VALDOSTA STATE UNIVERSITY
PHYSICAL PLANT AND FACILITIES PLANNING

DESIGN STANDARDS

Sixth Edition
(2008)

INTRODUCTION:

This information is provided to set standards for design and materials used on the campus of Valdosta State University (VSU). It is the intent of the University that these standards be followed by consultants who do work on campus. Board of Regents published guidelines shall be followed at all times. TheseDesign Standards have been developed as a result of many years of experience with building systems on the campus. It is the desire of VSU that consultants use these standards for all designs and that they submit any deviation in writing to the Director of Physical Plant and Facilities Planning for approval before being used.

DIVISION 1
GENERAL REQUIREMENTS

The consultant shall prepare all design using AutoCad or compatible software that will operate on the Facilities Planning system and furnish all designs to owner in CD disk form. The consultant shall deliver to the owner two sets of full size prints and specifications before any work is bid.

RECORD DRAWINGS

At end of project, consultant shall prepare as-built drawings consisting of one complete set of bond paper or Mylar prints and one set of prints/specifications with all changes and specifications marked. Consultant will also provide AutoCad compatible as-built CDs of all drawings and specificationsin Word. Consultant will ensure that three sets of operation manuals on all equipment and systems are provided to the owner. One complete set of shop drawings shall also be provided to the owner at close of job.

UNIT COSTS

The consultant shall include in project specifications a requirement of unit costing of all items.

CUSTODIAL

Consultants must provide adequate space for custodial supplies and equipment. It is preferred that at least one custodial closet of 80 square feet be provided for each 15,000 square feet of floor space with mechanical ventilation provided. Provide one 20-Amp ground fault duplex outlet, in each closet. Two closets shall be provided on each level and floor. Each closet shall have a floor basin with hot/cold water provided. Always consider equipment storage. Provide shelving and lighting for each closet.

TELEPHONE, DATA, AND CATV

Telephone, data communications and CATV systems are user utilities and shall be designed to VSU standards. The systems shall include telephone/data combination ports and separate junction box jack for CATV; all cable, conduit and wiring; all electronics required; and complete connection of the facility to the campus systems. All systems shall be reviewed and approved by VSU Telecommunications Office or Auxiliary Services. All telecom rooms shall be air-conditioned.

VENDING

The consultant shall provide adequate provisions for central location of vending machines in the facility. Locations for vending require power and data. Coordinate with Auxiliary

Services Department on locations and requirements. Vending machines may not be placed in hallways in such a manner that they restrict the allowable exit width of the hall.

AUTHORITIES

These design standards have been developed to reduce maintenance times and costs and to improve function on VSU buildings. They may exceed currently adopted building codes so that buildings represent a greater value to the University. Where conflicts arise between these standards and Board of Regents (BOR), the BOR shall be the governing authority. In the event there is a conflict between VSU and the consultant, the consultant shall be held accountable to justify these differences in writing to the Director of Physical Plant and Facilities Planning

CODES

As a matter of policy the architect shall comply with the current, adopted edition of the following at a minimum, and the VSU Design Standards when developing a project for the Board of Regents. Current Editions of these codes are available from the State Department of Community Affairs, Technical Assistance Division.

Mandatory Codes:

- Georgia State Minimum Standard Building Code (International Building Code with Georgia State Amendments)
- Georgia State Minimum Standard One and Two Family Dwelling Code (International Residential Code for One- and Two-Family Dwellings with Georgia State Amendments)
- Georgia State Minimum Standard Fire Code (International Fire Code with Georgia State Amendments)
- Georgia State Minimum Standard Plumbing Code (International Plumbing Code with Georgia State Amendments)
- Georgia State Minimum Standard Mechanical Code (International Mechanical Code with Georgia State Amendments)
- Georgia State Minimum Standard Gas Code (International Fuel Gas Code with Georgia State Amendments)
- Georgia State Minimum Standard Electrical Code (National Electrical Code with Georgia State Amendments)
- Georgia State Minimum Standard Energy Code (International Energy Conservation Code with Georgia State Supplements and Amendments)

Permissive Codes:

- International Property Maintenance Code
- International Existing Building Code

Review time for the State Fire Marshal's office is posted on the departmental website as two to three weeks. Experience has shown that it would more prudent to allow a review time of five to six weeks.

SUSTAINABILITY

VSU prefers inclusion of LEED design elements in University facilities. Where a choice between two alternatives in design is roughly equal in function, cost and aesthetics, the alternative that is aligned with LEED principles shall be selected.

ADVERTISEMENT

All bids shall be advertised using the Georgia State Procurement Web site, http://ssl.doas.state.ga.us/prsapp/. Go to "construction." Advertisement for bids may also be sent to the Dodge Plans Room. Consultant shall pay all costs. All review plans and submittals to the BOR, Commissioner of Insurance and other agencies having jurisdiction shall be made and paid for by the consultant. Consult with VSU Facilities Planning for details.

PUBLIC TELEPHONES

Verify with VSU Telecommunications Office or Auxiliary Services if public telephone service or data is to be provided.

