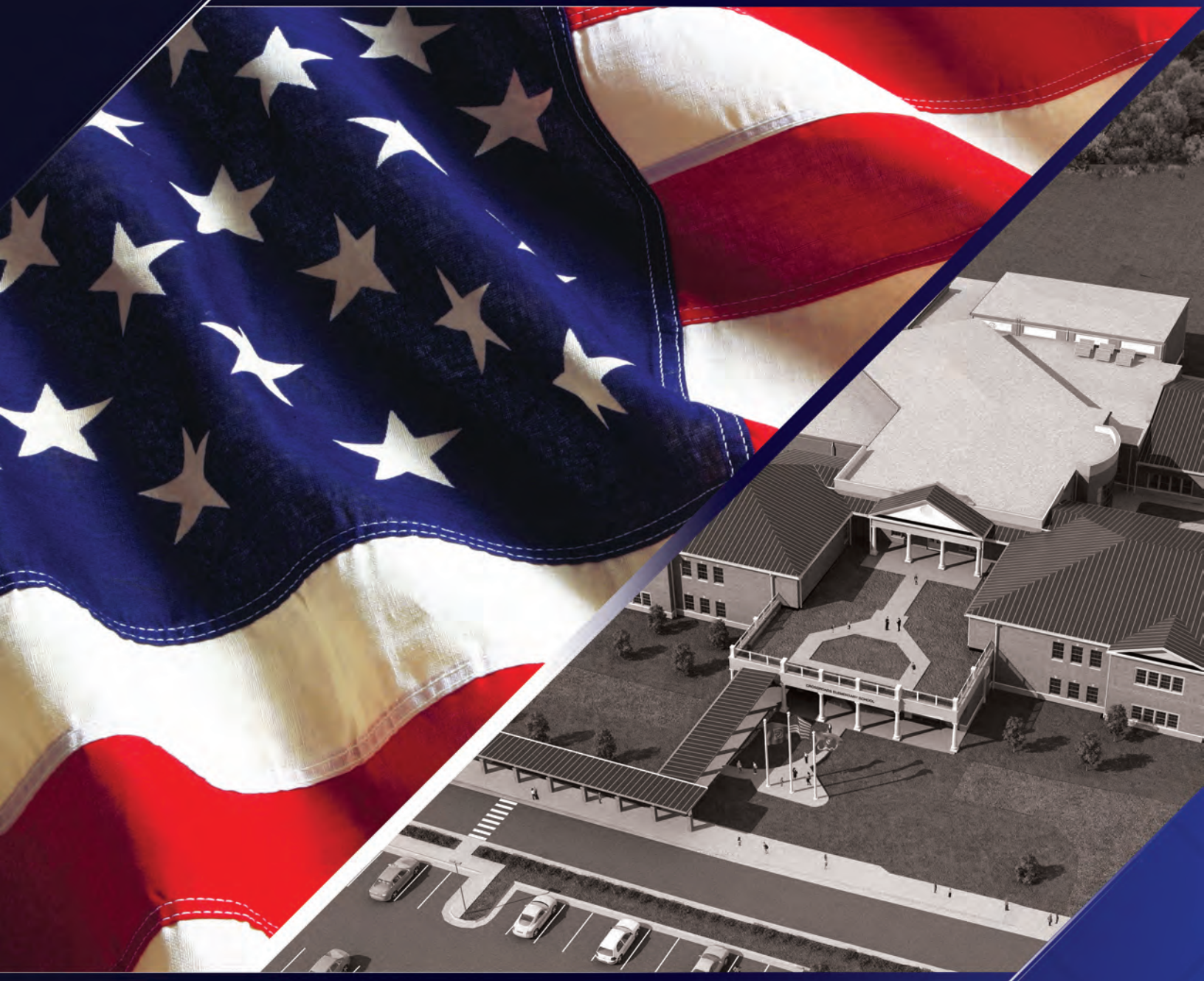
Physical Security & Antiterrorism Design Guide

For DoDEA Educational Facilities



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Approved by DoDEA Associate Director for Financial and Business Operations

dodea
DEPARTMENT OF DEFENSE EDUCATION ACTIVITY

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SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY. This issuance applies to:

a. The Office of the Director, DoDEA; the Principal Deputy Director and Associate Director for Academics, DoDEA; the Associate Director for Financial and Business Operations, DoDEA; the Chief of Staff, DoDEA; the Director for Student Excellence, DoDEA Americas/Associate Director for Performance and Accountability (formerly the Director, Domestic Dependent Elementary and Secondary Schools, and Department of Defense Dependents Schools, Cuba (DDESS/DoDDS-Cuba)); the Director for Student Excellence, DoDEA Europe (formerly the Director, Department of Defense Dependents Schools, Europe (DoDDS-E)); the Director for Student Excellence, DoDEA Pacific (formerly the Director, Department of Defense Dependents Schools, Pacific, and Domestic Dependent Elementary and Secondary Schools, Guam (DoDDS-P/DDESS-Guam)); (referred to collectively in this issuance as "DoDEA Region Directors for Student Excellence"); and all DoDEA region, district, and community school leadership and support staff.

b. The US Army Corps of Engineers (USACE) Norfolk Department of Defense Education Activity (DoDEA) Design Center, construction agents with DoDEA military construction (MILCON) responsibilities to include USACE, Naval Facilities Command, and the Air Force Civil Engineer Center.

c. MILCON process, from 1391 initiation through final building acceptance and used in conjunction with all DoD instructions. Specifically, this issuance applies to:

(1) New DoDEA educational and support facilities for fiscal year 2018 or later. New DoDEA projects prior to fiscal year 2017 may incorporate some changes based upon approval from the Security Management Division (SMD) Chief of Force Protection (CFP) and Hheadquarters (HQ) Facilities Chief.

(2) Existing DoDEA facilities when construction modifications trigger changes in accordance with Unified Facilities Criteria (UFC) 4-010-01, or facility changes/additions that will affect the DoDEA force protection (FP) standards of the existing facility.

1.2. IMPLEMENTATION. This issuance identifies DoD antiterrorism (AT) and DoDEA FP standards. **All DoD and DoDEA standards in this issuances are required for DoDEA MILCON and other design and construction projects**. Use of this issuance is mandatory.

a. Architectural and Engineering (A&E) firms, or other organizations working towards the construction of DoDEA facilities will submit DoDEA construction related design analysis, reports, statements, affecting FP in accordance with Section 5 of this issuance.

b. This issuance is a living document and will be periodically updated by the DoDEA HQ SMD. Suggested changes, additions, or corrections to this document can be forwarded to the CFP for consideration.

c. This issuance cancels the Safety and Security Design Specifications for New Educational Facilities and Version 04-13, March 2013, DoDEA physical security (PHYSEC) AT Design Guide, Version 2.

1.3. POLICY.

a. UFC 4-010-01 and the standards in this issuance pertain to:

(1) MILCON and other construction projects in new DoDEA facilities, to include educational and support facilities.

(2) MILCON and other construction projects in new and existing DoDEA facilities, when triggered, to meet FP requirements in addition to applicable DoD, Combatant Command (COCOM), DoDEA, and installation policy.

(3) Facility additions and renovations standardizing FP of a DoDEA facility.

b. DoD components and COCOMs can supplement the DoD Minimum Antiterrorism Standards for Buildings to increase the stringency.

c. A&E firms and Project Design Teams (PDTs) will review COCOM MILCOM FP requirements in the initial design phase. COCOM standards may address unique requirements to be incorporated in accordance with their policy, with coordination and approval with DoDEA HQ.

1.4. CONFLICTING POLICY.

a. DoDEA operations occur worldwide in various threat environments. With the variances that each location can offer, it is not practical to provide a single PHYSEC and AT solution that will meet the security needs of each project.

b. Nothing in this issuance will detract from, nor be construed to conflict with, the authorities and responsibilities of United States (U.S.) Geographical Combatant Commanders, or the inherent responsibility of DoDEA management to protect personnel and assets under their control in accordance with DoD Instruction (DoDI) O-2000.16, Volume 1 or DoDI 2000.12.

c. In the event of a conflict between DoD, COCOM, DoDEA, and installation requirements, every effort must be made to resolve the issue locally. Conflicts that cannot be resolved at the local level will be forwarded in writing to the DoDEA CFP, FP Program Manager, and DoDEA PHYSEC Manager.

d. Locally produced design guides or policy for FP, AT, PHYSEC, or emergency management are not authorized. Regional Force Protection Officers (FPOs) requesting specific requirements regarding FP or emergency management/preparedness will submit requests to the CFP.

SECTION 2: RESPONSIBILITIES

2.1. DODEA CFP. The CFP oversees the development and implementation of DoDEA specific guidance for FP at DoDEA facilities.

2.2. DODEA FP PRORGAM MANAGER. The FP Program Manager establishes the DoDEA PHYSEC AT Design Guide and integrates the document into DoDEA policy.

2.3. DODEA PHYSEC MANAGER. The PHYSEC Manager:

a. Addresses the design and construction FP concerns not addressed by DoD, COCOMs, and DoDEA guidance.

b. Serves as the primary advisor to the CFP for incorporation of FP in the design and construction of DoDEA facilities.

c. Reviews the design and construction plans for all DoDEA facilities.

d. Provides advice and assistance to the PDT during the design and construction phases.

2.4. DODEA REGIONAL FPOS. The Regional FPOs:

a. Remain an integral part of the PDT.

b. Serves as advisors for the proper implementation of established FP requirements within their area of responsibility (AOR).

c. Through coordination with installations and COCOMs, ensure facility designs incorporate the risk management process into each project. At a minimum, the risk management process will include a threat, criticality, vulnerability, and risk assessment.

d. Coordinate with the District Superintendent and local logistical staff to determine involvement in the planning, parametric, and design charrette.

e. Review all planning, parametric, and design charrette reports for technical and FP criteria compliance.

2.5. USER. The User may consist of an individual, or team of individuals, that are integral in conveying and determining the requirements of the group. The use will ensure DoD, COCOM, DoDEA and installation security standards are implemented throughout the design and construction phases of all DoDEA construction projects.

SECTION 3: FACILITY DESIGN

3.1. BUILDING CATEGORY.

a. DoDEA educational facilities will be categorized as Primary Gathering Buildings. DoDEA non-educational facilities categories will be based upon UFC 4-010-01 definitions.

b. DoDEA facilities on military installations will not be identified as critical assets, infrastructure, or facilities as identified in UFC 4-010-01, UFC 4-020-01, or DoDI O-2000.16, Volume 1.

c. DoDEA facilities will not be divided into inhabited and primary gathering areas. Only low occupancy portions of buildings may be treated separately from the remainder of the building.

3.2. CONSTRUCTION TYPE.

a. Conventional construction of DoDEA facilities may require special windows, structural reinforcement around windows, and progressive collapse resistant construction.

b. Where standoff distances in the "Conventional Construction Standoff Distance" columns of Tables B-1 and B-2 of UFC 4-010-01 can be met, conventional construction for the applicable building walls may be used for the buildings without a specific analysis of blast effects, except as otherwise required in the UFCs.

c. Refer to UFC 4-010-01 for Conventional Construction Parameters for wall and roof types. Refer to Protective Design Center (PDC) Technical Report 10-01 for details on the analysis assumptions and material properties.

3.3. DESIGN BASIS THREAT (DBT).

a. The installation ATO and the threat working group will determine the DBT.

b. The DBT is specific for each DoDEA facility and based on the threat likelihoods and the values of the assets in the building.

c. The DBT development process will determine if UFC 4-010-01 and DoD AT standards are adequate.

d. The DBT is required prior to the initial design of a new or remodeled facility.

3.4. LEVELS OF PROTECTION (LOP). DoDEA educational facilities will use the Low LOP. Refer to PDC Technical Report 06-08 for quantitative descriptions of LOPs.

3.5. CONTROLLED PERIMETER. In accordance with UFC 4-010-01:

a. **A physical, perimeter barrier is not required to have a controlled perimeter**. A controlled perimeter is a physical boundary at which vehicle access is controlled with sufficient means to channel vehicles to the access control points.

b. At a minimum, access control at a controlled perimeter requires the demonstrated capability to search for and detect explosives.

c. The installation will determine the perimeter type, i.e., controlled or uncontrolled. The type of perimeter will determine the applicable explosive weight levels and structural design requirements.

