

3.0 DEPARTMENT OF EMERGENCY SERVICES (DES) <VER>(REV 2.0 – 30 JUN 2012)</VER>

3.1. GENERAL REQUIREMENTS:

The Department of Emergency Service (DES) Facility is an emergency and security respondent facility which supports the needs of Military, Civilians, Soldiers and Families during fire, medical emergency, and security situations. The DES is composed of seven main functional areas: Director and Executive Support Area; Fire Emergency Services; Emergency Medical Services; Law Enforcement Services; Consolidated Dispatch; Training and Fitness; and Intake and Detention. Comply with the attached Army Standard for DES Facilities. Generally, the size of this facility depends on the size of the Installation population, class of station, the number of companies housed, the number and types of emergency vehicles housed, and any additional spaces required. The class of station will partially determine the number of spaces required. However, depending on what is currently available on the Installation, some spaces normally reserved for Headquarters stations may be provided in Satellite and Sub-Station facilities.

3.1.1. FACILITY DESCRIPTION

3.1.2. FACILITY RELATIONSHIPS – NOT USED

3.1.3. ACCESSIBILITY REQUIREMENTS

A. GENERAL: The Apparatus Bay, Storage, Equipment, Maintenance, Residential and Living Areas in the DES Facilities are the only areas not required to be accessible. All other areas shall be in accordance with the current edition of the Architectural Barriers Act (ABA) Accessibility Standard for Department of Defense (DOD) Facilities.

B. SITE PLAN DESIGN AND CONSTRUCTION:

- 1) Provide ABA compliant access from the parking lot to the building.
- 2) Provide minimum two (2) ABA compliant vehicle parking stalls for the visitor parking.
- 3) Provide handicap vehicle parking signage and pavement markings.

C. FACILITY DESIGN AND CONSTRUCTION:

- 1) The main building entrance on the ground level and at least one emergency egress, designed per applicable code, shall be handicapped accessible. Electronic exterior door openers with push button control are required for handicapped accessibility.
- 2) Provide ABA clearances and door access in the main public entrance.
- 3) Provide a handicapped accessible drinking fountain in the lobby.
- 4) Provide handicapped accessible public toilet(s), in the lobby area.
- 5) Do not include provisions outlined within the ABA requirements for the vision or hearing impaired.

3.1.4. BUILDING AREAS:

A. GENERAL: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B and C.

B. GROSS AREA:

- 1) Definition: Gross building area is measured to the outside face of exterior enclosure walls. Gross area includes floor areas, penthouses, mezzanines, and other spaces. Gross building area shall be calculated in accordance with TI 800-01 Design Criteria.
- 2) Limitations: Maximum authorized gross building areas for each facility is included in the Army Standard for DES facilities. Proposals that exceed authorized gross area limitations may be considered non-conforming.

C. HALF SPACE: Areas calculated as half space are canopies. Half spaces shall be calculated in accordance with TI 800-01 Design Criteria.

D. EXCLUDED SPACE: The following spaces are excluded from gross area calculations: Attic areas where average clear height does not exceed 7 feet, normal roof overhangs and soffits for weather protection, mechanical equipment platforms and catwalks.

E. NET AREA:

- 1) Definition: Net area is measured to the inside face of the room or finish walls.
- 2) Net Area Requirements: Net area requirements for programmed spaces are included in The Army Standard Designs for DES facilities. If net area requirements are not specified, the space shall be sized to accommodate the required function and to comply with code requirements, overall gross area limitations, and any other requirement of this RFP.

3.1.5. ADAPT BUILD MODEL – NOT USED

3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS

3.2.1. FUNCTIONAL SPACES

A. GENERAL: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B and C. Arrange core areas in one or two story configurations as indicated in Paragraph 2 of this Section.

B. PRIMARY SPACES:

- 1) **Director and Executive Support Area**: This executive area consists of Director of Emergency services, Provost Marshal activities, Executive Services, Administration, and a meeting area.
- 2) **Fire Emergency Services**: This area consists of executive services, administration, equipment/maintenance, storage, hazmat, and residential/living.
- 3) **Emergency Medical Services**: This area consists of all medical first responders.
- 4) **Law Enforcement Services**: This area consists of Law Enforcement public areas, Law Enforcement support, Patrol Operations, Physical Security, Police Operation, Investigations, Traffic Enforcement Branch, Operations Administrations, Law Enforcement On-Duty Desk Operations.
- 5) **Consolidated Dispatch**: This area is where all emergency calls are taken and dispatched.
- 6) **Training and Fitness**: This area is shared by all agencies, which consist of physical training areas, computer training areas, fitness area, and multipurpose area.
- 7) **Intake and Detention**: This area is where people are interviewed, booked, processed, and detained.

C. COMMON AREAS:

- 1) **Lobby**: Lobby shall meet the accessibility requirements stated in 3.1.3 above.
- 2) **Toilet(s)**: A Public toilet shall be a single, unisex toilet. It shall be located adjacent to the Lobby area and shall comply with the ABA accessibility requirements.
- 3) **Vestibule**: Provide an enclosed transition space between the exterior and the lobby or building interior. Provide a minimum of 7 feet clearance between interior and exterior doors.
- 4) **Corridors**: Corridors shall have a minimum width no less than 5'-0".
- 5) **Janitor Closet**: Provide a minimum of one Janitor Closet per floor. Each Janitor closet shall have a mop sink, mop rack, and space for buckets, vacuum and storage for janitorial supplies.
- 6) **Mechanical, Electrical, and Telecommunications Rooms**: Mechanical rooms shall accommodate space for equipment maintenance/repair access without having to remove other equipment. Mechanical, electrical and telecommunications rooms shall be keyed separately for access by Installation maintenance personnel. Filter changes and preventative maintenance shall be performed without requiring access to the dwelling units. First floor exterior access is required for centralized mechanical and electrical rooms.

Telecommunications Rooms provide telecommunication support to the entire DES facility, requiring direct access from the Administrative and Training Area. Telecommunications rooms shall comply with the requirements of ANSI/TIA/EIA-569-B. Refer to Mechanical and Electrical Sections for additional information.

- 7) **Vending Area**: Provide a vending area sized to accommodate one full-size vending machine. Locate vending area in a central location that is easily monitored.
- 8) **Recyclables Area Storage**: Provide a space for the collection and storage of recyclables in the DES facility.
- 9) **Apparatus Bay Ancillary Functions**: These areas provide support for and are directly related to functions in the Apparatus Bay. These areas should be directly accessible to, or a part of the Apparatus Bay

3.3. SITE FUNCTIONAL REQUIREMENTS

A. **GENERAL**: Organize the site to be compatible with the site planning and style of adjacent existing structures. Locate the building to reflect local climatic conditions. For example, provide protection from prevailing winds and glare and orient operable windows to take advantage of summer breezes. Locate the building to take advantage of passive solar heating and day lighting.

B. **PARKING**: Locate parking areas so they do not dominate the main entrance and public image of the facility.

1) **Privately Owned Vehicle (POV) Parking**: Design and construct the POV parking, within the designated construction area. Base the location and design of the POV parking area(s) on the Installation's site constraints. See paragraph 5.2.3, "VEHICLE PAVEMENTS", for additional information. Provide POV parking location and spaces per the Army Standard for DES.

2) **Staff Parking**: Provide parking for authorized Fire Emergency Services staff adjacent to the employee entrance. Parking area shall be sized to accommodate two shifts. Provide parking for authorized DES and Law Enforcement staff adjacent to employee entrance. Parking area shall be sized to accommodate two shift change and shall have controlled access.

3) **Vehicle Parking/Hardstand**: Hardstand areas shall be rigid pavement. Pavement for organizational vehicle areas shall be designed for the heaviest vehicle that uses the area.

C. **ACCESS DRIVES AND LANES**:

1) **Access Drives**: Provide access drives to each building per the Army Standard for DES. Access drives to DES and Law Enforcement staff and public parking shall not cross apparatus vehicle access and exit drive.

2) **Emergency Vehicle/Fire Access Lanes**: Provide fire access lanes. Design the fire access lanes in accordance with NFPA 1, UFC-3-600-01, and the installation's requirements.

D. **SPECIAL SETBACKS AND PERIMETER CONTROLS**:

1) **ATFP**: Comply with UFC 4-010-01.

2) **Circulation Lanes**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B and C.

3) **Building Aprons**: Provide a floor radiant heating element at each vehicle bay door in colder climates to prevent the door from freezing to the pavement.

3.4. SITE AND LANDSCAPE REQUIREMENTS

A. **GENERAL**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B and C.

B. **SITE STRUCTURES**:

1) **Dumpster Area**: Locate, design, and construct the dumpster enclosure area(s) and screening. Dumpster screening shall be aesthetically and architecturally compatible with the building it serves and shall be designed in accordance with the Installation's guidelines. Locate the dumpster areas in accordance with UFC 4-010-01.

2) **Storage of Structural and Aircraft Rescue Fire Fighting (ARFF) Agent:** Provide screening that is aesthetically and architecturally compatible with the building it serves. Design in accordance with the Installation's guidelines and locate in accordance with UFC 4-010-01.

C. **LANDSCAPING\HARDSCAPING:** Construct pedestrian walks within the designated construction area and connect to existing sidewalks, where applicable. Construct walks paralleling buildings beyond the eave drip line and at least 5 feet from the foundation. Sidewalks shall be a minimum of 6 feet wide. Restrict vehicular access to the sidewalks, as required by UFC 4-010-01. Construct non-vehicular pedestrian sidewalks of Portland cement concrete having a minimum nominal thickness of 4 inches. Design joint patterns uniformly, symmetrical, and in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards. For joints, do not exceed the length to width ratio of 1.25 for non-reinforced pavements.

