

GR-GENERAL REQUIREMENTS

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GR.1 GENERAL

GR.1.1 APPLICATION

University of Virginia **Facilities Design Guidelines** shall apply to all design projects unless specifically waived by the Chief Facilities Officer.

Facilities Design Guidelines are to be incorporated into the design and construction documents; not referenced. All waiver requests are to be submitted by the Project Manager to the Chief Facilities Officer through the Senior Review Architect in a format called “Determinations and Finding Report”.

GR.1.2 DEFINITIONS/TERMS

GR.1.2.1 University of Virginia Grounds

“Major University Areas” - Comprised of North Grounds, West Grounds, Central Grounds and the Jefferson Park Avenue precinct of the University of Virginia Health System as illustrated in **Figure GR-1**.

“Central Grounds” - The area bounded by Emmet Street, University Avenue, Hospital Drive and Jefferson Park Avenue, is the Historic District and the Academical Village.

“Historic Grounds” - Area bounded by Jefferson Park Avenue, McCormick Road, University Avenue, Hospital Drive (up to and including facades of Cobb Hall, McKim Hall, Barringer Wing and Old Medical School buildings along Hospital Drive), as illustrated in **Figure GR-2**. Portions of Rugby Road are also designated as a historic district.

“The Academical Village” - Original Jefferson designed buildings and grounds, including the land bounded by McCormick Road, University Avenue, Hospital Drive and including the South lawn in front of Cabell Hall, as illustrated in **Figure GR-3**.

“University of Virginia Health System” – The School of Medicine, School of Nursing, Health Sciences Library, and Medical Center are components of the Jefferson Park Avenue precinct bounded by Hospital Drive, University Avenue, Jefferson Park Avenue, the CSX Railroad, the Norfolk Southern Railroad, and Brandon Avenue. Additionally, the Health System includes the Kluge Children’s Rehabilitation Center located on U. S. 250 West near the U. S. 29 Bypass, and the Moser Radiation Therapy Center at 2871 Ivy Road, U. S. 250 West, and other off-site clinical facilities.

GR.1.2.2 Architect/Engineer

"Architect/Engineer" as used in these guidelines is the Architect or Engineer of record who contracts with the University of Virginia as the prime design professional to provide architectural or engineering services for a project. The term includes any associates or consultants employed by the Architect/Engineer of record in the provision of project design services.

GR.1.2.3 University of Virginia Project Manager/Construction Administration Manager

"Project Manager" as used in these guidelines, unless otherwise defined, is synonymous with "University of Virginia Project Manager", the designated Facilities Management person responsible to the Building Committee and University administration for the management of project design and construction within the established scope, budget and schedule. The Project Manager is the University's designated contact person for the Architect/Engineer.

"Construction Administration Manager" as used in these guidelines, unless otherwise defined, is the Facilities Management person responsible to the Project Manager for administration of construction, project inspection, and coordination with other University of Virginia persons or entities related to utilities, communications, and information technology.

GR.1.3 DOCUMENTS

Conform to the AutoCad version currently in use by Facilities Management and confirm the mode of transmission prior to project initiation.

Contract bid documents are to be dated with the actual date of final submission incorporating the review comments by the State Fire Marshal, the Bureau of Capital Outlay Management and the University Review Unit.

All specifications shall be provided in the most current version of Microsoft Word for Windows format. For microfilming purposes, an inner cover/title sheet is required in duplication of the harder outer cover/title sheet.

Facilities Management's base map is based on a set control datum. This control datum shall be used for all electronic mediums that pertain to mapping, civil and site work. Mapping shall be in accordance with National Map Accuracy Standards, based on Virginia State Plane Coordinate System, South Zone and North American Datum 1983 (NAD83). Vertical control is based on the North American Vertical Datum 1988 (NAVD88).

NAVD88 Control Monuments have been established in various locations on the University of Virginia Grounds using this datum. All construction or survey work shall be performed based on this established control.

GR.1.3 (continued)

GR - GENERAL REQUIREMENTS

For specific drawing requirements see Higher Education Capital Outlay Manual 2000 or Construction and Professional Services Manual, and SITE WORK, **SW.1.2**.

GR.1.4 PROFESSIONAL LIABILITY INSURANCE

The Architect/Engineer shall carry professional liability insurance covering negligent acts, errors, and omissions in an amount not less than 5% of the estimated cost of construction of University projects designed by the Architect/Engineer that are currently under construction, but in no event shall the amount be less than \$100,000.

GR.1.5 PARTNERING

Partnering is encouraged on all University projects. Projects above \$5,000,000 construction cost shall have a formal partnering agreement, unless waived by the Chief Facilities Officer.

GR.2 ACCESSIBILITY

GR.2.1 SPECIFIC ACCESSIBILITY REQUIREMENTS

The following are specific accessibility requirements applicable to new construction, renovations or replacements at the University of Virginia:

Effective October 1, 2004 the revised Americans with Disabilities Act Accessibility Guidelines (ADAAG) is applicable to Commonwealth of Virginia new and renovated construction projects (as stated in the Construction and Professional Services Manual 2004). ADAAG is therefore effective at this time for University of Virginia projects. Exceptions premised on compliance with the Uniform Federal Accessibility Standards (UFAS 1988) will be considered only for projects approaching 100% contract document completion.

Van parking is required in new parking areas and, where feasible, renovated parking construction.

Automatic door openers are required at major entrances along accessible routes. See BUILDING ENVELOPE, **BE.20.4.1**.

The use of accessibility approved lever-handled door hardware is required in new construction and renovations without regard to the numbers of doors involved.

GR.2.1 (continued)

Facilities shall be designed so that accessibility does not stand out or draw attention to it when other architectural alternatives are available. As an example, restroom lavatories shall be of uniform design with all lavatories meeting accessibility standards rather than just one unit meeting the standards. This would not apply to toilet stalls, urinals, or water closets.

In addition to application of ADAAG, teaching and research laboratories shall have a minimum of five percent, but not less than one, work station for each type of facility (fume hood, bench, sink, etc.). Compliance may be achieved using readily adjustable modular casework and equipment.

Platform lifts for the disabled are prohibited in new construction. The University Subcommittee for Accessibility must approve use of platform lifts in renovation projects, where ramps are not feasible.

See BUILDING SERVICES **BSRV.10.1** for elevator cab controls, hall call buttons and telephone requirements.

GR.2.2 **UNIVERSITY COMPLIANCE**

Waivers of University of Virginia accessibility requirements must be granted by the Chief Facilities Officer by means of a request, coordinated by the Project Manager and submitted to the Senior Review Architect. A presentation to the University Subcommittee for Accessibility may be required.

Where these guidelines exceed code or legal requirements for accessibility, the guidelines shall govern.

GR.3 **CODES AND REVIEWS**

GR.3.1 **CODES AND REGULATIONS**

See the Higher Education Capital Outlay Manual and/or Construction and Professional Services Manual for applicable codes and regulations. The 2000 Virginia Uniform Statewide Building Code, an amended version of the International Building Code 2000, is applicable exclusive of Chapter 11 Accessibility. For State projects the revised Americans with Disabilities Act Accessibility Guidelines are applicable to University projects per GENERAL REQUIREMENTS GR.2.1.

GR.3.3 REVIEWS AND APPROVALS

The following applicable Commonwealth of Virginia agency reviews will be coordinated through the Project Manager. Unless specifically directed by the Project Manager, submissions and responses to reviews shall be transmitted to the Agency via the Project Manager. The Project Manager is responsible for transmitting agency review comments to the Architect/Engineer.