SECURITY SYSTEMS/CCTV

Coordinate all security systems with Campus Police and IT. Existing dormitories are on a card access system and camera. Coordinate with 1Card or Auxiliary Services for specifications. Consultant will provide all conduits for wiring as designated by owner for system installation

TRASH PICKUP / DUMPSTERS

The Physical Plant handles all trash pickup for University buildings. If a central trash storage area or dumpster is to be used, confer with the VSU Assistant Director for Landscape and Grounds on design and placement. When a dumpster is planned to be used, the design must include appropriate off street access to the dumpster by the waste collection service. Design must include screening for the dumpster that is consistent with the exterior design scheme. When a dumpster is not planned in the design, the design still must include provisions for collected trash to be placed while waiting for Physical Plant to remove and access from the exterior to that space by a small truck. The trash holding area could be a room, or a small screened outdoor area that is consistent with the exterior design and landscaping.

INTERIOR TRASH RECEPTACLES

Consultant shall include wall mounted stainless steel trash receptacles to be located in each corridor and entrance to facility that will incorporate pull out liners. Confer with VSU Director of Physical Plant and Facilities Planning on type.

LOOSE EQUIPMENT

Consultant will confer with Director of Physical Plant and Facilities Planning as to types of specialized equipment required for maintenance of facility. This equipment shall include power scrubbers, vacuums, trash receptacles, entrance mats and special equipment necessary for maintenance of facility. Where ice machines are specified as water-cooled these must have plumbing and drain lines.

END OF SECTION

DIVISION 2
SITE CONSTRUCTION

UTILITIES

The following provide utilities on campus:

City of Valdosta, water, sewer
Georgia Natural Gas
Georgia Power Company
Southern Bell Telephone
Mediacom

Water and sewer mains and some gas mains on the main campus are maintained by the Physical Plant Department.

All underground electrical distribution is through a 7200 volt, three-phase concrete duct bank and feeds VSU owned transformers in a loop feed manner. Pad mount transformers meeting BOR regulations are used for all new buildings on the campus.

In cases where there is no VSU owned system at the proposed facility location, Georgia Power Company will provide direct burial in lieu of duct-bank installation. A pad mount transformer will be provided.

Designs will not contribute to run off of rain water. All anticipated storm water run off will be retained on site. Use of open retention or detention ponds is prohibited. Coordinate design for runoff retention with Facilities Planning.

It is the consultant's responsibility to contact and coordinate all utilities for any new facility. Any fees for taps and meters shall be included in the bid specifications.

UNDERGROUND STORAGE TANKS

Emergency generators will not utilize UST's for fuel storage. All generators shall have the units mounted above the fuel storage tank. No underground tank for any fuel will be allowed.

IRRIGATION

Provide lawn and shrub irrigation systems for new buildings controlled by a master controller on a seven-day clock with digital programming for all season use. Controller shall be mounted on outside of building so that it is readily accessible. Hunter products are preferred. All wiring shall be number 14 gauge, direct burial, color coded. Piping shall be schedule 40 PVC. Coordinate with Assistant Director of Landscaping and Grounds.

COORDINATION

Locations of underground utilities shall be coordinated with Physical Plant. The consultant shall confer with Physical Plant for data on informational drawings. The Physical Plant will not be responsible for drawing accuracy but will provide information for general knowledge only. The consultant must locate exact positions of underground utilities.

EXTERIOR BENCHES

All benches shall match Blazer Mall benches on campus. Coordinate with Facilities Planning on size and details.

EXTERIOR TRASH CONTAINERS

Wausau Tile, Inc., combination side ash urn with hooded sentry top, Model TF-1015, container and TF-2090 side ash urn, TF-1405 hooded top.

PAVING / SERVICE ROADS

All road and street construction shall be in accordance with current edition of the City of Valdosta "Standard Specifications for Construction" available from the City Engineer's office. Walks, ramps, and curb cuts shall meet ADA specifications. Provide a 4" PVC sleeve under all sidewalks and roads for future utilities; coordinate with engineering section. All ADA handicap spots shall be van accessible, which is universal on campus.

EXTERIOR SIGNAGE

All signage shall be in accordance with Valdosta State University Sign Standards. All exterior signage shall be coordinated through Facilities Planning. Buildings shall have Aluminum letters as per standards. All new buildings shall be lettered as per existing on main campus. Submit layout for approval to Facilities Planning.

PAVERS / WALKS

Designers shall submit design to Facilities Planning for review and approval. Sidewalks shall be 6" thick to accommodate occasional light utility vehicle traffic.

LANDSCAPING

GENERAL

All landscaping must conform to University standards for exterior maintenance. Coordinate design through the Assistant Director for Landscape and Grounds, located at Plant Operations. All grass areas shall be grassed using centipede sod unless approved by the Assistant Director for Landscape and Grounds. A Native Plant Materials list and VSU Tree Policy are included in appendices of this document. Topsoil shall be natural, friable, fine loamy soil possessing the characteristics of topsoils in the vicinity.

Be sure to include specifications covering the clean up of utility trenches disturbed by new construction to include resodding of all disturbed areas to pre-construction conditions.

All construction areas shall be fenced and secured from the public using 6 foot high metal fence to include plastic privacy screening. All construction areas must comply with State erosion control laws using best management practices for erosion control. Permits are required from Georgia EPD Storm Water Division. Provide for a comprehensive monitoring program. All areas will be restored to pre-construction condition.

Exterior hose bibs shall be installed on the exterior of each new building at 100-foot maximum spacing. Specify freeze proof design, surface mounted with key operation. Do not specify recessed hose bibbs.