3.5. ARCHITECTURAL REQUIREMENTS

A. **GENERAL:** See paragraph FACILITY SPECIFIC REFERENCES Attachments A, B and C.

1) **Architectural Requirements:** The architectural plan shall accommodate the functional and spatial relationships required for a functionally efficient DES facility. Building layouts shall recognize the contrasting operational, administrative and residential functional requirements, and the facility shall be designed for the appropriate accomplishment of each function.

- a) Clear spans are preferred for the Apparatus Bay.
- b) Harden the perimeter of the Display Area, Lobby and Public Entry.
- c) Harden the Intake and Detention.

2) **Circulation Design Considerations:** The interior functional arrangement shall allow for ease of circulation and movement and consider the safety, health and operational efficiency of the occupants. Also, the need for the fire fighters' and medical emergency personal rapid response to emergency situations shall be recognized. Exterior circulation at the facility shall meet antiterrorism and security requirements and provide safe and efficient vehicular movement.

3) The DES facility shall present a cohesive architectural image and shall comply with Command and Area Design Guide architectural standards. Also, consider the local geographical and cultural environment. Use durable and low-maintenance exterior and interior finishes.

4) Ensure that the main DES entrance and Contingency Waiting Area are clearly identifiable to discourage visitors from entering the facility through employee entrances. In cold climates, provide a canopy (or a recess) at required egress doors to ensure that doors can completely open without obstruction from snow and ice. Comply with NFPA 80.

B. **WALLS:**

1) **Exterior Walls:** Consult the applicable Area Design Guide for the required aesthetic motif and material preferences. Select exterior materials to be attractive, economical, durable and low maintenance. Pre-engineered metal building systems are preferred for their factory finished metal siding and roof panels. Masonry walls are preferred at the ground floor level. Masonry units shall be tested for efflorescence. Efflorescence testing shall conform to the provisions of ASTM C 67. CMU construction shall comply with the provisions of ASTM C 1400.

2) **Interior Walls:** Consult the applicable Area Design Guide for the required aesthetic motif and material preferences. Select interior materials to be attractive, economical, durable and low maintenance.

C. **ROOF SYSTEMS:** Roof system shall comply with applicable criteria for fire rating.

D. **OPENINGS:**

1) **Storefronts/Curtain Walls and Entrances:** Material and installation shall comply with applicable codes and criteria.

2) **Windows:** Material and installation shall comply with applicable codes and criteria.

a) **Exterior Windows:** Provide insulated, high efficiency window systems, with thermally broken frames complying with applicable codes and criteria. Each bedroom shall have at least one exterior window. Window

shall meet egress requirements of NFPA 101 and International Building Code. Window sills shall be designed to discourage bird nesting. Operable windows shall be furnished with locks, and fiberglass or aluminum insect screens removable from the inside.

- b) **Interior Windows:** Material and installation shall comply with applicable codes and criteria.
 - 3) **Doors and Frames:** Fire-rated and Smoke Control Doors and Frames: Shall comply with applicable codes, criteria and requirements of labeling authority. STC ratings shall be of the sound classification required and shall include the entire door and frame assembly.
 - a) **Exterior Insulated Hollow Metal Doors and Frames:** Provide exterior personnel doors in the ends of central corridors maintenance areas, and in the circulation bays. Provide steel doors with vision panels, except at storage, janitorial, and latrine areas. Minimum size for personnel doors is 3 feet wide by 7 feet high. Doors and frames shall comply with applicable codes and criteria. Fire-rated openings shall comply with applicable codes, and the requirements of the labeling authority. Door and frame installation shall comply with applicable codes and criteria.
 - b) **Interior Insulated Metal Doors:** Comply with applicable codes and criteria.
 - c) **Solid Core Wood Doors:** Comply with applicable codes and criteria.
 - d) **Interior Hollow Metal Frames:** Comply with applicable codes and criteria.
 - e) **Overhead Door:** Comply with applicable codes and criteria.
 - 4) **Apparatus Bay Doors:** Provide overhead doors (minimum 14 feet wide by 14 feet high) in the exterior wall at each end of each structural bay and (minimum 18 feet wide by 18 feet high) in the exterior wall at each end of each ARFF bay.
 - a) **Locking:** Provide overhead doors that are operable from the interior only. Provide doors with a positive locking mechanism that will allow the door to remain open at engine exhaust position, approximately 1 ft above the floor. Coordinate door locking requirements with the using service.
 - b) **Serviceability:** Design repair and Apparatus Bay doors to meet heavy duty loads and high frequency of operation. Conduct testing of deflection and operation of the doors prior to acceptance during construction. Doors shall be provided and installed by a commercial door company having not less than five years of experience in manufacturing, installing, and servicing the size and type of doors provided.
 - c) **Insulated Doors:** The preference is insulated doors for thermal resistance and noise control.
 - 5) **Equipment Storage:** Provide overhead doors (minimum 8 feet wide by 10 feet high) in the exterior wall.
 - a) **Locking:** Provide overhead doors that are operable from the exterior only. Coordinate door locking requirements with the using service.
 - b) **Serviceability:** Design doors to meet heavy duty loads and high frequency of operation. Conduct testing of deflection and operation of the doors prior to acceptance during construction.
 - c) **Insulated Doors:** The preference is insulated doors for thermal resistance.
 - 6) **Glass and Glazing:** Material and installation shall comply with applicable codes and criteria.
 - 7) **Louvers and Vents:** Exterior louvers shall have bird screens and shall be designed to exclude wind-driven rain. Exterior louvers shall be made to withstand wind loads in accordance with the applicable codes. Wall louvers shall bear the Air Movement and Control Association (AMCA) International certified ratings program seal for air performance and water penetration in accordance with AMCA 500-D and AMCA 511.
- E. **EXTERIOR SPECIALTIES:** Provide details in the design necessary to eliminate the congregating and nesting of birds at, on, and in the facility.
- F. **ELEVATORS/CONVEYING SYSTEMS:** Material and installation shall comply with applicable codes and criteria.
- G. **ACOUSTICAL REQUIREMENTS:**

1) Exterior walls and roof/floor/ceiling assemblies, doors, windows and interior partitions shall be designed to provide for attenuation of external noise sources such as airfields in accordance with applicable criteria, but no less than the following: See the Army Standard for DES facilities.

2) When a DES facility is located near the flightline, comply with the AICUZ noise reductions for the facility location. If an AICUZ map is not available for the location, an acoustical engineer must conduct an acoustical analysis to determine the exact type and extent of the additional acoustical treatments needed to address aircraft noise

H. **THERMAL REQUIREMENTS:** Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities. Insulation shall not be installed directly on top of suspended acoustical panel ceiling systems. See Paragraph ENERGY CONSERVATION REQUIREMENTS for details.

I. **MOLD AND MILDEW:** The Designer of Record shall provide details in the design analysis and design showing steps taken to mitigate the potential growth of mold and mildew in the facility. All gypsum board shall achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. All gypsum board shall be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03).

3.5.1. FINISHES AND INTERIOR SPECIALITIES

A. **GENERAL:**

1) See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.

2) Construction and finishes (walls, floor, and ceiling) shall support the cohesive image and theme of the facility. A residential, non-institutional character shall be reflected in the living areas of the facility, such as the Day Room and the Dorm Rooms.

3) Durability is extremely important when specifying materials for interior construction and finishes. DES facilities are occupied 24 hours per day, seven days a week and heavy equipment is regularly handled throughout the facility. Compared to many other facility types, these conditions will lead to greater interior damage being incurred.

4) Finishes must take into account the intended uses, be highly durable, and meet the requirements listed in NFPA 101 Life Safety Code.

5) Designers are not limited to the minimum interior finishes and are encouraged to offer higher quality finishes.

B. **FINISHES:** See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C for further finish requirements.

1) **Minimum Finish Requirements:** Wall, ceiling and floor finishes shall conform to the requirements of the Army Standard for DES Facilities, IBC, NFPA and UFC 3-600-01. Where code requirements conflict, the most stringent code requirement shall apply.

a) **Walls:** All wall finish shall be minimum 5/8" painted gypsum board, except where stated otherwise.. Use impact resistant gypsum board in corridors, storage rooms, stairwells and activity rooms and centralized laundries.

b) **Ceilings:** All ceiling finishes shall be minimum 5/8" painted gypsum board, except where stated otherwise.

c) **Floors:**

(1) **Resilient Flooring:** Resilient tile flooring shall be used for floor finishes. If selected, vinyl composition tile (VCT) shall be a minimum 1/8 inch thick, conforming to ASTM F 1066, Class 2, through-pattern tile, Composition 1, asbestos free, with color and pattern uniformly distributed throughout the thickness of the tile.