- Fire Safety Review. (See **GR.3.4.**)
- Assistant State Building Official. (See **GR.3.5.**)
- Art and Architectural Review Board (meets once per month with limited exceptions) (See **GR.3.8.**)
- Erosion and Sediment Control Board
- Storm Water Management
- Division of Historic Landmarks
- Department of Health
- State Water Control Board
- Department of Air Pollution Control
- Department of Waste Management

The Project Manager will arrange the following University review submissions, as applicable. Resulting review comments shall be provided through the Project Manager to the Architect/Engineer.

- Architect for the University and the Board of Visitors. See **GR.3.6** and **GR.3.11.**
- University Landscape Architect (see **GR.3.7**) and Arboretum and Landscape Committee. (See **GR.3.15**)
- Master Planning Council
- Building Committee (see **GR.3.12**) or appropriate end user (Requester) and Project Advisory Group (see **GR.3.14**)
- Facilities Management: (See **GR.3.13**)
- Real Estate and Space Management (Programming Phase)
- Accessibility Project Manager
- Police/Safety (See **GR.3.16**)
- Information Technology and Communications (See **GR.3.17**)
- Office of Insurance and Risk Management

GR.3.3 (continued)

The extent of involvement of the Architect/Engineer in presentations to Commonwealth of Virginia agencies and University entities shall be as professionally necessary to convey a full and appropriate understanding of the aesthetic and technical design. The above reviews and approvals, where required, shall be deemed part of basic services, applicable to all design projects at the University of Virginia.

Through the University Senior Review Architect reviews will be incorporated or forwarded directly to the Architect/Engineer from:

- Department of Facilities Operations
- HVAC Maintenance
- Fire Protection Systems
- Department of Utilities
- Systems Control Center
- Environmental Health and Safety (See **GR.3.18**)

Comments from the Health System's Physical Plant shall be forwarded to the Architect/Engineer by the Project Manager.

Figure GR-4, Project Approval Procedures included at the end of this category

GR.3.4 FIRE SAFETY REVIEW

Fire Safety Reviews for Design projects at the University of Virginia shall be coordinated and transmitted through the Facilities Management Senior Review Architect to the responsible Agency as follows:

- New buildings, additions or changes of use - Bureau of Capital Outlay Management
- Renovations – Regional State Fire Marshal/University Senior Review Architect

Any project involving the location, or relocation, of a fire department building connection, or the location, relocation, or modification of a fire alarm control panel shall be approved Fire Marshal for the City of Charlottesville or other appropriate jurisdiction for University of Virginia College at Wise, Blandy Farm, Mountain Lake and any other non-University Grounds location.

GR.3.5 DELEGATED STATE REVIEW UNIT/BUILDING OFFICIAL

The Commonwealth of Virginia Division of Engineering and Buildings has delegated the Facilities Management Review Unit to conduct code and other required reviews of drawings and specifications, applicable to all University of Virginia projects. For Agency 209, University of Virginia Health System the Chief Facilities Officer is the designated Building Official. Other University of Virginia agencies and facilities are subject to the State Building Official.

GR.3.5 (continued)

The staff of the Facilities Management Review Unit, under the direction of the Senior Review Architect, is responsible for the review of drawings and specifications for compliance with established requirements of the Commonwealth of Virginia and the University of Virginia, Higher Education Capital Outlay Manual or Construction and Professional Services Manual, and Facilities Management **Facilities Design Guidelines**, and for constructability in the long-term interest of the University of Virginia. For each review submission, one complete set of documents shall be submitted for each represented discipline (fire safety, civil, architectural, structural, mechanical and electrical) plus two additional sets for the Facilities Management Utilities Department and the Office of Environmental Health and Safety. Where applicable additional set(s) are required for the Department of Conservation and Recreation for storm water management and/or soil erosion and sedimentation control.

GR.3.6 ARCHITECT FOR THE UNIVERSITY

The Architect for the University provides architectural and design oversight to the senior administration of the University and to the Board of Visitors to assure reciprocity between academic planning and the physical planning and design of University buildings and grounds.

In this capacity, the Architect for the University is the principal participant in the institutional planning process, responsible for the University's Facilities Master Plan and area precinct studies, and the architectural and landscape architectural design of all buildings, structures, landscape development, open space, plantings, site furnishings and above-ground utilities.

The Architect for the University provides the architectural design criteria for each project determined to be applicable by that office, including significant or major interior spaces. The Architect for the University is a responsible party for review and approval of design during the pre-design study or schematic design and the preliminary design/design development stages.

The Architect for the University serves as the chair of the Architectural Selection Committee for all Capital Outlay and other designated projects; and serves as a member on every appointed building committee.

GR.3.7 UNIVERSITY LANDSCAPE ARCHITECT

The University Landscape Architect, of the Office of the Architect for the University, assures that projects conform to the University Master Plan and precinct plans, advises on 1) selection of consulting landscape architects, and 2) design of outdoor spaces, plant selection and tree staking. Specific criteria for brick paving patterns and use of bollards shall be verified with the University Landscape Architect.

GR.3.7 (continued)

GR - GENERAL REQUIREMENTS

The University Landscape Architect reviews projects before any presentation to the Arboretum and Landscape Committee (See GENERAL REQUIREMENTS **GR.3.15**) and serves as liaison between the University Development Office, Facilities Management, and donors in selecting and placing memorial trees and benches.

GR.3.8 ART AND ARCHITECTURAL REVIEW BOARD

For projects as determined applicable by the **Higher Education Capital Outlay Manual** or **Construction and Professional Services Manual**, the Project Manager in consultation with the Architect for the University, shall schedule, and coordinate the presentations to the Art and Architectural Review Board (AARB).

The Architect/Engineer will participate in presentations typically made at the Schematic Design stage and at the Preliminary Design Development stage. There will also be occasions when presentations of working drawings will be required.

The AARB meets monthly. Scheduling can be critical to a project schedule.

GR.3.9 CURATOR AND ARCHITECT FOR THE ACADEMICAL VILLAGE & JEFFERSONIAN RESTORATION DESIGN COMMITTEE

The Office of the Architect for the University (Curator and Architect for the Academical Village) is charged with the care of Thomas Jefferson's historic Academical Village, comprising the site shown in **Figure GR-3** at the end of this category. This office is the Architect and principal agent for this World Heritage List precinct and the principal contact for any work that might affect the buildings and site therein. This office is also the University's liaison with the Jeffersonian Restoration Design Committee, which is the primary review agent and advisor to the President and the Board of Visitors for all issues having to do with the care and restoration of the Academical Village.

For all other historic properties at the University of Virginia, this office serves as the Historic Facilities Officer within Facilities Management. As such the office shall be consulted regarding alterations to all designated historic properties. See HISTORIC PRESERVATION, **HP.1**.

GR.3.10 VIRGINIA DEPARTMENT OF HISTORIC RESOURCES

In accordance with the Governor's **Executive Order Number Forty-Seven (1976)**, the University must submit all plans for demolition or significant alteration, remodeling, redecoration, restoration, and repairs that may basically alter the appearance of any state-owned registered historic landmark to the Virginia Department of Historic Resources for review and comments. For a list of the University's properties considered to have historic significance, see HISTORIC PRESERVATION, **HP.1**.

GR.3.11 BOARD OF VISITORS

The Buildings and Grounds Committee of the Board of Visitors of the University of Virginia reviews Capital Outlay Projects for design in compliance with the **Vision Statement for the Planning and Design of the University of Virginia Buildings and Grounds**.

The Buildings and Grounds Committee approves the location and design of new buildings. Approvals are required for architectural design guidelines, schematic design and preliminary design/design development.

The Architect for the University, in conjunction with the project design Architect and the Project Manager make presentations to the Buildings and Grounds Committee.