Include in specifications that all University grounds are sprinkled and landscaped, and that contractor is to protect owner's underground sprinkler system. All damage caused by construction shall be repaired at contractor's expense. As-Built drawings are required.

END OF SECTION

DIVISION 7
THERMAL AND MOISTURE PROTECTION

WATERPROOFING

Polyethylene plastic sheeting is not acceptable as a moisture barrier beneath concrete floor slabs on grade. Use W. R. Meadows Sealtight membrane, Fortifiber Moistop.

Metallic iron waterproofing or Bentonite is to be used on walls below grade. Do not use asphaltic types of waterproofing.

ROOFING

No single-ply or foam roofing will be accepted on campus. All reroofing projects shall be designed to use modified bitumen systems, preference shall be given to Siplast systems and all flashings shall incorporate the metal clad Veral system. Main Campus buildings must incorporate clay tile roofing into their design. All clay tiles shall be Ludowici Roof Tile, only Spanish, Classic, straight barrel, in red color shall be considered. Installation shall be as per manufacturer's specifications, no deviations will be allowed. No other manufacturer will be considered. All installations must match existing. Stainless steel screws are the preferred method of attachment *in lieu* of copper nails.

All metal flashings shall be 16-ounce copper. No aluminum will be allowed unless approved by Facilities Planning All gutters shall be copper including downspouts. Provide splash blocks.

Standing seam metal roofing, color coated shall be considered in some instances, confer with Facilities Planning for design standards.

Shingles shall be architectural, 30 year, and color to be determined by owner. An ice and water barrier shall be installed on all edges and valleys.

END OF SECTION

DIVISION 8
DOORS AND WINDOWS

DOORS

Doors shall be min 3' wide. All doors and frames shall conform to the Steel Door Institute specifications. The use of knockdown type frames will be coordinated with Facilities Planning. Use wrap frames on block construction and use frames, which do not require special headers but rather standard constructed headers. For block construction coordinate door frame heights to block work.

Wood doors shall conform to the National Woodwork Manufacturers Association specifications. Finish shall be high gloss polyurethane. All doors shall be solid core, rated for opening used. Do not specify wood frames. Red oak and Birch are preferred species for wood doors.

HARDWARE

Door hardware shall consist of locksets, locks, hinges, and associated hardware needed. No concealed vertical rod panic devices shall be allowed. All panic devices shall be rim devices. Finish shall be clear anodized, 26D or shall match existing at each site. Von Duprin 99 series will be used. Keyed removable mullions shall be used on pairs.

Locksets shall be Best, Sargent, Stanley, or Russwin mortise type, seven-pin removable core. Consultant and Campus Lock Shop will develop a keying system and numbering system for all new buildings or rooms. Keying forcylinders shall be Best compatible.

Specifications shall read that the contractor shall furnish complete all door hardware installed and ready to use with a removal construction key cylinder core for each door lock. The contractor will have the lock manufacturer deliver and install at the contractor's expense the permanent door key cylinder cores and keys prior to final inspection. This shall be coordinated with Campus Lock Shop.

WINDOWS

Windows shall be aluminum or aluminum-clad exterior finish painted to match existing painted windows on campus. All glass shall be as specified in National Fenestration Council ratings, SHGC < .35 and U-Factor <.60. Units shall be Low E, double pane, thermal with all frames being thermal broke. Windows shall allow for inside cleaning on top and bottom glass from the inside. Muttons shall be on exterior of glass to simulate true divided lites as per BOR preference for historic exterior treatments.

All fixed glass shall be tempered or plate to match design conditions, ¼" min. Do not use wire glass unless necessary to meet codes.

All wood and metal doors between two corridors, between corridors and classrooms, and between corridors and stairwells shall have a vision panel.

DOOR LABELS

Labels shall be readable on all fire rated frames and doors and shall not be painted over. A solid core wood birch door is the Physical Plant Standard and shall be used on all new installations.

DOOR HARDWARE

All exterior frames and doors must be weather-stripped and insulated. No wood frames are allowed.

Closers shall be LCN 4040 Super Smoothee-type, and closers with delay action shall be used on exterior barrier-free entrances. All closers shall be of the heavy-duty type. Floor and concealed closers shall not be used.

Butt mount hinges are preferred. Pivot hinges are not preferred, their use, when approved by the University will require a pair and one half pivots per door leaf. All doors shall have 1-1/2 pair of hinges. Ball bearing hinges are preferred. Consider use of continuous gear hinge on heavy use doors. Overhead stops shall be used on exterior doors. Floor stops shall be used where practical on interior doors.

New construction shall include push button power-assisted openers at all main and ADA designated entries.

Corridor smoke doors shall include electrified door hold-open devices tied to the fire alarm system.

Interior doors may have integral stop holders, select-hold-open features or kick-down holders except at fire rated doors. Hold open or select hold features are not allowed on exterior doors. Silencers are required on each door, min. three. All thresholds shall be ADA type.

END OF SECTION

DIVISION 9
FINISHES

SUSPENDED CEILINGS

Lay-in ceilings shall be installed using the two-foot grid system only. Do not specify tegular; use only square lay-in installation. Type of grid to be Donn, heavy duty. Panels to be Armstrong or Celotex 5/8" thick, with Class A fire resistance, sag resistance, acoustical rating of 0.55 NRC, and must be non-directional. Access to equipment above ceiling shall be clearly identified at all ceiling areas by use of plastic engraved nameplates attached to ceiling panel. Be sure to reinforce ceiling grid if lights are to be hung from grid.