(2) **Porcelain/Quarry Tile:** (NOT USED)

(3) **Ceramic Tile:** (NOT USED)

(4) **Sealed Concrete:** Provide concrete floors in the Apparatus Bay areas that shall be sloped to the floor trench drains. Provide floor trench drains parallel to the centerline of each vehicle or a continuous trench drain located at the interior side of overhead doors on each side of the Apparatus Bay. Slope trench drain toward the areas where component washing will occur.

d) **Counter Tops, Casework, and Cabinets:** Provide counters, casework, and cabinets of high-quality and durable construction with Premium or Custom finishes per AWI Quality Standards, 8th Edition. Casework, cabinet doors, and drawer faces shall be veneer panel core. At a minimum use plastic laminate doors, drawers, and casework faces. Where no water source is present, countertops shall have plastic laminate as a minimum. Where a water source is present, countertops shall be solid surface/solid composite plastics only

2) **Minimum Paint Finish Requirements:** All paints used shall be listed on the "Approved product list" of the Master Painters Institute, (MPI). Application criteria shall be as recommended by Master Painters Institute (MPI) guide specifications for the substrate to be painted and the environmental conditions existing at the project site. Except factory pre-finished materials, provide surfaces receiving paint with a minimum of one prime coat and two finish coats. Paints having a lead content over 0.06 percent by weight of nonvolatile content are unacceptable. Paints containing zinc-chromate, strontium-chromate, mercury or mercury compounds, confirmed or suspected human carcinogens shall not be used on this project.

a) **Exterior Surfaces:** Exterior paints and coating products shall be classified as containing low volatile organic compounds (VOCs) in accordance with MPI criteria. Provide an MPI Gloss Level 5 Finish (Semi-gloss), unless otherwise specified.

b) **Interior Surfaces:** Interior paints and coating products shall contain a maximum level of 150 g/l (grams per liter) of volatile organic compounds (VOCs) for non-flat coatings and 50 g/l of VOCs for flat coatings. Provide an MPI Gloss Level 5 Finish (Semi-gloss) in wet areas and a flat finish in all other areas.

C. INTERIOR SPECIALTIES:

1) **Signage and Directories:** See Paragraph 6.

2) **Room Signage:** See Paragraph 6.

3) **Stair Exit Door Signage:** See Paragraph 6.

4) **Visual Display Units/Cases:** See Paragraph 6.

5) **Toilet Accessories:** Furnish and install the items listed below and all other toilet accessories necessary for a complete and usable facility. All toilet accessories shall be Type 304 stainless steel with satin finish.

a) **Toilet(s)/Showers:** See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C. Toilet accessories shall conform to the requirements of the ABA and shall include, but are not limited to the following:

(1) Glass mirrors on stainless steel frame and shelf – at each lavatory

(2) Liquid soap dispenser – at each lavatory

(3) Combination recessed mounted paper-towel dispenser/waste receptacle

(4) Sanitary napkin disposal at each female/unisex toilet

(5) Recessed mounted lockable double toilet paper holder – at each water closet.

(6) Sanitary toilet seat cover dispenser – a minimum of one per toilet room

(7) Grab bars – as required by ABA

(8) Shower curtain – white anti-bacterial nylon/vinyl fabric shower curtain shall completely close the shower width (where a shower is required)

(9) Soap dish – built-in shower (where a shower is required)

b) **Intake and Detention Toilet(s):** Stainless mirrors, toilets, and lav-toilets.

6) Wall Protection:

a) **Chair Rail:** Chair rails shall be installed in areas prone to hi-impact use, such as corridors and lobby.

- b) **Corner Guards:** Provide surface mounted, high impact resistant, integral color, snap-on type resilient corner guards, extending from floor to ceiling for wall/column outside corners in high traffic areas. Factory fabricated end closure caps shall be furnished for top and bottom of surface mounted corner guards.
- 7) **Partitions:** Movable partitions shall conform to the requirements of the IBC, NFPA and UFC 3-600-01. Where code requirements conflict, the most stringent code requirement shall apply.
- 8) **Storage Shelving:**
- a) **Janitor Closet:** Provide a minimum of six linear feet of 18 inch deep, heavy duty, stainless steel shelving for storage of janitorial supplies.
- b) **Closets:** Closet rod and bracket system shall be capable of supporting a minimum of 30 pounds per linear foot. Provide a minimum of 78 linear inches of rod and shelf with no rod and shelf being less than 48 inches long.
- 9) **Fire Extinguishers, Cabinets and Mounting Brackets:** Furnish a list of installed fire extinguisher cabinets and mounting brackets (including location, size and type) to the Contracting Office Representative. Provide a list of all required portable fire extinguishers, with descriptions (location, size, type, etc.) and total number per type. See also Section 01 33 16, Attachment D, "SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW", paragraph 1.14.

3.6. STRUCTURAL REQUIREMENTS

- A. **GENERAL:** Design and construct as a complete system in accordance with APPLICABLE CRITERIA.
- B. **DESIGN LOADS:**
- 1) **Live Loads:** Design live loads shall be per the IBC but not lower than the following minimums.
- a) **Elevated floors:** 60 pounds per square foot (psf) minimum
- b) **Foundations/Slab on grade:**
- (1) Building Structures: 150 psf minimum
- (2) Hardstands: Support the largest vehicle to be utilized or stored at this facility.
- c) **Centralized Laundry Area:** 150 psf, (but not less than actual equipment loads)

3.7. SEE PARAGRAPH 6.7 THERMAL PERFORMANCE – NOT USED

3.8. PLUMBING REQUIREMENTS

- A. **GENERAL:** See paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C. Provide facility with a fully functional plumbing system that complies with the International Plumbing Code (IPC) and APPLICABLE CRITERIA.
- B. **DOMESTIC WATER:**
- 1) **Heating System:** Domestic water heating system shall be sized based on 20 gallons of 110 deg. F hot water consumption per occupant during morning peak period. Peak period duration shall be 30 minutes (10 minute duration for shower and lavatory use per occupant per dwelling unit plus a 10 minute transition period). Hot water storage capacity shall be based on 75 percent usable storage and a storage temperature of 140 deg F. Domestic hot water distribution shall be at 120 deg F from a central system mixing valve. Domestic hot water distribution piping shall be designed to handle up to 180 deg F water temperatures.
- 2) **Pipe Sizing:** Domestic water piping shall be sized in compliance with the methods described in the IPC.
- C. **FIXTURE FLOW RATES:**
- 1) **Water Closets:** Shall have a maximum flow rate of 1.28 gallons per flush or dual flush with an equivalent average flush volume of 1.28 gallons per flush.
- 2) **Shower heads:** Shall have a maximum flow rate not to exceed 1.5 gpm.

- 3) **Bathroom Sinks**: Shall have a maximum flow rate not to exceed 0.5 gpm.
 - 4) **Kitchen Sinks**: Shall have a maximum flow rate not to exceed 1.0 gpm.
 - 5) **Janitor Sinks**: Shall have a maximum flow rate not to exceed 2.0 gpm.
- D. **DRAINS, INTERCEPTORS, SEPARATORS AND CLEANOUTS**:
- 1) **Solid Interceptors**:
 - a) **Centralized Laundry**: Centralized laundry area shall be considered commercial laundries with respect to the IPC and shall be provided with solids interceptor in accordance with the IPC.
 - b) **Protective Clothing Laundry**: Protective laundry area shall be considered commercial laundries with respect to the IPC and shall be provided with solids interceptor in accordance with the IPC.
 - 2) **Cleanouts**: Cleanout requirements and locations should be in compliance with the IPC. If Dryer vents are manifolded to a common exhaust, provide an easily accessible means of cleanout.
 - 3) **Drains**:
 - a) **Ice Machine**: Provide water and drain connections for ice cube machine-dispensers.
 - b) **Centralized Laundry**: Provide water and drain connections for all washers.
 - c) **Protective Clothing Laundry**: Provide adequate water and drain connections to support the equipment used in this area.
 - d) **Emergency Eye Wash Fountain and Shower**: Provide water and drain connections for the emergency eye wash fountain and shower in accordance with UFC 3-420-01 Plumbing Systems.
 - e) Provide floor trench drains parallel to the centerline of each vehicle or a continuous floor trench drain located at the interior side of overhead doors on each side of the Apparatus Bay. All vehicle bay drains shall connect to an approved oil/water separator with holding tank prior to discharge.
 - f) Connect all Equipment Wash/ Disinfection and Work Room/ Equipment Maintenance drains to an oil/water separator with holding tank.
 - g) Connect all Protective Clothing Laundry drains to an oil/water separator with holding tank, if required by location, in accordance with NFPA 1581 Standard on Fire Department Infection Control Program
 - 4) **Oil/Water Separator**: Oil/water separators shall be designed in accordance with local codes and standard industry practice for the specific waste stream to be treated. Minimize maintenance requirements and locate oil/water separators to minimize pipe runs, provide vehicular access, and be out of circulation areas.
- E. **PLUMBING FIXTURES**:
- 1) **Emergency Fixtures**:
 - a) **Eye Wash Stations**: Provide an emergency eye wash fountain in the Apparatus Bay and Fire Extinguisher Inspection Room.
 - b) **Shower Stations**: Provide an emergency shower in the Apparatus Bay and Fire Extinguisher Inspection Room.
 - 2) **Hose Bibs (Exterior)**: Provide hose bibs near Apparatus Bays and Tactical Vehicle Storage for vehicle cleaning and maintenance and at the Patio Area.
 - 3) **Mop Sink**:
 - a) **Apparatus Bay**: Provide a foot-operated mop sink with mop hanging rack in the Apparatus Bay.
 - b) **Janitor Closets**: Provide a foot-operated mop sink with mop hanging rack.
 - 4) **Gas Piping (Patio)**: If natural gas is available, provide a gas connection to an external grill.
- F. **COMPRESSED AIR SYSTEMS**: Provide a compressed air system in the Apparatus Bay with self-retracting lines at each vehicle bay and a separate compressed air system for the Self-Contained Breathing Apparatus (SCBA) Maintenance Room.