GR.3.12 BUILDING COMMITTEE

The University of Virginia appointed Building Committee advises and gives direction to Facilities Management and to the Architect/Engineer in the development of the project, within established scope and available funding, from the inception of planning through design and completed construction.

The composition of a Building Committee varies according to the scope and complexity of the project. The Committee is supported by the Project Advisory Group (see GENERAL REQUIREMENTS **GR.3.14**), the assigned Budget Manager from the Office of the Vice President for Management and Budget, and the assigned Project Manager.

The organization and functions of the Building Committee are found in "Guidance for Building Committees Appointed for Planning and Construction of Capital Budget Projects", which is available from Facilities Management through the Project Manager.

The Architect/Engineer will participate in and make presentations to the Building Committee throughout the design process as coordinated by the Project Manager.

GR.3.13 FACILITIES MANAGEMENT

Designated Facilities Management personnel review design/construction documents for compliance and integration with utility master planning and needs, monitoring of fire protection and building systems, institutional space management under applicable guidelines by the Commonwealth of Virginia, landscaping, and the incorporation of lessons learned with regard to HVAC maintenance, fire protection systems and overall building operations.

GR.3.13 (continued)

Facilities Management is responsible for implementing University of Virginia policies regarding safety, security, accessibility for the physically disabled, and related matters of health, safety and the general welfare of the University.

For information related to Facilities Management, visit the website <http://fmweb/virginia.edu/FMHome/>.

GR.3.14 PROJECT ADVISORY GROUP

For Capital Budget projects, the Building Committee will be supported and advised by a University appointed Project Advisory Group, made up of members reflecting users or other constituencies with an interest in the development of the project, and technical advisory members. The Building Committee chair convenes the Project Advisory Group.

GR.3.15 ARBORETUM AND LANDSCAPE COMMITTEE

Master plans, precinct studies, landscape designs associated with building projects, and projects involving trees, removal of trees, planting plans or landscape design standards, must be presented to the University appointed Arboretum and Landscape Committee. This committee, composed of University faculty, staff and students, provides general oversight of the University of Virginia landscape. The University Landscape Architect determines when the project is placed on the agenda of the Arboretum and Landscape Committee

The project landscape architect and Project Manager make presentations at the conceptual stage and construction document phase. Meetings are held every three weeks during the fall and spring semesters, and occasionally during the summer. To be placed on the agenda of a scheduled meeting, the Project Manager and the landscape architect shall coordinate a review by the University Landscape Architect two weeks before the Arboretum and Landscape Committee meeting.

GR.3.16 UNIVERSITY DEPARTMENT OF POLICE

The Department of Police shall 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.

See GENERAL REQUIREMENTS **GR.5.3** for card reader requirements. See SITEWORK **SW.20.2** for related issues of lighting.

GR.3.17 INFORMATION TECHNOLOGY AND COMMUNICATIONS

The University of Virginia owns an integrated telephone and information technology cabling system under management by Information Technology and

Communications (ITC), administered by the Vice President and Chief Information Officer.

See GENERAL REQUIREMENTS, **GR.5.7** Information Technology and Communications, and BUILDING SERVICES **BSRV.50.3.1** Telecommunications.

GR.3.18 **ENVIRONMENTAL HEALTH AND SAFETY**

The University of Virginia manages laboratory chemical fume hood certification and other ventilation systems which capture and control hazardous contaminants at their generation source, overview of the abatement of asbestos or lead containing materials, and related health and safety issues through the Office of Environmental Health and Safety. Consultation with and review by this office is required for the design of all University projects.

GR.3.19 **BUILDING PERMITS**

New or renovation construction on University (state-owned) property requires a building permit. Under delegation from the State Building Official (Director of the Division of Engineering and Buildings) the University issues building permits, subject to approvals by the Chief Facilities Officer and the appropriate fire safety review office. If there is a question as to applicability of a building permit or a project permit, consult with the Senior Review Architect/Head of Review Unit.

Facilities Management Directive 562D, or a subsequent update, describes the procedures applicable to building permits and project permits (under the “Annual Permit” authorization). This directive further defines construction related work that does not require a building or project permit.

See GENERAL REQUIREMENTS **GR.3.3** regarding reviews as may be applicable to approval of a building permit.

Contractors are not required to obtain building permits on University properties, excluding properties under the ownership of the University of Virginia Real Estate Foundation or the Health Services Foundation.

GR.4 DESIGN STANDARDS AND REQUIREMENTS

GR.4.1 PREDESIGN CONFERENCE

The design process shall be expedited by arranging through the Project Manager to schedule a predesign conference at the earliest practical date in the preliminary design phase. For atypical projects not warranting a preliminary design, this conference shall be scheduled upon the initiation of design.

The predesign conference is intended to:

- expedite the required review process and schedule
- provide for dialogue on Facilities Design Guidelines, including waivers or modifications that may be applicable
- establish University preferences for civil, mechanical, plumbing and electrical systems
- identify roles of Facilities Management departments and designated personnel determine necessary phasing and/or relocation issues based on user needs
- determine if the application of on-board reviews is beneficial to the project or the design consultants

GR.4.2 DRAWINGS AND SPECIFICATIONS

Demolition or renovation work, which occurs on the floor below or above the primary construction site, shall be shown sufficiently to convey the extent of work, effect on occupants, and construction restraints to maintain or maximize functional occupancy of the effected space.

GR.4.3 VIVARIUMS

Vivarium and other research or clinically related animal holding facilities are required to meet architectural, mechanical, electrical and plumbing standards established by the current edition of the Guide for the Care and Use of Laboratory Animals, Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council, National Academy Press (website:www.nap.edu).

GR.4.4 EMERGENCY GENERATORS AND OTHER FUEL BURNING EQUIPMENT

All emergency generators require evaluation for inclusion in the University of Virginia Federal Title V Air Permit and for permitting as a new stationary source (9VAC5-80) as required by the USEPA and the Virginia Department of Environmental Quality as managed by the University of Virginia Office of Environmental Health and Safety (OEHS). Paperwork for this processing requires providing the Environmental Compliance Officer (OEHS) with a copy of the manufacturer's specifications for each new emergency power generator.

GR.4.4 (continued)

GR - GENERAL REQUIREMENTS

For diesel generators having output capacities equal to or greater than 1675 hp or 1125 kW the Environmental Compliance Officer determines the applicability of the new stationary source regulations and the University must obtain a permit before installation and operation of these generators. Diesel generators having output capacities above 645 hp or 481 kW must be included as a permitted emission unit in the Title V Operating Permit. Diesel generators of a lower capacity must be included in the permit as an insignificant emission unit.

For generators that utilize other fuels such as natural gas or gasoline, OEHS shall be contacted to obtain specific permitting requirements.

To be compliant with the University of Virginia Spill Prevention Control and Countermeasures Plan (SPCC) under Federal regulation 40CFR112, all above ground petroleum storage tanks and containers having capacities of 55 gallons or more are required to have a secondary containment (double-wall or diked tank) with a means to monitor that containment (interstitial space) for leakage.

The SPCC Plan and State regulations require that new underground petroleum storage tanks and lines have secondary containment, interstitial monitoring, and cathodic protection installed. Other requirements may also apply to each specific installation.

Professional designers under contract to the University of Virginia for a specific project are responsible for compliance to all legislated requirements. Questions should be directed OEHS Environmental Compliance Officer, 434-982-4901 or 434-982-4911.

See UNDERGROUND OR ABOVE GRADE PETROLEUM STORAGE TANKS, **SW.1.5**.