FLOORING

Flooring materials shall be specified in accordance with the following guidlines.

1. Restroom: Floors and walls shall be ceramic tile.
2. Food Service areas: quarry tile shall be on all floors and base.
3. Laboratories: Floors shall conform to Board of Regents Laboratory Design Standards, Do not use VCT in these areas.
4. Stair treads: Specify rubber treads with rubber risers.
5. Mechanical Rooms: Sealed or painted concrete epoxy finish.
6. Computer Rooms: Raised floor type or at a min. use computer grade carpet.
7. Offices: Shall have carpet with rubber base.

Vinyl composition should be used in general-purpose rooms. Use Azrock, Congoleum, or Forbo colors. Specify rubber 4" base or to match existing. Do not use vinyl. Do specify pre-molded corners.

Use 28 oz. carpet in corridors and dormitories. Specify direct glue down installation methods with special attention to the type glue specified. Confer with VSU Facilities Planning prior to specifying any carpet weight less than 28 oz. for areas other than corridors and dormitories. Do not specify unitary backing. Do specify solution dyed 100% nylon carpet. If you must specify cut pile, remember to use a stiffer backing to meet ADA specifications. Do not specify stretch or tack with padding. Do not specify hatch-loop type carpet installations. Remember to obtain certifications from manufacturer on quality and also certify that carpet meets NFPA-101 specifications concerning smoke and fire spread. Specify vinyl transitions; do not use metal. Never specify dial-up carpet. Use only standard colors and products. VSU does not accept special runs since they cause problems in maintenance and renovation.

PAINTING

VSU uses latex base paints. Duron paint products are used exclusively on the campus and Duron is also the State of Georgia Supplier for all paints. Use Duron for paint of choice. Finish of rooms shall be satin; corridors shall be semi-gloss. Restrooms and high moisture areas shall be semi or gloss. Paint shall have additional mildewcide added at rate of 1.5 to 2 ounces per gallon. Specify block filler for all masonry walls.

Exterior trim color is "Coronado" "Salmon" refer to Facilities Planning for exact color formulation. Exterior stucco color is Dryvit "Prarie Clay" in smooth finish. If refinishing use STO VSU 22354 elastomeric coating.

Consultant shall obtain and supply to owner at end of project, each paint formula for every paint used on the project.

PLASTERING

VSU prefers the "old fashioned" three-step stucco finish over brick veneer. If consultant uses EIFS system color and texture must meet existing. Additional steps must be added to prevent damage to finish within six feet of ground.

WALLCOVERING

Use commercial grade and use adhesive containing mildew inhibitors. All surfaces must be sized for applications. All wallcovering shall be vinyl fabric backed with a Class A flame/smoke rating.

Provide additional seevage at end of job to be turned over to owner.

END OF SECTION

DIVISION 10
SPECIALTIES

TOILET COMPARTMENTS

Specify solid surface plastic partitions. Partitions may be floor or wall mounted. Specify stainless steel hardware. Do not specify steel painted partitions.

COUNTERTOPS

Solid surface countertops to include a front removable screen to cover piping and to meet ADA regulations shall be used.

RESTROOM ACCESSORIES

All design accessories must be capable of accepting supplies from State Contract Supplier. Use jumbo toilet paper roll holders in all toilets Kimberly Clarke model 0961200. Coordinate with Director of Custodial Services for exact product information. Current supplier is: Fulton Paper Co., P.O. Box 43884, 5200 Phillip Lee Drive, SW, Atlanta, GA. 30336, and Model ART-507.

Supply sanitary napkin trash receptacles in all ladies toilet stalls such as Bradley 47-150000. Surface mounted soap dispensers will be used such as GOJO 9034 800 milliliter capacity in Ceramic White finish. Provide surface mount or freestanding paper towel dispenser such as Bobrick stainless steel finish B-262 in all restrooms. Provide a hose bibb and floor drain in all restrooms. Include bookshelves in public restrooms such as Bobrick B298X36. Coordinate with VSU Assistant Director for Campus Services.

INTERIOR SIGNAGE

All interior signage must comply with VSU standard sign design. Contact Facilities Planning for standards. Include a directory and fire evacuation route plan for each floor or building. Building directory shall be aluminum and/or glass lockable with plastic removable letters that can be arranged to suit owner. Size to be determined by building size.

CHALKBOARDS, TACKBOARDS

The University uses Claridge chalkboards, markerboards, and tackboards. All chalkboards and markerboards shall have chalk trays of anodized aluminum. Do not use epoxy to mount boards. We prefer to add additional metal clips all around the board; this allows us to relocate the board. Be sure to include map rails on all boards.

END OF SECTION

DIVISION 12
FURNISHINGS

ACCESSORIES

Clocks in each buildingshall be Primex to match existing system onCampus. Bells will not be included.

FLOOR MATS

Provide walk-off entrance mats at each entrance. Minimum size shall be 3" x 5' for single doors and 4' x 6' for double doors. Do not design recessed mat areas.

WINDOW TREATMENTS

Provide one inch vinylblinds or similar for all windows.

