Terrorism Precautions

Enforcement of new safety setback and other security regulations for Department of Defense agencies could result in a massive relocation of many agencies from their present buildings in Northern Virginia to remote military installations or compounds.

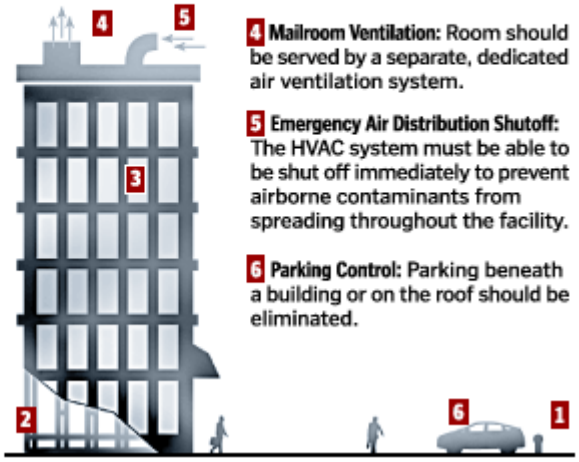
What the Standards Are

The Department of Defense outlines 22 specific standards that must be met in order for a building to comply. Some standards may be difficult or impossible for landlords to accommodate. Among the more challenging requirements:

1 Minimum Standoff Distance: Office buildings must be set back at least 82 feet (25 meters) from the "controlled perimeter"—typically, a fence or bollards that prevent vehicle access.

2 Progressive Collapse Avoidance: The building must be designed to prevent a chain reaction whereby the removal of a single column or girder causes disproportionate damage to the remainder of the building.

3 Protective Glazing: Windows and frames must be reinforced with shatter-resistant laminated glass.



4 Mailroom Ventilation: Room should be served by a separate, dedicated air ventilation system.

5 Emergency Air Distribution Shutoff: The HVAC system must be able to be shut off immediately to prevent airborne contaminants from spreading throughout the facility.

6 Parking Control: Parking beneath a building or on the roof should be eliminated.

SOURCES: GMU Center for Regional Analysis, Grubb & Ellis Government Services Group | THE WASHINGTON POST

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APPENDIX B

DoD MINIMUM ANTITERRORISM STANDARDS FOR NEW AND EXISTING BUILDINGS

B-1 **SITE PLANNING.** Operational, logistic, and security requirements must be integrated into the overall design of buildings, equipment, landscaping, parking, roads, and other features. The most cost-effective solution for mitigating explosive effects on buildings is to keep explosives as far as possible from them. Standoff distance must be coupled with appropriate building hardening to provide the necessary level of protection to DoD personnel. The following standards detail minimum standoff distances that when achieved will allow for buildings to be built with minimal additional construction costs. Where these standoff distances cannot be achieved because land is unavailable, these standards allow for building hardening to mitigate the blast effects. Costs and requirements for building hardening are addressed in the *DoD Security Engineering Planning Manual*.

B-1.1 Standard 1. Minimum Standoff Distances. The minimum standoff distances apply to all new and existing (when triggered) DoD buildings covered by these standards. The minimum standoff distances are presented in Table B-1 and illustrated in Figures B-1 and B-2. Where the standoff distances in the “Conventional Construction Standoff Distance” column of Table B-1 can be met, conventional construction may be used for the buildings without a specific analysis of blast effects, except as otherwise required in these standards. Where those distances are not available, an engineer experienced in blast-resistant design should analyze the building and apply building hardening as necessary to mitigate the effects of the explosives indicated in Table B-1 at the achievable standoff distance to the appropriate level of protection. The appropriate levels of protection for each building category are shown in Table B-1, and are described in Tables 2-1 and 2-2 and in the *DoD Security Engineering Planning Manual*. For new buildings, standoff distances of less than those shown in the “Effective Standoff Distance” column in Table B-1 are not allowed. For existing buildings, the standoff distances in the “Effective Standoff Distance” column of Table B-1 will be provided except where doing so is not possible. In those cases, lesser standoff distances may be allowed where the required level of protection can be shown to be achieved through analysis or can be achieved through building hardening or other mitigating construction or retrofit as described in these standards and in the *DoD Security Engineering Design Manual*.