GR.5 FUNCTIONAL AND SPACE PLANNING REQUIREMENTS

GR.5.1 SPACE GUIDELINES

The following State Council of Higher Education for Virginia (SCHEV) space guidelines shall be used for the planning of all University facilities:

- Vice Presidents 300 net square feet (nsf)
- Deans, Associate Vice Presidents, Assistant Vice Presidents, Directors reporting to Vice Presidents and the President 200 net square feet
- Administrative and Faculty Offices 110 net square feet*
*for full time employees
Temporary Employees **
** coordinate with Project Manager for allowable square footage
- Support Spaces (clerical, conference and reception)
Administrative Offices:
 - 00-05 Full Time Employees (FTE) 30 nsf per FTE, plus 120 nsf
 - 06-15 Full Time Employees 30 nsf per FTE, plus 200 nsf
 - 16-25 Full Time Employees 30 nsf per FTE, plus 50 nsf
 - 25 and over 30 nsf per FTE
- Open Office Circulation 15% net square feet in addition to normal allowance

Tem

Classroom standards vary depending on the type of classroom and the facility. The Facilities Management Office of Real Estate and Space Management establishes the University standards applicable for classroom programming and furnishings.

Space requirements, based upon these guidelines, shall be reflected in the programming of projects and the schematic design. The space requirements so established shall be adhered to throughout the design process.

The Architect/Engineer may not make assumptions or exceptions to the above based upon other standards or their standard practice.

GR.5.2 ROOM NUMBER ASSIGNMENT PROCEDURE

All accessible enclosed spaces must have (SCHEV) room numbers assigned by the Facilities Management's Office of Real Estate and Space Management or, in the University of Virginia Health Systems, the Office of the Associate Vice President for Health System Planning and Facilities.

GR - GENERAL REQUIREMENTS

GR.5.2 (continued)

The Architect/Engineer, through the Project Manager, shall provide three half-size copies of floor plans not later than at the preliminary design (35%) submission for the assignment of (SCHEV) room numbers by the appropriate Space Administrator. If CAD files are submitted they shall be in AutoCAD format. The assigned room numbers provided to the Project Manager shall be incorporated in the construction document (95%) submission. The Architect/Engineer shall be responsible for obtaining the assigned numbers from the Project Manager.

Door numbering shall relate to assigned room numbers in a logical sequence, such as single doors being the same as room number, such as 1001, 1001A or J1001 where assigned room numbers have a suffix or prefix. Multiple doors into one space shall be 1001A, 1001B, etc. or 1001A-1, 1001A-2, etc. as logically applicable.

Additional submittals are required if plans have changed since preliminary design submission.

During the bid phase the Architect/Engineer shall provide the Project Manager with plans in AutoCAD format for transmission to the appropriate Space Administrator (Academic or Health Systems) with all non-relevant layers turned off. Relevant layers show walls, windows, doors, interior ramps, stairs, elevators, shafts, bathrooms, partitions (e.g. low/high walls, retractable wall system, and modular partitioning), roof, SCHEV room numbering, room descriptive (e.g. office, classroom, conference, men's toilet, mechanical room, etc.), and occupancy notation (e.g. occupancy load or number of stations).

Where room and door numbering signage is provided by the contractor it shall be installed prior to final inspection for occupancy or substantial completion.

GR.5.3 CARD READER REQUIREMENTS

Major building entrances for any new building, additions or major building renovation shall provide conduit, electrical boxes and a power source to accommodate a card reader security system compatible with Facilities Management Systems Control and University Department of Police monitoring. Exceptions to this requirement require approval by the Chief Facilities Officer.

Installation of a security system will be considered on a project-by-project basis for reasons of safety for students and staff personnel, protection of property, and protection of assets such as laboratory research and valuable collections.

For University of Virginia Health Systems facilities the Architect/Engineer shall incorporate requirements of the Director of Facilities Services as coordinated by the Project Manager.

See BUILDING SERVICES, **BSRV.50.3.3**, Security.

GR.5.4 LIFE, RESEARCH AND FACILITIES FIRE PROTECTION

Established University policy requires that all new construction will include fire detection and suppression. Projects within existing facilities will be expected to include fire detection and/or protection as part of the project up to a minimum of 10% of the renovation project construction cost. When additional funding is available, Facilities Management may cover some or all fire protection costs in excess of the 10%.

GR.5.5 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 noxious 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.
- If not determined that card reader systems are to be installed the minimum provisions under **GR.5.3** shall be provided.
- Site and building design shall include consideration of the "Design Checklist for Crime Prevention" found in Higher Education Capital Outlay Manual Section 7B.4 or Construction and Professional Services Manual Section 701G, considered in conjunction with participation by a designated representative of the University Police Department.

GR.5.5 (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?

In conjunction with the above parking under a building is not permitted, and parking near a building is subject to scrutiny.

See BUILDING SERVICES, **BSRV.30.2.1**.

GR.5.6 **BUILDING SYSTEMS ACCESS AND EQUIPMENT**

Rooftop mounted equipment (excluding fume hood exhausts, power roof ventilators, and similar equipment functionally required on roof tops) is discouraged. Adequate space for building systems equipment shall be provided in programming and schematic design. Rooftop equipment in new construction is subject to approval of the Chief Facilities Officer.

Rooftop equipment where permitted shall be screened from view of other buildings, streets and walkways.

Where rooftop mounted equipment is approved or necessary there shall be considerations for access carrying maintenance tools and equipment, replacement of the equipment, and lighting for night maintenance or repair.

Roofs with mechanical or electrical equipment shall have access by an enclosed stairway except in renovations where impractical. Ladders and a hatchway may be used for access to roofs without rooftop equipment. Safe access to all roof levels shall be provided for practical roof and equipment maintenance. Elevated rooftop equipment shall have permanently installed ladders and platforms to provide access to all access doors and items that require maintenance.

Rooftop mechanical and electrical equipment shall be accessible by durable walkways to protect the roofing during required maintenance or repair. Service walkways shall not be less than two feet wide and shall extend six feet from the equipment on sides requiring service or repair accessibility.

See BUILDING ENVELOPE, **BE.40.1** Rooftop Equipment.

GR.5.6 (continued)

Building systems (mechanical, electrical, telephone/data communications) space shall include considerations for routine and emergency maintenance access and adequate space for storage and/or use of related drawings, specifications, and operations and maintenance manuals.

GR.5.7

INFORMATION TECHNOLOGY AND COMMUNICATIONS

Programming and Schematic Design shall meet requirements established through the Project Manager by Information Technology and Communications (ITC). ITC equipment rooms shall be dedicated for information technology and telecommunications use (telephone, data and entertainment video services). These rooms shall not be used to support any other building utility.

Consultation with ITC shall be considered in the determination of room size requirements related to the projected number of outlets served including not less than thirty-three percent growth. Waivers of the following requirements, without ITC approval, are required.

Telecommunications room/closets shall have:

- A minimum size of 6'-0" x 8'-0" (in no case less than 4'-0" width)
- A 7'-6" minimum clear height; 9'-0" preferred
- No suspended or false ceiling unless required by building code construction requirements
- A lockable 3'-0" minimum width, 6'-8" minimum height door opening out unless prohibited by building code requirements for fire exit access passage width.
- 50 foot-candles illumination level at 3'-0" above floor, mounted 7'-6" minimum clear above floor (no wall mounted light fixtures)
- HVAC capacity to maintain ambient room temperature over the range 50 to 85 degrees F, 30-75% relative humidity, positive pressure with air exchange sufficient to dissipate heat generated by equipment (typically not less than 2500 watts)
- Fire-treated ¾" plywood from floor to 8'-0" above finish floor on three walls.