3.9. COMMUNICATIONS AND SECURITY SYSTEMS

A. GENERAL:

- 1) See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 2) Coordinate service with local Network Enterprise Center (NEC) personnel. Provide a fully operational system from the demarcation point to each outlet. See paragraph 6 for possible additional requirements.
- 3) Telecommunications design shall be in accordance with the Technical Guide for Installation Information Infrastructure Architecture (I3A). In the I3A Technical Criteria, substitute the word "shall" for the word "should" throughout the document.
- 4) Provide a fully operational system from the demarcation point to each outlet.

B. TELECOMMUNICATION SYSTEMS: Provide telecommunications outlets in accordance with the applicable criteria based on functional purpose of the space within the building.

- 1) **General:** Telecommunications design shall be in accordance with the Technical Criteria for Installation Information Infrastructure Architecture (I3A). An acceptable building telecommunications cabling system encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and/or fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, grounding, and labeling.
- 2) **Outlet:** Telecommunications outlets shall be provided per the applicable criteria based on functional purpose of the space within the building. Voice/data outlets shall be two 8-pin modular (RJ45 type) outlet/connector in a double gang outlet faceplate, one connector labeled voice use and one labeled data use. Provide each utility space, such as mechanical, electrical and telecommunications rooms with at least one wall mounted, single connector telecommunications outlet, with a wall mounting lug face plate near the entrance door.
- 3) **Outside Plant Telecommunication Systems:** Connect the project's facilities to the Installation telecommunications (voice and data) system through the outside plant (OSP) underground infrastructure in accordance with I3A guidance. Connections to the OSP cabling system shall be from each facility main cross connect located in the main telecommunications room or telecommunications equipment room to the closest OSP access point. Components include the physical cable plant and the supporting structures. Items included under OSP infrastructure encompass, but are not limited to, maintenance hole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, splices, cable vaults, and copper and FO entrance facilities. Provide minimum two 4-inch ducts with fabric innerduct and pull cords for copper and fiber optic.
- 4) **Telecommunications Rooms:** Provide telecommunications rooms and telecommunications entrance facilities for unclassified network and voice equipment and cabling infrastructure throughout the facilities. Provide a minimum of one telecommunications room on each floor, located near the center of the building. Design and provision the telecommunications rooms in accordance with the I3A Guide and ANSI/EIA/TIA-569-B. Provide one telecommunications entrance capability for each facility. The telecommunications entrance may be collocated with the main TR for the facility. Cover three walls of each telecommunications room with fire-resistant interior.
- 5) **Cable TV (CATV):**
 - a) All CATV outlet boxes, connectors, cabling, and cabinets shall conform to the I3A Technical Criteria unless noted otherwise. All horizontal cabling shall be run from the CATV outlet to the nearest telecommunications room. Provide outlets in Day Rooms, Recreation Rooms and Training areas, and any room specified in FACILITY SPECIFIC REFERENCES Facility Specific References, Attachment B.
 - b) Provide provisions for programming input to specific outlets from sources in the Telecommunications Room. See paragraph 6 for possible additional requirements.
 - c) Dorm rooms shall have CATV, data, and phone.

C. CATV: All CATV outlet boxes, connectors, cabling, and cabinets shall conform to the I3A Technical Criteria unless noted otherwise. All horizontal cabling shall be run from the CATV outlet to the nearest telecommunications room. Provide outlets in Day Rooms, Recreation Rooms and Training areas, and any room specified in Paragraph FACILITY SPECIFIC REFERENCES, Attachment B. Provide provisions for programming input to specific outlets from sources in the Telecommunications Room.

D. AUDIO/VISUAL SYSTEMS AND INFRASTRUCTURE:

- 1) **Projectors**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 2) **Public Address (PA) Systems**: Provide a PA System throughout the facility.
- 3) **Video Teleconferencing (VTC)**: Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 4) **Sound System Infrastructure**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.

E. **SECURE COMMUNICATIONS:**

- 1) **SIPRNET**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 2) **Secure Video Teleconferencing (VTC)**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.

F. **SECURITY INFRASTRUCTURE/SYSTEMS:**

- 1) **Intrusion Detection (IDS)**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 2) **Door Status/Alarm Monitoring**: See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.
- 3) **Security Observation System Infrastructure**:
 - a) Coordinate any closed-circuit television (CCTV)/camera systems with the appropriate Installation security office.
 - b) See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.

G. **MASS NOTIFICATION SYSTEMS:** Provide the Mass Notification System (MNS) combined with the Fire Alarm System to prevent duplication of devices and maintenance, which should interface with the installation MNS to provide emergency notifications of an area, regional or national nature. Designer should also consider combining with the Public Address System (PA) for further cost savings.

H. **FIREFIGHTER ALERT SYSTEM:** Firefighter Alert System shall provide visual/audible alerts, features, and controls. Provide simultaneous light and audible control for the following spaces when the firefighter alert system is activated: Dorm Room lights (the dedicated alert light), corridor lights from Dorm Rooms to the Apparatus Bay, and the Apparatus Bay lights. Provide controls for the system at the Station Officer's Office/Watch Desk and at Dispatch Desk. Provide the Fire Chief's and Deputy Fire Chief's Offices with a dedicated alert light fixture that is controllable from the Watch Desk/Dispatch and is tied into the firefighting alert system with a red-tinted bulb or lens.

3.10. ELECTRICAL REQUIREMENTS

A. **GENERAL:** See Paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C.

- 1) Electrical power and lighting shall be provided to the facility as specified below, in accordance with APPLICABLE CRITERIA, GENERAL TECHNICAL REQUIREMENTS, all IEEE Standards (including Recommended Practice) where the scope is applicable to this design effort, all UL Standards where the UL scope is applicable to this design effort and where itemized, in the combined interdisciplinary areas cited. Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power based upon the size and types of loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served. Power shall be provided for all installed equipment requiring power including but not limited to lighting, HVAC, convenience receptacles and government furnished government installed equipment. The effect of nonlinear loads such as computers, other electronic equipment and electronic ballasts shall be considered and accommodated as necessary. Voltage drop shall not exceed the maximum allowed per ASHRAE 90.1. Transient voltage surge protection shall be provided on service equipment. Dorm Rooms shall be considered to be living and sleeping rooms; therefore they are considered part of a dwelling unit per NFPA 70 definition.

- a) Perform a short circuit study as an integral part of selecting and sizing electrical distribution components (all equipment shall be fully rated; that is, do not use series-combination rated equipment).
- b) Perform a coordination study to ensure that protective device settings are appropriate for the expected range of conditions (depending on the design and construction schedule, it is acceptable to design adequate protective devices with adjustable features, followed by a coordination study required during construction to specify the correct settings).
- c) Circuit breakers disconnect switches, and other devices that meet the OSHA definition of energy-isolating device shall be lockable.
- d) Do not exceed 5 percent combined voltage drop on feeders and branch circuits if the transformer providing service is located within the facility. If the transformer is located exterior to the facility, limit the combined voltage drop for service conductors, feeders, and branch circuits to 5 percent. Individual voltage drop on branch circuits should not exceed 3 percent. Branch circuits supplying sensitive circuits should be limited to 1 percent voltage drop.
- e) When facility electrical design includes a 480/277V power distribution system, mechanical systems and lighting systems shall generally be fed from the available 480/277V power distribution system. All other systems shall be fed via 120V source as applicable.

- 2) **Hazardous Locations:** Hazardous locations shall be clearly defined by the designer based on the intended use of the facility and applicable criteria. Receptacles, devices, equipment and wiring in hazardous locations shall be designed (UL listed for the application) and installed in accordance with the NFPA codes. When hazardous locations are determined to be up to 18-inches above the finished floor, receptacles, devices and conduit routing to them shall be installed above the hazardous area or at the height required by the Paragraph 3.7.6.1 Special Power Requirements, whichever is higher.
- 3) **Cathodic Protection System:** Corrosion protection for the facility shall be provided by coordinated material specification and/or provision of a cathodic protection system to assure corrosion will not compromise system operation for the 50-year infrastructure design lifetime of the facility. Provide an appropriate cathodic protection system when the design analysis of a corrosion engineer indicates cathodic protection is recommended to assure corrosion will not compromise system operation for the 50-year infrastructure design lifetime of the facility.

B. **POWER:** Power shall be provided for all installed equipment requiring power to include convenience receptacles and government furnished government installed equipment.

- 1) **Panels:** Panelboards located in accessible areas, shall be lockable and keyed to one master key.
- 2) **Outlets:**
 - a) In general, provide wall duplex outlets, not less than 10 feet on center. Provide not less than one duplex outlet per wall on walls less than 10 feet long. Locate outlets to eliminate the need for extension cords. Provide a minimum of one 125 volt duplex receptacle per corridor for housekeeping. No point along a corridor wall at 18" above finished floor shall be more than 25 feet from a receptacle. Provide a minimum of two 125 volt duplex receptacles in mechanical rooms in addition to those required by NFPA 70. This requirement does not apply to the small mechanical rooms used for individual dwelling units. In addition, provide a minimum of one 125 volt duplex receptacle in each electrical room
 - b) Above counter receptacles shall be mounted in the vertical wall space above the counter-top.
 - c) Data, CATV, and similar electronic equipment outlets shall each be provided with an associated duplex receptacle.
 - d) Provide GFCI outlets in the Apparatus Bays, restrooms, kitchen and water accessible work areas. Provide weatherproof GFCI outlets for all exterior outlets.
 - e) Unless unavoidable, to minimize sound transmission, do not install "back-to-back" outlet boxes.

C. **LIGHTING LEVELS, FIXTURES AND CONTROL:** Interior lighting controls shall be provided in accordance with ASHRAE 90.1. Electronic ballasts for linear florescent lamps shall be the high efficiency programmed start type. Provided lighting levels shall be within +/- 10 percent of required lighting levels.

