GR.2.2 SECURITY

GR.2.2.1 SECURITY GUIDELINES FOR DESIGNING A SAFER UNIVERSITY

Providing a secure environment is important to the University of Virginia. The university seeks to prevent crime using concepts commonly known as Crime Prevention through Environmental Design (CPTED). These concepts include the allowance for natural surveillance, natural access control, and development of territoriality. Further descriptions of these concepts and methods by which they may be incorporated into building designs are provided in the following sections. In addition, many outside references are available to the designer to assist in developing designs that address the many issues related to security and crime prevention in and around University of Virginia buildings and grounds. A list of available resources and general guidelines are provided in Appendix S.

The following are specific security requirements applicable to new construction, site modifications, renovations affecting building entrances or exits, or security system modifications or replacements at the University of Virginia.

GR.2.2.2 SPECIFIC SECURITY REQUIREMENTS

GR.2.2.2.1 University Department of Police

The Department of Police shall be afforded the opportunity to review projects for campus safety, security and card access locations. Particular concerns include landscaping, building entrances, walkways and parking areas, which shall be adequately lighted and free of areas hidden from view that could encourage criminal activity. Line of sight and accessibility for police personnel shall be given design consideration, including proposed or future surveillance cameras.

GR.2.2.2.2 SECURITY SYSTEMS

All new buildings, or existing buildings with a building code change of use, shall include a security access system for all exterior doors and such interior doors as determined by the Building Committee. Any exemptions on a case by case basis shall be determined by an approved Determinations and Findings Report after first consideration by the Building Committee. The security access system shall be installed and operational prior to the issuance of a Certificate of Use and Occupancy.

The Architect/Engineer shall determine, in consultation with the University Project Manager, the security systems requirements for each project.

The Architect/Engineer, through the Project Manager, shall determine the design and operational compatibility of the security access system in consultation with the office of the Vice President for Business Operations for Academic buildings, (card system), and ID Services for Health System buildings.

(GR.2.2.2.2 continued)

Building design and construction shall provide conduit, outlet boxes, power source(s), backboards, and adequate spatial requirements to accommodate and support the installation of a University compatible card reader security access system. The card reader security access system shall be determined on a project by project basis as to whether it is installed by the building contractor or by a separate contractor coordinated for completion as required for issuing a Certificate of Use and Occupancy.

Major renovations (10,000 square feet or $1,000,000 construction) shall incorporate security access systems. Smaller renovations will be determined on a case by case basis.

Consultation during design with the University of Virginia Police Department and/or Hospital Security, as appropriate, shall seek to assure the adequacy of the proposed design including incorporation of CPTED concepts in APPENDIX S.

Power for security systems and devices is to be from an emergency circuit where available.

GR.2.2.2.3 Security and Sources of Noxious or Toxic Fumes

Each building, whether new or renovated, needs to be considered for security needs and the prevention of obnoxious or toxic fumes from entering occupied spaces. Some buildings will have more stringent needs, such as those where large numbers of persons gather or a medical research building. All buildings including major renovations and upgrading of heating, ventilation, and air conditioning systems require a number of features that are to be incorporated

- Site and building design shall include consideration of outside air intakes for heating, ventilation and air conditioning related to sources of noxious or toxic fumes. Project Manager and Architect/Engineer shall be responsible for actions wherein existing conditions and/or prevailing winds are not clearly understood.
- Outside air intakes shall be sufficiently above exterior grade (30’-0” or at third story level) on all new buildings and major renovations to avoid intake of noxious or toxic fumes associated with vehicles, maintenance equipment, electrical generators, similar sources of fumes permanently or intermittently associated with building functions and maintenance, and to discourage malicious contamination.
- Dedicated mail rooms shall be exhausted and shall be under negative pressure.
- Site and building design shall include consideration of the “Design Checklist for Crime Prevention” found in Higher Education Capital Outlay Manual Section 7B.4 considered in conjunction with participation by a designated representative of the University Police Department.
- Parking under a building is not permitted, and parking near a building is subject to scrutiny.

(GR.2.2.2.3 continued)

The design process shall evaluate:

- What can be done to improve building security at little or no cost?
- Does the design make it difficult for people to accidentally or purposely harm the building, its occupants, and contents?
- Are vehicle barriers needed to keep vehicles from having easy access to areas not intended for service vehicles?
- Is lighting adequate?
- Are emergency telephones appropriate on the site? (See **SW.20.8**)
- Is unauthorized access to a roof from ground prevented?
- Does landscaping contribute to security?
- Have Crime Prevention Through Environmental Design (CPTED) concepts (Appendix S) appropriate to the project been applied?