B-1.2 Standard 2. Unobstructed Space. It is assumed that aggressors will not attempt to place explosive devices in areas near buildings where these explosive devices could be visually detected by building occupants observing the area around the building. Therefore, ensure that obstructions within 10 meters (33 feet) of inhabited buildings or portions thereof do not allow for concealment from observation of explosive devices 150 mm (6 inches) or greater in height. This does not preclude the placement of site furnishings or plantings around buildings. It only requires conditions such that any explosive devices placed in that space would be observable by building occupants. For existing buildings where the standoff distances for parking and roadways have been

established at less than 10 meters (33 feet) in accordance with paragraph B-1.1.2.2, the unobstructed space may be reduced to be equivalent to that distance.

B-1.3 Standard 3. Drive-Up/Drop-Off Areas. Some facilities require access to areas within the required standoff distance for dropping off or picking up people or loading or unloading packages and other objects. Examples that may require drive-up/drop-off include, but are not limited to, medical facilities, exchanges and commissaries, child care centers, and schools.

B-1.4 Standard 4. Access Roads. Where access roads are necessary for the operation of a building (including those required for fire department access), ensure that access control measures are implemented to prohibit unauthorized vehicles from using access roads within the applicable standoff distances in Table B-1.

B-1.5 Standard 5. Parking Beneath Buildings or on Rooftops. Eliminate parking beneath inhabited buildings or on rooftops of inhabited buildings. Where very limited real estate makes such parking unavoidable, the following measures must be incorporated into the design for new buildings or mitigating measures must be incorporated into existing buildings to achieve an equivalent level of protection.

B-2.1 Standard 6. Progressive Collapse Avoidance. Progressive collapse is considered to be significant risk for buildings of three or more stories. Basements will be considered stories if they have one or more exposed walls. For all new and existing inhabited buildings of three stories or more, design the superstructure to sustain local damage with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage. Achieve this through an arrangement of the structural elements that provides stability to the entire structural system by transferring loads from any locally damaged region to adjacent regions capable of resisting those loads without collapse. Accomplish this by providing sufficient continuity, redundancy, or energy dissipating capacity (ductility, damping, hardness, etc.), or a combination thereof, in the members and connections of the structure. For further guidance, refer to American Society of Civil Engineers Standard 7-98 and to detailed guidance in the DoD Security Engineering Design Manual. In addition, the measures below apply to all buildings of three or more stories.

B-2.2 Standard 7. Structural Isolation.

B-2.2.1 Building Additions. Design all additions to existing buildings to be structurally independent from the adjacent existing building. This will minimize the possibility that collapse of one part of the building will affect the stability of the remainder of the building. Alternatively, verify through analysis that collapse of either the addition or the existing building will not result in collapse of the remainder of the building.

B-2.3 Standard 8. Building Overhangs. Avoid building overhangs with inhabited spaces above them where people could gain access to the area underneath the overhang. Where such overhangs must be used, incorporate the following measures into the design for new buildings. Incorporate mitigating measures into existing buildings to achieve an equivalent level of protection.

B-2.4 Standard 9. Exterior Masonry Walls. Unreinforced masonry walls are prohibited for the exterior walls of new buildings. A minimum of 0.05 percent vertical reinforcement with a maximum spacing of 1200 mm (48 in) will be provided. For existing buildings, implement mitigating measures to provide an equivalent level of protection.

B-3.1 Standard 10. Windows, Skylights, and Glazed Doors. To minimize hazards from flying glass fragments, apply the provisions for glazing and window, skylight, and glazed door frames below for all new and existing inhabited buildings covered by these standards. Glazing and frames must work as a system to ensure that their hazard mitigation is effective. These provisions apply even if the minimum standoff distances are met. The specific requirements below, provided conventional standoff distances are met, will result in windows, skylights, and glazed doors that comply with this standard for windows provided their visual glazing openings do not exceed 3 square meters (32 square feet). For larger windows, refer to the DoD Security Engineering Design Manual.