FIRE EXTINGUISHERS

Provide only 10-pound ABC type extinguishers and surface mount cabinets. Special extinguishers may be required in special areas. Where surface mounted fire extinguishers/cabinets occur they must not restrict the minimum allowable exit width required by NFPA

END OF SECTION

DIVISION 14
CONVEYING SYSTEMS

The consultant shall pay special attention to the operation and electrical compatibility of elevator equipment for the specific location and installation. Attention is called to compatibility and phasing / voltage. Operating controllers must be non-proprietary. Proprietary controllers are strictly prohibited.

The following minimum operational characteristics of elevator systems shall apply:

1. Passenger Elevators

Speed:	As appropriate for building height and use
Capacity:	2,500 pounds
Platform:	5 feet 1 inches deep x 6 feet 4 inches wide
Door:	3 feet 0 inches x 7 feet 0 inches

2. Freight Elevators

Speed:	As appropriate for building height and use
Capacity:	3,000 pounds
Door:	4 feet 0 inches x 7 feet 0 inches for freight or for passengers

Doors shall be fully automatic. Passenger elevators shall include a device for placing the doors in the open position when the emergency switch is turned off. A protective device shall be provided to prevent elevator doors from closing on an obstruction. An obstruction shall cause the doors to reopen automatically.

Upon activation of fire alarms, elevator controls shall automatically return the elevator to the floor or level designated by the University. Keyed switches shall achieve security of elevators. All service switches not required for public operation shall be on the University's keying system.

Elevators shall meet all ADA handicap codes including gongs and lights on each floor or level. Interior and exterior control panels shall be in compliance with all ADA codes. Provide emergency hands free telephone and traveling cable to mechanical room for hookup to University's emergency phone system.

Specify all exterior doors to be stainless steel.

Specify Thyssenkrupp, Kone, Schindler or Albany Elevator.

END OF SECTION

DIVISION 15
MECHANICAL

GENERAL INFORMATION

Provide access panels in hard ceiling areas. Panels are not required in lay-in ceilings.

Do not place pumps, telephone equipment, electrical panels or data equipment in custodial rooms.

All heating, ventilating and air conditioning (HVAC) control systems shall be connected to the University's energy management system (EMS), which is Siemens, Landis Division Apogee system. Any new addition to a facility will use Seimens Controls. Any new construction may use Automated Logic Controls or Seimens Controls.

The following utilities, in most cases, can be furnished to the proposed building site from nearby University systems. All costs and work involved with these extensions must be included in the cost of the new facility.

1. Steam is available at all times on the main campus at 50 psi. Consider heat exchangers in new buildings.
2. Water is available to the entire campus from the University's own piping system. Confer with the engineering section for sizes and locations. Be sure to consider new fire hydrants for new buildings. Water pressure averages 50 to 65 psistatic pressure.
3. Sewage lines on the main campus are owned and maintained by the University. City of Valdosta "Standard Specifications for Construction" latest edition will be followed for new sewer and water extensions.
4. Gas mains on the main campus are owned and maintained by the University. All new laterals shall be in accordance with Georgia Natural Gas Company Specifications.
5. Chilled water is available on the main campus. Coordinate design with Physical Plant.
6. Telephone/ electrical, see Division 16.

Be sure to provide adequate training for maintenance personnel for new equipment. A minimum of three instruction manuals should be provided for each piece of equipment as soon as available. Do not wait until end of job to turn over material. We need to review material ahead of final inspection.

Where centralized air conditioning compressors, condensers, and the like are sited at or on a building, an exterior ground mounted location accessible for maintenance purposes shall be provided. Do not place equipment in hard to reach areas including roof-mounted equipment unless provisions are made for access.

MOTORIZED EQUIPMENT

Motors of ¾ horsepower and larger shall be 3-phase, 60 hertz. All motors shall be equipped with permanently lubricated bearings.

All motors specified shall be high-efficiency type, with a service factor of 1.1 or greater. All belt driven equipment shall include selected sheaves and matched V-belts and have expanded metal guards.

Variable frequency drives should be considered as standard on all air handler installations and coordinated with the controls manufacturer.

CHILLERS

The manufacturer on operational levels and noise must certify all new chillers. The University prefers that two chillers be used in lieu of one where large variations in load are anticipated. All new chillers shall have a digital display and be fully compatible with Siemens Controls. Trane chillers are the University's preference.

PIPE LABELS

Provide pipe labels on all mechanical piping not to exceed 10-foot intervals. Use color-coated labels; label all valves using brass tags.

COOLING TOWERS

Design a closed loop type tower that will permit the Chiller to be shut down and the cooling tower to operate as the chilling source during winter days when outside air temperature is at 50 degrees and lower. Prefer a counter flow design. Specify Marley, Evapco, Baltimore Air Coil only. Provide a bypass system so that the chilled water can be diverted past the Chiller. Specify stainless steel design. If two chillers are required, specify two cooling towers to allow for maintenance of chillers during off operation.

DRAINS

Restrooms, custodial closets, vending rooms, and mechanical rooms shall have floor drains. Be sure to design drain primers due to sewer gases. Provide a hose bib in each restroom, mechanical room for wash down of equipment and floors.

TOILETS / URNIALS, SINKS

Preference is given to wall mounted toilets in gang or multi toilet installations. Floor mounted toilets may be used in individual installations. Toilets must provide a flush of not more than 1.28 gallons per flush with no compressed air assist. Urinals must provide a

flush of not more than 0.125 gallon. Kohler, Zurn or American Standard products are preferred.

FAUCETS

Kohler, 7400 Series or T&S Brass shall be used.