3.6. EXPLOSIVE WEIGHTS. Explosive weights used in designing buildings are established based on potential bomb locations with the larger explosive weight.

a. DoDEA facilities within controlled perimeters, beyond 200 feet or 60 meters will use explosive weight II in the design of facility doors and windows. If a DoDEA facility is within 200 feet 60 meters to the controlled perimeter, analyze explosive weights I **and** II at their actual standoff distances to determine the design of facility doors and windows.

b. If a DoDEA facility is within a controlled perimeter and closer than conventional construction standoff distances allow, explosive weights I **and** II will need to be evaluated to determine the blast effects on building walls, doors, and windows.

c. For design, development, and construction of new facilities, standoff distances between installation perimeters, roadways/parking, and trash containers have a substantial bearing on the construction material and or standoff.

3.7. DESIGN CONCEPT.

a. Terrorist threats are unpredictable. UFC standards are based on a specific range of assumed threats that provide a reasonable baseline for the design of inhabited DoD buildings. Designing facilities to resist baseline threats will provide general protection today and establish a foundation for enhanced FP if necessary.

b. **DoDEA views AT and FP as a holistic concept, affecting the entire site and facility. AT does not stop with standoff or an analysis of the site. DoDEA AT and FP includes facility security, access control, detection, etc**. A&E firms will use this holistic concept when developing designing the AT FP concept.

c. It is cost prohibitive to provide protection against the worst-case scenario in every building.

d. Neighborhood Security. In a 21st century design school:

(1) Security begins at the facility perimeter with a secondary level of security at the neighborhood. Detection, access control, and procedures are used to mitigate against the most likely threats.

(2) Lockdowns will secure the perimeter of the neighborhoods, administrative areas, and other enclaves throughout the facility. If a 21st century school has classrooms, in addition to neighborhoods, they could be locked down separately or as part of neighborhood.

(3) Direct line of sight into the neighborhood must be obstructed by designing the learning studios and staff collaboration rooms in such a way, that in the event of a lockdown, all personnel assigned to that neighborhood could quickly take cover and not be detected.

e. Facility Security.

(1) Numerous schools shootings in the U.S. have taught us, single buildings are easier to secure than campuses or complexes.

(2) DoDEA will only design and construct single building schools or DoDEA facilities, not multiple building environments that are part of the same school or facility, i.e., campus or complexes.

(3) Complexes that consist of multiple schools, for example, an elementary school at the north end of the site and a middle school on the east side of the site are authorized. An elementary school and middle school that is physically attached is authorized.

(4) MILCON additions must make every attempt to add on directly to the existing facility.

f. Future expansion. DoDEA facilities should be constructed with the concept that future additions could be added on to the facility that would not require a separate building or create an educational complex.

3.8. ADDITIONS TO MINIMUM DESIGN STANDARDS.

a. Through the application of the risk management process, if local conditions identify the need for enhanced FP countermeasures above the DoD or DoDEA standards, the PDT will forward a written justification of proposed additions to the CFP and FP Program Manager.

b. The risk management process will include a threat assessment, criticality assessment, vulnerability assessment, and risk assessment. An example risk management processes can be found in UFC 4-020-01 and the DoD ATO guide. The PDT should leverage installation assessments for additional information and supporting risk management documentation

c. Justification of enhancement beyond the design standards in this issuance will be evaluated by the DoDEA PHYSEC Manager, CFP, HQ Chief Facilities Branch, and other senior leadership as applicable. The CFP or designee will provide a written response to the PDT that will endorse, amend, or deny the requested additions.

SECTION 4: FP STANDARDS

4.1. STANDARD 1: STANDOFF DISTANCES.

a. This UFC 4-010-01 applies to all DoDEA facilities on military installations. Standoff distances are identified in UFC 4-010-01.

b. The standard does not require physical barriers capable of stopping or preventing moving vehicles from accessing areas within the standoff distances. Measures using landscaping features, curbing, or pavement marking will meet the requirements for establishing standoff.

c. Standoff distances within a controlled perimeter is based on the assumption that a controlled perimeter will allow for the detection of larger vehicle bombs and prevent them from entering the installation.

d. If within the United States European Command (USEUCOM) AOR, DoDEA facilities must mitigate against moving threat vehicles by establishing a **continuous** perimeter of passive and active barriers at the facility's required standoff limit. Refer to Standards 3, 4, and 34.

4.2. STANDARD 2: UNOBSTRUCTED SPACE REQUIREMENTS. This UFC 4-010-01 standard is applicable to all DoDEA facilities on military installations. When placing features i.e., vegetation, equipment enclosures, trash containers, etc., within unobstructed spaces, determine if a device, equivalent to explosive weight II could be hidden within the feature.

a. Electrical and mechanical equipment such as transformers, air-cooled condensers, and packaged chillers should be placed outside the unobstructed space or on the roof.

b. Foliage on trees or shrubs within the unobstructed space will not extend lower than 3 feet or 1 meter above the ground to improve observation of objects underneath them.

c. Playground equipment will be located within the unobstructed space footprint. Ensure that playground equipment provides no opportunity for concealment of explosive devices with heights of 6 inches or 150 mm or greater.

d. Parking is required to be outside the required standoff distance.

4.3. STANDARD 3: DRIVE-UP/DROP-OFF AREAS. This UFC 4-010-01 standard applies to drive-up/drop-off roadways.

a. Standoff.

(1) Drive-up/drop-off areas, for parents and school buses are authorized in standoff distances, however, make **every effort to locate drive-up/drop-offs areas outside the standoff distance.** At DoDEA facilities:

(a) Bus loops and parent drive-up or drop-off lanes:

1. Standoff distances will be measured to the nearest legal parking spaces, not the drive-up or drop-off areas.

2. Will not generate building hardening to compensate for closer standoff distances.

(b) All bus loops and drive-up/drop-off areas or lanes must be clearly identifiable and marked in accordance with the *Manual on Uniform Traffic Control Devices*; allowing for drivers to understand the intent of the area.

(2) Unattended vehicles may not be closer than the minimum standoff distance. If problems occur with unattended vehicles, address the issue at the local level. If issues cannot be resolved at the local level, contact the CFP for assistance.

b. Drive Up/Drop-Off – Active and Passive Vehicle Barriers.

(1) Drive-Up/Drop-Off Areas – Active Barrier Requirement.

(a) Active barriers **will not** be used to control access to drive-up/drop-off lanes, bus loops, or bus drive-ups within set standoff distances. If local security conditions require threat mitigation for these areas, the PDT through coordination with the CFP, will develop appropriate countermeasures.

(b) In accordance with USEUCOM Operations Order (OPORD) 16-03 and Standard 35, DoDEA facilities **within the USEUCOM AOR will:**

1. Mitigate against moving threat vehicles, establishing a continuous perimeter of passive and active barriers at the facility's required standoff limit. Refer to OPORD 16-03 and Standard 35 for additional details.

2. Locate drive-up/drop-off lanes, bus loops, bus drive-ups outside the set standoff distance **and** use automated active barriers where vehicles will drive within set standoff distances. Deviations will require approval from the CFP.

(2) Drive-Up/Drop-Off Areas – Passive Barrier Requirement.

(a) Passive barriers **will be** employed on the facility side of bus loops and drive-up/drop-off areas, refer to Figure 1, within the immediate vicinity of facility entry points, i.e., main door and student entrances. For this purpose, passive barriers are recognized as eight inch vertical wall curbs.

(b) Measures using landscaping features, curbing, or pavement marking will meet the requirements of these standards for standoff. Passive barriers:

1. Include, but are not limited to berms, gullies, boulders, trees, benches, planters, walls, bollards, and cables. Refer to Figure 1.

2. Are predicated on the stationary vehicle bomb threat. The standard does not required vehicle barriers to stop a moving vehicle unless the facility is within the USEUCOM AOR.

3. Will not exceed three feet of separation between barrier types, e.g., bollards, planters, etc., or four feet of separation when crossing a primary pedestrian access route, i.e., sidewalks and ramps. **Whenever possible, passive barriers should be aesthetically pleasant.**

(c) The PDT will determine types, combinations, and quantities of passive barriers. Consider unobstructed space requirements when determining the types and locations of passive barriers.

Figure 1. Passive Barriers

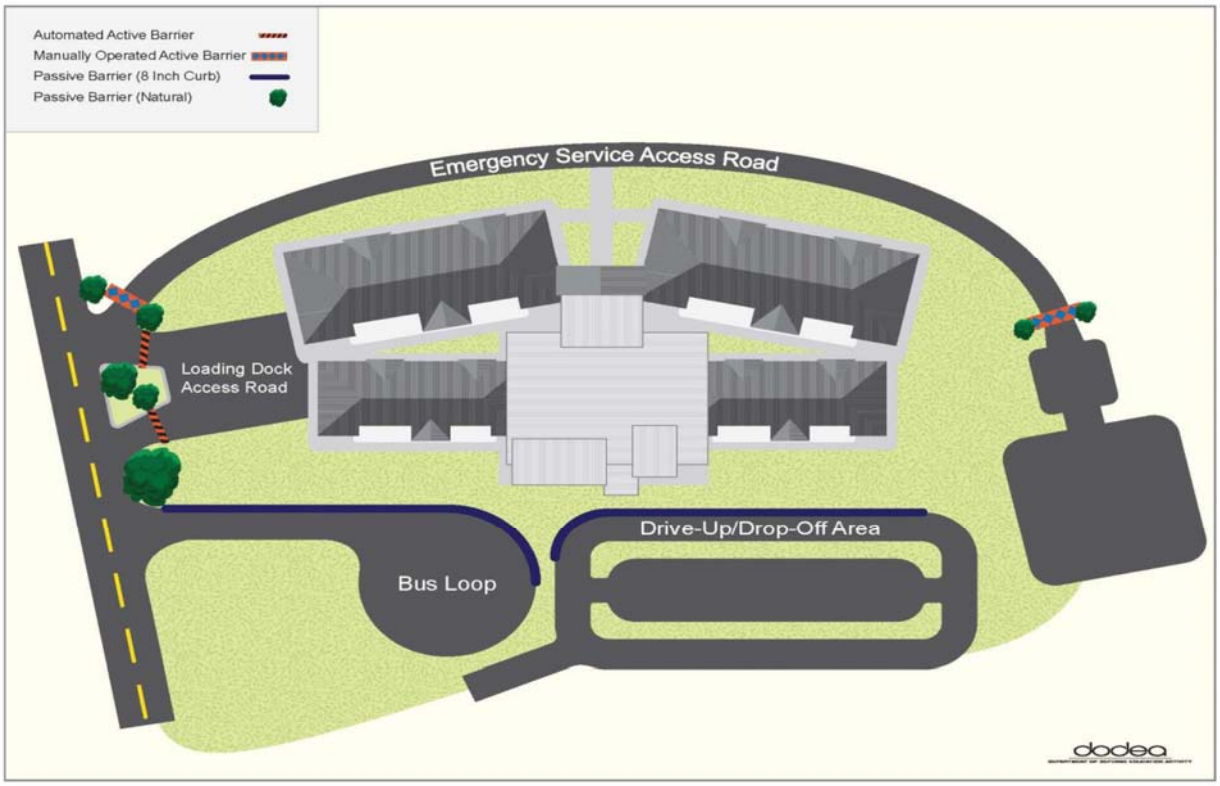
(d) There is no intention of an all-encompassing passive barrier system around each facility.

1. Passive barriers will be employed to provide an added layer of FP at exterior areas contain high populations of students, i.e., main facility entrances within the drive-up/drop-off and bus loop areas.

2. The PDT will apply prudency when placing barriers, while keeping cost, functionality, and esthetics in mind.

(3) Refer to Figure 2 for barrier deployment.

Figure 2. Barrier Deployment.



4.4. STANDARD 4: ACCESS ROADS. This UFC 4-010-01 standard applies to DoDEA access roads. DoDEA recognizes two types of access roads, dual purpose and standalone emergency service roads. Drive-Up/Drop-Off's are not considered access roads. Parking locations will not be accessible from access roads.

a. Access Road – Active and Passive Vehicle Barriers:

(1) Are not required to stop moving vehicles, unless within the USEUCOM AOR.

(2) Will incorporate passive barriers to the immediate sides of the active barrier(s) to aid in identification of vehicle breeches. For this purpose, passive barriers will extend 10 feet out from the active barrier(s) and not exceed three feet of separation between barrier types.

b. Dual Purpose Access Roads:

(1) Will use automated active barriers to facilitate entry and egress to loading docks and to emergency services. For automated active barriers:

(a) Entry and egress barrier operations, at the barriers, are facilitated through PACS with voice and video identification system integration. Refer to Standard 23.

(b) Entry and egress remote access capabilities and operations shall be provided via up/down switch in the administration suite, loading dock/service entry area, and inside the loading dock door.

(c) A buried detection loop is required to open barrier upon egress and close the barrier once cleared entry vehicle passes through.

(d) Battery backup will be provided, based on manufacturers recommendations and anticipated throughput.

