

GENERAL DESIGN GUIDELINES

PART 1 - GENERAL

1.1 SCOPE:

This section contains general guidelines affecting the design of University of Florida construction. These guidelines are either not covered by the sixteen division CSI format used by these Standards or do not fit easily within just one of the sixteen divisions. The guidelines included in this Section are State or Federally mandated requirements, SUS or University Policies, and/or University conventions or preferences.

1.2 SUPPLEMENTARY UNIVERSITY STANDARDS:

A. GENERAL:

The UF Design & Construction Standards have been established to express the requirements common to all facilities comprising the University of Florida's main campus for the purpose of conveying these guidelines to the Design Professional developing project designs for University construction. To augment these Standards, several of the various University entities responsible for administering University construction have developed supplemental sets of standards to convey requirements that are particular to the facilities they maintain. These standards are attached as Appendixes. Before commencing with project design, the Design Professional is cautioned to confirm with the UF Project Manager that all applicable requirements supplemental to these Standards have been provided.

B. CONFLICTS WITH STANDARDS:

Supplemental sets of standards are not intended to supersede any of the requirements found in the UF Design & Construction Standards. Where conflicts exist in or between these Standards, Appendix, or applicable Codes, the most restrictive requirement shall apply. The UF Project Manager shall be notified in writing and written clarification received before proceeding with any further design or work affected by the conflict.

C. INCLUDED AS SUPPLEMENTAL STANDARDS:

As mentioned in the Introduction, many of the University's various facilities management and/or planning offices have developed their own sets of Divisions 0 and 1 specification sections (generally referred to as "non-technical," or "front-end," specifications) for use on the construction projects they administer. These various sets of "non-technical" specifications are considered to be supplemental standards regardless of whether they are contained within a set of supplemental standards or issued separately.

1.3 ACCESS FOR PERSONS WITH DISABILITIES:

All new construction and major renovations shall meet the needs of our community members with disabilities. All new construction and renovation projects shall comply with the Florida Building Code (Chapter 11, Florida Accessibility Code for Building Construction). For your convenience, Appendix B of this document reproduces a portion of Chapter 11 of the Florida Building Code, and highlights successful standards experienced by the University of Florida in past construction projects.

1.4 **BUILDING AND SITE STANDARDS:**

A new campus building must be designed with all sides having the appearance of being the "front" of the building, with each facade oriented and linked to surrounding campus buildings or features. Several design techniques have been utilized in campus construction to relate new buildings to the surrounding environment and avoid a "back-of-the-building" presentation of any facade. A/E firms undertaking the design of campus facilities should examine the following techniques, which appear on campus, and incorporate them into architectural and site design when appropriate. **Additional guidance is found in the Campus Master Plan Urban Design and Future Land Use Elements.**

A. **BUILDING SITING, ORIENTATION AND LINKAGES:**

Overall, building siting, orientation and linkage should seek to preserve and maintain open spaces; provide access for emergency, service and disabled persons' vehicles; and respect adjacencies to other facilities and the natural environment. Building sites should carefully consider the creation of quadrangles and the relationship to existing buildings and pedestrian pathways to create pleasant and functional open spaces.

There are distinct sectors on campus where definitive architectural and spatial characteristics have been established. The northeast portion of the campus is a designated historic district containing collegiate-gothic style architecture and semi-formal outdoor spatial arrangements. For example, roof peaks on Dauer Hall and Tigert Hall align with each other along the centerline of Union Road and establish visual focal points at both ends of the road. Similarly, the main entrance of Library West is aligned with the axis of the Plaza of the Americas defined by rows of magnolia trees, terminating visually on the central axis of University Auditorium.

Within the historic district, these architectural and spatial relationships are to be maintained and reinforced when undertaking the design of any new construction project. The collegiate-gothic architectural style must be reinforced within this district, though modern adaptations may be acceptable. An example of a modern adaptation, which is successful in this regard, is the Chemistry Lab Building north of Leigh Hall. The use of materials, the building massing, outdoor spatial definitions, arrangement of windows and doors and the delivery areas borrow from surrounding architectural and spatial themes. There is no appearance of any back side to the building and the ground floor presents a pedestrian scale on all four sides of the building.

Other notable campus sectors, which require studied consideration of the surrounding built environment for a new building's siting, orientation and linkages are the southwest cultural complex and the southeast medical complex. In transitional zones, the collegiate-gothic architectural style can be reinforced through modern adaptations. An example of transitional adaptation on campus is contained in the details incorporated into the design of Little Hall located on the far east pedestrian mall section of Stadium Road near SW 13th Street.