Telecommunications rooms/closets shall:

- Be stacked vertically where possible and be interconnected by bushed sleeve floor penetrations extending 1" above the floor
- Be interconnected horizontally at minimum of every three floors with a cable tray above suspended ceiling or conduit where ceiling is not accessible, with a run distance not exceeding 295 feet
- Be within 295 feet of cable run distance of the most remote site (multiple closets required where this distance cannot be achieved with one closet)

See BUILDING SERVICES, **BSRV.50.3.1**, Telecommunications for additional technical requirements.

GR.5.8

CUSTODIAL ROOMS

GR - GENERAL REQUIREMENTS

Provide one custodial room for each 15,000 to 18,000 gross square feet, with a minimum of one room per floor. Provide a central custodial room in each building on a level accessible from a service or loading dock entrance, containing a minimum area of 130 square feet to accommodate the following:

- Open storage space for one maid's wheeled cart and one floor machine
- 18 linear feet of shelving 24 inches deep with 14 inches vertical separation
- *3' x 3' floor service pan/sink with drain and three mop holders, with impermeable surface two feet minimum above the sink on any adjacent wall
- *Broom hanger strip or hangers to accommodate a minimum of three brooms
- Space to accommodate two (2) stepladders
- Space for small desk with data/telephone outlet (see exception)
- *Two (2) GFCI type duplex electrical outlets centered 18 inches above the floor in accessible locations (one adjacent to corridor door)
- *Motion detector switch for overhead lighting fixture
- *Water resistant flooring with a floor drain with a 1/4-inch per foot floor slope to the drain throughout the room

Exception: When agreed by housekeeping minimum area can be 100 square feet.

Trailers and other custodial rooms shall accommodate 20 square feet of open floor space, 8 linear feet of shelving 24" deep with 18 inches vertical separation (not exceeding 7' -2" above the floor to the top shelf), and the above asterisked items excluding service pan/sink.

See BUILDING SERVICES **BSRV.30.4.4**, Distribution, General Exhaust.

GR.5.9 RECYCLING ROOMS

Each floor of new construction or significant renovation shall provide for paper recycling in moveable storage (provided by the University) and for aluminum can recycling located for the convenience of the occupants. Additionally, the Project Manager will coordinate with the Office of Facilities Management Recoverable and Disposable Resources to provide such additional space requirements as determined suitable for the tenants and/or functions of the project for plastics, glass, cardboard or other materials.

For programming space and design, space allotment shall provide for the following:

- 60 to 80 square foot supply room near or adjoining new loading docks (to be equipped by others) with motion detector light switching.
- minimum of one (1) floor space 16 inches by 52 inches to accommodate moveable paper storage shelving in each departmental or functional area
- minimum of one (1) floor space 24 inches by 24 inches to accommodate aluminum storage containers, provided by others

GR.5.9 (continued)

- such other floor space as determined applicable to the tenants and/or function of space in the specific project

Paper storage is preferred in copy room. Used beverage container storage is preferred in vending, lunch or kitchen areas. These storage areas shall be handicapped accessible.

GR.5.10 BUILDING DEDICATION PLAQUES

Certain building information is to be incorporated in a standard plaque to be installed on the facade of all new buildings, additions with major entrances, and major renovations per criteria determined by the Architect for the University.

Architect/Engineer shall accommodate plaques in the design. While remaining subject to criteria determined by the Architect for the University, examples in Figure GR.5.10 are included for reference only.

Project Manager shall establish the physical size and material requirements as coordinated with the Office of the Architect for the University.

The University shall procure and install the plaque.

Unless approved by the President, building identification is not to be included in the fabric of the building, such as in a cornerstone, engraved stone, or surface mounted lettering.

GR.6 SITE AND SITE PLANNING REQUIREMENTS

GR.6.1 SITING AND RELATIONSHIP TO CONTIGUOUS SITES

Approved precinct studies/criteria developed by the Office of the Architect for the University shall be incorporated into building and site design.

No building roof and sky silhouette in the Central Grounds area, the Health Systems precinct, or readily visible on a line of sight with the Rotunda shall rise higher than the visual spring line of the Rotunda dome (elevation 631.75 feet above sea level).

In all other areas, except the Health Systems precinct Center, no buildings shall be more than 60 feet above the average building exterior ground level.

Efficient and safe vehicular access, parking and service traffic shall be achieved, avoiding conflicts between vehicular and pedestrian traffic.

Provide adequate accommodation for emergency access for fire, ambulance, police and service vehicles; including access for policing the building perimeter and pedestrian paths.

GR.6.2 BUILDING MATERIALS

In consultation with the Architect for the University, the Architect/Engineer shall incorporate building materials meeting the design criteria provided by the Architect for the University. The Project Manager will coordinate presentations to the Architect for the University.

The use of traditional red brick with buff mortar for exterior walls, broad white trim at the eave line of structures, and sloping slate or metal roofs shall be applicable to all buildings in and around the Central Grounds. Sloping roofs are applicable to all buildings on University Grounds or at the University of Virginia College at Wise.

GR.6.3 SITE INVESTIGATION

The Architect/Engineer shall not rely on University records pertaining to site conditions. Such available documentation from the University is not guaranteed to be accurate. In coordination with the Project Manager, the Architect/Engineer shall determine any site investigation, including underground utilities and/or structures, warranted to reasonably prevent conflict or unforeseen project cost.

GR.7 SCHEDULING AND CONSTRUCTION CONSTRAINTS

GR.7.1 ARCHITECT/ENGINEER RESPONSIBILITY

In coordination with the Project Manager, the Architect/Engineer shall identify all scheduling and construction constraints. Particular consideration is warranted for projects in or around areas of healthcare facilities, research laboratories, and classrooms.

As appropriate, construction documents shall identify requirements for weekend or after normal hours for disruptive work.

The Architect/Engineer, in coordination with the Project Manager, shall incorporate specific requirements of the Joint Commission for Accreditation of Health Care Organizations (JCAHCO) concerning construction in occupied patient care facilities. These owner-initiated measures require contractor actions related to Interim Life Safety Measures and Environment of Care, including Infection Control Risk Assessment. Facilities Management Directive 723A, Infection Control for Construction, describing required processes is available at Internet website link <http://www.fm.virginia.edu/fpc/Links.htm> under FM Directives.

GR.7.1 (continued)

The Architect/Engineer, in coordination with the Project Manager, shall determine and convey in the contract documents the limitations, availability or lack thereof for construction staging, site access, construction trade vehicle parking. Parking for contractor's employees on University premises typically is not available, except permit parking arranged with the University Department of Parking and Transportation at the Contractor's expense.

GR.7.2 NOISE, VIBRATION AND DUST

Noise, vibration and dust in health care facilities, research facilities, academic instruction facilities and housing facilities shall be minimized in buildings that are occupied during construction. The Project Manager will provide and approve specified provisions to minimize both hazard and inconvenience. See GENERAL REQUIREMENTS, GR.7.1 above.

The Architect/Engineer in coordination with the Project Manager shall identify all such requirements in the bid documents, including, but not limited to:

- Designated hours, off-hours or days for the execution of work disruptive to occupied areas.
- Dust barriers for all renovation projects where tenants occupy portions of the project area or adjoining areas.
- Exhaust fans where determined applicable by the Architect/Engineer and/or the University Office of Environmental Health and Safety. This may be a critical application for health care patient areas.
- Procedures for stopping work when requested for valid reasons.

Dust barriers shall be located to maintain required exitways. When blocking an exitway is required, alternative exiting will be provided.

GR.8 POLICIES FOR CONSTRUCTION

GR.8.1 CONSTRUCTION POLICIES

Architect/Engineer shall include the following policies in the bidding and construction documents: Where asterisked, provide the language "Violators may be subject to University disciplinary action up to and including removal of and prohibition of further project involvement by the offending person(s)."