(e) Manual barrier override capability will be provided via manufacture designated tools.

(f) A high security key safe, i.e., Knox box or equivalent, will be mounted to the barrier's structural support. This will allow the fire department to activate/open the barriers.

(g) Refer to figure 3 for automated active barriers.

Figure 3. Automated Active Barriers

c. Standalone Emergency Service Roads:

(1) Separate from dual purpose access roads will have manually operated active barriers.

(a) Equip manually operated active barrier(s) with a high security key safe, i.e., Knox box or equivalent, mounted to the barrier's structural support. This will allow the fire department to open/secure the barriers.

(b) Some manually operated barriers allow entry to be obtained by use of hydrant wrenches. The PDT will make the determination in concert with installation fire department.

(2) Refer to figure 4 for an example.

Figure 4. Passive Vehicle Barriers

4.5. STANDARD 5: PARKING BENEATH BUILDINGS OR ON ROOFTOPS. This UFC 4-010-01 standard will apply to only new DoDEA facilities with underground or rooftop parking.

4.6. STANDARD 6: PROGRESSIVE COLLAPSE RESISTANCE. This UFC 4-010-01 standard will only apply to new DoDEA facilities with three or more stories.

4.7. STANDARD 7: STRUCTURAL ISOLATION.

a. This UFC 4-010-01 standard is applicable for building additions or the construction of separations between inhabited portions of buildings, including primary gathering and low occupancy portions of buildings.

b. This standard will not be applied to separate inhabited areas of buildings that do not meet the definition of primary gathering from those that do meet the primary gathering definition.

c. If buildings have inhabited and primary gathering occupancies, the entire inhabited portion of the building will be considered to be primary gathering.

d. Design all building additions to be structurally independent from the adjacent existing buildings to minimize the possibility that collapse of one portion of the building will affect the stability of the remainder of the building.

e. Verify through analysis that the collapse of either the addition or the existing building will not result in collapse of the remainder of the building.

4.8. STANDARD 8: BUILDING OVERHANGS AND BREEZEWAYS. This UFC 4-010-01, standard is applicable to new DoDEA facilities with overhangs or breezeways.

4.9. STANDARD 9: EXTERIOR MASONRY WALLS. This UFC 4-010-01 standard applies to wall types and applicable explosive weight, based on the established DBT, to

determine the standoff distances. Refer to UFC 4-010-01, Standard 9, table 2-3 and, table B-2 for additional information.

a. Unreinforced masonry walls are prohibited for the exterior walls of new buildings. Local code, regulatory requirements, and established DBTs dictate the construction of a facility.

b. Construction methods will differ due to location, code requirements, and DBTs. The PDT will make the final determination of structural requirements.

4.10. STANDARD 10: WINDOWS (EXTERIOR) AND SKYLIGHTS. This UFC 4-010-01, standard applies to window systems at all standoff distances.

a. Window design requirements will be determined by analysis based on applicable explosive weights and associated standoff distances.

b. If the facility is more than 200 feet from the controlled perimeter, windows and skylights will not need to protect against explosive weight I.

c. If located within the United States Forces Korea (USFK) AOR, review USFK OPORD 5050-11, Appendix 2 to Annex H (Logistics) to ensure compliance with windows, lamination, and glazing standards.

4.11. STANDARD 11: BUILDING ENTRANCE LAYOUT. This UFC 4-010-01 standard applies to the building entrances at all DoDEA facilities. DoDEA facilities will have one main point of entry.

a. Vestibules, foyers, or similar entry configurations with inner and outer doors into inhabited areas are not considered routinely occupied spaces.

b. Main entrance(s):

(1) Will include a vestibule, entrapment area, or sally port to control the flow of visitors into a facility by physically channeling them into the main office. Refer to Figure 5 & Figure 6.

(2) Should take into account the Americans with Disabilities (ADA) and Architectural Barriers Act (ABA) requirements.

(3) Exterior doors will be only accessible via PACS with intercom, audio, and visual capabilities and equipped to allow for egress for life safety codes. Refer to Standard 23.

(4) Interior doors:

(a) Leading from the main office or administration suite will have electronic locks, controlled by the main office staff, and the designated PACS to provide a single point of access.

(b) Must meet standards and glazing associated with inner door entries in accordance with UFC 4-010-01, Standard 10.

(c) These doors will remain locked from the inside until released.

(5) Will not face installation perimeters or uncontrolled areas with direct lines of sight to the entrance. If this is not achievable due to site constraints, utilize UFC 4-010-01 to develop mitigation measures.

(6) To provide debris resistance, inner doors, sidelights, and transoms located in vestibules or foyers must meet the windborne debris resistance requirements of American Society for Testing and Materials (ASTM) E1996. Inner vestibules or foyers doors will meet UFC 4-010-01 Standards 10 and 12.

Figure 5. Sally Port Example 1.

Figure 6. Sally Port Example 2.

4.12. STANDARD 12: EXTERIOR DOORS.

a. All exterior doors entering into inhabited areas of DoDEA facilities must meet this UFC 4-010-01 standard.

b. All facility exterior doors will be secured at all times.

c. Daily use exterior doors, i.e., main facility entrances, bus loading/unloading entrances, and mail room/loading dock entrances, will be accessible via applicable PACS capabilities.

d. Overhead doors will meet the requirements identified in UFC 4-010-01. Daily use

exterior overhead doors will be accessible via applicable PACS. Ensure overhead doors do not open into inhabited spaces. Ensure the overhead doors are intercepted by walls or tether systems designed with sufficient strength to keep the doors from translating into other areas, to include inhabited space.

4.13. STANDARD 13: MAIL ROOM/LOADING DOCK. Hereafter, DoDEA refers to mail room/loading docks as receiving rooms.

a. This UFC 4-010-01 has been adapted to meet DoDEA's mission. All DoDEA facilities will have a receiving room to meet the intent of this standard to take the place of mail or delivery rooms. Refer to the DoDEA Education Facilities Specifications Guide for additional information.

(1) All mail or supplies will be delivered to the receiving room.

(2) A receiving room is required, regardless if mail or deliveries are screened or processed at a central mail or supplies handling facility.

b. All facilities will have an exterior loading dock or area to receive deliveries for the food service and central supply/storage area.

c. The receiving rooms:

(1) Will be located on the perimeter and as far from heavily populated areas of the facility as possible and adjacent to the school supply/storage area and food service area.

(2) Does not require the hardening because the mail and supplies bomb threats are beyond the scope of UFC 4-010-01. Refer to UFC 4-020-01 for an identified mail or supplies bomb threat.

(3) Are the only access point into the facility from the loading dock.

(4) Will be equipped with a:

(a) Combination emergency eye wash.

(b) Dedicated Heating, Ventilation, and Air Conditioning (HVAC) system with shut off capability. In addition to a HVAC shut-off switch for the entire building. Both shut off switches will be labeled "HVAC shut-off" and will be located inside the receiving room.

(c) Space for a small table to process paperwork for deliveries.

(5) Will not have filing cabinets, utility shelving, or staff workstations in this space.

d. Access control from the loading dock to the facility must comply with Standard 23. CCTV coverage will meet Standard 24.

4.14. STANDARD 14: ROOF ACCESS. This UFC 4-010-01 standard is applicable to all DoDEA facilities.

a. Roof access points shall be locked at all times.

b. Facilities with rooftop outdoor space will ensure:

(1) Doors leading into and out of the facility are equipped with PACS; this would require PACS on both sides of the roof top door and telephone in weatherproof container with emergency contact information.

(2) Ladders or other means to egress off the rooftop outdoor spaces are secured to allow for egress but prevent an individual on the ground from accessing to the rooftop.

4.15. STANDARD 15: OVERHEAD MOUNTED ARCHITECTURAL FEATURES. This UFC 4-010-01 standard is applicable to all DoDEA facilities.

4.16. STANDARD 16: AIR INTAKES. This UFC 4-010-01 standard is applicable to all DoDEA facilities.

4.17. STANDARD 17: RECEIVING ROOM VENTILATION. UFC 4-010-01 refers to this standard as mail and locking dock ventilation.

a. This UFC 4-010-01 standard is to ensure airborne chemical, biological, or radiological agents introduced into mail rooms, receiving rooms, and loading docks do not migrate into other areas of the buildings.

b. DoDEA facilities will provide separate, dedicated air ventilation systems for receiving rooms that complies with UFC 4-010-01, Standard 17.

4.18. STANDARD 18: EMERGENCY AIR DISTRIBUTION SHUT OFF.

a. This UFC 4-010-01 standard is applicable to all DoDEA facilities.

b. Emergency HVAC shut off switches are required throughout the facility. The shut off switch will:

(1) Close all dampers leading to the outside except where interior pressure and airflow control would more efficiently prevent the spread of airborne contaminants.

(2) Be located similarly to mass notification system (MNS) local operating consoles (LOC), however, **the travel distance to the nearest shutoff switch will not exceed 200 feet.**

(3) Stand capable of shutting down all required systems and closing all required dampers, even if the local hand/off/auto switch is in the hand position, within 30 seconds of switch activation.

(4) If co-located with fire alarm pull stations, remain well labeled, and a different color than fire alarm pull stations.

(5) If student accessible, secure with a tamperproof housing. In addition, HVAC shut off switches will only be located on the inside of the facility. Refer to figure 7.

(6) Regardless of the 200 feet distance, be located in the administration suite, neighborhood staff collaboration area, and receiving room. These fixed locations will be the starting points for the 200 feet distance.

Figure 7. HVAC Shut Off Switch

c. Facilities with a standalone HVAC will install air duct shut off switches at that location, e.g., receiving room.

d. Shutdown procedure shall be controlled and orderly so airflow shutoff will not harm the air handling system if activated for practice drills, operational inspection, or accidental activation. This allows for testing at initial building acceptance.

4.19. STANDARD 19: EQUIPMENT BRACING. This UFC 4-010-01 standard is applicable to all DoDEA facilities.

4.20. STANDARD 20: UNDER BUILDING ACCESS. This UFC 4-010-01 standard is applicable to all DoDEA facilities. Access to crawl spaces, utility tunnels, and other means of under building access must be controlled.

4.21. STANDARD 21: MASS NOTIFICATION. This UFC 4-010-01 standard is applicable to MNS at all DoDEA facilities.

a. If a wide area MNS is on the installation, the individual building MNS will:

(1) Communicate with the central control unit of the wide area MNS to provide status information, receive commands, activate pre-recorded messages, and originate live voice messages.

(2) Remain compatible with an existing, and future, wide area MNS.

b. If no wide area MNS is available:

(1) At a minimum, the DoDEA facility MNS will receive an audio line-level input.

(2) The DoDEA facility MNS will allow future interface with a wide area MNS procured from another manufacturer.

c. The PDT will ensure:

(1) All MNS projects for DoDEA facilities are supervised by a registered fire protection engineer, registered professional engineer with at least four years of current experience in fire protection and detection systems design, or engineering technologist qualified by the National Institute for Certification in Engineering Technology (NICET) Level IV in fire alarm systems.

(2) The individual's name, signature, and professional engineer number or NICET certification number will be included on all final design documents.

(3) The installation receives electrical requirements, computer codes, or other protocols needed to interface the wide area and facility MNS.

d. If a facility MNS is combined with an installation MNS, the PDT may request notifications initially terminate within the administration suite. This request will need to be formally presented to and approved by the installation.

(1) If approved, the facility level MNS will have the ability to prevent installation level communications from broadcasting throughout the entire facility. This capability will provide the facility officials with an opportunity to determine if incoming communications, i.e., exercise/training announcements, etc., are suitable for the student population.

(2) Combined MNS and fire alarm systems are required by the United States Navy and highly recommended by the United States Army (USA) and United States Air Force (USAF). If the USA or USAF approves a separate MNS and separate building fire alarm system, utilize UFC 4-021-01.

(3) The combined system design may be used by the United States Marine Corps (USMC) when approved by the authority having jurisdiction based on the class and size of the building. USMC projects will use the technical criteria of UFC 4-021-01, chapter 5.

f. An individual building MNS for new construction projects includes several subsystems: autonomous control unit (ACU), local operating console (LOC), notification appliance network; and interface with the wide area MNS.

(1) Design the MNS and wiring to meet National Fire Protection Association 72 requirements.

(2) Provide a LOC for first responders and building occupants to access and originate messages from locations in the building other than from the ACU. Specific locations for installation of LOCs are service directed and outlined in UFC 4-021-01.

(2) Regardless of service requirements, DoDEA facilities will have LOCs installed in the administration suites, neighborhood staff collaboration areas, and receiving rooms.

g. Refer to UFC 4-021-01 for detailed MNS component and subsystem requirements, i.e., internal and external speakers, strobes, ACU, LOC, etc.