Temporary buildings are defined as structures that provide temporary support to programs in need of or in the process of constructing new space. Temporary buildings shall not be located in the core campus as defined in the Campus Master Plan with the exception of those temporary buildings needed during the duration of a construction project. Temporary buildings may be located in the Surge Area, Energy Park, 34th Street Animal Park, Physical Plant complex and IFAS agricultural areas. These buildings should not be sited on important open spaces or conservation lands. Whenever possible, temporary structures should be sited on surface parking lots. These structures may be anticipated for use during a period of 12 months and in no case shall their use extend beyond a period of 5 years.

Parking structures warrant special consideration of location and design. Parking structures

should not detract from the overall visual quality of the campus by virtue of siting directly on street fronts and by their size and character. Incorporating parking structures as part of mixed-use facilities or more judicious siting back from streets and with appropriate landscape screening will help mitigate their visual impact.

B. ARRANGEMENT OF ANCILLARY USES ON THE SITE:

In order to minimize storm damages and also emphasize the design characteristics of buildings, open spaces & full tree canopies, electrical and telecommunication lines should be located underground. The location of transformers or meters of any type on any power pole or hung on the outside of any building is not recommended. These utilities should be placed at grade within the building or in an exterior location screened from public view. Any above-grade utility equipment such as electrical transformers that cannot be reasonably located underground, should be screened from view.

Service areas and loading docks must be sensitive to pedestrian movements and safety, and shall be screened from public view. Within the historic district, examine the archway entrance road into Leigh Hall on Buckman Drive and the loading dock on Union Road serving the Chemistry Research Building south of Leigh Hall. Any required loading docks should be recessed entirely within the building and closed off with rolling overhead doors or other appropriate screens compatible with the building exterior.

C. LAYOUT OF EXTERNAL CIRCULATION:

Parking accommodations are not always required for a project. When parking is provided service vehicles must have access and disabled parking and visitor drop off areas shall be provided. When parking is provided off-site, the project site design must include well developed pedestrian and bicycle amenities linked to the larger non-vehicular circulation network. Bicycle facilities are to be provided on site in accordance with the standards presented in these construction standards.

At least one accessible route complying with 11-4.3 of the FBC (Florida Building Code, Chapter 11, Florida Accessibility Code for Building Construction) shall be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones if provided, and public streets or sidewalks, to an accessible building entrance. The ADA Office will meet with the design team and UF project manager to determine the boundary for each project.

Pedestrian access to buildings must be coordinated with the established network and the location of existing and proposed pedestrian crossings and roadway speed tables. This information should be obtained through the Physical Plant Division and Facilities Planning and Construction.

Whenever a major parking facility is either part of a building project or is an independent project, the Campus Master Plan requires that a traffic impact analysis be performed. Coordinate this with the office of Facilities Planning and Construction. Technical specifications for required parking studies are provided in Section 02500.

D. LOCATION OF OUTDOOR USES

Sites for various outdoor uses are designated in the Campus Master Plan in the Future Land Use Element and the Recreation and Open Space Element. When the siting and design of a building creates an opportunity for a small open space, study the examples found in the interior courtyards of the Entomology/Nematology Building near the Surge Area off Hull Road, or the outdoor spaces between Carleton Auditorium and Grinter Hall in the historic district. Future planned campus expansion and growth shall be balanced with quality open

spaces. The following are important characteristics to consider in the design of new open spaces and natural areas on campus:

- retention of unique or particularly attractive natural features;
- planning for a variety of natural spaces, from large, open lawns or meadows to secluded creek side spaces or natural areas;
- sensitively located seating and bench/table arrangements to enhance areas for study, eating and conversation;
- concise, integrated system of well lit and patrolled "night safety paths" linking main campus entries and night time activity centers to promote personal safety for all users; and consideration for noise in the outdoors.

E. **OPEN SPACES:**

Figures 1-3 Green Space Buffers and Urban Parks and 1-5 Open Space Enhancement Priorities in the Campus Master Plan identifies existing and future significant open spaces in relation to future building sites and transportation facilities on the University campus. When siting a new facility adjacent to any of these areas, the orientation and location shall contribute to the definition and establishment of the open space. The hierarchy of space between any adjacent structures, either existing or planned, shall be stepped down from the larger open space in the form of secondary passages defining access and egress to the principal open space. Secondary open spaces shall also be used for linkages to the broader campus circulation network. Within this context of hierarchies, opportunities to establish localized areas for outdoor study shall be examined and implemented with each new project. Trees and other exterior materials shall be used to provide spatial definition and hierarchy in these areas and along movement corridors.