- 1) **Exterior Lighting:**

a) **Site Lighting:** Provide general site lighting to ensure that parking areas and the exterior facility, including facility aprons, open storage areas, walkways, etc., have adequate lighting for safety, evacuation, and security measures. Exterior area lighting systems should consist of color corrected high intensity discharge lighting units mounted on poles and located within the clear zone and on the primary facility. Illumination levels shall be 50 lux for areas adjacent to the primary facility and 5 lux for parking areas.

b) **Perimeter Security Lighting:** Protective lighting systems shall be provided in response to project specific requirements to deter trespassers and make them visible to guards. Levels of exterior lighting for protected areas shall conform to the requirements in the IES Lighting Handbook. Lighting circuits shall be controlled by a photoelectric cell with manual override. If the facility is near a flight line, site lighting cannot interfere with or be a distraction to aircraft operations or movement at night.

c) **Lighting Control:** Perimeter security lighting protective lighting circuits shall be provided with photocell control with a manual "ON/OFF/AUTO" control switch independent of the control device for the ASHRAE 90.1 nonexempt lighting. The facility aprons and open storage area lighting circuits shall be provided with photocell control with a manual "ON/OFF/AUTO" control switch independent of the control device for the ASHRAE 90.1 nonexempt lighting.

2) **Interior Lighting:**

a) Provide fluorescent luminaires with premium efficiency electronic programmed start fluorescent ballasts or better. For spaces where the "Standard Design Criteria, Fire Stations, Room By Room Descriptions" of a space does not specify a particular light level target, the illumination shall be in accordance with the recommendations of the IESNA and other applicable criteria and standards.

b) Lighting controls shall be provided in accordance with ASHRAE 90.1.

c) Illumination target level is 50 foot-candles for the PPE Gear Storage Area, Protective Clothing Laundry, Equipment Maintenance/Wash/Disinfection Area, Fire Extinguisher Inspection, Maintenance and Storage Area (also provide task lighting at work/service bench), Dispatch Area (also provide task lighting at the desk), Day/Training Room (including kitchen), Apparatus Bay and Hose Storage Area. Apparatus Bay lighting design shall incorporate the design elements per UFC 3-530-01 for a Maintenance Facility Vehicle Storage/Repair Area. The illumination is the same for the following rooms if they are included in the project facility: SCBA Maintenance/Compressor room, EMT Storage and Medical Storage Cabinet, Fire Chief's and Deputy Fire Chief's Offices (also provide task lighting at the desk), and Computer Training/Testing Room.

d) Illumination target level is 50 foot-candles for the HAZMAT/CBRNE Equipment Storage Areas, Agent Storage Area, Spare PPE Gear Storage Area, Vehicle Maintenance Equipment Storage Area, Deployment Gear Storage area, and Vending Area.

e) Illumination target level is 0.5 foot-candles for the Outdoor Patio/BBQ Area.

f) Illumination target level of rooms not specified shall be to current codes. Upon conflict current codes shall dictate illumination target levels

g) Provide dimming controls for the lighting in the Day/Training Room (including kitchen) and Recreation Room.

h) Provide under-cabinet counter lighting where wall cabinets are used above counter tops.

D. **EMERGENCY POWER:** Provide an Emergency Power Supply System (EPSS) in accordance with NFPA 110 for Class X (minimum time 72 hours), Level 1, Type 10. Provide Bypass-Isolation Switches to bypass and isolate the transfer switch. On-site fuel supply shall be provided. Prime movers shall not be solely dependent on a public gas utility for their fuel supply. Means shall be provided for automatically transferring from one fuel supply to another where dual fuel supplies are used. Provide 100 percent emergency generator back-up power for all Fire Stations.

E. **SPECIAL POWER REQUIREMENTS:**

1) **Apparatus Bay:** Provide Apparatus Bay doors with a signaling system to indicate fully raised doors with a red/green indicator located on the driver's side at 6 feet above finished floor. Locate all outlets at 36 inches above finished floor. Provide self-retracting electric drop cords between vehicles that can reach to either end of the bay.

- 2) **Vehicle Maintenance Bay**: Provide vehicle maintenance bay doors with a signaling system to indicate fully raised doors with a red/green indicator located on the driver's side at 6 feet above finished floor. Locate all outlets at 36 inches above finished floor. Provide self-retracting electric drop cords between vehicles that can reach to either end of the bay.
- 3) **Hose Storage**: Provide dedicated outlets to support drying equipment.
- 4) **Station Officer's Office/Watch Desk**: Provide outlets as needed to support the extensive equipment required. Provide two additional quad outlets at the control center console. Provide a switch controlling operation of Apparatus Bay doors.
- 5) **Telecommunications Room**: Provide outlets as needed to support the extensive equipment required. In addition, provide two spare quad outlets. In addition to providing generator backup power for the computer file server and for all dispatch and alarm systems, provide uninterruptible power supply (UPS) that will provide uninterrupted flow of power to gap between the time of power loss and the time that the generator is providing power. Provide transient voltage surge suppression in the electric panel(s) serving this room. Provide a Stored Energy Power Supply System (SEPSS) UPS in accordance with NFPA 111 for Type O, Class 0.25, Category B, Level 1.
- 6) **Kitchen**: Provide dedicated outlets to accommodate all non-portable kitchen equipment.
- 7) **Fitness Room**: Provide dedicated wall or floor outlets as needed to accommodate fitness machines such as treadmills, bikes and stair-step machines. Provide dedicated circuit to accommodate the sauna's heating element.
- 8) **Laundry Room**: Provide dedicated power receptacles for each washer, dryer and laundry supplied vending machine. Electrical service shall be provided for electric dryers regardless of whether or not electric dryers are to be used. Provide a minimum of one convenience 125V duplex power receptacle on each wall. Provide additional 125V duplex power receptacle at the folding table.
- 9) **Recreation Room**: Provide additional outlets(s) to accommodate game equipment. Refer to Paragraph 6.0 of this Section for the number of game equipment to be provided.
- 10) **Vending Area**: Provide dedicated power outlets required by each vending machine or ice cube machine dispensers. Refer to Paragraph 6.0 of this Section for the number of vending machines to be provided.
- 11) **Department Training Room**: Provide direct power to each work table.
- 12) **Computer Training/Testing Room**: Provide direct power to each computer/study corral and for other equipment such as printers.
- 13) **Consolidated Emergency Dispatch**: Provide a Stored Electrical Energy Emergency and Standby Power System (SEPSS) with Uninterruptible Power Supply (UPS) backup for all Consolidated Emergency Dispatch system equipment, appurtenances, and devices within the facility where any interruption of power to the equipment, appurtenances, and devices would result in interruption of the Consolidated Emergency Dispatch operations. The SEPSS shall be in accordance with NFPA 111 for Type O, Class 0.25, Category B, Level 1.
- 14) **Outdoor Patio/BBQ**: Provide minimum of four weatherproof GFCI outlets (with additional outlets provided as needed to support functional requirements).
- 15) **Dorm Rooms**: Provide a minimum of two duplex outlets at the night table location so that each of the two firefighters who share the room will be capable of plugging in two personal use items at the night table location.

3.11. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS

- A. **GENERAL**: See paragraph FACILITY SPECIFIC REFERENCES attachments A, B, and C. Provide facility with a fully functional HVAC system that is automatically controlled by a building automation system (BAS).
- B. **HVAC DESIGN CRITERIA**:
 - 1) **Unit Location and Access**: See Paragraph 6.
 - 2) **Ventilation**:
 - a) **Corridors**: Corridors shall be ventilated per ASHRAE 62.1 by supply from the dedicated outdoor air unit.

- b) **Vending Area:** Provide additional ventilation/exhaust to maintain vending areas temperature at levels specified for corridors.
- c) **SCBA Compressor Room:** The area shall be kept under constant negative pressure to evacuate gaseous emissions from stored gear or filtration equipment that is designed to filter and remove gaseous emissions from Personal Protective Equipment shall be provided.
- d) **SCBA Maintenance Room:** Each dwelling unit shall be positively ventilated using dedicated outdoor air units. Dedicated outdoor air units (DOAUs) shall continuously supply dehumidified, tempered air ducted directly to each bedroom from DOAU. DOAU supply air ductwork shall not connect to dwelling unit heating/cooling unit. Supply air conditions from DOAU shall be between 68 and 75 degree F dry bulb and no greater than 48 degree F dew point. Supply quantity shall be 30 cfm per bedroom for a total of 60 cfm per dwelling unit.
- e) **Dorm Room Pressurization:** Positively pressurize the Dorm Rooms with a 100 percent dedicated outdoor air unit. Dedicated outdoor air units (DOAUs) shall continuously supply dehumidified, tempered air ducted directly to each Dorm Room from DOAU. DOAU supply air ductwork shall not connect to Dorm Room heating/cooling unit. Supply air conditions from DOAU shall be between 68 and 75 degree F dry bulb and no greater than 48 degree F dew point. Supply quantity shall be 30 cfm per bed for a total of 60 cfm per Dorm Room. Dedicated outdoor air units shall continuously supply dehumidified, tempered air to each Dorm Room. Provide compliance with International Mechanical Code (IMC) chapter 4 and maintain slight building positive pressurization. Dedicated outdoor air unit cooling/dehumidification shall be available 24 hours a day/7 days a week/365 days a year. Refer to Paragraph 6 of this section for site specific constraints. Use the outdoor air unit to ventilate and pressurize corridors adjacent to the Dorm Rooms.
- 3) **Exhaust:**
- a) **Vehicle Exhaust System:** A complete Apparatus Bay Air Cleaning System in compliance with NFPA 1500 Standard on Fire Department Occupational Safety and Health Program to eliminate 100 percent of vehicle exhaust emissions shall be utilized, consisting of exhaust filtration for apparatus and for off-gassing from Personal Protective Equipment. A hose based, or Fire Apparatus Vehicle Exhaust Removal System (FAVERS) system, may be used in conjunction with the filtration system.
- b) **Centralized Laundry:** Dryers shall be vented to exterior according to all applicable criteria and manufacturer's installation instructions. Dryer exhaust vent exterior terminations shall be located no closer than 15 feet from dwelling unit bedroom windows. Provide individual vent connections for all dryers.
- 4) **Ductwork:** Ductwork shall comply with the latest version of SMACNA HVAC Duct Construction Standards Metal and Flexible.
- 5) **Kitchen Range Hoods:** Kitchen range hoods shall be the U.L. listed ducted type to building exterior.
- C. **DORM ROOM TEMPERATURE CONTROLS:** Provide each Dorm Room with an individual heating/cooling unit. Centrally control each unit with the facility's Direct Digital Control (DDC) system. Occupant control shall include fan selection (on/off) and a slide bar temperature set point adjustment that allows +/- 2 degrees F of adjustment from the DDC programmed set points (70 degrees F heating, 75 degrees F cooling). Additionally, the DDC controls shall monitor each dwelling unit for sub-cooling. The DDC system shall record an alarm event if the space temperature drops below 71 degrees F (adjustable) when the outside air is greater than 85 degrees F (adjustable).