4.22. STANDARD 22: ESS AND INTEGRATION. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background. ESS includes Intrusion Detection Systems (IDS), CCTV, PACS, and duress alarm systems and will be compliant with Unified Facilities Guide Specifications (UFGS) 28 10 05.

b. Coordination.

(1) DoDEA facilities are located around the world. It is not practical to identify a specific type of ESS for use at each facility.

(2) Prior to determining ESS requirements, DoDEA and installation security officials will coordinate and determine the type of ESS operating on the installation. Information gathered from this coordination will help planners determine local support, local maintenance, and local vendor capabilities.

(3) A formalized agreement between DoDEA and the installation via Memorandums of Agreement (MOA) or Interagency Service Support Agreements (ISSA) may be required for ESS connectivity, monitoring, and response.

c. Infrastructure Requirements. ESS will:

(1) When possible, should mirror the type of ESS, i.e., PACS, CCTV, IDS, duress alarms operating on the installation.

(2) Have the ability to integrate with other facility PHYSEC systems and equipment as applicable.

(3) Network capability, either standalone local area network or DoDEA network will be determined by the HQ DoDEA, Information Technology Branch Chief through the PDT with concurrence with the CFP. ESS networks are used for the operation of IDS, CCTV, and PACS. All networks must meet the applicable DoD and service component information assurance policies and procedures.

4.23. STANDARD 23: PACS. This is a DoDEA standard that is required at all DoDEA facilities. Also known as an access control system, PACS is to ensure only authorized personnel are permitted ingress to a specified area or facility using a Common Access Card (CAC). PACS requirements are outlined in DoDI 5200.8, Directive-Type Memorandum 09-012, UFC 4-021-02, and UFGS 28 10 05.

a. Background.

(1) PACS:

(a) Compares an individual's entry authorization identifier against a verified database. Once an individual's identity has been verified, the PACS send an output signal to allow authorized individual entry at controlled portals, i.e., gates or doors.

(b) Can have many elements, including electric locks, card readers, biometric readers, door contacts, and request-to-exit (REX) devices, all monitored and controlled by a distributed processing system, i.e., master station, and one or more workstations as identified in UFGS 28 10 05. Refer to the National Institute of Standards and Technology Special Publication 800-116 for PACS implementation guidance and UFC 4-021-02, for an example PACS configuration.

(2) Utilize UFC 4-021-02 and Directive-Type Memorandum 09-012 to ensure installed systems meet minimum DoD requirements, for the design, construction, and implementation of PACS. All systems must allow for compliance with ADA standards.

(3) **Maglock systems are not authorized at DoDEA facilities.**

(4) In accordance with DoD Directive 4270.5, it is DoD policy that the UFC and UFGS shall be used to the greatest extent possible by all DoDEA for the planning, design, and construction, to include restoration and modernization of facilities, regardless of funding source.

b. PACS Implementation.

(1) A fully operational PACS, outfitted with electronic locks, card readers, audio, video, and remote access capabilities will be installed at the perimeter entrances to DoDEA facilities, active vehicle barrier locations, utility/communication closets, chemical storage rooms, and roof access doors. Remote access is provided by facility officials through the use of electronic door releases. At a minimum, remote access, i.e., master stations, locations shall include the administration suite and loading dock/service entry areas.

(2) This includes the installation of PACS card readers for access capabilities, electronic locks, and mechanical cylinder overrides, ensuring compliance with Standard 30.

(3) DoDEA educational facilities physically connected to District Superintendent Offices (DSOs) will require PACS at an access point, connecting the facilities.

(4) Mechanical cylinder overrides for all identified perimeter doors.

(5) Active Vehicle Barrier Locations will be outfitted with a card reader with audio, video, and remote access capabilities. Include remote access for these barriers provided by facility officials. At a minimum, remote access, i.e., master stations, shall be located within the administration suite and loading dock/service entry areas.

(6) DoDEA high school locations that host annual sporting events on a large scale may require additional PACS at gym entrances.

c. PACS Infrastructure:

(1) Refer to UFSG 20 10 05 for:

(a) All PACS badging, programing, and central processing.

(b) Types of access control units and devices. Hardware compatibility and Federal approval can be determined via https://www.idmanagement.gov/. PACS systems must be General Service Administration Ficam Product Search 201 evaluation program approved.

(c) Push button switches, panic bars, electric doors strikes and bolts, electromagnetic locks, and portal control devices.

1. While not recommended, REX devices should be included in the electrified hardware when possible. If not possible, REX should be mounted directly above the door.

2. REX devices will have the capability to fail-secure, i.e., locked.

(d) PACS with elevator control.

(2) Infrastructure will include:

(a) Individual uninterruptible power supply to provide backup power to all systems for at least eight hours.

(b) Access control panels located in a secure and environmentally controlled room, preferably the telecommunications room. External PACS components shall be protected from inclement weather.

(c) Badging equipment, e.g., camera, badging software, printer, etc., for the issuance of visitor badges.

(3) Card readers:

(a) Will be contactless card readers as identified in UFGS in 28 10 05 will be the primary technology used by DoDEA. Existing card readers will be upgraded to dual mode readers through the process of attrition. Read contact and contactless technology in accordance with Federal Information Processing Standard 201-2.

(b) Must be General Service Administration Ficam Product Search 201 evaluation program approved.

(c) Provide keypad for personal identification number usage or for additional levels of security. The use of a personal identification number by itself to allow access is prohibited in DoDEA facilities.

(c) Stand capable of normal operation indoors, outdoors for the environment being installed. Located outdoors will have an outdoor hood to protect against inclement weather.

d. PACS Card or Entry Credential.

(1) Homeland Security Presidential Directive 12 requires Government-wide standard for secure and reliable forms of identification issued to Federal employees and contractors.

(2) As required by UFGS 28 10 05, PACS and access control systems must be compatible with CACs. DoD established the CAC as the authorized credential in accordance with DoDI 8520.03. **PACS at DoDEA facilities will only use the CAC.** Refer to https://www.idmanagement.gov/ to determine if the access control system is approved by the General Service Administration Ficam Product Search 201 evaluation program**.**

(3) Key fobs, wireless system, VOS Siemens, or non-CAC prolixity cards are not authorized unless approved by the CFP.

(4) Local proximity cards are required for each facility for issuance to individuals who cannot obtain a CAC.

e. PACS Intercom requirements.

Security intercoms will:

(1) Integrate with electronic or magnetic remote door/gate release allowing for remote communication and unlocking of doors/gates from the master stations.

(2) Include audio and built-in video capability. Refer to Figure 8 for a PACS intercom example.

Figure 8. PACS Intercom Example

4.24. STANDARD 24: CCTV. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background. CCTV systems:

(1) Are a collection of cameras, recorders, switches, keyboards, and monitors.

(2) Will enable remote monitoring of live and recorded images by authorized personnel, i.e., DoDEA security and local school officials, over an internal internet protocol (IP) network.

(3) Installed at DoDEA facilities should mirror the installation CCTV network. Refer to UFC 4-021-02 and UFGS 28 10 05 for the design, construction, and implementation of CCTV systems.

b. Implementation. CCTV systems must cover perimeter doors that are primary points of entry into the facility, play areas, interior reception area at the main entrance doors, bus loops, drive-up/drop-off areas, and service areas, i.e., the exterior of receiving rooms.

c. Infrastructure Requirements.

(1) Video images will be recorded in digital format and be retained for at least 90 days in accordance with DoDEA AI 5705.01, Volume 3.

(2) Video management system recording devices will include individual uninterruptible power supply to provide backup power to all systems for at least 90 minutes.

(3) CCTV will transmit to recording devices over an internal IP network and be viewable by facility administrators in the administration suite.

(4) CCTV systems may be integrated with PACS to enable automatic triggering of live video alerts and alarm notifications.

4.25. STANDARD 25: IDS.

a. IDS is not required in DoDEA educational facilities, unless housing or maintaining classified information.

b. DoDEA DSOs with secure rooms or classified areas will require IDS. Refer to Standard 39.

c. Facility administrators may invest in IDS as supplementary security devices. Refer to DoDEA AI 5705.01, Volume 3.

4.26. STANDARD 26: DURESS/PANIC ALARM REQUIREMENTS. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background.

(1) Duress alarm(s):

(a) Also known as panic alarms are required at new and modified DoDEA facilities.

(b) Systems will be connected to the installation emergency or security monitoring center capable of continuous operations.

(2) Monitoring centers shall have the capability to immediately dispatch security to the designated facility.

(3) Upon activation, a silent alarm signal shall be sent to the monitoring location.

(4) Refer to UFGS 28 10 05 when designing duress alarm systems.

b. Implementation.

(1) At a minimum, duress alarm call stations will be installed at:

(a) The main entrance reception desk, principal and administration officer's office, guidance and health suite, as applicable.

(b) Staff collaboration rooms in each neighborhood. In addition, if a neighborhood has more than four learning studios, or a combination or mix of learning studios, laboratories, or classrooms, an additional duress alarm will be provided.

(2) The PDT in coordination with local school officials may determine the need for additional placement of duress call stations.

c. Infrastructure Requirements. Duress call station hardware will be mounted to remain not observable and prevent unintentional operation or false alarms. The duress hardwire can be radio frequency or keypad activated.

4.27. STANDARD 27: LIGHTING. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background.

(1) Use UFC 4-020-03FA and UFC 3-530-01 when designing exterior or perimeter security lighting systems.

(2) Exterior or perimeter lighting shall be sufficient to allow security or individuals responsible for maintaining surveillance to see illegal acts such as forced entry.

(3) Building perimeter lighting will be designed to deter criminal or malicious activity.

b. Coordination.

(1) DoDEA facilities are located throughout the world. It is not practical to identify a specific type of security lighting at each facility.

(2) The PDT will:

(a) Prior to determining lighting requirements, coordinate with installation security and engineering officials to determine what security lighting systems are currently in operation. Information gathered from this coordination will help planners determine local support, local maintenance, and local vendor capabilities. If possible, security lighting at DoDEA facilities should mirror the installation.

(b) Ensure security lighting requirements, i.e., illumination levels, uniformity, color rendering, and energy conservation are adequately identified and addressed.

c. Implementation.

(1) Specific requirements for protective lighting must be determined locally through a lighting survey.

(2) At a minimum, security lighting will be installed at facility entrances, exits, and loading docks must be lighted for all levels of protection.

(a) Use concealed, fully shielded, or low brightness sources to limit glare and increasing brightness.

(b) Lighting at these locations should protect against forced-entry and provide enough light for threat assessments.

d. Lighting Requirements.

(1) Interior and exterior lighting systems, including fixtures, lamps, and associated primary and backup power, control components, and wiring must be carefully designed to ensure effectiveness.

(2) Lighting levels around facility perimeter and entry areas will be 0.5 foot-candles (fc) [5.1 lux].

(3) Use the manufacturer's foot-candle requirements and other aspects of security lighting to support CCTV or other visual surveillance equipment.

(4) Security lighting systems, switches, power lines, and supporting equipment must be designed and fielded to ensure an intruder cannot defeat the lighting system by simply turning it off or interrupting the power supply. In situations where it is determined that uninterrupted security lighting is required, redundant power supplies should be considered.

(5) Fixed lighting along facility perimeters shall provide overlapping cones of light when activated.

(a) Perimeter lighting, depending on local requirements, may call for the installation of continuous lighting.

(b) When continuous perimeter lighting is not required, the application of motion sensor is authorized.

(6) Entrances, exits, and loading docks exterior lighting shall be automatically controlled by a photosensor, astronomical time switch, or a combination of both.

(a) Controls must be configured to automatically turn on exterior lighting at dusk and turn off the exterior lighting when sufficient daylight is available or the lighting is not required. Manual override for exterior lighting shall be provided.

(b) Locations of manual override switches will need to be carefully considered as to not allow access to unauthorized personnel.

e. Interior Motion Lighting Requirements. This is a DoDEA standard that is required at all DoDEA facilities. Interior motion activated lighting in classrooms, neighborhoods, offices, and conference rooms will have an on/off switch in each location.

4.28. STANDARD 28: INTERIOR DOORS AND WINDOWS.

This is a DoDEA standard that is required at all DoDEA facilities.

a. Door Requirements.

(1) Doors will be capable of being closed and locked quickly from inside by one person.

(2) Interior doors, to include narrow view glass panels, will provide a one minute time delay against forced entry.

(3) To facilitate lockdown procedures and to decrease costs, the introduction of interior doors that would allow an intruder access to interior portions of neighborhoods and primary gathering locations should be kept to a minimum.