F. **STORMWATER MANAGEMENT:**

On-site retention and detention facilities for stormwater runoff shall be designed as natural landscape features and integrated into the overall site design to create natural open spaces and wildlife habitat. Retention/detention ponds shall be designed with curvilinear banks and side slopes not exceeding 4:1. Littoral shelves should be created, where feasible, with a 3:1 ratio of area to permanent pool and planted with approved wetland species or allowed to seed naturally. There should be heterogeneity within the basin bottom in order to provide a variety of conditions for plant growth. On-campus examples to study prior to facility design include the rock-lined wet ponds around the Fine Arts complex near SW 13th Street, the wetland system teaching pond in the natural area between the Performing Arts Center and the Entomology/Nematology Building and the pond by the J. Wayne Reitz Student Union. More specific requirements for stormwater management and permitting procedures are presented in the "Utilities Design" paragraph of this section and in Appendix C. More specific requirements relating to the stormwater drainage system are presented in Section 02700.

G. **RETENTION OF NATURAL FEATURES:**

The location and description of existing conservation/preservation areas is presented in the Conservation Element of the Campus Master Plan. Similarly, the location and composition of **Urban Park** open space on campus is presented in the **Urban Design** Element. Development occurring adjacent to conservation/preservation areas shall be carefully designed to minimize impacts and encroachment into the area, and shall consider the use of buffers, landscaping, walls and berms to promote visual, noise and physical separation of these uses.

Any construction of other disturbance of natural open spaces shall include a census of

flora/fauna in the affected area to identify and protect species regulated by applicable state, regional or local authorities. When listed endangered species are encountered, appropriate agencies as identified in the Florida Game and Fresh Water Commission Guidelines shall be consulted for guidance.

State jurisdictional wetlands shall be preserved and buffered in accordance with provisions of the St. Johns River Water Management District. Permitting is handled through the University's Physical Plant Division.

Urban Design Element in the Campus Master Plan offers specific guidance relative to tree preservation and selection of new plants and trees. Section 02900 contains requirements regarding the protection of trees and other vegetation during construction.

H. TOPOGRAPHIC AND SOIL CONSTRAINTS:

There is a topographic balance to achieve on any given project site. That balance is to maintain a relatively flat building site under 5% slope with appropriate drainage contours for engineering purposes, and to maximize topographic relief visually for landscape aesthetics and differentiation in the environment. Greater topographic relief "verticalizes" greenery and thereby gives the visual impression of a more extensive landscaping. Emphasizing slopes and topographic contours helps define and separate places in the same manner as a berm might and establishes landmarks in the environment. Topographic relief is useful in reducing glare and light reflections in the built environment and helps reduce and absorb unwanted noise.

Sites with slopes greater than 5% generally require more earthwork and a greater effort shall be made to balance cut and fill on the site. Designs that call for large amounts of unnecessary grading are discouraged. Sites with slopes of 8% or greater are generally not buildable except in special circumstances where retaining walls or pile footers are used. New construction shall be designed to fit the topography and blend the structure into the site. Finish grading shall reflect smooth transitions between grades and constructed forms. Contours that slope from one parcel across another shall be graded to minimize runoff directly onto lower parcels. All cut slopes shall be rounded at the top to present a softer transition line between constructed and existing slopes. Where slopes are greater than 3:1, retaining walls or special erosion control measures such as groundcover planting beds shall be used.

Site grading shall recognize existing drainage patterns while solving drainage problems that may exist or result from ground plane alterations during construction. Site grading shall be sympathetic to existing land forms while providing appropriate transition of architectural elements to grade. Site grading shall provide for an uninterrupted flow of vehicular and pedestrian traffic through the campus. Sensitive use of site grading can provide aesthetic qualities to the development relieving rigid architectural lines, creating private spaces, screening objectionable views and adding interest and relief to flat sites with little or no natural topographic interest.

That there are several areas on campus with unsuitable soil types for building purposes. These include poorly drained soils and clays which require careful engineering or replacement altogether. The Campus Master Plan soil inventory documents along with maps at the Physical Plant Division contain general soil information, which shall be consulted for preliminary screening. Project planners and designers shall be aware that there are closed landfill sites on campus, some which predate current soil mapping and inventory information. The results of subsurface investigations may disqualify a site for project consideration. Remedial actions may be warranted when a particular site is required to be located adjacent to existing uses. This has proven to be the case in instances of karst geology near the Health Science Center.