GR.8.1.1 Abusive And Offensive Language*

The use of abusive or offensive language, or gestures, in dealing with members of the faculty, staff, student body, visitors to the University, and contractor personnel is unacceptable behavior at the University of Virginia.

GR.8.1.2 Sexual Harassment*

The University of Virginia is committed to providing a working and educational environment for all faculty, staff, students and visitors, which is free from sexual harassment. This policy is applicable as well to personnel of the Architect/Engineer and Contractors under contract on University premises.

Sexual harassment is any form of conduct, whether verbal, visual, physical or emotional, which is threatening or harmful to a second party of another gender; or so perceived by a third party.

GR.8.1.3 Drug Use And Alcohol

In addition to criminal penalties for the use of drugs or alcohol on University property, violators may be subject to University disciplinary action up to and including the removal of and prohibition of further project involvement by the offending person(s).

GR.8.1.4 Smoke-Free Workplace*

Smoking in University of Virginia buildings is prohibited except in University designated smoking areas.

GR.8.1.5 Builder's Risk Insurance

For new construction the requirements for builder's risk insurance is established by the General Conditions of the Construction Contract. For renovation projects the Contractor will provide builder's risk insurance in the amount of the construction contract per established Supplemental General Condition, Section 12, per website <http://www.fm.virginia.edu/fpc/Links.htm> for HECO forms with a link to <http://www.forms.dgs.virginia.gov> for CPSM/ DGS CO forms. The University of Virginia will provide insurance on the remaining value of buildings under renovation.

GR.8.1.6 Conflict Of Interest

The Commonwealth of Virginia has established rules of personal conduct and standards of acceptable work performance for its employees. Those standards include a policy regarding Conflicts of Interest that apply to anyone involved in procurement of goods and services.

Architect/Engineers and Contractors shall assure that nothing they do contributes to a conflict of interest, or the appearance of such conflict, by a University employee; including, but not limited to, the offering of gifts, travel, etc.

GR.9 BIDDING REQUIREMENTS AND PROCEDURES

GR.9.1 CONSTRUCTION DOCUMENTS

Architect/Engineer shall be responsible for reproduction and distribution of bid documents to bidders. For “on-demand” or “make-buy”, and Facilities Management personnel constructed projects, Architect/Engineer shall be responsible for reproduction only and the University shall distribute the documents.

Architect/Engineer shall determine the appropriate but non-excessive deposit to charge those requesting bid documents. Charges for packaging and shipping as agreed by the Project Manager shall be stated in Notices of Invitation to Bid. There are no deposits associated with “on-demand” or “make-buy” bidders.

The Architect/Engineer shall determine, in accordance with stated requirements in the bid documents, and make appropriate refunds, crediting the non-refunded amount to the University of Virginia on invoices for architectural/engineering services for the subject project.

The construction documents shall state that the University shall provide a reasonable number of sets of contract documents, and that no guarantee is made as to the completeness of returned bid sets given to the successful Contractor.

GR.9.2 SEPARATE CONTRACTS AND OWNER FURNISHED PRODUCTS

Under the direction of, or in conjunction with, the **University Project Manager** the Architect/Engineer shall establish any work to be provided under separate contract.

The work on these separate contracts will proceed in conjunction with the execution of the contract for construction. The Contractor shall coordinate the work of the separate contracts in accordance with Section 10 of the General Conditions.

The Architect/Engineer shall coordinate and identify owner furnished products in bid/construction documents. Owner furnished products may include trash receptacles (SITEWORK **SW.20.10**), type 1 bollards (SITEWORK **SW.20.11.1**), elevator telephones (BUILDING SERVICES **BSRV.10.1**), and emergency telephone assemblies (SITEWORK **SW.20.8**). Research laboratory casework and/or equipment may be owner furnished. Bid/construction documents shall specify when these items are owner installed or contractor installed.

GR.10 CONSTRUCTION REQUIREMENTS AND PROCEDURES

GR.10.1 ARCHITECT/ENGINEER RESPONSIBILITY

The General Conditions of the Construction Contract (G.S. E&B Form CO-7, 2004 edition, (06/04) are applicable to all construction projects for the University of Virginia. The following is a checklist of items that may be required in Division 1 of the construction documents:

- Beneficial occupancy
 - Blasting
 - Clean up activities
 - Conduct of the work
 - Construction barriers
 - Construction road use
 - Construction parking
 - Dust, fumes and vapor control
 - Field offices
 - Fire protection during construction
 - Noise-restricted hours
 - Project signs
 - Operation and shutdown of utilities
 - Project close out
- Requests for information
 - Separate contracts
 - Site limits and access
 - Sound limitations
 - Submittals
 - Substitutions
 - Temporary coverings
 - Temporary enclosure, heating
 - Temporary facilities and services
 - Temporary hoists and chutes
 - Temporary storage
 - Temporary utilities
 - Temporary use of elevators
 - University excavation permit

GR.10.2 CONSTRUCTION BARRIERS

The Architect/Engineer in coordination with the Project Manager shall provide specific direction in the construction documents regarding the provision of barriers for site safety barriers, dust control, fume and vapor control, and noise control for new and renovation construction. See GENERAL REQUIREMENTS **GR.7.2**, Noise, Vibration and Dust.

Construction dust barriers shall be constructed of non-combustible rated materials.

For construction site enclosure see SITEWORK **SW.1.3**. Construction fencing shall be erected prior to the beginning of on-site construction and shall not be removed until the beginning of finish grading and after the building is secure from unauthorized entry.

GR.10.3 CONSTRUCTION PROCEDURES

The University accomplishes construction by publicly advertised competitive bidding procedures under established provisions of the Higher Education Capital Outlay Manual or Construction and Professional Services Manual.

When determined under established provisions, construction can be achieved by design-build, construction management procedures, or competitive negotiation of contracts. Competitive negotiation, under provisions of the State Procurement Act, is limited to construction contracts of \$500,000 or less.

Construction by “on-demand” or “make/buy” predetermined contractors is limited to non-Capital Outlay projects with total project costs of \$500,000 or less, inclusive of fees, project management, work by owner and other project costs). At the University’s discretion Facilities Management Renovations Division may also bid “on-demand” or “make/buy”.

GR.10.4 REQUESTS FOR INFORMATION

Requests from the Contractor to the Architect/Engineer during construction shall be via the University of Virginia’s **Request for Information (RFI)** form. See Facilities Management Division 1 Specification Guidelines available from website <http://www.fm.virginia.edu/fpc/Links.htm>.

GR.10.5 PRECONSTRUCTION MEETINGS

A preconstruction meeting, scheduled by Facilities Planning and Construction, shall be held at a convenient University location prior to commencement of construction activities. The meeting will be conducted to review the following responsibilities and personnel assignments:

Attendees: the Project Manager, the Construction Administration Manager, the Architect/Engineer, the Contractor, the Contractor’s Superintendent, representatives of the major subcontractors (including Division 17 automated building systems subcontractor), manufacturers, suppliers and other concerned parties. Attendees shall be represented by persons familiar with and authorized to act on matters relating to the work.