(4) Interior doors and connected windows must have the ability to obstruct vision into neighborhoods from interior hallways, circulation corridors, and exterior portions of the facility during security incidents.

b. Window Requirements.

(1) Interior window glazing, framing, connections, and supporting structural elements at the neighborhood entrances, administration suites, and primary gathering locations will provide a one minute time delay against blunt tool and sharp tool impacts.

(2) Utilize ASTM F1233-08 as the standard for interior window glazing.

4.29. STANDARD 29: WINDOW COVERINGS. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background.

(1) There is no intention to provide window coverings such as shades or blinds on every window in a facility.

(2) The use of window coverings is a cost effective measure as it relates to the protection of building occupants from the direct fire weapons tactic.

b. Requirements.

(1) Install window coverings on windows, to include windows on doors and doorways, of neighborhoods and instructional areas that provide line-of-sight into these inhabited spaces from interior hallways or circulation corridors and exterior portions of the facility. Oblique or translucent glass may be used to obstruct vision.

(2) The placement of additional window coverings will be determined by the PDT in coordination with the local security posture for the purposes of facilitating lock down procedures.

(3) Window coverings will:

(a) Not be installed on moveable partitions.

(b) Cover the window fully obscuring vision from outside the inhabited space.

(c) Be operable by a single person.

(4) If window coverings are automated and/or tied into a control system, provide a single point of activation in each regularly occupied and staffed areas for emergency situations, i.e., lockdown capable of shutting all window shades or blinds within those spaces.

4.30. STANDARD 30: INTERIOR DOOR LOCK/KEY REQUIREMENTS. This is a DoDEA standard that is required at all DoDEA facilities.

a. Lock Requirements.

(1) **Mechanical card-operated door locks, i.e., CorKey, is not authorized at DoDEA facilities.**

(2) Locks shall not require the use of a key, tool, or special knowledge or effort for operation in accordance with National Fire Protection Association 101.

(3) All interior, regularly occupied and staffed area doors will have locking systems on hardware capable of single-handed locking and unlocking from the inside without the use of keys or tools, i.e., thumb latch. Uninhabited room doors will auto-lock each time door is closed.

b. Key Requirements. Master key systems will be used to allow all door locks to be opened with a single key, even if the locks are keyed differently. Refer to DoDEA Administrative Instruction 5705.01, Volume 3for key and lock procedures.

4.31. STANDARD 31: KEY STORAGE. This is a DoDEA standard that is required at all DoDEA facilities.

a. Key Cabinet.

(1) DoDEA facilities will provide a key cabinet, located within a lockable administrative office, with capacity to receive keys for 150 percentof the cylinders for the project. The PDT will coordinate with principal for installation location.

(2) Cabinet shall be heavy duty steel construction with full length, hinged door and built-in, slotted key racks, and lockable with a key retaining lock so that key cannot be removed until cabinet is locked.

b. Exterior Key Storage.

(1) Install two exterior mounted high security key safe, Knox box, or equal that holds master keys for emergency responders to retrieve in emergency situations. Refer to figure 10 for an example.

(2) Install a key safe at vehicle barrier locations and designated facility entrance(s), as determined by installation first responder personnel.

Figure 9. Knox Box Example.

4.32. STANDARD 32: SIGNAGE (SECURITY RELATED). This is a DoDEA standard that is required at all DoDEA facilities.

a. Applied exterior building signage shall comply with installation standards in size, material/finish, typestyle and placement and shall meet all ADA and ABA requirements.

b. Smaller scale signage shall be located adjacent to the vestibule entry door identifying it as "main office."

c. At educational facilities, all doors providing direct access to the school, except the vestibule door, will have a plaque with wording:

(1) "Student Entry Only: During school hours, visitors must enter through the main office. These doors are locked during school hours" or similar as required by facility users.

(2) The intent is to require all visitors to enter through the administration lobby prior to gaining access to the remainder of the school.

d. Signage at the loading dock will identify delivery instructions for drop off. Fire evacuation maps, similar to the maps on the back of hotel doors, shall be provided to meet National Fire Protection Association and International Building Code standards.

(1) Maps shall be at least "8.5 X 11" size. They shall be delivered as preprinted and framed with a durable shatter proof cover. Each map shall include "YOU ARE HERE" with primary and alternate exit routes.

(2) Maps shall be installed in the neighborhoods at the exit from each learning studio, and each exit from the neighborhood, and other large occupancy space as required by code.

4.33. STANDARD 33: SECURITY FENCING. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background.

(1) Security fencing can serve as both a physical and psychological deterrent to unauthorized personnel.

(2) Security fencing at DoDEA Educational Facilities is not required.

(3) The PDT may, based on the application of the risk management process, or security concerns, determine local threat conditions require PHYSEC measures such as security fencing.

(4) Security fencing requirements identified in this section will not conflict with safety related fencing requirements around age specific outdoor play areas. Refer to the DoDEA 21st Century Education Facilities Specifications for additional information.

b. Installation requirements. If the PDT, with coordination/approval from HQ SMD, determines security fencing is needed, the fence will:

(1) Be ornamental, also known as tubular fencing as defined in UFC 4-022-03. Ornamental fencing provides a greater resistance to climbing and aesthetic qualities. Ornamental fencing systems are constructed of either steel or aluminum components.

(2) Provide a minimum of 2 inches (51 mm) or maximum of 6 inches (152 mm) between the fence and the ground.

(3) Provide lockable gates within the fence for emergency egress with panic hardware.

(4) Prevent openings in the fencing and gates to allow exterior manipulation of panic hardware.

(5) Refer to UFC 4-022-03 and ASTM F2408 for additional fencing requirements.

4.34. STANDARD 34: USEUCOM STANDARD. In accordance with USEUCOM OPORD 16-03, this AT construction design standard is required to be incorporated by DoDEA into all new facilities in the USEUCOM AOR.

a. Vehicle Borne Improvised Explosive Device – explosive weights will be determined by intelligence of aggressor capability, the status of the controlled perimeter, and the functional capacity of the access control point; but no less than those contained in UFC 4-010-02. EUCOM AOR facilities must mitigate against moving threat vehicles by establishing a **continuous** perimeter of passive and active barriers at the facility's required standoff limit.

(1) In accordance with UFC 4-020-01, the general design strategy includes the application of vehicle barriers to establish and maintain the standoff distance between vehicles and facilities. Barriers will include passive perimeter barriers that define the standoff distance and active barriers that allow entry through the perimeter.

(2) In accordance with UFC 4-020-01, stationary vehicle bomb tactic will require passive and active barriers to define the perimeter and provide an obstacle whose breaching would draw attention. Moving vehicle bomb tactics include barriers to actually stop the kinetic energy of the moving vehicle because the driver is assumed to be suicidal.

b. Hand Delivered Devices- explosive weights will be determined by the capabilities of the access control point and perimeter security system to detect and respond. Detonation distance for determining wall, window, and door strength requirements shall be determined by unobstructed space, ability to notice device, and ability to notify occupants to evacuate affected area.

c. If standoff cannot be met based on the appropriate tactic and LOP, refer to UFC 4-020-01 to determine the appropriate construction upgrades necessary to mitigate the lack of standoff.

d. Installation commanders must certify that construction requirements, commensurate with the threat tactic, LOP, and available stand-off in accordance with UFCs 4-020-01and/or 4-010-01 will be met on the programming documents, e.g. Department of Defense Form 1391, Military Construction Project Data for MILCON.

4.35. STANDARD 35: PARKING GARAGES. This is a DoDEA standard that is required at all DoDEA facilities.

a. Background. Based upon the location, space may be at such a premium that a multilevel parking garage is needed. As such, the following are the minimum requirements for parking garages.

b. Parking Garage Requirements.

(1) Access points or entry ways from the parking garage into the facility will use PACS. The access points will meet all Standard 23 PACS infrastructure requirements to include card readers and video audio intercoms.

(2) Signage will be placed throughout the garage, i.e., in each stairwell entrance and on access points into the facility that is in compliance with Standard 32.

(3) CCTV will be installed in all closed stairwells and areas with poor visibility, i.e., an area that would block vision from others at an average distance to aid an individual in distress. The PDT will determine areas with poor visibility.

(4) If the parking garage has three or more floors, standard 6, progressive collapse resistance, will apply.

(5) The parking garage will have an entrance and separate exit.

(6) If the parking garage is located within the set standoff distance, access control must be provided. The entrance and exit will have drop arm automated active barriers.

(a) Entry/egress drop arm automated barrier will meet all PACS requirements in Standards 4 and 23.

(b) If within the USEUCOM area of responsibility, the barrier must comply with Standard 34.

(7) At least one, assistance or emergency call stations, will be located on every floor of the parking garage. Refer to Figure 11 for example call stations.

(a) Call stations are a separate requirement and not to be confused from Standards 24 and 26.

(b) The call station will:

1. Be located in an open, easily accessible area.

2. Have a blue light fixed to the station to increase public awareness and visibility.

3. Upon activation, the station will contact the local emergency response center on the installation, i.e., law enforcement desk, and allow for audio telephonic communications.

c. The PDT will determine the most advantageous location for the call station.

Figure 10. Call Station Examples.

4.36. STANDARD 36: UNITED STATES PACIFIC COMMAND (USPACOM) PROTECTED AREAS. In accordance with United States Pacific Command Instruction (USPACOMINST) 0536.2, this is an AT design standard to be incorporated by DoDEA into all new DoDEA facilities within the USPACOM AOR.

a. In accordance with USPACOMINST 0536.2, protected areas will be incorporated into buildings.

(1) A protected area is a:

(a) As defined in USPACOMINST 0536.2, a specifically designated area within a building where vulnerabilities from blast effects of an explosion is minimized.

(b) Location where occupants are advised to go in the event of a bomb threat warning.

(2) A protected area should be considered during the design state for new construction.

b. Protected area minimum criteria:

(1) Located away from windows, external doors, and external walls.

(2) Toward the center of the facility.

(3) Generally not in stairwells or areas having access to an elevator shaft since blast overpressures are likely to propagate into these areas.

(4) Located in areas surrounded by full height masonry or concrete walls if possible, e.g., internal corridors, internal toilet areas, etc.

(5) The size of the room(s) must provide a minimum of 0.9 square meters (10 Square feet) of space for each person who will occupy the room.

4.37. STANDARD 37: USPACOM SITE LOCATION.

a. This is a USPACOM design standard that is required at all new DoDEA facilities within the USPACOM AOR.

b. In accordance with USPACOMINST 0536.2, locate areas where large numbers of personnel congregate away from local roads outside the perimeter and away from primary access roads onto the installation or facility. This will reduce vulnerability to vehicle-borne explosive devices and to standoff attack.

4.39. STANDARD 38: DSO – SECURE ROOM – CLASSIFIED SPACE. DSOs will have a secure room, capable of classified electronic and telephonic communication at the secret level.

a. DoDEA DSO secure rooms will have 120 square feet of space, unless more is approved by the CFP.

b. Construction standards. Secure rooms PHYSEC construction standards will meet DoD Manual (DoDM) 5200.01-V3.

(1) Walls, floor, and roof shall:

(a) Be of permanent construction materials and offer resistance and evidence of unauthorized entry into the area.

(b) Extended from the true floor to the true ceiling and attached with permanent construction materials, mesh, or 18 gauge expanded steel screen.

(2) The ceiling shall be constructed of plaster, gypsum, wallboard material, hardware or any other acceptable material.

(3) Doors:

(a) Shall be substantially constructed of wood or metal. Refer to DoDM 5200.01, Volume 3, Appendix to Enclosure 3, paragraph 1.b.(1) for outswing doors.

(b) Shall be equipped with a General Service Administration approved combination lock meeting FF-L-2740.

(c) Unless required by local code, secure rooms have only one door. If other doors are required, refer to DoDM 5200.01, Volume 3, Appendix to Enclosure 3, paragraph 1.b.(3) for securing doors from the inside.

(4) No windows are authorized in DoDEA secure rooms.

c. IDS, Standard 25, is required for secure rooms. Refer to DoDM 5200.01, Volume 3 Appendix to Enclosure 3 and UFGS 28 10 05.

(1) DoDEA specific include:

(a) Acceptability of equipment as all IDS must be Underwriters Laboratories listed or equivalent and approved by the CFP.

(b) The IDS will be integrated into the facility access control system.

(2) Ensure adherence to DoDM 5200.01, Volume 3, Appendix to Enclosure 3, paragraph 2. – 2f.(2)., for transmission and annunciation requirements, in addition to installation, maintenance, and monitoring.

(3) Ensure primary and emergency power requirements are achieved in accordance with DoDM 5200.01, Volume 3, Appendix to Enclosure 3, paragraph 2.d.(7) – 2.d.(7)(b).

d. Access Control.