Appropriate methods of controlling erosion and sedimentation to minimize destruction of soil resources shall be used during site development such as: phasing and limiting the removal of vegetation; minimizing the amount of land area that is cleared; limiting the amount of time bare land is exposed to rainfall; use of temporary ground cover on cleared areas if construction is not imminent; and special consideration for maintaining vegetative cover on areas of high soil erosion potential (stream banks, steep or long slopes, stormwater conveyances, etc.).

I. CAMPUS SAFETY AND SECURITY:

Safety and security shall be considered. Facility programs and project proposals shall be reviewed by the office of Environmental Health & Safety, University Police Department and the Physical Plant Division, at a minimum. Other expert input is available through various University review committees depending upon the nature of the project.

The following Crime Prevention Through Environmental Design (CPTED) strategies shall be taken into consideration in building projects and safety upgrades:

1. **Natural Surveillance:** A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas and building entrances: doors and windows that look out onto streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; and adequate nighttime lighting.
2. **Territorial Reinforcement:** Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Promoted by features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments and fences.
3. **Natural Access Control:** A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Gained by designing streets, sidewalks, building entrances and neighborhoods gateways to clearly indicate public routes and discouraging access to private areas with structural elements.
4. **Target Hardening:** Accomplished by features that prohibit entry or access: window locks, dead bolts for doors, interior door hinges.

1.5 PERIMETER ARCHITECTURAL TREATMENTS:

Buildings and other facilities designed with frontage on any of the major roads along the campus periphery will conform generally with the guidelines established in **Future Land Use and Urban Design Elements** in the Campus Master Plan. These guidelines address building setbacks, heights, floor area ratios (FAR) and ground area coverage (GAC).

The building setback and height guidelines are not fixed standards for all situations. In developed sectors like the campus historic district, compatibility with existing structural massing, heights and setback patterns shall be considered. There are also considerations relative to existing buildings off-campus, which may face a proposed University facility and affect its architectural treatment.

Perimeter landscape treatments will be developed in accordance with **Urban Design and Future Land Use Elements of the Master Plan**.

1.6 HISTORICAL BUILDINGS:

A. GENERAL:

The University of Florida main campus contains significant historic resources (archeological sites, historic structures and features) that are listed in the National Register of Historical Places. The designation as a historical building or historical site affords these properties special considerations when interior or exterior maintenance, construction, development and landscaping activities are required.

B. POLICY:

In order to fulfill its historic preservation responsibilities under Section 267.061(2), Florida Statutes, the University of Florida has entered into a Programmatic Memorandum of Agreement with the State of Florida Division of Historical Resources. (Refer to Appendix D for a reprint of the Programmatic Memorandum of Agreement) All University maintenance, construction, and development activities shall adhere to the stipulations contained in this Agreement and with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitation, 1983, for any work performed on the following historical buildings:

- Anderson Hall
- Bryan Hall
- Buckman Hall
- Dauer Hall / Arts and Science Building
- Fletcher Hall
- Flint Hall
- Griffin-Floyd Hall
- Infirmery
- Keene-Flint Hall
- Leigh Hall
- Library East
- Murphree Hall
- Newell Hall
- Norman Hall
- Peabody Hall
- Police Department
- Rolfs Hall
- Sledd Hall
- Thomas Hall
- University Auditorium
- Walker Hall
- Ustler Hall / Women's Gym

Repairs and alterations shall not damage or destroy the materials and features, including their finishes that are important in defining the building's historic character.

C. RESPONSIBILITIES:

Facilities Planning and Construction (FPC) is responsible for ensuring University compliance with the Programmatic Memorandum of Agreement (PMofA). Prior to commencing any work affecting the above-listed buildings, University entities (primarily PPD and Housing) responsible for rehabilitation, maintenance, new construction, demolition, and/or landscaping projects affecting these buildings shall review the PMofA and confer with FPC regarding the need for Division of Historical Resources (DHR) review. Routine maintenance activities, as defined within the PMofA, are excluded from DHR review.

1.7 ARCHAEOLOGICALLY SENSITIVE AREAS:

There are certain areas on the University of Florida Campus that have been determined to be of archeological significance and areas that have a high potential for containing archeologically significant items. A map showing the locations of these areas is available for inspection in the PPD A/E Department Plan Room (Bldg. 700) and shall be consulted as the need arises. It is the Architect/Engineer's responsibility to consult this map as necessary and to ensure that construction documents address any concerns that could arise and instruct the Constructor in the appropriate University and State-mandated procedures (refer to Appendix D for relevant procedures) and notifications for protecting archeologically significant items. Conflicts and/or special requirements shall be resolved at the beginning of a project.

