

Report to Congress on Installation Master Plans



Office of the Under Secretary of Defense
for Acquisition, Technology, and Logistics

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BACKGROUND

This report responds to House Report 111-166, accompanying H.R. 2647, the National Defense Authorization Act for Fiscal Year 2010, which states the following on pages 540-541:

Installation Master Plans

The committee is concerned about the planning decisions at military installations and the intent to advocate for low-density developments that promulgate sprawl. The committee understands that the Department of Defense's propensity for low-density development is being driven primarily by a facility-centric approach to anti-terrorism/force-protection issues and requirements to insert 10- and 25-yard standoff distances from roads and parking structures. Consequently, in the use of the current anti-terrorism/force-protection criteria, the value of land as a commodity has been lost. The committee believes that a layered approach to anti-terrorism/force-protection design is critical to defeating threats against an installation threat and that effective perimeter security serves as the primary defense. Furthermore, the committee believes that stand-alone facilities should have sufficient standoff distances. However, a military installation, which is formed by the concentration of multiple facilities, should be approached from a holistic view and the development of anti-terrorism/force-criteria should be modified to reflect an installation approach. Buttressing this installation approach to anti-terrorism/force-protection is the current public-sector approach to sustainable design. The committee believes that it is important to recognize that many communities are embracing a planning approach that promotes efficient use of public spaces and de-emphasizes vehicular travel.

Therefore, the committee directs the Secretary of Defense to submit a report to the congressional defense committees by March 1, 2010, that reviews current anti-terrorism/force-protection measures and considers alternative measures for installations. In conducting this review, the Secretary should consider current community-based, sustainable design techniques that support better quality-of-life techniques and increase working efficiencies.

REPORT APPROACH

This report reflects the efforts of a multi-disciplinary, multi-service team comprised of representatives from the planning, sustainable development, and security engineering disciplines of the three Military Departments.

INTRODUCTION

The planning and development of Department of Defense (DoD) installations in the 1950s and 1960s reflected the goals and preferences of the typical American suburban community at that time: low-density, car-oriented development with segregated land-use patterns. Installations that were established or significantly expanded throughout the United States and, to a lesser extent, overseas since World War II reflect such characteristics.

Other than a few older (often historical) installations in built-up areas, installations of this type account for most of the installations in the Department.

Within the past decade, two additional significant influences have challenged installation planning. The first of these influences resulted from terrorist threats and attacks and took the form of new physical security and antiterrorism (AT) requirements for installations and facilities. AT requirements, including minimum standoff distances, have become critical elements in installation planners' analyses of area development plans, vehicle circulation, parking, building siting and orientation, and determination of buffer zones. The second recent influence on installation planning – the concept of “sustainable development” – promotes a return to higher-density, mixed-use planning. Sustainable development seeks to create walkable or transit-oriented communities that are highly “liveable” and less dependent on the use of automobiles.

Superficially, these two recent influences may seem to be in conflict. Indeed, the application of AT requirements to projects for new facilities has often tended to reinforce the existing low-density development patterns on many DoD installations, thereby inhibiting goals for sustainable development. However, closer evaluation of these seemingly disparate planning goals reveals a relationship not necessarily in conflict (i.e., sustainable development can satisfy DoD AT requirements when deliberately planned to do so). Fundamentally, the goals of sustainable development are not at odds with physical security requirements so much as with the existing low-density patterns of installation development. Installation planners may apply AT requirements – more accurately, a “neutral” influence than a biased one – in support of either type of development at their own choosing.

THE PLANNING PROCESS

The foremost factors that base planners consider in facility siting and design are the facility's purpose and the facility's functional relationship to other facilities on the installation and in the local region. These mission factors – along with project scope, circulation and transportation, safety, site conditions, environmental impacts, and physical security and AT requirements – constitute the key considerations in development of site recommendations and plans for new facilities. Planners then submit these recommendations as part of installation development plans or capital improvement programs to installation facilities boards or planning committees for approval. Once approved at the installation level, these plans govern the development of military construction project documents that are submitted to Congress for authorization and appropriation.

Identifying the specific goals for a proposed facility and weighing various tradeoffs is a formidable part of facility siting and design. Base community planners and master planners are taught comprehensive planning through education and experience in city, urban, and environmental planning. The planners weigh salient factors such as the natural, built, and sociocultural environments when making site development and project siting recommendations. The overall goal is to derive optimal return on the invested capital.

In addition to the factors that planners have historically taken into account in site development and the unique military requirements associated with health, safety, and welfare, military planners should also promote the goals of sustainable communities, smart growth, and low-impact development.

INSTALLATION DEVELOPMENT

DoD installation development in the 1950s and 1960s reflected and promoted the goal of the idealized American community of that time: suburban, low-density, car-oriented, and compartmentalized with regard to land use. The installations from that period are notable for their use of:

- Large parking lots;
- Few sidewalks;
- Significant distances between buildings;
- Outsized buildings; and
- Limited use of buses and vans.