(1) PACS will meet Standard 23 requirements. A secondary line of access control is required to enter the secure room. DoDEA will only use a personal identification number and identification card via a CAC for lines of authentication.

(2) Secure rooms will utilize a minimum of an X-09 as the locking mechanism.

SECTION 5: FP DESIGN ANALYSIS STANDARDS

5.1. DESIGN ANALYSIS.

a. Submission of the design analysis, CONOPS, or other type of report providing a written statements regarding the project, at each design submittal, **will provide all DoD AT and DoDEA FP Standards together in, one section, chapter, annex, enclosure, etc.** This section **must** include all FP information.

(1) The description must identify each standard with an explanation of how it is being applied.

(2) If the standard is not applicable to the project, an explanation is required of why the standard is not applicable.

(3) **DoDEA views AT and FP as a "whole building" concept, providing PHYSEC and AT for the entire facility. AT and/or FP reviews or analysis are not limited to only the DoD standards, blast analysis, or standoff distances.**

b. A&E firms or other organizations submitting a design analysis, CONOPS, or other type of report providing written statements regarding the project **will** use the format identified in Appendix 5A.

c. Do not include FP requirements in other sections, i.e., fire, safety, etc.

5.2. DESIGN DRAWINGS. A&E firms or other organizations submitting a design analysis, CONOPS, or other type of report providing written statements regarding the project will provide FP drawings in a separate section, as its own electronic file. Drawings will **not** be combined in a mass electronic file. Drawings will use labels as described below. If necessary, multiple drawings can be used to include the required information. Drawings will only include information identified below.

a. Drawing 1 – Exterior. This drawing will include the following:

(1) The facility overview, to include parking, access roads, and the surrounding site.

(2) Barrier, manual, automated, active and passive on access roads, drive up/drop off lanes, bus loops, parking garages, or any other location where a barrier is located.

(3) Encompass the drawing with a ring to identify the boundary of the standoff distance.

(4) Identify objects within unobstructed space, to include trash containers, HVAC systems, mechanical areas, playgrounds, etc.

(5) Refer to Appendix 5B for an example.

b. Drawing 2 – ESS. Identify the interior and exterior locations of card readers, CCTV, duress buttons, etc. Refer to Appendix 5C.

c. Drawing 3 – Interior Floorplan. A basic overview of the floorplan. Identify the room locations, however, this drawing is intended to be simple, neat, and easily understandable. Refer to Appendix 5D for an example.

d. Drawing 4 –HVAC and Roof Access. Include HVAC shutoff switches, LOC locations, entry layouts, receiving room HVAC separation, and roof access locations.

e. Drawing 5 – Window and Skylights. Provide the criteria and analysis for windows and skylights.

5.3. DESIGN CHECKLIST. A design checklist, similar to Appendix 5E is highly encouraged for all projects. Each checklist must be customized for the project. Contact the CFP for a customizable, Microsoft Word version of the checklist..

5.4. LANGUAGE. All design plans, drawings, analysis, or any other document that pertains to the construction of a DoDEA facility will be submitted in English.

5.5. QUESTIONS. All FP related questions will be addressed to the DoDEA PHYSEC manager.

APPENDIX 5A: REQUIRED REPORT FORMAT EXAMPLE

PART I: EXAMPLE FORCE PROTECTION DESIGN REQUIREMENTS

1. GENERAL DESCRIPTION:

a. The new school buildings will be routinely occupied by 50 or more DoD personnel and therefore is classified as "Primary Gathering." The building is required to be designed to provide a low LOP. This LOP allows "moderate damage" whereby the building damage resulting from a blast event will not be economically repairable and progressive collapse will not occur.

b. School is located within a secure perimeter. Building was designed to explosive weight II standards.

2. CRITERIA REFERENCES:

a. DoDEA Physical Security Antiterrorism Design Guide, Version 3, April 2017

b. UFC 4-010-01; DoD Minimum Antiterrorism Standards for Buildings, Change 1, 9 February 2013

c. UFC 4-010-02; DoD Minimum Antiterrorism Standoff Distances for Buildings, 9 February 2012

3. STANDARDS:

3.1. STANDARD 1 – STANDOFF DISTANCE.

a. Based on the confines of existing site and proposed layout of the school and surrounding access roads and parking, the achievable standoff distance to explosive weight-II is 82 feet. The standoff is measured from the curb line of any parking lot or roadway adjacent to the face of the school building.

b. The school is located more than 200 feet from the installation's controlled perimeter, only explosive weight-II is required to be considered for the design.

c. The standoff distances in the "Conventional Construction Standoff Distance" column in Tables B-1 and B-2 are based on analysis of common conventionally constructed building walls that are in PDC Technical Report 10-01. The building components upon which the conventional construction standoff distances in Tables B-1 and B-2 are based are tabulated in Table 2-3 of the UFC 4-010-01.

d. The exterior wall system varies around the new school building. At the one story portion of the building, load bearing reinforced masonry with brick veneer is provided. The masonry wall thickness of 8-inches and 12-inches are used based on wall heights. At the two story portion of the building, a non-load bearing cold-formed metal walls with brick veneer are provided. Steel H-frames are provided around each windows of the two story portion.

3.2. STANDARD 2 – UNOBSTRUCED SPACE.

a. The unobstructed space is required to extend to the location or placement of explosive weight-II. Therefore, the unobstructed space around the new school building will extend to a distance of 82 feet from the face of the building.

b. All electrical and mechanical equipment, i.e., specify transformers, condensers, chillers, etc., is located outside the unobstructed space.

c. All trash containers will be located outside of the unobstructed space.

d. All foliage on trees or shrubs within the unobstructed space will not extend lower than three feet (or one meter) above the ground to improve observation of objects underneath them.

e. Playground equipment may be located within the unobstructed space, but will be designed to provide no opportunity for concealment of explosive devices.

f. Refer to FP Drawing 1 – Exterior.

3.3. STANDARD 3 – DRIVE-UP/DROP-OFF AREAS.

a. The new school building has two drive-up/drop-off areas; one for student drop off and one for bus drop off. The student drop off is located southeast of the building and the bus drop off is located west of the building.

b. The student drop-off is outside the standoff distance, but the bus drop-off is within the standoff.

c. Signage has been designed for the bus drop-off indicating that this area is for busses only and shall not be used for parking at any time during school hours.

d. All curbs within the student and bus drop-off shall be 8” high to provide a passive barrier and describe any other passive barriers being used.

e. Refer to FP Drawing 1 – Exterior.

3.4. STANDARD 4 – ACCESS ROADS.

a. Fire access: An access road is provided for fire access from the southeast to the northwest. A manually operated active barrier is provided at each end of the access road to prevent unauthorized access.

b. A service area is provided on the west side of the building. An automated active barrier is provided to control entry into this area.

3.5. STANDARD 5 – PARKING BENEATH BUILDINGS OR ON ROOFTOPS. Not Applicable. Parking is not provided underneath the new school or on its roof.

3.6. STANDARD 6 – PROGRESSIVE COLLAPSE RESISTANCE. Not Applicable. The new school building is 2-stories which is less than 3-stories tall and therefore exempt from progressive collapse requirements.

3.7. STANDARD 7 – STRUCTURAL ISOLATION. Not Applicable. The building is a new structure, not an addition and does not contain portions that are considered Low Occupancy.

3.8. STANDARD 8 – BUILDING OVERHANGS AND BREEZEWAYS. Not Applicable. The building is a new structure and does not have an overhang or breezeway.

3.9. STANDARD 9 – EXTERIOR MASONRY WALLS.

a. *[Describe vertical reinforcement]* The vertical reinforcement ratio is 0.05% and spaced at 4 feet on center and within 1.3 feet of the ends of walls.

b. *Describe the horizontal reinforcement]* The horizontal reinforcement ratio is 0.025%, consisting of bond beam reinforcement spaced no more than 4 feet on center. Horizontal reinforcement is located within 1.3 feet of the top and bottom of the wall.

c. The exterior masonry walls were analyzed to determine the minimum required reinforcement for the applicable blast loading. The walls are also being checked for conventional gravity and lateral loads, which may control the design.

3.10. STANDARD 10 – WINDOWS AND SKYLIGHTS.

a. The UFC 4-010-01 requires that windows are designed for the actual blast loads imposed on the building's façade based on the actual provided standoff distance, which is 82 feet for this project. Laminated glass with a minimum interlayer thickness of 0.030-inches is required. For insulated glazing units, the laminated glass requirement only applies to the inner lite.

b. Design of the window systems is completed by the selected window manufacturer during construction. Performance criteria will be added to the specifications to achieve the project specific requirements. A proof of concept evaluation of the window systems is included in the Design Analysis.

c. For low LOP facilities, the UFC permits the glazing to fracture, potentially come out of the frame but at a reduced velocity. This level of performance corresponds to a very low hazard rating per ASTM F 2912. A very low hazard rating permits glazing fragments to fly into occupied space landing on the floor no further than 3.3 feet from the window.

d. The facility is not within the USFK AOR.

e. Refer to FP Drawing 5.

3.11. STANDARD 11 – BUILDING ENTRANCE LAYOUT.

a. The main entrance of the new school building faces away from the installation perimeter.

b. A sally port has been established to route visitors through the administration suite.

3.12. STANDARD 12 – EXTERIOR DOORS.

a. The UFC 4-010-01 requires that exterior doors are designed for the actual blast loads imposed on the building's façade based on the actual provided standoff distance, which is 82 feet for this project.

b. For LOP facilities, doors will experience non-catastrophic failure, but will have permanent deformation and may be inoperable. This corresponds to a door damage level category III per ASTM F 2247 and ASTM F 2927.

c. Unglazed doors shall be provided that are tested to achieve the applicable door damage level category per ASTM F 2247 or ASTM F 2927. Unglazed doors may also be provided if they meet the provisions of the Alternative Design requirements of the UFC 4-010-01.

d. Glazed doors shall be provided that are tested to achieve the applicable door damage level per ASTM F 2247 or ASTM F 2927 and the glazing shall meet the very low hazard rating per ASTM F 2912. Glazed doors may also be provided if they meet the provisions of the Alternative Design requirements of the UFC 4-010-01.

e. Vestibules, foyers, or similar entry configurations into inhabited areas where there are inner and outer doors, the vestibules, foyers, or similar entries are considered not to be routinely occupied spaces. The inner doors must meet the provisions of the UFC 4-010- 01 and any other glazing associated with inner door entries such as sidelights and transoms must meet the requirements of Standard 10. The inner doors and glazing must be capable of mitigating any hazards resulting from the enclosed vestibule or foyer outer doors and glazing failure in response to a design blast event.

f. One overhead door is provided into the Receiving Room. This is not an inhabited space and the door is positioned so that it does not translate into inhabited areas.

3.13. STANDARD 13 – RECEIVING ROOM.

The new school building does not have a mail room but does have a receiving room. The requirements of Standard 13 apply to the receiving room at the new school building. Mail is initially sorted in a central facility on the Installation. The central storage and receiving area is on the exterior of the building. The receiving area is also located as far from the heavily populated areas of the school as possible.

3.14. STANDARD 14 – ROOF ACCESS.

a. Roof access is by ladder or stair from the interior of the building.

b. Refer to FP Drawing 4 – HVAC/Roof Access

3.15. STANDARD 15 – OVERHEAD MOUNTED ARCHITECTURAL FEATURES.

a. All overhead features weighing 31 pounds or more will be mounted with either rigid or flexible systems. The mounting systems will be designed to resist forces of 0.5 times the

component weight in the horizontal direction and 1.5 times the component weight in the downward direction.

b. Distributed systems such as suspended ceilings that collectively exceed the 31 pound weight limit are excluded.

3.16. STANDARD 16 – AIR INTAKES.

a. Air intakes for HVAC systems designed to move air throughout the building are located at least 10 feet above the ground.

b. There are air intakes designed to cool equipment within the main mechanical room. The interior walls and doors of the main mechanical room are designed for the same blast resistance as exterior walls and doors of the building.

3.17. STANDARD 17 – RECEIVING ROOM VENTILATION.

a. The new school building does not have a mail room but does have a receiving room. The requirements of Standard 17 apply to the receiving room at the new school building. The receiving room is fire and smoke rated. Additionally the receiving room is equipped with a dedicated exhaust system which will maintain negative pressure within the space.

b. Walls surrounding the receiving room extend from the true floor to the underside of the deck above and all joints will be sealed. Additionally, interior doors from to inhabited areas will have gaskets or weather stripping to minimize leakage around the doors.