1.8 STATE FIRE MARSHAL REQUIREMENTS:

Fire Marshal Requirements can be found at the UF EH&S website (www.ehs.ufl.edu). The following are highlights from that policy.

All new buildings, and any renovation projects determined by EH&S to affect life safety features shall be reviewed and approved by the State Fire Marshal (SFM) before construction can begin. Submission of design documents (at 100% issue only) for approval will be handled by EH&S. SFM approved documents shall be retained in the UF Project File for use during inspections conducted by the SFM's office. After approval, any changes to the contract documents that affect life safety features must be approved by the SFM. Field orders, change orders, or any other changes shall be reviewed by EH&S to determine if SFM review is required.

For major renovations and new construction projects, a 60% and a final inspection are required.

The requirements of the State Fire Marshal (SFM) in the areas of plan submittal and inspection procedures are set forth in the document Guidelines for Fire Alarm Plan Submittals, and in the Memorandum of March 15, 1990, regarding Plans Review Procedures and Requirements. A copy of these documents is provided at the EH&S website: www.ehs.ufl.edu. Arrangements for required SFM inspections are to be handled through the University's Fire Safety Coordinator at EH&S.

1.9 UTILITY DESIGN:

PPD has on file master plans for the various utility systems on campus (fire flow, chilled water plants & distribution, steam, sanitary, irrigation, electrical, storm drainage, energy management & fire alarm network). These plans were developed to assist in planning campus utility expansion & renovation for future facilities as well as upgrading the existing utility systems. Designers of new facilities may consult these studies for information on potential utility impact of new facilities; however, the approval of the PPD Utility Planning Engineer must be obtained before design is finalized.

When planning projects on the University of Florida campus, designers shall use a strap-on flow meter to check waterflow rates for chilled water, potable water and heating hot water. The design must take into account and incorporate the effect of addition/reduction (changes) in load at least two levels up (e.g.: two pipe sizes, two circuit breakers, etc.) demonstrating overall system functionality and capacity before and after project changes.

- A. Fire Water Mains, Chilled Water, Sanitary Sewer, Electrical, Natural Gas, Irrigation, Storm Drainage, Steam: Contact PPD Utilities Planner at (352) 392-1405 for further information.

B. STORMWATER MANAGEMENT:

All stormwater management on the University of Florida Campus, Gainesville shall be in accordance with the University's current stormwater permits from the St. Johns River Water Management District (SJRWMD) and the State of Florida Department of Environmental Protection (FDEP). Consequently, all construction performed on campus shall be in accordance with the University's NPDES Phase II MS4 Generic Permit (FDEP Permit No. FLR045067), the University's Conceptual Stormwater Permit (SJRWMD Permit No. 4-001-0040GC), and, as applicable, either the University's General Stormwater Permit (SJRWMD Permit No. 4-001-15570-3) or one of the University's other SJRWMD stormwater permits that authorize construction within specific areas of the campus. (Copies of these permits are available from the PPD A/E Department.)

To ensure implementation of permit requirements in University construction, the Project A/E shall review the above-mentioned permits, as applicable, and incorporate the stormwater management requirements contained therein into project construction documents. These requirements shall include, but are not limited to, the following items:

1. Turbidity barriers shall be installed at all locations where the possibility of transferring suspended solids into the receiving water body exists due to the proposed work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter, the Contractor will be responsible for the removal of barriers.
2. The Contractor shall select, implement, and operate all erosion and sediment control measures required to retain sediment on-site and to prevent violations of water quality standards as specified in Chapters 62-301, 62-302, and 62-4, Florida Administrative Code.
3. The Contractor shall construct and maintain a permanent protective vegetative and/or artificial cover for erosion and sediment control on all land surfaces exposed or disturbed by construction. This protective cover shall be installed within fourteen (14) days after final grading of affected land surfaces. A permanent vegetative cover shall be established within 60 days after planting or installation.

The Project A/E shall provide language within the construction documents that establishes the Contractor as being responsible for the removal of any sediment, trash, or debris entering the University's stormwater drainage system from the project site.

On the UF Campus, the Physical Plant Division (PPD) is responsible for maintaining the stormwater drainage system and administering the stormwater permit(s) by ensuring University compliance with permit conditions. PPD shall be contacted in all matters affecting stormwater management on the UF Campus and for guidance with the University's stormwater management requirements and permitting procedures. A copy of the University's stormwater permitting procedures for complying with the requirements of the St. Johns River Water Management District is included in Appendix C.