Agenda: Construction Administration Manager will conduct the meeting during which attendees will discuss items of significance that could affect progress including, but not limited to:

- Application for payment processing
- Blasting authority and procedures
- Building access routes
- Change order procedures
- First aid
- Housekeeping
- Inspection and testing
- Minimum protective clothing
- Neighborhood impact and contact

GR.10.5 (continued)

GR - GENERAL REQUIREMENTS

- Communications and correspondence
- Construction schedule
- Contract document distribution
- Critical work sequencing
- Equipment deliveries and priorities
- Excavation permits
- Existing construction protection
- Field decision procedures
- Noise and noise abatement
- Parking
- Permits, other than excavation
- Personal conduct and standards
- Progress photographs
- Record document requirements
- Responsible personnel designation
- Schedule of pay request submittals
- Utilities interruptions

GR.10.6 SUBMITTALS

Division 1, General Requirements shall identify all required submittals by the Contractor. References to submittal requirements in major division, such as Mechanical or Electrical, may be referenced as, for example, "Mechanical - see Division 15010". Specifications should state that the listing does not preclude unlisted submittals that are warranted for coordination or proposed by the Contractor in accord with Section 24 of the General Conditions for the Construction Contract.

In addition to those required by the Contractor, the Contractor shall deliver two (2) copies of all approved, and rejected, submittals to the Construction Administration Manager.

GR.10.7 PROGRESS MEETINGS

Progress meetings shall be scheduled semi-monthly, at a minimum, on Capital Outlay projects except where it is determined that more frequent meetings are essential to the nature of the project. On non-Capital Outlay projects, the number of site visits shall be determined in the Architect/Engineer contract.

The Architect/Engineer shall preside at all progress meetings, keep the minutes of the meeting, and distribute copies of written minutes within two working days of the progress meeting.

On a routine basis, as part of progress meetings, the Architect/Engineer shall check the as-built marked up set of documents to assure that the Contractor is recording changes to the documents as changes occur.

GR.10.8 BILLING INSTRUCTIONS

The Contractor shall submit monthly billings to the Facilities Planning and Construction Fiscal Technician or, for University of Virginia Health System projects, the Facilities Planning and Construction Budget Analyst on the agreed schedule determined at the Preconstruction Meeting, to assure that they will be submitted in correct, complete and signed form for processing by the 5th of each month.

Three (3) completed copies of the Department of General Services G.S. E&B Form CO-12 (current edition) Schedule of Values and Certificate for Payment shall be submitted. Reviews and approvals shall be by the designated representative of the University and the Architect/Engineer. The use of a computer-generated duplication of the form is acceptable. Forms may be photocopied, with original signatures on all copies.

GR.10.9 EXCAVATION PERMITS

Construction documents shall incorporate requirements that contractors are to call MISS UTILITY 72 hours prior to all planned hand or machine excavation, and to submit the University of Virginia - Facilities Management Utilities - Distribution Division **Request for Excavation Permit** within two hours of notifying MISS UTILITY. (See APPENDIX DIV 1, DIVISION 1 SPECIFICATIONS, **01015**.) Drawings must be submitted with the permit request per the requirements on the form. Excavations of any depth are to be included.

The excavation permit will be issued when all known underground utilities have been identified, located and field marked. The permit is applicable to and valid for University of Virginia property only. Field location of utilities is valid for fifteen (15) calendar days from the date of issuance. Otherwise, after fifteen (15) calendar days, a new permit will be required to verify locations and markings.

The applicable utilities systems include: electric, telephone, street lights, coaxial and other cable systems, water, steam, chilled water, natural gas, sanitary sewers, storm sewers, and compressed air. Construction documents shall indicate that if an unmarked line is encountered or utility line damaged, the Contractor must contact the Facilities Management Trouble Call Line 924-1777 (24 hours per day)

In addition to University of Virginia requirements, excavation permits may be required from the City of Charlottesville or Virginia Department of Transportation for excavation or other work performed within the right-of-way of streets and sidewalks maintained by them. Clearly identify such streets and/or sidewalks on the construction documents, and shall clearly affix responsibility to the organization, individual or group to perform excavations.

GR.10.10 BLASTING

Construction documents shall prohibit blasting, except when the University of Virginia has determined that property or activities will not be adversely damaged.

When blasting is authorized on an agreed schedule, approval of the University of Virginia Fire Safety Director, the Life Safety Division of the Charlottesville Fire Department and/or the Albemarle County Fire Department is required.

GR.10.11 UTILITY AND BUILDING SYSTEM OUTAGES

The procedures for requesting and scheduling of utility and other building system outages shall be coordinated with the Construction Administration Manager. Specifications shall incorporate the requirement of ten working days for approval of outages (five working days in University of Virginia Health Systems projects). The Director of Utilities and Operations approves outages for the academic University Grounds. The Director of Health Systems Physical Plant approves outages for Hospital and Medical School facilities.

Outage approvals in less than ten (or five) working days will be processed as required contingent on the essential notification of end users that may require rescheduling of academic activities, research activities or healthcare services. When off-hour outages are required, the contract documents shall stipulate specific requirements.

GR.10.12 REMOVAL OR ABANDONMENT OF UTILITIES

Removal or abandonment of existing utilities shall be coordinated with the Facilities Management Utilities Department through the Project Manager. Where existing underground utilities are to be taken out of service, they shall be removed, unless the Facilities Management Department of Utilities approves the abandonment of underground utilities.

Contract documents shall instruct the Contractor of requirements and/or procedures as coordinated during design. When underground utilities are approved to be abandoned in place, they are to be capped and filled with flowable fill. The Architect/Engineer shall assure that abandoned utilities are noted on the record documents as "abandoned".

GR.10.13 TEMPORARY UTILITIES

The Contractor shall provide, maintain, and remove all required temporary utilities unless directed by the Project Manager.

GR.10.13 (continued)

The cost of utilities used in new construction activities, unless otherwise directed by Facilities Planning and Construction, shall be included in the scope of the project through beneficial occupancy. Temporary utilities shall be metered with revenue grade meters.

The University at no cost, unless otherwise directed by Facilities Planning and Construction, shall provide the cost of utilities used in renovations, to the contractor. Specifications shall state the contractor will be subject to charge for abuse or excessive use quantities of utilities and/or bear the cost of installing revenue grade metering.

GR.10.14 MATERIAL AND EQUIPMENT ON SITE

Specifications shall state that all materials and/or equipment stored on site shall be adequately protected from weather, theft, etc.; and that the University of Virginia is not responsible for losses.

GR.10.15 TESTING AND LABORATORY SERVICES

The University of Virginia will employ and directly fund on-site testing and applicable laboratory consulting services independent of the Contractor. The frequency of testing will be determined by applicable codes, and/or construction documents if a greater frequency is warranted, and will include such items as soil compaction tests, moisture tests, soil samples, proof rolling and concrete. Retesting reconstructed work originally rejected for failed tests or resulting from delays caused by the Contractor shall be at the Contractor's expense.

GR.10.16 PRE-INSTALLATION CONFERENCES

A pre-installation conference shall be conducted at the site prior to each construction trade activity requiring coordination with other construction. The Installer and Representatives of manufacturers and fabricators who are involved in or affected by the installations shall attend the conferences. The Contractor shall advise the Construction Administration Manager and the Architect/Engineer of scheduled pre-installation conference dates. See BUILDING SERVICES **BSRV.1.11.2**, Submittal Review and Construction Phases for specific requirements.

The pre-installation conference shall be used to review the progress of other construction activities and preparation for the particular activity under construction, protection of existing construction and the protection of the completed installation.

In patient care facilities this includes JCAHCO requirements addressed in **GENERAL REQUIREMENTS, GR.7.1.**

The Contractor shall record significant discussions, agreements and disagreements of each conference, including scheduling, and shall provide a record copy to the Construction Manager and the Architect/Engineer.

GR.10.17 PROGRESSIVE CONSTRUCTION CLEANING

The Contractor shall remove all waste materials, debris, and rubbish from the site and construction areas weekly, or more frequently if needed, and dispose of such material off site in accord with all applicable regulations. No open fires or open barrel fires for debris of any kind are permitted on University property.