3.18. STANDARD 18 – EMERGENCY AIR DISTRIBUTION SHUTOFF.

a. An emergency shutoff switch will be provided in the HVAC control system which can immediately shut down the air distribution system throughout the building. The shutoff switch or switches will be located with or near the MNS LOC so the travel distance to the nearest shutoff switch will not exceed 200 feet (61 meters).

b. An emergency shutoff switch will be provided in the HVAC control system which can immediately shut down the air distribution system throughout the building. The shutoff switch or switches will be located with or near the Mass Notification System (MNS) Local Operating Consoles (LOC) (see UFC 4-021-01 for additional information on MNS LOCS) so that the travel distance to the nearest shutoff switch will not be in excess of 200 feet (61 meters).

c. Refer to FP Drawing 4 – HVAC/Roof Access

3.19. STANDARD 19 – EQUIPMENT BRACING.

a. All overhead utilities and other fixtures weighing 31 pounds or more will be mounted with either rigid or flexible systems. The mounting systems will be designed to resist forces of 0.5 times the component weight in the horizontal direction and 1.5 times the component weight in the downward direction.

b. Distributed systems such as piping networks that collectively exceed the 31 pound weight limit are excluded.

c. Refer to FP Drawing 4 – HVAC/Roof Access.

3.20. STANDARD 20 – UNDER BUILDING ACCESS. Not Applicable. The new school does not have under floor access ways or tunnels.

3.21. STANDARD 21 – MASS NOTIFICATION.

a. Mass notification system is provided for the facility and will be designed in accordance with the UFC 4-021-01. See the Fire Alarm drawings and specifications.

b. LOCs are located every 200 feet of travel on each level of the occupied areas of the building per UFC 4-021-01. The locations for the LOC panels will be coordinated with the layout of the school and the design team will pay special attention to locate the LOC panels in areas that are visible to faculty and staff, e.g., admin areas, staff areas, or collaboration areas.

3.22. STANDARD 22 – ESS. *Describe the ESS. Address systems that may need to interface with Installations systems. Address IDS, CCTV, and PACS utilizing a separate network.].*

3.23. STANDARD 23 – PACS.

a. For an area of restricted storage, an PACS system will be installed to restrict entry to authorized personnel only and to notify Security Forces of any unauthorized attempts.

b. Direction from the base and government reviewers is requested to determine the doors and areas that shall have IDS/PACS. Designated interior and exterior doors will have card access, electronic door locks and door contacts. The new exterior doors are to have provisions for recessed contact switches provided in the door frame.

c. The design will provide a 13mm conduit path from the door frame provision with pull string to an accessible ceiling space. On designated building exterior doors and some selected interior doors, paths in door frames will be provided for electrified door locks.

d. Refer to FP Drawing 3 – ESS.

3.24. STANDARD 24 – CCTV.

a. CAT 6 POE Camera wring to allow monitoring of the location is intended to be routed to local data closets per the riser diagrams shown in the plans.

b. Refer to FP Drawing 3 – ESS.

3.25. STANDARD 25 – IDS. An IDS system is not required for this facility

3.26. STANDARD 26 – DURESS/PANIC ALARM.

a. Duress alarm call stations will be installed at the main entrance reception desk, principal's office, guidance suite, health suite, and school's officer's office and near the entrance to each neighborhood learning hub.

b. Duress hardware will be mounted under desks and counters to remain not observable and prevent unintentional operation and false alarms.

c. The duress signal shall be remotely monitored at the installation security office.

d. Refer to FP Drawing 3 – ESS.

3.27. STANDARD 27 – SECURITY LIGHTING.

a. Security lighting will be installed at facility entrances, exits, and loading docks must be lighted for all levels of protection.

b. Lighting levels around a facilities perimeter and at entry areas will be 0.5 fc [5.1 lux].

c. Fixed lighting will be utilized along facility perimeters with overlapping cones of light.

3.28. STANDARD 28 – INTERIOR DOORS AND WINDOWS. Interior window glazing, framing, connections, and supporting structural elements at the neighborhoods and primary gathering locations provide a one minute time delay against blunt tool and sharp tool impacts.

3.29. STANDARD 29 – WINDOW COVERINGS.

a. Window coverings are provided on all windows with a direct line of sight, to include windows on doors and doorways, of Neighborhoods and Learning Studios.

b. Window coverings shall be provided on all interior windows (including windows in doors and sidelights) with a direct line of sight of Neighborhoods and Instruction Areas *[Art, Music, PE, describe specific areas.*

3.30. STANDARD 30 – INTERIOR DOOR/LOCK/KEY REQUIREMENTS.

a. All interior doors have single-handed locking and unlocking systems from the inside using a thumb latch. Panic identification hardware is provided on interior doors of the cafeteria, auditorium, gym, media center, and classrooms separated by movable partitions.

3.31. STANDARD 31 – KEY STORAGE.

a. A key cabinet is provided within a lockable administrative office, capable of 150% of the cylinders currently planned for this facility. The cabinet is of heavy duty steel construction with full length, hinged door and built-in, slotted key racks, and lockable with a key.

b. Two exterior mounted Knox boxes are located next to the facility entrance.

3.32. STANDARD 32 – SIGNAGE (SECURITY RELATED).

a. Signage is located adjacent to the vestibule entry door identifying it as “Main Office.”

b. All doors providing direct access to the school, except the vestibule door, will have a plaque with wording “Student Entry Only.”

3.33. STANDARD 33 – SECURITY FENCING. No fencing installed.

3.34. STANDARD 34 – USEUCOM STANDARD. Not Applicable. Facility not located within USEUCOM.

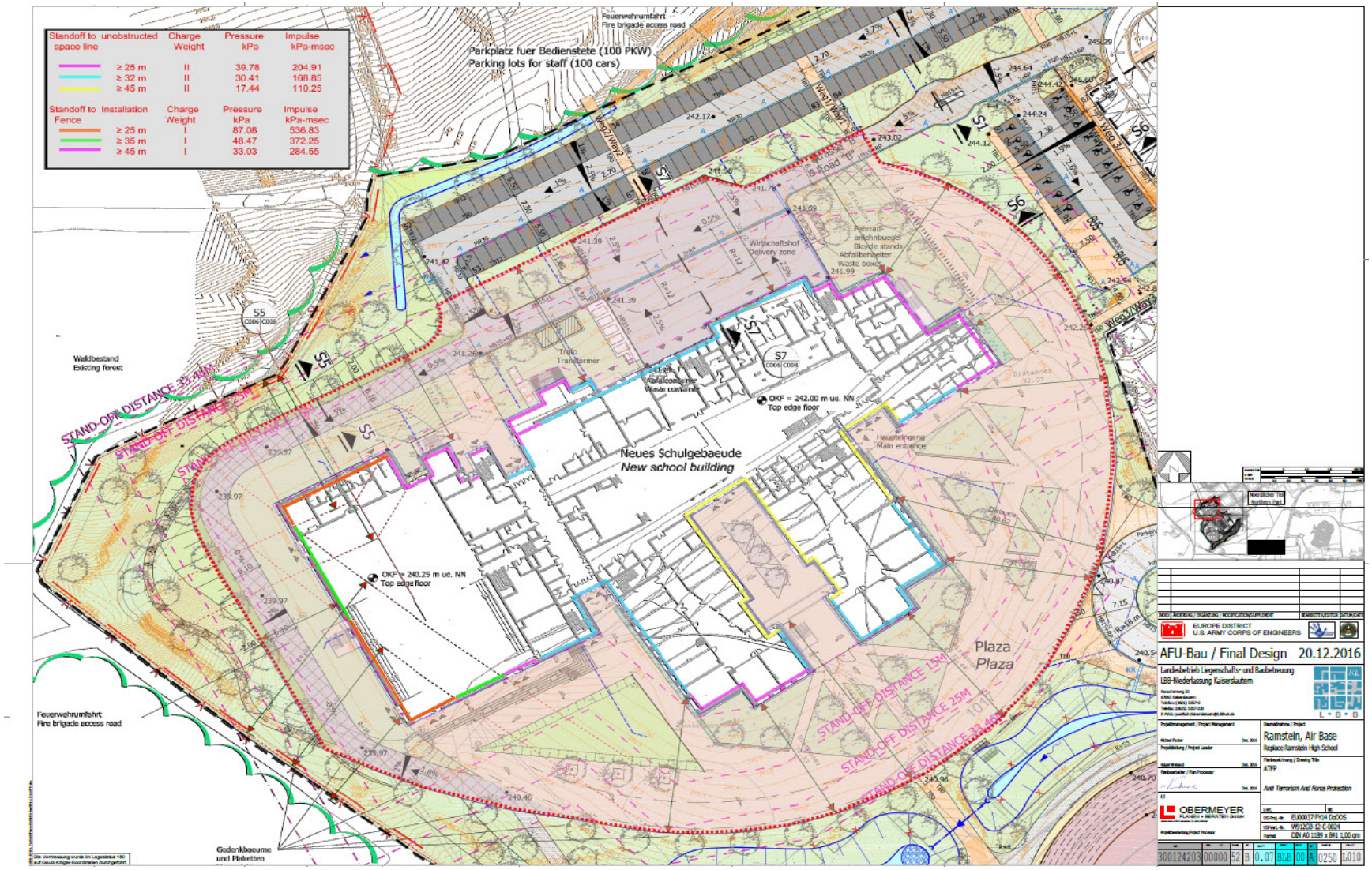
3.35. STANDARD 35 – PARKING GARAGE. Not Applicable. Facility does not require a parking garage.

3.36. STANDARD 36 – USPACOM PROTECTED AREAS. Not Applicable. Facility is not located within the USPACOM area of responsibility.

3.37. STANDARD 37 – USPACOM SITE LOCATION. Not Applicable. Facility is not located within the USPACOM area of responsibility.

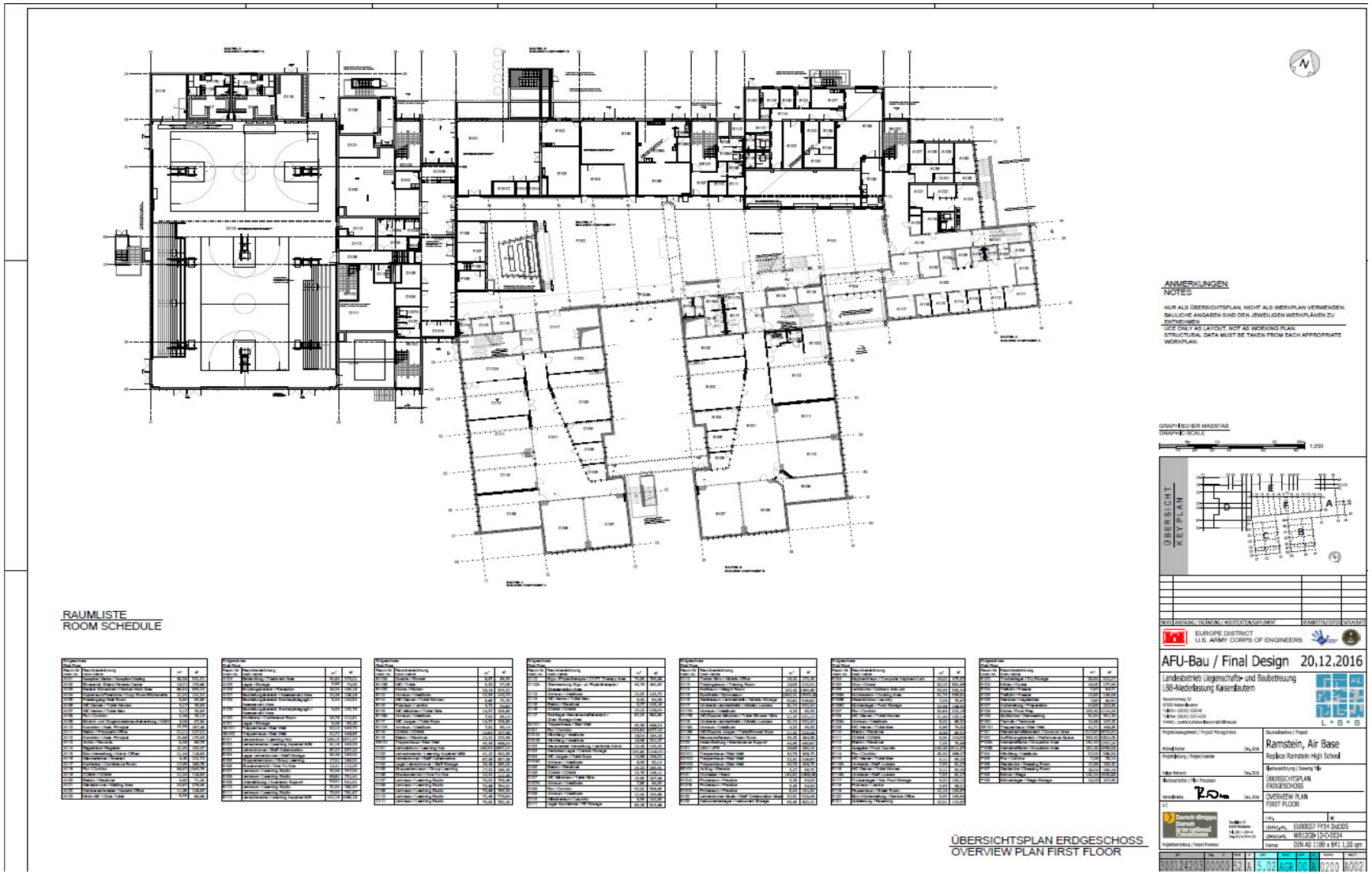
3.38. STANDARD 38 – DSO – SECURE ROOM – CLASSIFIED SPACE. Not Applicable. Facility is not a DSO.