Likewise, a copy of the University's procedures for complying with the construction site stormwater runoff control requirements under the University's NPDES Phase II MS4 Generic General Permit is included in Appendix C.

Stormwater management within the drainage basins of Tumblin' Creek, Hogtown Creek and several depression basins located in the southwest area of the campus is not covered by the University's General Stormwater Permit from the SJRWMD. Instead,

stormwater management provisions in these areas generally require separate permitting by the SJRWMD. Recent development in these areas has been permitted through the SJRWMD and, as the result, new development in these areas generally requires either a new permit, or modification of an existing permit.

For projects within the Hogtown Creek basin, the City of Gainesville-Public Works Department shall be provided the opportunity to review and make comment on the proposed development. The University shall ensure that any potential adverse impacts to the Hogtown Creek Drainage Basin are identified and that stormwater runoff for a 72-hour storm event shall be accommodated in the site design for the development.

Stormwater management and permitting issues concerning University parcels off of the main campus shall be coordinated with the University facility maintenance entity responsible for the parcel and the appropriate water management district.

C. **INCORPORATE LOW IMPACT DEVELOPMENT WHERE PRACTICABLE:**

In order to improve water quality and prevent additional erosion in the University's streams, all projects which impact soil must incorporate the use of Low Impact Development (LID) stormwater techniques where physically, economically, and practically possible. Projects shall include in their presentation before the Lakes, Vegetation and Landscaping Committee or Landscaping Subcommittee a discussion of how LID techniques were/were not incorporated.

These techniques include, but are not limited to:

- Mini-retention / detention,
- Bio-retention / rain gardens.
- Porous soil amendments,
- Lowered landscaping beds,
- Pervious pavement –hardscape storage,
- Curb openings (i.e. brick and other hardscape removal in edging and sweat wall footings) that allow water to enter vegetated areas,
- Use of lawn areas for incorporating slight depressions that retain rainfall,
- And elevating storm drains where water detention is acceptable so that they are not at the lowest elevation in the landscape.

Reference:

The Data and Analysis section of University of Florida Campus Master Plan – General Infrastructure- Stormwater Sub-element (pages 9-10 through 9-14).

1.10 INDOOR ENVIRONMENTAL QUALITY COMMISSIONING POLICY:

At the University of Florida, commissioning is the verification of ventilation design intent, and the development of an IEQ profile for the building describing the building structure, activities, occupancy, and environmental parameters.

The IEQ commissioning process begins at the project design phase, and continues through warranty completion. This process assists building occupants, architects, and engineers in establishing a standard for acceptable IEQ, and in controlling building related illness and sick building syndrome.

Buildings at the University of Florida are used for a wide variety of purposes. Therefore, the IEQ

Commissioning Policy shall be considered as minimum recommendations only. The policy is not designed to assure adequate IEQ in all situations; this is the responsibility of the Project Architect/Engineer.

The University of Florida's IEQ Commissioning Policy is contained within the Environmental Health & Safety Division document Indoor Environmental Quality Commissioning available at www.ehs.ufl.edu. Should there be any conflicts between this document and the requirements contained within these Standards, consult the UF Project Manager for resolution.

1.11 MANUFACTURERS LISTED AS ACCEPTABLE:

The manufacturers listed are to set a standard that is acceptable to the University. It is not to be interpreted as excluding all others. "Or equal" is implied even if not stated unless the list of acceptable manufacturers is appended with the phrase "No others are acceptable," then it shall be understood that substitutions are not allowed, and specifications shall be so written.

1.12 ENERGY CONSERVATION:

A. GENERAL:

All construction shall adhere to the requirements of the State Energy Management Plan.

B. SPACE LAYOUT:

The simplest and most effective method of energy conservation is to turn things off when not in use. Spaces with similar occupancy schedules shall be grouped together on the same HVAC system, to accommodate unoccupied shutdown.

1.13 SPACE PLANNING:

A. TELEPHONE CLOSETS:

See "Telecommunications Standards" issued separately by the Office of Information Technology (<http://net-services.ufl.edu/infrastructure>).

B. CUSTODIAL CLOSETS:

Each floor requires a dedicated custodial closet, with a mop sink, a mop hanger over the sink, and four shelves on one wall. In addition, each building requires a closet for storage of custodial supplies and equipment, to be located on the ground floor, adjacent to the custodial closet. The size of both types of closet shall be approximately 6' X 8'. These closets shall have self-closing doors, which open directly onto the corridor, and shall not be provided with conditioned air. If gross floor size is over 20,000 sq. ft., then a second closet is required on that floor.