3.12. ENERGY CONSERVATION REQUIREMENTS

- A. **GENERAL:** Refer to Paragraph 5.9 and Paragraph 6.12 for energy conservation requirements.
- B. **ENERGY PERFORMANCE:** The building, including the building envelope, HVAC systems, service water heating, power, and lighting systems shall be designed to achieve a non-plug load energy consumption that is at least 40 percent below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007 (see paragraph 5.9 Energy Conservation). (Note: Plug loads shall be included in building energy modeling but are subtracted in the final calculation of Energy Performance. See section "Design After Award" for additional guidance.)
- C. **SOLAR WATER HEATING:** ~~<SOLARWATER HEATING DES>~~In addition, the building shall be designed and constructed to provide 30 percent of domestic hot water by use of solar hot water system.

</SOLARWATER_HEATING_DES><SOLARWATER_HEATING_DES_NO>Not
Used</SOLARWATER_HEATING_DES_NO>

D. REQUIRED ENERGY CONSERVATION FEATRUES AND TABLES: See Energy Conservation Attachments.

E. COMPLIANCE DOCUMENTATION: See Energy Conservation Attachments.

F. LOAD AND SET POINT SCHEDULES: See Energy Conservation Attachments.

3.13. FIRE PROTECTION REQUIREMENTS

A. GENERAL: See paragraph FACILITY SPECIFIC REFERENCES Attachments A, B, and C. Comply with all NFPA codes and regulations. The fire protection system shall be in compliance with UFC 3-600-01 Fire Protection Engineering for Facilities. See Paragraph 6 for possible additional requirements.

B. FIRE SUPPRESSION SYSTEMS:

1) **Fire Sprinkler Systems**: Provide automatic sprinklers that provide 100 percent coverage of the facility. Avoid locating any sprinkler piping in spaces that may be subject to freezing. Portions of the sprinkler system subject to freezing may be dry sprinkler systems. For the kitchen area(s), provide a wet chemical or water spray for all kitchen hood ductwork. Also, provide each cooking surface with a fire extinguishing system. Ensure the kitchen area(s) are in compliance with NFPA 96.

2) **Fire Extinguishing Systems**: Provide a fire extinguishing system the Day Room at the hood vent over the stove.

C. FIRE DETECTION AND ALARM SYSTEMS: The fire alarm system installation shall be supervised by a National Institute for Certification of Engineering Technologies (NICET) Level 3 (minimum) technician.

1) **General**: There shall be one complete addressable Fire Alarm System for each building. Combine system with MNS and consider incorporating PA system to reduce device and maintenance costs. This system shall consist of a control panel, a communications device, initiating devices, notification devices and associated wiring and pathways. Class A addressable systems shall be installed. The fire alarm system installation shall be supervised by a National Institute for Certification of Engineering Technologies (NICET) Level 3 (minimum) technician.

2) **Software**: All software, software locks, special tools and any other proprietary equipment required to maintain, add devices to or delete devices from the system, or test the Fire Alarm system shall become property of the Government and be furnished to the Contracting Officer's Representative prior to final inspection of the system.

3) **Smoke Detectors and Carbon Monoxide Detectors**: Smoke detectors and carbon monoxide detectors shall be provided in all Dorm Rooms. All smoke detectors and carbon monoxide detectors shall be monitored. Tampering with a smoke and carbon monoxide detectors shall send a trouble signal to the control panel.

4) **System**: There shall be one complete addressable Fire Alarm System for each building. Combine system with MNS and consider incorporating PA system to reduce device and maintenance costs. This system shall consist of a control panel, a communications device, initiating devices, notification devices and associated wiring and pathways. Class A addressable systems shall be installed.

5) **Military Police Facilities**: Provide Military Police Facilities with a smoke detection system for all the Military Police Facilities air-handling systems, arranged in such a way that these systems supply 100 percent of outside air and exhaust all the air circulated whenever smoke is detected in the air handling system or the fire alarm system is activated. This is to clear the building of smoke, which is a greater hazard to people than fire. In addition, provide smoke detectors in all areas where fires could start and not be detected easily, such as evidence and records storage rooms, janitor's closets, interview rooms and under floating or raised floors. Fire and smoke control in air-handling systems shall be in accordance with NFPA Standard 90A.

3.14. SEE PARAGRAPHS 5.12 AND 6.14 SUSTAINABLE DESIGN – NOT USED

3.15. SEE PARAGRAPH 6.15 ENVIRONMENTAL – NOT USED

- 3.16. SEE PARAGRAPH 6.16 PERMITS – NOT USED
- 3.17. SEE PARAGRAPH 6.17 DEMOLITION – NOT USED`
- 3.18. SEE PARAGRAPH 6.18 ADDITIONAL FACILITIES – NOT USED
- 3.19. EQUIPMENT AND FURNITURE REQUIREMENTS

3.19.1. FURNISHINGS

See paragraph FACILITY SPECIFIC REFERENCES attachments A, B, and C. See furnishings attachment.

3.19.2. EQUIPMENT

See paragraph FACILITY SPECIFIC REFERENCES attachments A, B, and C. See equipment attachment.

3.20. FACILITY SPECIFIC REFERENCES

A. GENERAL: The Attachments represent the Army Standards at the time of award. The Standards may be updated through the course of the contract. Attachment B – The Army Design Standard for DES Facilities – Plans are for information only to show general layout and arrangement of the facility. Provide the facility for this project as depicted in the floor plan provided in Appendix J.

B. ATTACHEMENTS:

- 1) Attachment A – The Army Standard for DES Facilities
- 2) Attachment B – Standard Design Criteria DES – Room by Room Description
- 3) Attachment C – The Army Design Standards for DES Facilities

SAMPLE



DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON DC 20310-0600

The Army Standard for
Consolidated Fire, Safety and Security Facilities

September 2008

Square Feet

See Note

See Note

Staffing

Facility Size Classification

Note: The square footage of the Consolidated Fire, Safety and Security Facilities (Con FSS) will vary with accordance to specific functional components co-located in each facility. The size and number of fire trucks, patrol vehicles, tactical vehicles, detention area, and offices necessary to meet the mission of the specific installation is crucial. Therefore a spreadsheet and floor plan are available to serve as a guideline for Con FSS planning and generally represents the maximum space allowed.

The COS Huntsville must be contacted for approval to make any adjustments to Con FSS Standard Layouts.

Description: The Con FSS is an emergency and security respondent facility which supports the needs of military, civilians, soldiers and families during fire, medical emergency, and security situations. The Con FSS is comprised of seven essential elements: **Vehicle Apparatus and Storage, Equipment and Maintenance; Residential and Living; Administrative & Training; Executive Area; Tactical Vehicle Storage and Intake & Detention.**

The following spaces are not normally included in this facility unless it is a specific installation requirement: 1) Emergency Operations Center; 2) Host nation employee dayroom as mandated by Master Labor Contracts (MLC) or Status of Force Agreements (SOFA).

The vehicle apparatus and storage is the area where firefighters park fire trucks and engage in the assembly of fire truck equipment, tactical vehicles are storage, and portal vehicle park. The equipment and maintenance areas will consist of support the facility. The administrative area will consist of offices and training rooms used for emergency respondent purposes. Residential and living are synonymous to dorm rooms, it gives the fire fighters an opportunity to sleep, shower, eat and relax during peak and off peak hours. Intake and Detention is where the MPs provide the following: property storage, detention intake and holding, sally port, and interview area.