APPENDIX 5B: EXTERNAL PLAN EXAMPLE



APPENDIX 5C: INTERNAL ESS PLAN EXAMPLE

APPENDIX 5D: INTERNAL FLOOR PLAN EXAMPLE



APPENDIX 5E: CHECKLIST EXAMPLE

DoDEA Minimum Construction Standards - Checklist

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applies to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with USD (AT&L) Memorandum dated 29 May 2002. UFC 4-010-01 will be used for all DoD projects and work for other customers where appropriate. **The standards below are minimums set for DoD funded projects.**

Date: 19 May 2017			**Facility Name/Description: Spangdahlem ES**					**Facility No.** *(if assigned)*			
Is This Facility New Construction?			**Yes**		**No**			**If No, which "trigger" requires compliance with these**			
Is There a Controlled Perimeter?			**Yes**		**No**			**(See triggers below)**			
TRIGGERS											
A. MAJ	B. CHANGE	C. WIND	D. BUILDI	E. LEASE	F. PURCHAS E OF	G. ON BASE NON		H. NATIO	I. VISITOR	J. CONTR	K. EXPEDITIO

A. MAJOR INVESTMENT: Implementation of these standards to bring an entire inhabited building into compliance is mandatory for all DoD building renovations, modifications, repairs, revitalizations, and restorations where those costs exceed 50% of the plant replacement value of the existing building in accordance with UFC 3-701-01 based on a bldg of the same size except as otherwise stated in these standards. The 50% cost is exclusive of the costs identified to meet these standards. In window replacement projects the window replacement and glazing costs should not be used to cause any building to exceed 50% of the plant replacement value where only the window replacement project trigger in paragraph 1-8.2.3 applies to the buildings. This is to ensure that window replacement projects alone do not trigger whole building compliance with these standards. In addition, costs of building additions will not be included in calculating the 50% trigger. Requirements for building additions are in paragraph 1-8.3. Where the 50% threshold is not met, compliance with these standards is recommended.

B. CHANGE OF OCCUPANCY: Implementation of these standards is mandatory when any building or portion of a building is converted from its current occupancy to a higher occupancy. Examples would include a warehouse (low occupancy) being converted to administrative (inhabited) use, an inhabited administrative building being converted to a primary gathering building, billeting being converted to a primary gathering building, and any building being converted to billeting.

C. WINDOW REPLACEMENT: Because of the significance of glazing hazards in a blast environment, implementation of all provisions of paragraphs B-3.1 and B-3.3.2 of these standards is mandatory for existing inhabited buildings any time a window or glazed door is being replaced. Such replacements may require window frame modification or replacement and building reinforcement around the windows in addition to glazing replacement.

D. BUILDING ADDITIONS: Inhabited additions to existing inhabited buildings shall comply with the minimum standards for new buildings except that operational procedures allowed for control of parking around existing buildings in Appendix B may be applied to the building addition where conventional construction standoff distances are unavailable. If the addition is 50% or more of the gross area of the existing building, the existing building will comply with the minimum standards for existing buildings in Appendix B. If the building addition causes the occupancy of the building to change from inhabited to primary gathering occupancy, the entire inhabited portion of the building will be considered to be primary gathering and will trigger upgrades to the inhabited portion of the building due to change of occupancy. These triggers do not apply to leased buildings.

E. PURCHASE OF EXISTING BLDGS: Existing inhabited buildings purchased for use by DoD will comply with the minimum standards for existing buildings. Those buildings will meet the requirements before they can be occupied by DoD personnel. Building purchases in progress or programmed as of the date of publication of this UFC are exempt from these standards until they meet one of the other triggers in paragraph 1-8.2.

F. NON-DoD TENANT BUILDINGS ON DoD INSTALLATIONS: Because buildings built by non-DoD tenants on DoD property may be taken over by DoD during their life cycles, non-DoD tenant-built buildings other than those that meet one of the exemptions below shall comply with these standards, regardless of funding source. For the purposes of these standards, non-DoD tenant-built building occupancies will be calculated assuming that building occupants are DoD personnel.

G. VISITOR CENTERS AND MUSEUMS: Where DoD or non-DoD visitors to visitor centers, museums, and similar buildings on DoD property routinely increase the occupancy of those buildings to levels meeting the definitions of inhabited or primary gathering buildings , those buildings will comply with these standards.

H. VISITOR CONTROL CENTERS AT ENTRY CONTROL FACILITIES / ACCESS CONTROL POINTS: For the purposes of this standard, visitor control centers located at controlled perimeters will be considered to be outside the controlled perimeter, and their population will include all permanently assigned DoD personnel plus the average daily peak population of visitors in the building.

I. EXPEDITIONARY STRUCTURES: Implementation of these minimum standards is mandatory for all expeditionary structures that meet the occupancy criteria for inhabited or primary gathering buildings or billeting. See Appendix D for structure types that meet the expeditionary structures criteria.

New Structures: These standards apply to all new expeditionary structures effective as of the implementation date of these standards.

Existing Structures: These standards will apply to all existing expeditionary structures as they undergo major modifications or renovations as of the implementation date of these standards.

SITE PLANNING - Standards 1 - 5						
What is Building Category? (See Table B-1)		**Billeting**		**Primary Gathering**		
		Inhabited		**Low Occupancy**		
Is Exterior Wall Construction Load Bearing or Non-Load Bearing? (See Table B-1)		**Load Bearing**		**Non-Load Bearing**		
What is the corresponding Column Letter? (See Table B-1)		**E**				
What is Exterior Wall Construction Type? (See Table B-2)		**Reinforced Concrete**				
What is required standoff distance? (See Table B-2)		**16 ft (5m) Design for 82 ft**				
STD	**REQUIREMENT**	**YES**	**NO**	**N/A**	**TBD**	**COMMENTS/REMARKS/NOTE**
1	**STANDOFF DISTANCES**					
1.1	Is the facility located at the required distance from the installation perimeter?	**X**				
	WITH A CONTROLLED PERIMETER					
1.2	Is the facility located at the required distance from parking lots and roadways?	**X**				
1.3	Are trash containers located at the required distance away from the facility?				**X**	Will be located at required standoff distance.
1.4	If the answer to any of the above is "No", has dynamic analysis of the facility been completed?				**X**	
	WITHOUT A CONTROLLED PERIMETER					
1.5	Is the facility located at the required distance from parking lots and roadways?			**X**		
1.6	Are trash containers located at the required distance away from the facility?			**X**		
1.7	If the answer to any of the above is "No", has dynamic analysis of the facility been completed?			**X**		
	SUPPLEMENTAL INFORMATION TO THE UFC CRITERIA					
S1.8	Does the facility have an installation specific design guide? If so, outline the impacts to Standard 1.	**X**				DoDEA Physical Security & Antiterrorism Design Guide
S1.9	Has a Design Based Threat (DBT) study been completed for the installation? If so, outline the impacts to Standard 1.				**X**	

SITE PLANNING - Standards 1 - 5 (Cont'd)						
STD	**REQUIREMENT**	**YES**	**NO**	**N/A**	**TBD**	**COMMENTS/REMARKS/NOTES**
2	**UNOBSTRUCTED SPACE**					
2.1	Are there any obstructions within the required standoff distance of the facility that would allow for concealment from observation of explosive devices 6 inches (150mm) or greater in height?		**X**			Will be incorporated into the design
2.2	Are there any trees or shrubs within the required standoff distance of the facility that have foliage extending lower than 3 feet (1 meter) above the ground?		**X**			Will be incorporated into the design
2.3	Does the unobstructed space extend to the greater distance of either the conventional construction standoff distance of the wall/roof system or the standoff distance required to provide the applicable performance of the windows/doors?	**X**				
2.4	Have fences or walls with a minimum height of 6 feet (2 meters) high been provided around controlled parking areas associated with existing buildings?			**X**		
2.5	Are enclosures within the unobstructed space closed on all four sides and the top?				**X**	
2.6	Is the enclosure secured?				**X**	
SUPPLEMENTAL INFORMATION TO THE UFC CRITERIA						
S2.7	Does the facility have an installation specific design guide? If so, outline the impacts to Standard 2.	**X**				DoDEA Physical Security & Antiterrorism Design Guide
S2.8	Has a Design Based Threat (DBT) study been completed for the installation? If so, outline the impacts to Standard 2.				**X**	

GLOSSARY

G.1. ACRONYMS.

ABA	Architectural Barriers Act
ACU	autonomous control unit
ADA	Americans with Disabilities Act
AOR	area of responsibility
ASTM	American Society for Testing and Materials
AT	antiterrorism
ATO	Antiterrorism Officer
A&E	Architectural & Engineering Firm
CAC	Common Access Cards
CCTV	Closed Circuit Television
CFP	Chief of Force Protection
COCOM	Combatant Command
DBT	Design Basis Threat
DoD	Department of Defense
DoDEA	Department of Defense Education Activity
DoDI	Department of Defense Instruction
DoDM	Department of Defense Manual
DSO	District Superintendent Office
ESS	Electronic Security System
fc	foot-candles
FP	force protection
HQ	headquarters
HVAC	Heating, Ventilation, and Air Conditioning
IDS	Intrusion Detection Systems
IP	internet protocol
ISSA	Interagency Service Support Agreement
LOC	Local Operating Consoles
LOP	Level of Protection
MILCON	Military Construction
MNS	Mass Notification System
MOA	Memorandum of Agreement
NICET	National Institute for Certification in Engineering Technology

OPORD	Operations Order
PACS	Physical Access Control System
PDC	Protective Design Center
PDT	Project Delivery Team
PHYSEC	Physical Security
REX	request to exit
SMD	Security Management Division
UFC	Unified Facilities Criteria
UFGS	Unified Facilities Guide Specifications
U.S.	United States
USA	United States Army
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USEUCOM	United States European Command
USFK	United States Forces Korea
USMC	United States Marine Corp
USPACOM	United States Pacific Command
USPACOMINST	United States Pacific Command Instruction

G.2. DEFINITIONS.

active barrier system. An active barrier requires some action, either by personnel, equipment, or both, to permit or deny entry of a vehicle. The system has some form of moving parts. Active barrier systems may include barricades, bollards, beams, gates, and active tire shredders.

Administrative Suite. The front office or reception area at the main entrance to the facilitiy. Also referred to as Administrative Office.

critical asset. As defined by:

(1) DoDI O-2000.16, Volume 1.

(2) UFC 4-020-01.

critical facilities. As defined by UFC 4-010-01.

critical infrastructure. As defined by UFC 4-020-01.

conventional construction. Building construction that is not specifically designed to resist weapons or explosives effects. Conventional construction is designed only to resist common loadings and environmental effects such as wind, seismic, and snow loads. Note that for the

purposes of these standards, conventional construction may still require special windows, structural reinforcement around windows, and progressive collapse resistant construction.

DBT. The threat (aggressors, tactics, and associated weapons, tools or explosives) against which assets within a building must be protected and upon which the security engineering design of the building is based.

DoDEA Facilities. All facilities owned or occupied by DoDEA personnel or are supporting the DoDEA mission.

dual purpose road.

FP. Refer to the DoD Dictionary of Military and Associated Terms.

LOP. The degree to which an asset (person, equipment, object, etc.) is protected against injury or damage from an attack.

minimum standoff distance. The smallest permissible standoff distance for new construction regardless of any analysis results or hardening of the building. For existing buildings, standoff should never be less than this distance, but may with appropriate hardening or analysis where this distance is unachievable.

PHYSEC. Refer to the DoD Dictionary of Military and Associated Terms.

standalone emergency service road.

USFK. Unified command operating within the Korean AOR.

unobstructed space. Space around inhabited buildings in which there are no opportunities for concealment from observation of explosive devices 6 inches (150 mm) or greater in height or width.

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