B-3.2 Standard 11. Building Entrance Layout. The areas outside of installations are commonly not under the direct control of the installations. Where the main entrances to buildings face installation perimeters, people entering and exiting the buildings are vulnerable to being fired upon from vantage points outside the installations. To mitigate those vulnerabilities apply the following measures:

B-3.3 Standard 12. Exterior Doors. For all new and existing buildings covered by these standards, ensure that all exterior doors into inhabited areas open outwards. By doing so, the doors will seat into the door frames in response to an explosive blast, increasing the likelihood that the doors will not enter the buildings as hazardous debris. Alternatively, position doors such that they will not be propelled into rooms if they fail in response to a blast or provide other means to ensure they do not become hazards to building occupants.

B-3.4 Standard 13. Mailrooms. The following measures address the location of rooms to which mail is delivered or in which mail is handled in new and existing inhabited buildings. The measures involve limiting collateral damage and injuries and facilitating future upgrades to enhance protection should they become necessary.

B-3.5 Standard 14. Roof Access. For all new and existing inhabited buildings covered by these standards, control access to roofs to minimize the possibility of aggressors placing explosives or chemical, biological, or radiological agents there or otherwise threatening building occupants or critical infrastructure.

B-3.6 Standard 15. Overhead Mounted Architectural Features. For all new and existing buildings covered by these standards, ensure that overhead mounted features weighing 14 kilograms (31 pounds) or more are mounted to minimize the likelihood that they will fall and injure building occupants. Mount all such systems so that they resist forces of 0.5 times the component weight in any direction and 1.5 times the component weight in the downward direction. This standard does not preclude the need to design architectural feature mountings for forces required by other criteria such as seismic standards.

B-4.1 Standard 16. Air Intakes. Air intakes to heating, ventilation, and air conditioning (HVAC) systems that are designed to move air throughout a building that are at ground

level provide an opportunity for aggressors to easily place contaminants that could be drawn into the building.

B-4.2 Standard 17. Mailroom Ventilation. To ensure airborne chemical, biological, and radiological agents introduced into mailrooms do not migrate into other areas of buildings in which the mailrooms are located, provide separate, dedicated air ventilation systems for mailrooms. Refer to the DoD Security Engineering Design Manual for additional guidance.

B-4.3 Standard 18. Emergency Air Distribution Shutoff. For all new and existing inhabited buildings, provide an emergency shutoff switch in the HVAC control system that can immediately shut down air distribution throughout the building except where interior pressure and airflow control would more efficiently prevent the spread of airborne contaminants and/or ensure the safety of egress pathways. Locate the switch (or switches) to be easily accessible by building occupants. Providing such a capability will allow the facility manager or building security manager to limit the distribution of airborne contaminants that may be introduced into the building.

B-4.4 Standard 19. Utility Distribution and Installation. Utility systems can suffer significant damage when subjected to the shock of an explosion. Some of these utilities may be critical for safely evacuating personnel from the building or their destruction could cause damage that is disproportionate to other building damage resulting from an explosion. To minimize the possibility of the above hazards, apply the following measures:

B-4.5 Standard 20. Equipment Bracing. Mount all overhead utilities and other fixtures weighing 14 kilograms (31 pounds) or more to minimize the likelihood that they will fall and injure building occupants. Design all equipment mountings to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction. This standard does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

B-4.6 Standard 21. Under Building Access. To limit opportunities for aggressors placing explosives underneath buildings, ensure that access to crawl spaces, utility tunnels, and other means of under building access is controlled.

Standard 22. Mass Notification. All inhabited buildings must have a timely means to notify occupants of threats and instruct them what to do in response to those threats.