GR.10.18 CHANGE ORDERS

In addition to the change order requirements of the Higher Education Capital Outlay Manual (HECOM) or Construction and Professional Services Manual (CPSM), and the General Conditions of the Construction Contract (see HECOM or CPSM); the Architect/Engineer shall incorporate procedural requirements for work at the University in the construction documents as directed by the Project Manager.

These University requirements include documentation to back up change order costs; and a Board on Changes review procedure (see APPENDIX CA, CONSTRUCTION ADMINISTRATION), in which the Architect/Engineer is a participant, for significant change orders.

GR.10.19 RECORD DOCUMENT KEEPING

All projects for the University require record documents based upon Contractor provided as-built conditions (drawings and specifications) by the Architect/Engineer of record. (See Higher Education Capital Outlay Manual or Construction and Professional Services Manual.)

Waivers of this requirement are prohibited without documented written approval of the Director Of Facilities Planning and Construction.

Record Documents shall include automatic fire suppression system drawings as approved by the Bureau of Capital Outlay Management or Regional State Fire Marshal's office as applicable. These documents shall indicate any changes during construction as approved in the final inspection.

GR.11 PROJECT CLOSE-OUT REQUIREMENTS

GR.11.1 FINAL CLEANING

Final cleaning shall include, but not be limited to, cleaning in compliance with manufacturer's instructions, interior and exterior glass, mirrors, floors, other interior finishes, mechanical and electrical equipment, removal of stains and foreign substances exposed to view; vacuuming of clean soft surfaces; polishing of transparent or glossy surfaces, and other such requirements leaving the project area in a first class finished condition.

The University will be responsible for resilient floor stripping and finishes.

In patient care facilities this includes JCAHCO requirements addressed in GENERAL REQUIREMENTS, GR.7.1.

GR.11.2 SITE RESTORATION

The Contractor shall restore all existing gravel areas, paved areas, walks, drives, storm drains, etc. to their original condition.

The Contractor shall restore all grassed or turf areas disturbed by construction activities, including areas used for access, staging, parking and storage in accordance with established requirements in the construction documents. General instructions to restore grassed or turf areas to original condition are not acceptable. Copies of the University's Turf Restoration Specifications are available through the Project Manager.

When the Project Manager directs that finish landscaping is to be accomplished by separate contract, the construction documents shall include specific requirements for leaving the site ready for landscaping.

GR.11.3 PROJECT RECORD DOCUMENTS

The University shall receive one set of mylar reproducible record drawings, a complete set of AutoCAD documents in .dwg format, unbound original specifications, and electronic .doc files of specifications for all projects. The Architect/Engineer shall arrange with the Project Manager for the transmission of the record documents to the Facilities Management Resource Center.

The University shall accomplish the microfilming of documents to meet Commonwealth of Virginia requirements.

GR.11.4 OPERATION AND MAINTENANCE MANUALS/DATA

The Contractor shall submit all operations and maintenance manuals to the Architect/Engineer for review and approval, prior to the final demonstration of equipment. The approved manuals shall be submitted to the Construction Administration Manager prior to final demonstration of the equipment.

For new buildings or major renovations, the Contractor shall provide a sturdy constructed maintenance manuals cabinet to be located in a visible, secure location sized to contain a complete set of operations and maintenance manuals.

Four complete sets of manuals shall be delivered to the Architect/Engineer for submission to Facilities Management through the Construction Administration Manager. Each set of manuals is to be in individually bound volumes based upon the following standard specification headings:

Divisions 1-13	Architectural
Division 14	Elevators, Escalators & Lifts
Division 15	Heating, Ventilation and Air Conditioning
Division 15	Fire Suppression and Detection Systems
Division 15	Plumbing
Division 16	Electrical
Division 17	Building Automation System

Manual binders shall accommodate 8.5 by 11-inch pages, be stiff-backed, plastic or canvas covered three ring type loose-leaf binders with the project name and division permanently lettered on the spine. When larger pages are necessary, they shall be neatly folded to 8.5 by 11 inches as pullouts or foldouts.

Each copy of the manuals shall include:

- Names, addresses and trades of all applicable subcontractors, manufacturers and equipment.
- Complete maintenance instructions from the manufacturer's local representative for each item of operable equipment, as well as the name, address and telephone number of the installing subcontractor.
- Catalog data on all items submitted and other pertinent data such as mortar colors, brick selected, and colors selected for all finished materials and fabrics.
- Catalog data on all furnished plumbing fixtures, valves, water heaters, heating equipment, light fixtures and similar equipment and systems. Manufacturer's promotional literature is not acceptable.
- Manufacturer's name, model number, service manual, spare parts list, and descriptive literature for all components used.
- Preventive maintenance instructions and schedules for all major equipment
- List of most frequently encountered breakdowns and repairs/trouble shooting manual(s)
- Instructions for starting and operating the actual system as installed
- Detailed one-line, color-coded wiring diagrams

(GR.11.4 continued)

Schedules on Contractors As-Built drawings and subsequent A/E's record drawings shall indicate the actual make, model, and size, for each piece of equipment used.

GR.11.5 SPARE PARTS AND MAINTENANCE MATERIALS

Spare parts and maintenance materials shall be turned over to the Construction Administration Manager at final inspection. Keys other than those provided by Facilities Management (see INTERIORS INT.10.2.2) shall be delivered to the Construction Administration Manager at the final inspection. Construction documents shall state these requirements.

GR.11.6 PREVENTIVE MAINTENANCE SYSTEMS EQUIPMENT LISTS

The Contractor shall furnish a data sheet inventory of all installed equipment and building components to include elevators, fire protection systems, fire detection systems, pressure vessels, emergency lighting, emergency electrical generators, monitoring systems, electrical, HVAC and refrigeration, roofing, water and sewer, heat distribution, carpentry, plumbing for the preventive maintenance system. The Contractor shall provide all special tools and special test equipment required for maintenance.

GR.11.7 WARRANTIES AND GUARANTEES

All warranties and guarantees shall be drawn in the name of the Commonwealth of Virginia and the Rector and Board of Visitors of the University of Virginia, and shall be delivered by the Architect/Engineer to the Construction Administration Manager.

The Contractor shall submit warranties and guarantees in one commercial quality, hardback binder sized to accommodate 8.5 by 11 inch pages, with a table of contents and two (2) copies of each warranty or guarantee. Marked tabs shall separate warranties and guarantees in sections following the order of the specifications.

GR.11.8 BENEFICIAL OCCUPANCY/FINAL INSPECTION

See BUILDING SERVICES BSRV.1.11, Commissioning.

Minimum conditions necessary to meet the "beneficial occupancy" stage of a project include:

- The building(s) must be inspected and accepted, on both interior and exterior, by the Project Manager, Construction Administration Manager, and Architect/Engineer.
- Exterior lighting shall be operational.

GR - GENERAL REQUIREMENTS

(GR.11.8 continued)

- Any continuing construction activity on the balance of the project, including equipment and vehicle access, shall be identified on a list.
- Exposed earth adjacent to buildings and walkways serving buildings shall be graded and protected to prevent erosion.
- Trash receptacle pads shall be in place and accessible to collection equipment.

The Contractor is responsible for the final inspection held in the presence of the Project Manager, the Construction Administration Manager, and the Architect/Engineer. The responsible Facilities Operations or Health Systems Physical Plant Zone Maintenance Supervisor shall be a participant.

The Division of Engineering and Buildings (DEB) requires an inspection on Capital Outlay projects by a State representative and/or delegated University Assistant State Building Official personnel, and a representative of the State Fire Marshal. The Project Manager or Construction Administration Manager will coordinate this inspection(s) as determined with the Architect/Engineer after all punch list items have been corrected by the Contractor.