize Building Space and Material Use
- Enhance Indoor Environmental Quality (IEQ)
- Optimize Operational and Maintenance Practices



**RESOURCE PAGES**

Managing Enclosure Heat Flows  
While the control of moisture is practically a universal requirement for buildings, the

**PARTICIPATING AGENCIES**

Select an agency below for more information on its building programs and criteria.



UFC UFGS

**POPULAR FEDERAL CRITERIA & GUIDANCE**

- DOD Unified Facilities Criteria (UFC)
- DOD Unified Facilities Guide Specifications (UFGS)
- USACE & NAVFAC Engineering and Construction Bulletins (ECB)
- FDOT FAD Bulletins



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DEPARTMENT OF DEFENSE - UNIFIED FACILITIES CRITERIA (UFC)



**UNIFIED FACILITIES CRITERIA (UFC)**

UFC documents provide planning, design, construction, sustainment, restoration, and modernization criteria, and apply to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with DoD Directive 4270.5 (Military Construction) and USO(AT&L) Memorandum dated 29 May 2002. UFC are distributed only in electronic media and are effective upon issuance.

See the DOD Engineering Criteria Status Report for the list of UFCs that were formerly Agency-specific documents.

UFC Template in MS Word

Questions, comments, suggestions and recommended changes for these documents are welcome and should be submitted as a Criteria Change Request. To submit a Criteria Change Request, click on the CCR link next to the document below.

Click the 'Title', 'Date' or 'Change Date' heading to sort by ascending or descending order. Narrow the list by selecting a 'Series' option from the dropdown or view archived or inactive documents by selecting from the 'Status' dropdown and clicking 'Apply'. These documents are available in the following format: Adobe Acrobat (PDF)

Status	Series				
Active	-Any-				
		TITLE	DATE	CHANGE DATE	VIEW PDF CCR
		UFC 1-300-01 DoD Building Code (General Building Requirements)	06-20-2016		PDF CCR
		UFC 1-200-02 High Performance and Sustainable Building Requirements	12-01-2016		PDF CCR
		UFC 1-201-01 Non-Permanent DoD Facilities in Support of Military Operations	01-01-2013		PDF CCR
		UFC 1-201-02 Assessment of Existing Facilities for Use in Military Operations	06-01-2014		PDF CCR
		UFC 1-202-01 Host Nation Facilities in Support of Military Operations	09-01-2013		PDF CCR
		UFC 1-300-01 Criteria Format Standard, with Change 2	02-28-2006	07-01-2009	PDF CCR
		UFC 1-300-02 Unified Facilities Guide Specifications (UFGS)	04-01-2014	04-01-2017	PDF CCR

Industry Standards

**RELATED LINKS**

- Non-Government Standards (Limited Access)
- Military Standards: ASSIST database
- Corrosion Prevention & Control (CPC) Source
- TI-Service Building Technology Vendor Portal