C. WASTE HANDLING AND RECYCLING:

Refer to Section 11170 for the space planning requirements relating to facilities and equipment necessary for collecting and handling waste and recyclable materials.

D. MECHANICAL EQUIPMENT ROOMS:

Scaled drawings that show the space required by all equipment shall be required. The space required for servicing, maintaining, operating, and replacing parts shall be clearly shown.

E. OFFICE SPACE CHANGE OF OCCUPANCY AND/OR USE:

When renovating a space to accommodate a change in use or occupancy, give consideration to the new hvac and electrical requirements during the planning stage.

1.14 EXTERIOR EQUIPMENT PROTECTION AND LOCATION:

All exterior and rooftop equipment must be provided with adequate physical protection in the form of fencing, guardrails or bollards, as necessary. Locate so as to be visually unobtrusive; coordinate with Architect and UF Project Manager. Roof overhangs shall be protected from vehicle traffic or have a free clearance of at least 14'-6".

1.15 RADON TESTING:

A. In addition to any necessary geotechnical explorations, new building site analysis shall include testing for Radioactive Activity due to Radon Gas Seepage.

B. There are certain areas on Campus with known high levels of Radon. Mitigation procedures are available from several faculty specialists.

C. INDOOR RADON AND RADIATION:

1. Construction Principles:

- a) Buildings shall be designed and constructed to minimize the entrance of soil gas into the building.
- b) Buildings shall be designed and constructed with features that will facilitate post-construction radon removal or further reduction of radon entry if installed prevention techniques prove to be inadequate.
- c) HVAC systems shall be designed, installed and operated to avoid depressurization of basements and other areas in contact with the soil under all building operating conditions.
- d) Building construction materials shall be selected and installed to minimize the ambient gamma exposure rate in occupied areas of the building.
- e) Indoor radon testing shall be performed by individuals and/or companies listed in EPA's Radon Measurement Proficiency Program or the Florida Certification Program.
- f) The design and installation of radon control systems shall be performed and supervised by a builder who has satisfactorily completed an EPA-approved or Florida certified radon-training course.
- g) Radon mitigation design shall comply with the Florida Building Code (2004). Specifically, Appendix C (Chapter 9B-53 F.A.C., Standard for Mitigation of Radon In Existing Buildings) and Appendix E (Chapter 9B-67 F.A.C., Florida Standard for Radon-Resistant New Commercial Building Construction).

2. Performance Verification: Indoor radon and radiation levels in newly constructed buildings shall be determined prior to acceptance by the University. Testing

protocols approved by the State of Florida shall be followed. Indoor radon levels for newly constructed buildings shall not exceed 2 pCi/L prior to occupancy and at one month prior to warranty completion. The long-term goal is to keep the radon level below 4 pCi/L for the life of the structure.

1.16 HAZARDOUS MATERIALS:

An updated asbestos survey of any building or section of a building that is scheduled for renovation or demolition shall be conducted to identify both friable and non-friable asbestos containing materials. A draft copy of the survey must be reviewed by the University Asbestos Coordinator for completeness prior to accepting the final product. A copy of the updated survey must be kept on site until the renovation or demolition activities are completed.

The survey shall be conducted prior to the start of renovation or demolition under the supervision of a Florida-licensed asbestos consultant. Individuals performing asbestos surveys must be certified as EPA asbestos inspectors through a Florida-approved training provider.

Asbestos containing materials may not be used in new construction or in renovation. Existing asbestos containing flooring may not be left in place if new flooring is to be installed as part of the project.

A lead paint survey must be provided for any building constructed prior to 1980 and for any exterior structure (e.g., painted handrails) that may be affected by a construction project, regardless of age. Materials identified as having lead paint must be further characterized to determine if they are subject to hazardous waste disposal restrictions. Lead survey information must be provided to the contractor and the contractor must comply with applicable training requirements as required by OSHA and the EPA.

For renovations or demolitions, hazardous wastes shall be segregated, collected, labeled, and disposed of via UF Environmental Health & Safety (EH&S). These include light fixture ballasts (PCB and non-PCB), mercury-containing devices (such as thermostats), and batteries.

Construction documents for renovation or demolition projects shall incorporate University hazardous materials policies as needed. See the Hazardous Materials Management page of the EH&S website at www.ehs.ufl.edu/HMM.

1.17 INFORMATION / COMMUNICATIONS RESOURCES REQUIREMENTS

A. UNIVERSITY INFORMATION / COMMUNICATION STANDARD:

See "Telecommunications Standards" issued separately by the Office of Information Technology (<http://net.services.ufl.edu/infrastructure/>).

