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The Needs and Benefits of Security Design Guidelines in a Campus Environment: An Architect's Planning Tool

By Aegis Security Design

After a general decline in 2006, new construction projects in colleges and universities are forecasted to increase to over $45 billion in the next few years. Growth in enrolment, and programs and changing planning visions offer exciting and creative opportunities for the design professional. Higher education buildings are reflective of times and intended purpose; but they are also the hallmark of the Architect's creative skills.

The design professional under contract to the institution goes to great lengths to understand the needs of his client, but will generally only respond to the owner's direction as to the *level' of security applied ... this "level" most often determined to be directly proportional to the number of cameras and card readers deployed. Because this need is often established late in the design process, however, construction budgets often do not permit such expenditures. Most importantly, the design is fixed, which eliminates the possibility of meaningful changes to the interior or exterior space, or the juxtaposition of major architectural elements.

The solution to this dilemma is to ensure that security requirements are detailed in writing and communicated clearly to the design team during the early stages of the design process. The most effective method for this communication is a well thought out campus design standard or guideline which offers clear direction to the Design Team relating to security objectives, systems and products to be included in the project. The availability of such standards will assure appropriate program consideration and allocate the funding necessary for proper implementation.

Benefits of Security Design Standards/Guidelines

Design is thought of as a decision-making process. It involves an interaction of the Architect and other members of the Design Team with many different university departments, each of which may have their own ideas related to the outcome of the design process. A properly thought out design guideline will provide valued direction, reduce this information gathering effort, and clearly identify resource personnel who are key to the design process and have the authority to influence the outcome. Benefits of such a document include:

- Permits advanced determination of risks and threats to the structure and its occupants.
- Establishes the level of security to be provided for a particular type of structure or function and identifies spaces within a planned structure that require additional security provisions.
- Ensures that the appropriate institutional officials have authorized appropriate security program elements.
- Ensures adequate allocation of funds for the security program.
- Identifies roles and responsibilities of the various constituencies/departments and personnel involved in the security planning process ... including facilities, physical plant, network services and public safety.
- Challenges the creative skills of the Design Team to satisfy the security objectives though the application of CPTED (Crime Prevention Through Environmental Design) principals in lieu of typical target hardening techniques. When properly considered during the design process, CPTED strategies can often eliminate a number of traditional "target hardening" features installed solely for security purposes.
- Permits seamless integration of security systems into the structure, thus realizing a significant savings to the institution.
- Ensures consistency of systems and functions among all campus structures.

- Eliminates funding competition issues though executive directive.
- Decreases liability exposure for the institution though the uniform application of security strategies, including those tailored to specific risk environments.
- Decreases liability exposure for the design professionals though advanced determination of the security requirements by the institution.

Elements of Campus Security Design Guidelines

Although the specific content of the security design standards or guidelines will vary from one institution to the next, there are some common elements which should form the template for the document. Included in this template are the following:

- *Introductory Issues*

  The introductory issues should include a discussion of what the document includes and how it should be used by the Architect and other design professionals involved with the project. It should address the organization of the document and illustrate the expected results at each stage in the design process. Finally, it should detail the role of the various security-related departments play in the design process, such as University Public Safety/Police/Security, Campus Card Office, Security Systems Administrator, Facilities Management and the Physical Plant Department.

  It should also be noted that guidelines and standards contained in the document represent minimum requirements for all new buildings projects at the University. There may be circumstances, however, where the nature of the building activities or occupants warrants additional protection measures. Design professionals should be sensitive to such situations, of which some of the more common are listed as follows:

  - Where extensive after hours operations are expected, particularly involving students;
  - Where large amounts of cash or other valuable items are maintained;
  - Where clinical operations or patient treatments are to be conducted;
  - Where prisoners or psychiatric patients are treated, counseled or housed;
  - Where disciplinary counseling or other confrontational encounters are expected;
  - Where animal care or research facilities are involved;
  - Where select agents or chemical/biological materials are maintained;
  - Where required by insurance carriers;
  - Where required by regulatory agencies governing the activity intended to take place in the completed structure;
  - Where security "best practices" typical for buildings of the planned type are higher than the base security standards.

- *Crime Prevention Through Environmental Design (CPTED)*

  Environmental design guidelines are based upon the theory that “the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life." Guidelines in this category are intended to provide challenge to the design professional in the application of architectural strategies. They are intended to maximize opportunities for natural surveillance; to increase a sense of territorial control and identification of space; and to enhance natural access control. As previously noted, environmental design security provisions are immensely preferable to more traditional

security approaches because they are intended to fulfill the two-fold purpose of providing security while also increasing the level of comfort and functionality of the space.

Environmental Design Guidelines are intended to be used during the program and schematic design phases, since these directives tend to drive site planning, use of space and the positioning of major building components. They are general in their nature and intended to permit the design professional a substantial degree of latitude in how the objectives are accomplished.

- *Specific Design Issues*

  The strategies in this category tend to be more specific in nature – relating primarily to locationing and configuration of certain specific elements or components of a project. These guidelines assist in the design effort by indicating certain "standard" security provisions (i.e. duress alarms in reception areas and restrooms, designating electrically controlled doors, door type selection, etc) and defining options which the Architect may employ to satisfy the security objective. Minimum security provisions applicable to all risk situations should be defined; however, certain higher risk situations will require levels of security that may not be articulated in the document. Where such conditions exist, the campus protection agency or outside consultant should provide additional requirements.

  General Design Directives are intended to be reviewed and incorporated into the design process primarily as the project moves into the design development phase of the design. They will also influence the early construction document phase of the work. The guidelines in this section should be developed around the Construction Specifications Institute (CSI Masterformat). This format permits the architect to more clearly identify the design discipline affected.

- *Standard Product Specifications and Drawing Details*

  The final issue to be addressed relates to details required for inclusion in the construction documents and includes specifications for specific products and installation means. These are represented in text form as specifications (i.e. detailed technical specifications for emergency call boxes) and graphically (i.e. a drawing depicting how the call box is installed and connected to the campus telephone system). Information contained in this section is usually included "as-is", but is subject to some tailoring by the project Architect as the project evolves into the Construction Document Phase. Information should be provided to the Architect in electronic form including drawing files suitable for importing to directly to the Architect's/Engineer drawing details.

Summary

Appropriate written directives provided by the client institution can clearly define how the project must address the issue of security; thus, reducing the need for the architect to acquire this information by other means. Security design standards/guidelines must be tailored to the unique risks, threats, physical environment and culture of each college or university. They cannot simply be "boiler plated' from other manuals or past projects. The design and implementation of the standards/guidelines should be accomplished by a campus committee and a design professional working with a skilled campus crime prevention specialist or a qualified consultant; and, they should be frequently reviewed and updated to maintain relevancy to the institutional environment.