Click an agency logo below for more information and criteria



UFC Download

Submit a CCR Criteria Change Request

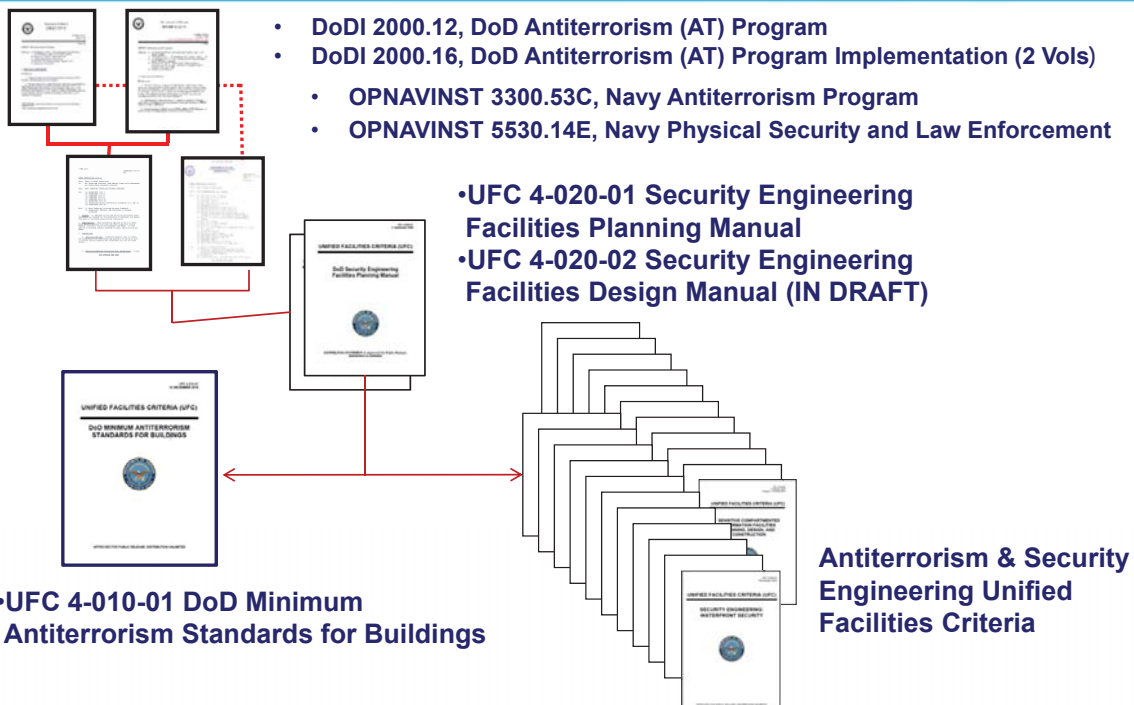


• **DoD Security Engineering Working Group (SEWG)**

- OSDUSD (I&E)
- USACE PDC (Chair)
- NAVFAC
- Deputy Civil Engineer USAF
- **Members of the “Joint” services and other DoD agencies**
  - OSD, Navy, Marine Corp, Air Force, Army, Defense Threat Reduction Agency, DMFO, various others...
- **DoD Engineers, Architects, and security professionals involved in security engineering**
  - Achieve a balance between operational requirements, security operations and facility requirements.
  - Develop criteria that are “requirements” as well as guides to achieving requirements.



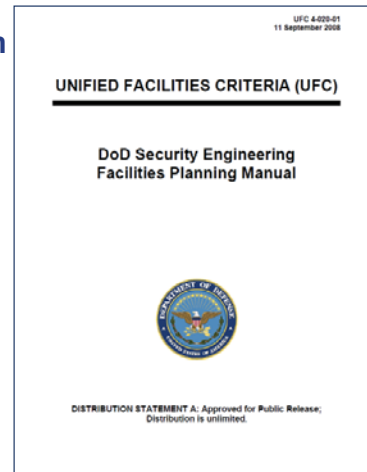
**DoD Policy and Security Engineering Criteria**



# UFC 4-020-01, SECURITY ENGINEERING FACILITIES PLANNING MANUAL



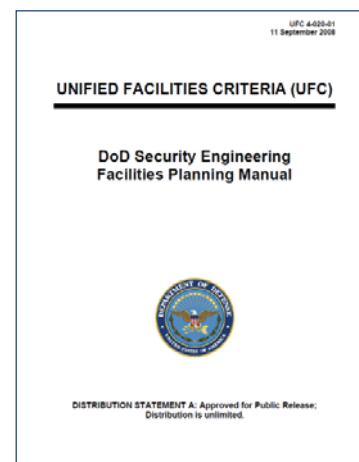
- **PURPOSE:** To provide a unified risk based approach to support planning of projects that include requirements for security and antiterrorism protective measures
- **APPLICABILITY:** New construction, existing construction or expeditionary and temporary construction.
- **INTENDED USERS:** Engineering planners responsible for project development and planning teams responsible for developing design criteria for projects.
- **GOAL:** Develop appropriate, effective, unobtrusive, and economical protective designs to a level appropriate for project programming and to provide commanders with the information they need to allocate resources.