Antiterrorism Standards

The Department's response to increasing terrorism threats in the 1980s and 1990s tended to reinforce the existing patterns of low-density installation development. The Department developed a "layered" approach to protection that includes both physical measures (e.g., fences and gates) and operational measures (e.g., patrols and random AT security checks), which provide a consistent level of protection both on and off installation. With the greatest expected threat being from a vehicular explosive close to an occupied building, installation planners focus on controlling the standoff distance between vehicles and occupied buildings and "hardening" buildings to resist explosions. Due to the higher cost in most situations to deliberately harden facilities against explosive blasts, planners and designers have typically opted for using generous standoff distance between a building and roadway or parking area as long as land is available. These decisions have entrenched the already-existing patterns of low-density development on many installations.

Partially in recognition of this issue, the Department revised Unified Facilities Criteria (UFC) 4-010-01, "Minimum Antiterrorism Standards for Buildings," during the last year. The required minimum standoff distance for buildings was formerly published as a single value representing the least-protective type of conventional wall construction. Although this conservative value exceeded the standoff distance required for more-protective types of wall construction (such as reinforced masonry block), planners and designers would often default to the published value lacking specific information or analysis to the contrary. To overcome this,

the revised UFC now includes distinct, unique standoff distance requirements for ten different types of conventional wall construction based upon results of additional blast testing.

As an example, the published minimum standoff distance between a “primary gathering” building on an installation and a vehicle parking area or road now ranges from 151 feet for metal stud wall construction, to as little as 16 feet for reinforced concrete. This refinement in the criteria allows planners to significantly reduce building standoff distances when building design parameters are either known in advance or can be specified by the master plan to preserve space and enable higher-density development.

Research, data collection, and program evaluation are under way to develop additional strategies for achieving force protection while minimizing land requirements. The DoD AT community routinely reviews force-protection criteria in light of current threat and vulnerability assessments. The community’s periodic review and trend analysis of perimeter intrusions and threatened or actual installation attacks, both overseas and in the continental United States, provide the basis and metrics for subsequent validation and modification of AT criteria.

Sustainable Development

Higher-density development on installations promotes more sustainable communities and is required by Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance.” Sustainable communities call for new approaches to land-use planning, transportation alternatives, renewable energy, and compact development that also meet security and safety requirements. DoD Components are presently collaborating on a sustainability performance plan to establish strategic goals in response to this Executive Order. The DoD Components are also developing a sustainable-communities tool supporting implementation of their strategic plans that incorporates regional planning, community connectivity, accessibility, and environmental planning.

With the goal of sustainable development in view, the Department recently overhauled its guidance for installation master planning. UFC 2-100-01, “Installation Master Planning,” establishes overarching planning strategies to promote compact multi-story and mixed-use development, transit-oriented and connected transportation networks, and water- and energy-conserving buildings and sites. These strategies reflect the development patterns of older military installations and small towns, in contrast to the lower-density development of installations developed after World War II that the UFC seeks to transform.

INTEGRATION

Rather than being at odds, the Department’s new standards for installation master planning and building AT protection are complementary: where the former prescribes more efficient development and land use, the latter serves to enable it through more judicious use of buffer space. In practice, the synthesis of sustainability and AT protection has already begun. For example, an innovative approach for long-term base development has been employed at Misawa Air Base, Japan, where base planners redeveloped three areas within the congested

central base core. The core is divided into three distinct clusters that combine residential, educational, and medical uses. Parking and roadways are situated at the periphery of each development cluster. A benefit of this redevelopment strategy includes the creation of internal space for additional facility development or green space for recreation. Additionally, the redevelopment actually increased the amount of available parking space and reduced the number of access roads, in turn reducing the road maintenance required for the base arteries. All of this was accomplished while still providing the required AT standoff distance and level of protection.

Other examples of high-density, pedestrian-oriented development include the following:

- A mixed-use town center, mid-rise buildings, and a vertical parking structure contained in the Peterson Air Force Base (AFB), Colorado, Triangle Area Development Plan;
- An AT barrier providing enhanced pedestrian circulation around a historic building at Joint Base Lewis-McChord, Washington;
- Distinctive application of compact development, mixed use, and walkability at the Community Center at Cannon AFB, New Mexico;
- The “M Street” corridor at the Washington Navy Yard-Anacostia Waterfront that comprises mixed land use in a higher-density neighborhood and a pedestrian streetscape that limits vehicular access;
- The Installation Management Campaign Plan at Joint Base Myer-Henderson Hall that is implementing sustainability concepts by providing specific goals and objectives for sustainable development, infrastructure improvements, environmental stewardship, and energy efficiency; and
- Lodging, dining, and shopping facilities across the street from the passenger air terminal at Kaiserslautern Military Community Center.

New synergies may develop as the Department further integrates the new standards for master planning and AT protection over time. Higher-density, mixed-use communities with segregated pedestrian, transit, and automobile networks may eventually afford even higher levels of convenience and energy efficiency while simultaneously enhancing AT protection.

CONCLUSION

The Department is committed to the principles of sustainable installation planning while maintaining the safety of DoD personnel and facilities and has revised its UFC accordingly. As a result, the Department expects higher-density, mixed-use development to gradually replace the circa-50s and 60s suburban model now present on military installations, without compromising AT protection. This transformation is a long-term effort, however, that will take place one project at a time.