The Army Standards for Con FSS is as follows and is based on Army Baseline Standards:

THE ARMY STANDARD FOR FIRE STATIONS

ITEM	MANDATORY CRITERIA
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The Consolidated Fire, Safety, and Security Facilities

Exterior Lighting	Exterior lighting systems provided for parking areas, sidewalks, building entrances and perimeter.
Sustainability	Facility shall be designed to meet current sustainable development and design policy requirements as established by Department of the Army.
Accessibility	The Administration Office Area is required to be ADA accessible and will be in accordance with the Uniform Federal Accessibility Standards (UFAS), as required by Architectural Barriers Act, title 42 United States Code, sections 4151 - 4157, (42 USC 4151-4157). The U.S. Architectural & Transportation Barriers Compliance Board established the Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities in August 1994. The latest edition of these guidelines, referred to as the ADAAG, will be met whenever they provide equal or greater accessibility than UFAS.
Vehicular Circulation/Service Road/Drives	Provide site entrances, exits, service drives and special circulation areas sized to accommodate the largest vehicle that uses the area. Drive through bays are preferable and where the site permits shall be utilized. Service road/drive must be provided on the side of the building adjacent to the mechanical room. The service drive will have a controlled access point with a controlled structure.
Patio	Must provide outdoor patio space. Space should be adjacent to the kitchen/dining area, residential in nature, and provide area for firefighters to relax, engage in sports or other outdoor activities, and barbeque.
Staff/Visitor Parking	Must provide parking for staff. Parking area should be sized to accommodate two shifts. Must provide parking for visitors. Visitor parking should be separate from Staff parking. Visitor parking spaces should be approximately 25% of the Staff parking and should contain the appropriate number of handicapped accessible spaces as determined by the Uniform Federal Accessibility Standard (UFAS).
Storage of Structural and Aircraft Rescue Firefighting (ARFF) Agent	Must provide storage space for Structural and/or Flight line Rescue and Firefighting Agent. Storage space should consist of a single story structure located along the drive entrance to the Apparatus Bay. Storage area must be lighted and, were required, heated to prevent agent freezing. Storage structure may be either attached or unattached to the main facility.
Emergency Generator	The Emergency Generators for all Con FSS should support and maintain the following items at all times: <ul style="list-style-type: none"> ▪ Lights in corridors leading to the Apparatus Bay. ▪ Apparatus lights and over head doors. ▪ 911 Center ▪ Dispatch. ▪ Intercom Systems. ▪ Alarm Systems. ▪ Portable Communication Device Charge Station
FIRE APPARATUS, EQUIPMENT, AND MAINTENANCE	This area is where firefighters park fire trucks and engage in the assembly of fire truck equipment.
Apparatus Bay	Must have Apparatus Bay(s) sized to house authorized vehicles. Must be sited to provide ready access to thoroughfare. Each bay must include support facilities for vehicles such as exhaust collection systems, overhead cold water fill, compressed air, cold water, floor drain(s), lighting and power.

The Consolidated Fire, Safety, and Security Facilities

	Bays will be heated except in very temperate/tropical climates, but will not be air conditioned except through exception.
Personal Protective Equipment (PPE) Gear Storage	Must have a separate ventilated locker area to accommodate Personal Protective Equipment. Lockers must be accessible from the Apparatus Bay.
Hose Storage	Must have area for drying and storage of hoses. Storage must be accessible from Apparatus Bay.
Self-Contained Breathing Apparatus (SCBA) Maintenance Room	Must have area to service and maintain Self- Contained Breathing Apparatus. Area must contain work bench, task lighting and shelving for parts and equipment storage. Must have direct access to the SCBA Compressor Room.
Self-Contained Breathing Apparatus (SCBA) Compressor Room	Must have room to house compressor to support the Self-Contained Breathing Apparatus. Compressor Room perimeter enclosure to have a minimum Sound Transmission Coefficient rating of 55. Must have adequate access to this area for the placement of compressor equipment.
Protective Clothing Laundry	Must have laundry facility to wash and disinfect fire fighters' Protective Clothing. Room should accommodate large commercial-grade washers and dryers. Room must be accessible from the Apparatus Bay.
Equipment Wash/Disinfection	Must have area to wash/disinfect and initiate any minor repair to fire fighters' equipment. Provide a wash-off area and work bench area where incoming equipment can be washed, desalinated and dried. When returning from a fire, the equipment may be taken directly from the truck to the wash/disinfect area prior to the truck reentering the Apparatus Bay.
Work Room/Equipment Maintenance.	Must have area to maintain fire fighting tools. Advantageous for Maintenance area to be adjacent to the Apparatus Bay.
Emergency Medical Services (EMS) Equipment Storage	Must have EMS Storage area for supplies. EMS Storage must be close to the Apparatus Bay and must be restricted and controlled.
HAZMAT/CBRNE (Chemical, Biological, Radiological, Nuclear, Explosive) Equipment Storage and Spare Personal Protective Equipment (PPE) Equipment Storage	Must have storage area to house equipment classified for use with hazardous materials. Must have storage area for spare PPE. Area must contain a logistics workstation.
Fire Extinguisher Inspection (Non Flightline) Maintenance and Storage	As dictated by mission requirements, this area accommodates maintenance and service of fire extinguishers. The area contains work bench, task lighting, safety cage, scale, recharge kit, and parts storage bins.
Fire Extinguisher (Flightline) Maintenance and Storage	As dictated by mission requirements, this area accommodates maintenance and service of flightline fire extinguishers and includes both an indoor storage/maintenance and an outdoor storage area. The indoor area contains work bench, task lighting, safety cage, scale and parts storage bin. The outdoor area is a covered secure area which accommodates tank recovery, spare tanks and spare gaseous agent re-servicing tanks.
RESIDENTIAL AND LIVING	While the sleeping quarters are synonymous to dorm rooms, it gives the fire fighters an opportunity to sleep, shower, eat and relax during peak and off peak hours.
Day/Training Room	Must be configured and furnished like a large residential kitchen/dining/living room. Must be flexible to accommodate various functions as informal meetings and group training for the number of companies on duty. Kitchen must be sized to provide ample room for meal preparation for the entire

The Consolidated Fire, Safety, and Security Facilities

	facility overnight population. Separate dry and cold food storage must be provided for each shift.
Dorm Rooms	Must provide private quarters for the firefighters sleeping during 24 hour shifts. Each room will be shared by two firefighters of different crew/shift so that the room is never occupied simultaneously. Room must contain two beds, nightstand and closets.
Bathroom/Showers/Changing	Bathroom/Showers/Changing area must contain private water closets, lavatory and shower stall with private changing area for firefighters. Must also provide lockers for temporary storage of personal items of firefighters occupying the room.
Fitness Room	Must provide room for fitness machines as well as more traditional equipment. Room must be sized to provide free circulation and should be adjacent to, or in the proximity of, the Bathroom/Showers/Changing area.
Physical Therapy/Sauna	As dictated by mission requirements, a Physical Therapy/Sauna will be provided. This area should be adjacent to the Bathroom/Shower/Changing area.
Laundry Room	Must provide room to accommodate washers, dryers and folding table for personal use by the fire fighters.
Recreation Room	As dictated by mission requirements, a Recreation Room will be provided to accommodate up to two "game units".
Vending	Must provide space for two or more vending machines for snacks and drinks. Vending area should be conveniently located for use of the firefighters and the fire station staff.
Administrative & Training	The administrative area will consist of offices and training rooms used for emergency respondent purposes.
Lobby	Must serve as the entrance to the facility and be a gathering/waiting space for the visiting public. The lobby should be adjacent to the administrative component of the facility.
Provost Marshal	Must contain executive office area for the Provost Marshal which includes an executive meeting area. This office will be located adjacent to or in close proximity to the following area: Deputy Provost Marshal, Provost Marshal Sgt. Major, and Provost Marshal Secretary.
Deputy Provost Marshal	Must contain executive office area for the Deputy Provost Marshal.
Provost Marshal Sgt. Major	Must contain office area for the Provost Marshal Sgt. Major.
Provost Marshal Secretary	Must have office/workstation in the Provost Marshal Office area.
ADA Toilets	Must provide ADA toilets to be utilized by the public.
Administration Assistant	Must provide with accordance to specific functional components.
General Administration Storage	Must provide storage for administration supplies. Must be adjacent to Administrative office area.
Dispatch	Must provide control center console area. Area must contain modular component work stations to accommodate computers, monitor screens, two-way radios and audio equipment, recording system for all emergency radio and telephone messages. Area must also provide wall-mounted installation grid coordinate map, map racks, book cases, safe for classified technical manuals and ergonomically designed seating. Secure drawer or safe storage must meet SECRET criteria.
Dispatch Supervisor	As dictated by mission requirements a workstation will be provided for a Dispatch Supervisor. Workstation will be located in proximity to the Dispatch area.
Dispatch Toilet	Must provide ADA accessible toilet adjacent to the Dispatch area.