HOSE BIBBS

Use Chicago or T&S brass bibs.

WALL HYDRANTS

Use Watts wall hydrants.

VALVES

Hammond or Nibco with full port ball valves will be used. Be sure to isolate each battery of fixtures with valves.

DRINKING FOUNTAINS

Halsey Taylor is the campus standard and shall be used. A double design, high and low, shall be used for accessibility.

FLUSH VALVES

Sloan flush valves will be specified for replacement fixtures as this is the campus standard and the University stocks no other type.

Use HW-Hoffman, ITT, or Domestic condensate units.

Use Bell & Gossett type “SU” heat exchangers.

BACKFLOW PREVENTORS

Backflow preventors will be required on all new water and fire systems to new buildings. Be sure to provide adequate vault size if located outside of building.

CIRCULATING PUMPS

Use Bell & Gossett or Lawlor.

PRESSURE REGULATORS

Use Spence, or Hoffman.

TEMPERATURE REGULATORS

Use Spence, type T-14 temperature pilot or Lawlor.

END OF SECTION

DIVISION 16
ELECTRICAL

GENERAL

Two 4" data, one 2" CATV and one 4" telephone conduit shall be installed from each electrical communications room to the master communications center room in each facility or ladder type rack system.

Data/Telephone equipment shall be located in an air-conditioned space. Provide separate room for this equipment. Do not locate in electrical equipment room.

Two 4" data conduits, one 2" CATV, and one 4" telephone conduit shall be installed from each main communications backboard to 5' outside of building.

Provide a main communications room backboard for each telephone, data, and CATV. The size shall be minimum required for each service. Provide dedicated electrical duplex outlet for each panel.

Provide one data and one voice cable for each location shown for each computer/telephone outlet. Voice and data shall be four pair enhanced category six or higher and voice and data should be interchangeable. The cables may be Siamese type for ease of installation. Terminate cable at jacks on the user end and modular patch panels on the other end. The user outlet shall consist of a dual telephone/data jack combination.

Consultant shall coordinate all design with the University electrical, computer technology, and telecommunications sections. The University must approve all designs before construction is allowed.

Hallways must have 30 amp electrical outlets every 30-40 feet for custodians to use to clean floors. It is recommended that these receptacles be on circuits separate from classrooms to prevent tripping breakers serving those areas.

EXTERIOR LIGHTING

All exterior lighting shall be high-pressure sodium and fixtures shall match existing campus fixtures. Consult with Director of Physical Plant and Facilities Planning for design standards. All designs shall incorporate fixture hoods to eliminate night sky pollution. Make every effort to design fixtures with full cutoff hoods to prevent night light pollution. Do not specify wall washer type fixtures or "Bandit" type spread fixtures for outside use. Completed design should include sufficient sidewalk lighting or other lighting (if not already present) to eliminate dark spots that create unsafe conditions.

INTERIOR LIGHTING

All interior lighting shall be fluorescent T-8 Octron tubes with solid-state electronic ballasts. Preferred fixtures are 2 feet x 4 feet, two tubes with parabolic troffers in office areas and nonglare parabolic troffers in computer rooms. Lighting in classrooms shall be three tube-recessed lighting with prismatic lens. The lighting systems in classrooms shall be dual switched for center bulb, and two outer bulbs creating three lighting levels. Preferred manufacturers are Lithonia, Metalux. Include in each major room design motion and infrared sensors with manual override feature. Dormitory rooms will be supplied with general fluorescent lighting to achieve the appropriate lighting levels and use T-8 Octron tubes with solid–state electronic ballasts. Dormitory common rooms should have fluorescent lighting with motion sensors and manual override feature.

EMERGENCY LIGHTS

Design emergency lighting in residence halls to consist of troffers or equivalent area lighting wired to operate in conformance with NFPA 101 7.9.2.1 continuously with no on /off switch and with battery backup.

Provide typical wall mounted fixtures in all other buildings.

Preferred manufacturers are Lithonia, Metalux, and General Electric.

EXIT LIGHTS

Provide LED type exit lights with battery backup on all exits. No preference.

DISCONNECTS / STARTERS / PANELS

Square D or Cutler Hammer, Westinghouse

CAMERA SYSTEM

On new construction or extensive remodeling, design must include a camera system for exterior of building and main entrances and hallways of interior. Even if the task specifically does not call for the cameras to be installed, the wire runs, conduit, domed camera protection elements must be in place for future installation.

TRANSFORMERS

Primary:

voltage:	12470grd/7200
bil:	95KV
bushings:	600 amp dead break

elbows: 600 amp
fuses: expulsion series D with current limiting
switches: loop-feed/closed transition
tap changer: for de-energized operation
lighting arrestor: under oil/integral
Provide drain, fill, and temperature gauge

Secondary:
voltage: 480Y/277 or 208Y/120
bil: 30KV
bushings 600volt
spades: 2 HOLES ABOVE NORMAL

All transformers shall be mineral oil filled and have adapters to 200 amp loadbreak.
Preferred mfg. G. E., Westinghouse

WIRING

All interior circuit wiring shall be stranded copper THHN type wire. Solid wire is prohibited on motorized equipment connections. VSU prefers all building electrical wiring shall be copper stranded in lieu of solid copper. Grounding shall remain bare solid copper as required by the NEC.

FIRE ALARM SYSTEM

Any new fire alarm system shall be coordinated with the campus standard and shall include the options listed.