B. GENERAL INFORMATION:

The design team shall include the resources needed to fully develop a complete scope of work for all telecommunications, I/T, and audio/visual systems and components, including a BICSI certified RCDD. The University will require that all telecommunications, I/T, audio/visual systems and components be designed and annotated on "T" drawings in accordance with the above referenced standards. Construction documents must account for all work (i.e., with notes for work "by others").

- (BICSI): Building Industry Consulting Service International, Inc.
- (RCDD): Registered Communications Distribution Designer

Telecommunications plant work (exterior of facility) is typically purchased by the project through the University of Florida Computing and Networking Services (UFCNS). The architect/engineer shall coordinate with UFCNS to eliminate conflicts with other utilities, landscaping, etc., shall include all such work "by others" in the construction documents, and shall ensure that no gaps exist between the contractors' scope of work and the scope(s) of work "by others."

The interior voice & data work may be purchased by the project from UFCNS (or from HealthNET for UF Health Science Center projects). All such work shall be included in the construction documents and coordinated by the architect/engineer.

The roles and responsibilities of other relevant University of Florida entities include:

- ATO (Academic Technology Office): ATO Classroom Support will participate in the design and specification of classroom instructional spaces and associated audio/visual and information technology systems. They will also meet with the User Group during program verification to determine classroom needs. The Health Science Center, Office of Academic Information Systems & Support will support the ATO for Health Science Center projects.
- OIT Network Services: Network Services will participate in the design and specification of all communications rooms, cable pathways, and data network cables. They will also meet with the User Group during program verification to determine their network needs. HealthNET will perform this function for Health Science Center projects.

1.18 **LEED CERTIFICATION**

Seeking high performance, energy-efficient, and sustainable buildings, the University of Florida utilizes Leadership in Energy and Environmental Design (LEED) criteria as developed by the U.S. Green Building Council (USGBC) for the design and construction of all major construction and renovation projects. The LEED program provides a complete framework for assessing building performance and meeting sustainability goals, with a specific focus on strategies for site development, water savings, energy efficiency, material selections, and indoor environmental quality. The following specific design guidelines are based on the latest LEED-NC version available at the time of the project inception.

- A. Use the most efficient water closets, automated faucet fixtures, etc. to meet or exceed LEED, Water Efficiency Credit 3.2.
- B. Specify changing/shower facilities and bike racks to meet or exceed LEED, Sustainable Sites, Credit 4.2.
- C. Specify alternative-fuel refueling/charging station(s) to meet or exceed LEED, Sustainable Sites, Credit 4.3.
- D. Specify designated parking for carpools or vanpools to meet or exceed LEED, Sustainable Sites, Credit 4.4.

- E. Pervious concrete is acceptable for paving to meet or exceed LEED, Sustainable Sites, Credit 6.2.
- F. To meet the requirement of LEED Sustainable Sites, Credit 7.2: Heat Island Effect:Roof, the roof shall meet the following criteria listed below:
 - 1. Use roofing materials having a Solar Reflectance Index (SRI) equal to or greater than the listed values for a minimum of 75% of the roof surface.
- G. Develop and implement an Indoor Air Quality Management Plan during construction in accordance with LEED, Indoor Environmental Quality, Credit 3.1; Construction IAQ Management Plan: During Construction.
- H. Evaluate new construction or renovation projects for inclusion of carbon dioxide (CO₂) monitoring system to measure (CO₂) concentrations within all densely occupied spaces (those with a design occupant density greater than or equal to 25 people per 1000 sq.ft.). For each mechanical ventilation system serving non-densely occupied spaces, provide a direct outdoor airflow measurement device to meet or exceed LEED, Indoor Environmental Quality, Credit 1: Outdoor Air Delivery Monitoring.
- I. Specify low VOC emitting materials including adhesives, sealants, paints, carpet and composite wood to meet or exceed LEED, Indoor Environmental Quality, Credits 4.1-4.4.
- J. Specify deck to deck partitions to separate outside exhausting from housekeeping areas and copying/print rooms from contaminating regularly occupied areas; specify permanent entryway systems (grills, grates, etc.) to meet or exceed LEED, Indoor Environmental Quality, Credit 5.
- K. To the extent possible, maximize daylighting in accordance with LEED Indoor Environmental Quality, Credit 8.1: Daylight & Views: Daylight 75% of Spaces, and LEED Indoor Environmental Quality, Credit 8.2: Daylight & Views: Daylight 90% of Spaces.
- L. To view the entire UF policy on LEED Certification, go to <http://www.facilities.ufl.edu/sustain>.

END OF SECTION