The Consolidated Fire, Safety, and Security Facilities

Dispatch Kitchenette	Must provide kitchenette adjacent to the Dispatch area.
911 Center	Utilizes an automatic call distribution system to route incoming calls to available call-takers. (non-emergency information group, military police, fire, and EMS.
Information Technology (IT) Room	Must provide room for the termination of all data and communication utilities in the facility. This area must also house the equipments racks for the facility's computer network, telephone and communication feeds and an Uninterrupted Power Source (UPS). Room should be close to Dispatch.
Additional IT Room	As dictated by mission requirements an additional IT room will be provided adjacent to the Dispatch area.
Computer Training/Testing Room	Must provide room for Computer Training and Testing consisting of carols for study and testing. Must provide seating and workstation/carol space with audiovisual capabilities, phone, and internet connection for each training station. Each carol or workstation must be private for testing and to facilitate quiet study. Access to the room must be controlled by the Training Officer.
Department Training Room	Must provide space for continuing education and training of the entire on-duty staff. Must provide seating and desk space and audiovisual capabilities with phone and internet connection for each training station. Must have direct access to storage space for audiovisual equipment, media, additional equipment and furnishings.
Training Officer's Office	Must provide office and work station space for the Training Officer. Must be located to control access to the Computer Training/Testing Room.
Fire Chief's Office	Must contain office area for the Fire Chief and include workstation, private bedroom and toilet.
Fire Chief's Conference Room	As dictated by mission requirements, this area must provide conference space for the station on duty personnel.
Deputy Chief's Office	As dictated by mission requirements, office area for the deputy chief should be located adjacent to the chief's office and must contain a workstation.
Station Officer's Office/Watch Desk	Station Officer's Office must contain Watch Desk whose function is to receive emergency calls from dispatch. This area contains the security monitors for the station and is occupied 24 hours a day 7 days a week.
Registration Section	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Operations Office	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Operations Support	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Assistant Chief/Shift Supervisor	As dictated by mission requirements, this area must have office/workstation and bedroom. Area should be located in the vicinity of the Administrative Office area.
Assistant Chief for Fire Prevention	As dictated by mission requirement of four or more inspectors, must have office/workstation in the Administrative Office area.
Inspector(s) Office	Must have office/workstation in the Administrative Office area. There is usually one inspector per company; however the number of inspectors may be determined by the amount of building square footage on the installation.
Emergency Medical Services (EMS) Office	As dictated by mission requirements, office must have work station and be in the Administrative Office Area.
Hazardous Materials (HAZMAT) Safety Office	As dictated by mission requirements, office must have work station and be in the Administrative Office Area.
Game Warden Section	Must provide an open office area, able to accommodate cubicles, filing, and

The Consolidated Fire, Safety, and Security Facilities

	storage areas. The size to be driven by the installations mission.
Investigations	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Accident Investigator	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Patrol	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Physical Security	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Traffic Section	Must provide an open office area, able to accommodate cubicles, filing, and storage areas. The size to be driven by the installations mission.
Supply Clerk	Must provide a work area in or adjacent to the supply area to provide control in and out of the supply area.
Supply	Must provide storage for supplies. Must provide a supply clerk area with-in or adjacent to this area.
Found Property	Must provide adequate space to store found property.
Evidence Room	Must provide adequate space to store evidence.
Arms Room	Must provide a vaulted secured area to store fire arms and ammunition. This room is to be located in a centralized area of the facility. Must remain locked at all time.
Records	Must provide a secure filing area to store records.
INTAKE AND DETENTION	Intake and Detention is where the MPs provide the following: property storage, detention intake and holding, sally port, and interview area.
Vehicle Sally Port	Similar to the personnel sally ports but have, of physical necessity, a large middle space to control the incoming/outgoing vehicle and personnel mounted in the vehicle.
Sally Port	A small controlled space with two doors. Essentially, one must enter the space and close the first door before opening the second to proceed, rather like an airlock.
Processing / Booking	The primary functions are the processing, admission, and lodging of persons under arrest. The unit is headed by the Central Booking Lieutenant who oversees a staff of Booking Sergeants, Booking Clerks, Matrons, and Chauffeurs. The physical layout consists of a processing area where prisoner intake is conducted, and identification area where prisoner photographs and fingerprints are taken, a male cellblock area, a female cellblock area, a breath analysis room, a property room for storing prisoner property, and a garage area that houses the prisoner transport vehicle.
Interview Room	Must provide a room to conduct interview and discussions with a one way mirror only to be view from the Viewing Room.
Viewing Room	Must provide a room with one way mirrors viewing into the Interview Rooms to observe activities in the Interview Rooms.
Breathalyzer	Must provide an area to administer and conduct breathalyzer exams.
Personal Property	Must provide adequate space to store personal property.
Holding Cells	Must provide cells where a person will be held, with a stay of 24 hours or less.
Detainee Cells	Must provide cells where the detainees will be held, with a stay greater than 24 hours.
Detainee Shower	Must provide area where detainees can shower.

BACKGROUND

Applicability: The criterion is based upon approval all MCA funded Consolidated Fire, Safety and Security Facilities. The functional relational are mandatory unless it is approved by the Center of Standardization (CoS). The size of the Con FSS will be essentially based on the mission of the installation. The staff size quite often will depend on the number of companies in the facility and weather the facility is a Satellite or a Headquarter facility. The Army Standard applies to Active, Reserve and National Guard Component facilities on Army Installations. The Army Standard is mandatory for all construction projects effective in FY10 and beyond. All USACE geographic districts shall incorporate the mandatory design criteria described herein in close coordination with the USACE designated CoS, for Consolidated Fire, Safety, and Security Facilities. All projects must be reviewed by the CoS to ensure conformance with the Army Standard.

General Design Philosophy: The Con FSS which is a comprehensive facility designed to support the military firefighter's mission to protect lives, installation facilities and flight-lines. The facility also accommodates the firefighters' administrative functions and provides an environment for fire prevention education and training.

Waivers: Only the Assistant Chief of Staff for Installation Management has the authority to approve exceptions to the Army Standard. Waivers from the Army Standard must be requested in accordance with the AR 415-15, latest edition. All waiver requests to this Army Standard require COS conflict resolution prior to submission by the Garrison Commander. Garrison Army Standard waiver request submissions must be received in sufficient time to allow completion of Facility Design Team review and development of recommendations or courses of action for the Army Facilities Standardization Committee to consider prior to implementation into project design. All waiver requests shall include compelling rationale of functional and operational deviations to include substantiating documentation in sufficient detail for the Army to assess implications of approving the waiver. All HQDA approved waivers shall be documented in installation master plans thereby serving as the installations modified standards.

GUIDANCE

Consolidated Fire, Safety and Security Master Planning: The Consolidated Fire, Safety and Security Facilities must be easily accessible both by military personnel and military personnel family members and reservist. The Con FSS will be sited a minimum of 45 meters (150') from the perimeter and 25 meters (82') from trash containers, roadways and parking lots. If these standoff distances are not provided, the Con FSS will be hardened as described in the "DoD Antiterrorism Minimum Construction Standards for Buildings". Reference: UFC 4-010-01 Unified Facilities Criteria – DOD Antiterrorism Minimum Construction Standards for Buildings.

Accessibility: The Administration Office Area, areas shall be open to general public; offices and training rooms in the CON FSS shall be designated in compliance with the Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

Signage: As a minimum the facility must be identified as a "Con FSS". The installation or community name or geographic location of the facility may be used for public identification purposes. Location of the sign is a site adapts issue.

Sustainability: Facility is designed to meet current sustainable development and design policy requirements as established by the Department of the Army. The Army has transitioned to Leadership in Energy and Environmental Design for New Construction (LEED-NC) and the

The Consolidated Fire, Safety, and Security Facilities

SILVER rating level is the designated new sustainable performance criteria for MILCON projects starting in FY08 and beyond. Sustainable design techniques should be considered as they relate to site design, site engineering, unit design, and unit engineering.

- Exterior Construction: Use sustainable, low maintenance finish materials.
- Landscaping: Provide materials natural to the area to limit irrigation and maintenance.
- Utilities: Use underground utility distribution lines, where feasible.

HVAC: HVAC units will provide heating and air conditioning for the entire facility excluding the Mechanical room and the Apparatus Bay which require only heating. A system w/ zoning flexibility must be provided, the use of heating and cooling are subject to the different geological climates.

Antiterrorism / Force Protection: Facility is evaluated for security requirements in accordance with UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings, latest edition.

Gross Area Calculation: Gross floor areas depicted in the “Mandatory Criteria” are calculated in accordance with the International Building Code (IBC). Gross floor areas depicted in the “Mandatory Criteria” reflect a change towards counting all space at the actual floor area despite previous guidance in TI 800-01 for considering some space at one-half the actual floor area. This change reflects the goal to go to Industry Standards which does not distinguish between half space and full space.

Physical Security: Physical security compliance is defined within the Standard Design. The criteria may change due to technological advancements. The mandatory criteria intent is to ensure each facility constructed incorporates the need for physical security.

Compliance Threshold: The Army Standard may identify an Army regulation, technical guide or other written guidance as mandatory criteria. The Corps of Engineers Center of Standardization provides the first line technical compliance review. The Facilities Design Team in conjunction with the COS will resolve any issues where there may be conflicting, unclear or no compliance measurement threshold. Resolution may require senior leadership guidance or amendment of the Army Standard. The Army Standard is not intended to provide compliance criteria detailed in references, regulations, industry standards, or the standard design.

REFERENCE CRITERIA

The designs should use latest editions of the following design criteria:

- Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines
- American with Disabilities Act Accessibility Guidelines (ADAAG)
- Uniform Federal Accessibility Standards (UFAS) Federal Standard 795
- Energy Policy Act 2005 (EPACT05)
- IBC – International Building Code
- AR 405-70, Utilization of Real Property
- AR 415-15, Army Military Construction Program Development and Execution
- DA PAM 415-28, Facility Guide To Army Real Property Category Codes
- ETL 1110-3-491, Sustainable Design for Military Facilities
- IBC – International Building Code
- UFC 3-120-10, Interior Design
- UFC 3-600-01, Design: Fire Protection Engineering for Facilities
- UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings
- UFC 4-023-03, Security Engineering: Design to Resist Progressive Collapse

The Consolidated Fire, Safety, and Security Facilities

- American with Disabilities Act Accessibility Guidelines (ADAAG)
- Uniform Federal Accessibility Standards (UFAS) Federal Standard 795
- USAISEC Technical Guide for Installation Information Infrastructure Architecture (I3A)
- USAISEC Technical Guide for the Integration of SECRET Internet Protocol (IP) Router Network (SIPRNET)

SAMPLE