1. System shall be able to be connected to the existing campus central monitoring system, which is a Siemens, Landis Division, EDS.
2. System shall connect into any elevator located in building.
3. All remote and annunciation panels shall have LED readout to locate zones or room.
4. The system shall include all computers and read devices to make system complete. Coordinate all system design with the Physical Plant HVAC.

LIGHTNING PROTECTION SYSTEM

All new buildings shall have a loop copper stranded wire grounding system that shall tie to all metal vent stacks and have a solid ground cable to the natural ground. Ground rods shall be driven until no megged resistance is noted. System shall be designed to cover any flat or built-up roof areas.

END OF SECTION

APPENDIX I

RECOMMENDED NATIVE PLANT MATERIALS VSU CAMPUS

Trees
Acer floridanum [*A. saccharum* subsp. *floridanum*, *A. barbatum*] Florida maple
Acer leucoderme [*A. saccharum* subsp. *leucoderme*] chalk maple
Acer rubrum red maple
Carya glabra pignut hickory
Carya tomentosa mockernut hickory
Chamaecyparis thyoides Atlantic white cedar
Fagus grandifolia American beech
Fraxinus americana L. white ash
Juniperus virginiana eastern red cedar
Liriodendron tulipifera tulip poplar [yellow poplar]
Liquidambar styraciflua sweetgum
Magnolia grandiflora bullbay magnolia
Magnolia macrophylla bigleaf magnolia
Magnolia virginiana sweetbay magnolia
Nyssa biflora swamp blackgum
Nyssa sylvatica blackgum
Platanus occidentalis eastern sycamore
Pinus echinata shortleaf pine
Pinus glabra spruce pine
Pinus palustris longleaf pine
Pinus taeda loblolly pine
Quercus alba white oak
Quercus hemisphaerica laurel oak
Quercus lyrata overcup oak
Quercus marilandica blackjack oak
Quercus michauxii swamp chestnut-oak
Quercus stellata post oak
Robinia pseudoacacia black locust
Sassafras albidum sassafras
Taxodium ascendens pond cypress
Taxodium distichum baldcypress
Tilia americana basswood
Ulmus alata winged elm
Ulmus rubra slippery elm

Understory trees and shrubs
Aesculus parviflora bottlebrush buckeye
Aesculus pavia red buckeye
Agarista populifolia [*Leucothoe populifolia*] pipestem
Amelanchier arborea downy serviceberry
Aralia spinosa devil's walkingstick
Asimina parviflora dwarf pawpaw
Calycanthus floridus Carolina allspice
Carpinus caroliniana eastern hornbeam
Cercis canadensis redbud
Chionanthus virginicus fringe tree
Clethra alnifolia sweet pepperbush
Cornus florida dogwood

Crataegus marshallii parsley haw
Crataegus phaenopyrum Washington thorn
Fothergilla gardeni witch-alder
Halesia diptera two-winged silverbell [American snowdrop]
Halesia tetraptera [*H. carolina*] Carolina silverbell
Hamamelis virginiana witch-hazel
Hydrangea quercifolia oak-leaf h.
Ilex opaca American holly
Ilex vomitoria yaupon holly
Illicium parviflorum star anise
Kalmia latifolia mountain laurel
Leucothoe axillaris dog-hobble
Osmanthus americanus wild olive
Ostrya virginiana hop hornbeam
Rhapidophyllum hystrix needle palm
Rhododendron alabamense Alabama azalea
Rhododendron canescens piedmont azalea
Rhododendron austrinum Florida azalea
Rhus glabra smooth sumac
Rhus copallina winged sumac
Serenoa repens saw palmetto
Styrax americana American snowbell or storax
Styrax grandifolia bigleaf snowbell
Vaccinium arboreum sparkleberry
Viburnum obovatum small leaved v. [Walter's v.]
Viburnum rufidulum rusty blackhaw
Zamia pumila [*Z. integrifolia*] Florida coontie

END OF SECTION

APPENDIX II

TREE PRESERVATION AND MAINTENANCE POLICY OF VALDOSTA STATE UNIVERSITY

I. Preamble

As the leading center for higher learning in south Georgia, Valdosta State University recognizes its obligation to preserve and manage an abundance and diversity of trees on campus for the benefit of the public and future generations of students. By its example of environmental stewardship, the University will take the lead in promoting and developing a sound preservation ethic for the region s natural heritage. Included among the many benefits of preserving trees on campus and promoting additional plantings are: (1) improved air quality; (2) noise abatement and temperature amelioration; (3) mitigating the natural processes of water runoff, erosion, and sedimentation; (4) shading and consequently energy savings; (5) education; (6) aesthetics; (7) historical significance, and (8) intrinsic value.

II. Scope

All trees on campus, particularly species native to south-central Georgia, are to be preserved and managed in such a way as to minimize damage and prolong their life. Especially important are stands of mature native trees and native species no longer abundant on campus or in the area. Existing trees should not be removed for merely aesthetic, design, or landscaping reasons. Long-term plans should promote new plantings that will increase the diversity of native species, contain more canopy species, and enhance fall color.