## UFC 4-020-01, Security Engineering Facilities Planning Manual



- Chap 1 INTRODUCTION
- Chap 2 AGGRESSOR THREAT AND TACTICS
- Chap 3 DESIGN CRITERIA DEVELOPMENT
- Chap 4 DESIGN STRATEGIES
- Chap 5 MASTER PLANNING CONSIDERATIONS
- Chap 6 PROJECT COST DEVELOPMENT
  
- GLOSSARY
- APPENDIX A NEW CONSTRUCTION COST TABLES
- APPENDIX B RETROFIT CONSTRUCTION COST TABLES
- APPENDIX C CONSOLIDATED CONSTRUCTION COMPONENT TABLES
- APPENDIX D EXPEDITIONARY CONSTRUCTION COSTS
- APPENDIX E BLANK WORKSHEETS





# Security Engineering Unified Facility Criteria



<b>MULTIDISCIPLINE</b>	
4-020-01	Security Engineering Facilities Planning Manual
4-020-02	Security Engineering Facilities Design Manual
4-010-01	DoD Minimum Antiterrorism Standards for Buildings
4-010-02	ARCHIEVED
4-010-03	Security Engineering: Physical Security Measures for High Risk Personnel
4-010-05	Sensitive Compartmented Information Facilities

<b>SITE DEVELOPMENT/BUILDING LAYOUT</b>	
4-022-01	Entry Control Facilities/Access Control Points
4-022-02	Selection and Application of Vehicle Barriers
4-022-03	Security Engineering: Fences and Gates
4-025-01	Security Engineering: Waterfront Security
4-026-01	Security Engineering Design to Resist Forced Entry
4-026-02	Design for Mitigating Acoustic Emanations
4-027-01	Design of Deployed Operational Bases to Mitigate Terrorist Attacks
4-028-01	Critical Infrastructure Planning Manual

Published Documents Available On the Whole Building Design Guide Website at:  
<http://WWW.WBDG.ORG>

# Security Engineering Unified Facility Criteria



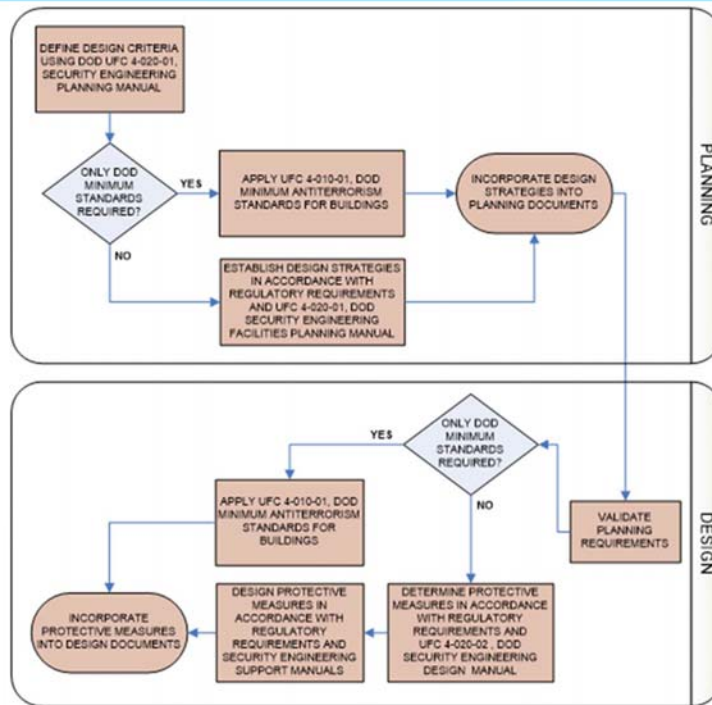
<b>STRUCTURAL/WEAPONS EFFECTS</b>	
4-023-01	Structural Design to Resist Explosives Effects for New Buildings
4-023-02	Retrofit of Existing Buildings to Resist Explosive Effects
4-023-03	Design of Buildings to Resist Progressive Collapse
4-023-04	Design of Windows to Resist Blast, Ballistic, and Forced Entry
4-023-06	Design of Mail Rooms, Delivery Points, and Building Entrances to Resist Explosive Effects
4-023-07	Design to Resist Direct Fire Weapons Effects
4-023-08	Design to Resist Indirect Fire Weapons Effects
4-023-10	Design for Safe Havens