GR.2.2.3 SITE LIGHTING

GR.2.2.3.1 General

Lighting is an important element in security design. An effective security lighting design should consider all elements of the site: facility location and usage, the landscape or planting plan, and site walkways and traffic patterns as well as the impact of the lighting on the surrounding areas. Light pollution, trespass and glare to surrounding properties should be minimized.

GR.2.2.3.2 Design Requirements

All exterior lighting fixtures shall conform to University approved types. Lens shall be impact-resistant tempered glass with a minimum 0.125" thickness.

In the Central Grounds area, and areas designated by the University Landscape Architect, light fixtures and poles are to be cast iron. When approved by the Director of Facilities Design and Construction, aluminum poles of similar design may be used in locations where it can be demonstrated that vehicular impact is not probable.

GR2.2.3.3 Illumination Requirements - Horizontal

Location/Area	Foot-candle Levels	Ratios
Roadway	Per IES Stds	Per IES Stds
Paths, Walks, Ramps	0.5 average, 0.125 minimum	4:1 avg min
Exterior Steps	0.2 minimum, top to bottom	4:1 avg min
Parking Lots	Per IES Stds	Per IES Stds
Parking Garages	Per IES Stds	Per IES Stds
Exit Discharge, Normal	Per VUSBC	Per VUSBC
Exit Discharge, Emerg.	Per VUSBC	Per VUSBC

Horizontal fc levels are measured at grade level.

GR.2.2.3.4 Illumination Requirements - Vertical

Vertical illuminance is important for identification of other pedestrians and any obstacles.

Location/Area	Foot-candle Levels	Ratios
Roadway	Per IES Stds	Per IES Stds
Paths, Walks, Ramps, Steps	0.5 – 0.8 average	4:1 ave min
Parking Lots	Per IES Stds	Per IES Stds
Parking Garages	Per IES Stds	Per IES Stds

Vertical fc levels are measured at five feet above grade level, parallel to the path of travel.

GR.2.2.3.5 Fixture and Installation Requirements

See Site Lighting, SW.20.2 for approved fixtures types and installation requirements.

GR.2.2.4 EMERGENCY TELEPHONES

New buildings, new parking lots and major site work projects shall provide the location(s) for emergency telephone(s) that are handicapped accessible, hands free operated, and located on or near lighted walkways providing visibility and comfort in their use. Project Manager shall determine approved locations and type(s) of installation in consultation with the University Safety and Security Committee.

Two types of emergency telephone styles are applicable. In all installations the telephone shall be University provided and installed on or in the assembly. The type applicable to most locations is a Facilities Management fabricated and installed assembly as illustrated in Fig. SW-7 at the end of SW - SITEWORK. Specifications shall state the requirements of the contractor. In some cases Facilities Management will be fully responsible for installation including necessary wiring and telephone cabling to a University point of connection. Facilities Management Department of Utilities will procure and install the Fig. SW-7 fabricated assembly including the telephone and light fixture.

For areas determined by the University Safety and Security Committee and large parking lots (more than 49 cars), the use of pre-manufactured emergency telephone assembly is appropriate. For each additional 99 parking spaces, an additional emergency telephone is required. Where approved by the University Landscape Architect this “tower” type assembly may be taller than 8-feet for large parking lots for visibility over vans and similar taller vehicles.

Where the “tower” type emergency telephone is applicable, the design shall be similar to Gai-tronics Corporation Model 234 Stanchion and/or model ETP-MT/R by Talk-A-Phone Co., and shall be ADA compliant. Color(s) shall be approved by the University Landscape Architect.

(GR.2.2.4 continued)

Power for emergency telephones is to be an emergency circuit where available.

GR.2.2.5 MECHANICAL ROOMS

Assure that building mechanical air intakes are located away from loading docks, emergency electrical power generators, emergency or ambulance vehicle entrances, and other external sources of noxious or toxic fumes. Consideration also shall include proximity to wind-blown dust from streets, fields and ground care activities, designated tobacco smoking areas, combustion by-products, and biogenic materials related to evaporative cooling towers or intentional human contamination.