III. Special Management Zones

Special zones on campus established to protect and manage critical, or sensitive, areas of mature trees include the following: 1) the entire stand of mostly mature longleaf pine, between Patterson and Oak streets, stretching southward onto the main campus. This stand, in particular, which pre-dates the settlement of Valdosta and contributes substantially to the unique character of the VSU campus, is especially vulnerable to slight changes in environmental conditions; 2) stands of mature native trees along One-mile Branch, especially near Patterson St.; 3) the mature mixed woodland at north campus bisected by Two-mile Branch; and 4) the dense woodland/swamp west of Sustella Ave. parking lot. Practices to be avoided in these zones include (a) trenching, filling, or other soil disturbances, including unabated erosion; (b) repetitious driving or operation of heavy equipment over the ground; (c) parking of vehicles or heavy equipment or storage

of materials; and (d) paving or introduction of impermeable surfaces on the ground. These and other activities resulting in soil compaction, root damage, and depletion of air and water supply to the roots should be avoided. Also, it must be recognized that thinning of groves, especially pines, increases susceptibility of remaining trees to storm damage.

IV. Preventive Maintenance and Care of Existing Trees

Prevention of tree damage or disease must be an ongoing commitment, particularly of older, still-healthy trees. Such prevention may necessitate pesticide treatment and reconstruction and rerouting of pavement or other physical structures so as to enhance and prolong a tree s vigor and reduce susceptibility to disease and weather damage. When renovation or construction occurs on campus, the drip lines of nearby trees should be cordoned and contractors forbidden to store equipment and building supplies within the cordoned area. The cordoned area should be demarcated by a 4-foot high fence completely surrounding the tree or group of trees and at least ten feet outside the trunk of each tree or the outer perimeter of trunks of the group of trees. Specific language to this effect should be written into every private construction contract on the VSU campus, as should penalties for violating these provisions and required remedial actions to mitigate any losses of trees not approved for removal (see Section VII).

V. Campus Planning to Minimize Tree Loss

As the campus continues to undergo development, special consideration must be given to the design and placement of new buildings to minimize the loss of trees. Landscape aesthetics or design preference should not take precedence over tree preservation. The time to look at existing trees is before siting decisions are made, i.e., during or before the Pre-Design Phase of new projects. Also, landscaping associated with new buildings should be designed to replace as closely as possible the number and the species that were lost to construction so that no net loss of trees occurs. This policy affirms the preservation aspects of the 1999 VSU Master Plan, in which the special management zones herein established in Section III have been identified as Permanent Open Space/Trees and further requires that any new properties added to the campus undergo the same tree-loss minimization planning with regard to new construction.

VI. Prior Consultation Requirement

This policy mandates that the Campus Beautification and Stewardship Subcommittee (CBS) of the Environmental Issues Committee be invited to be involved in all Pre-Design Phase and Design-Phase meetings--involving the VSU Administration, campus planners, state officials, and private contractors during which any decisions can and will be made affecting the fate of campu s trees. This

policy also designates CBS as the consultative body to be integrally involved in environmental, historical, and cultural impacts reviews of proposed campus projects as mandated by the Georgia Environmental Policy Act of 1991 (Georgia Code Title 12, Chapter 16).

Whether due to major or minor construction or renovation, or any other causes, before any individual trees are removed or any plans are finalized for tree removals or for construction or other activities that may result in tree removal or could potentially damage trees, VSU Plant Operations officials and/or an appropriate representative of the VSU administration must seek the consultation and recommendations of the Campus Beautification and Stewardship Subcommittee of the Environmental Issues Committee, except in emergency situations, where imminent damage to property or individuals is involved. In the latter event, the subcommittee is to be immediately notified by e-mail of the action to be taken. Reasons to be considered as valid for proposed tree removals will generally include only the following: (1) prevention of the impending spread of disease by the affected tree; (2) likelihood of imminent damage to property; (3) existence of a threatening safety hazard to individuals; and (4) any unavoidable constraints of construction or renovation that remain after completion of the planning and consultation requirements as specified in Sections V and VI.

VII. Monitoring and Enforcement

The VSU Administration shall ensure that any trees scheduled to be removed after consultation as specified in Section VI be clearly marked a suitable period of time before their scheduled removal and the Campus Beautification and Stewardship Subcommittee be notified and given the opportunity to inspect the marked trees before removal. For any construction projects, the VSU Administration shall periodically throughout the duration of the construction make arrangements for the Campus Beautification and Stewardship Subcommittee to inspect the site and ensure that the protection provisions specified in Section IV are being observed. If they are not being observed, the VSU Administration shall immediately report the failure to the contractor and Georgia State Finance and Investment Commission official. Failure to remedy the problem within one business day will constitute a violation of the contract provisions and trigger assessment of a penalty. Destruction or life-threatening damage to any tree not previously identified for removal in accordance with Section VI will be subject to damages to be paid by the contractor, not out of state funds, into a tree-bank fund to be administered by the Campus Beautification and Stewardship Subcommittee for replanting efforts on campus. We urge the
Board of Regents to determine the dollar amount of damages to be paid by the contractor at the completion of the project, in consultation with a recognized University System of Georgia authority on urban forestry, on a per-tree basis, being equal to the aesthetic, scientific, ecosystem-services or commercial value of the tree(s), whichever is highest. We urge the Board of Regents to ensure that all

contractors for work on the VSU campus abide by this Tree Preservation and Maintenance Policy of Valdosta State University. Willful and/or repeat violations of this policy by any VSU employee will constitute cause for disciplinary action, possibly including suspension or termination, as specified in Section 806 of the VSU Personnel Policies Manual.

END OF SECTION