<b>ELECTRICAL</b>	
4-021-01	Mass Notification Systems, Design and O&M
4-021-02NF	Security Engineering: Design of Electronic Security Systems
4-026-03	Design of Shielding for Reducing Electronic Emanations

<b>CHEMICAL/BIOLOGICAL</b>	
4-024-01	Procedures for Designing Airborne Chemical, Biological, and Radiological Collective Protection for Buildings
4-024-05	Design to Protect Against Waterborne Chemical, Biological, and Radiological Contaminants

Published Documents Available On the Whole Building Design Guide Website at:  
<http://WWW.WBDG.ORG>

# Security Engineering UFC Application



# DoD Base Structure



## • Buildings:

- **Owned: 191,309**
  - 1,741,031,421 Square Feet
- **Leased: 7,519**
  - 52,367,035 Square Feet
- **Other: 85,630**
  - 456,665,345

## • Land

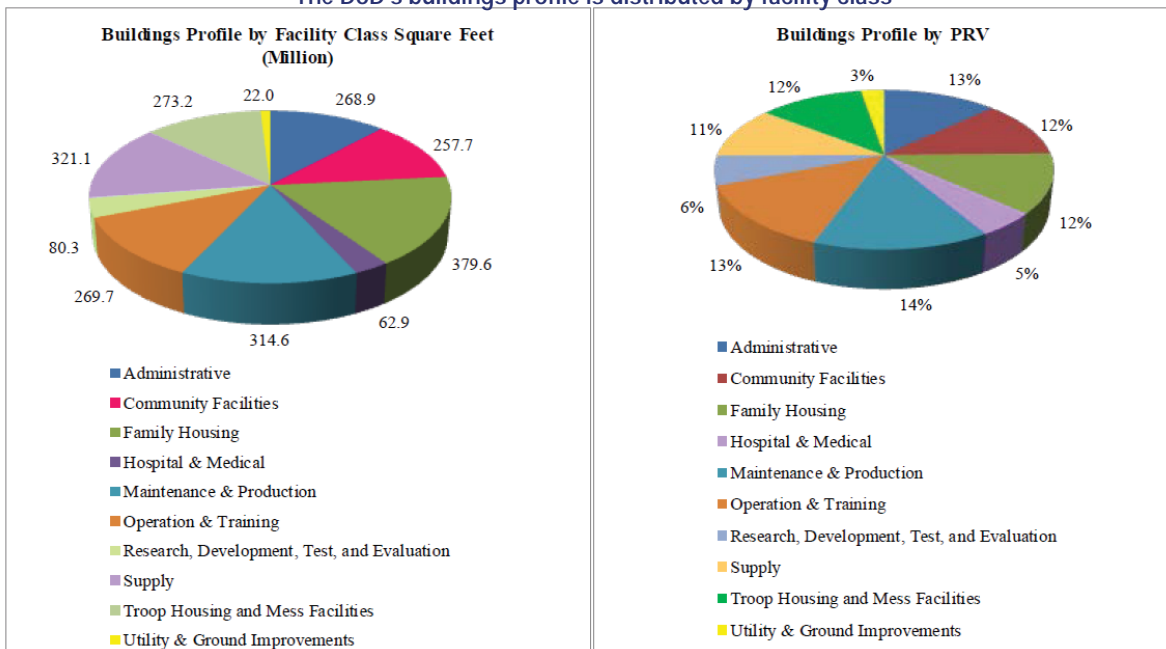
- **Owned: 14,477,496 Acres**
- **Total: 24,697,205 Acres**

DEPARTMENT OF DEFENSE BASE STRUCTURE REPORT FISCAL YEAR 2014 BASELINE  
(A Summary of DoD's Real Property Inventory)

# DoD Base Structure



The DoD's buildings profile is distributed by facility class



DEPARTMENT OF DEFENSE BASE STRUCTURE REPORT FISCAL YEAR 2014 BASELINE