I - FACILITY PROGRAM DOCUMENT

OUTLINE PROGRAM

One-Stop: Student Academic Support Center

BT- 882

Florida International University

University Park

October 15, 2008
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III. SIGNATURE SHEET

1. Educational Specifications contained in this document have been developed in accordance with the statutory requirements of the State University System of Florida as outlined in paragraph 4 of Standard Practice 00-0000-3-04-13:

ROBERT W. GRIFFITH, R.A., A.U.A.
DIRECTOR OF PLANNING
REAL ESTATE DEVELOPMENT AND PLANNING

Date: 10/16/08

2. This document is hereby recommended by the appointed University Building Program Committee:

CORINNE WEBB
VICE PRESIDENT FOR ENROLLMENT MANAGEMENT
COMMITTEE CHAIRPERSON

Date: 10/21/08

3. Information Technology and Communications Resource Specifications contained in this document have been developed in conformance with the requirements of Chapter 282, Florida Statutes, and University standard practices:

MIN YAO, VICE PRESIDENT & CIO
UNIVERSITY TECHNOLOGY SERVICES

Date: 10/22/08

4. This document is hereby approved and recommended by Real Estate Development and Planning.

JOHN CAL
ASSOCIATE VICE PRESIDENT
FACILITIES MANAGEMENT

Date: 10/24/08

5. This document is hereby approved by the Division of Business and Finance.

VIVIAN SÁNCHEZ
CFO & SENIOR VICE PRESIDENT
DIVISION OF BUSINESS & FINANCE

Date: 11/18/08

6. This document is hereby approved by the Office of the Provost, Academic Affair.

RONALD BERKMAN
EXECUTIVE VICE PRESIDENT & PROVOST

Date: 11/18/08

7. This document is hereby approved and recommended by the University.

MODESTO A. (M. C.) NAIDIQUE, PRESIDENT
FLORIDA INTERNATIONAL UNIVERSITY

Date: 11/22/08
III. SIGNATURE SHEET (continued)

FACILITY PROGRAM COMMITTEE

This building program represents the University's requirements for the development of a One-Stop: Student Academic Support Center in as specific and complete a form as is presently available. It is a comprehensive effort of the members of the Building Program Committee who have each contributed, by drawing from their expertise and respective responsibilities, the essential information required by the architects and engineers to conceptualize and develop the project. This committee will monitor the development of the design and assist the design Architects/Engineers and Landscape Architects by refining details and clarifying any ambiguities herein in a manner consistent with this program. Coordination of program requirements (compatibility, standards, finishes, utility connections, equipment, etc.) and scheduling throughout the duration of the project will be maintained by the University's Facilities Construction Department.

The members of the Program Committee are:

Chairperson: Corinne Webb
Vice President for Enrollment Management

Members:
Rosa Jones, Vice President, Student Affairs and Undergraduate Education
University Controller, Controller’s Office
Pete Garcia, Athletic Director
President, Student Government Association

Ex-Officio:
Ex Officio Members: Associate Vice President, Planning & Institutional Effectiveness
Associate Vice President, Facilities Management
Associate Director, Facilities Management/Operations
Associate Vice President, Information Technology
Associate Vice President, Environmental Health & Safety
Chairperson, Faculty Senate
Chairperson, Ad Hoc Building and Environment Committee
Associate Director, Facilities Management/Utilities
Director, Auxiliary Services
Director, Purchasing
Director, Academic Space Management
Director, Facilities Management/Minor Projects & Construction
Director, Real Estate Development & Planning
Director, Real Estate Development & Planning/Operations Analysis
Senior Project Manager/Facilities Management

Program compiled by:
Cecilia Suarez
IV. INTRODUCTION

In Fall 2006, the Florida International University Board of Trustees approved the construction of a $58M multi-purpose student support complex to create, facilitate and promote student interaction, campus engagement and academic success.

The first phase of the project, currently underway and separately funded, will provide students with a new 20,000 seat athletic complex for NCAA-Division I competition and additional meeting space for activities and special events. The new $34M complex will host over 100,000 patrons at athletic events annually and serve as the major “hub” for student events and club activities year round.

This program document focuses on the second phase of this major new complex, the One-Stop: Student Academic Support Center. This $24M program will provide the university with a 100,000 sq. ft. facility complete with an attractive new welcome center and an integrated service facility to enable students to conduct university business---from recruitment to graduation---in a single location. The primary focus of this new facility is to build student affinity and promote student success from the first visit at the welcome center to the last pro-active and positive service encounter at the one-stop facility.

This new center represents an opportunity for the university to create a “culture of service” by assisting students in a single location with professional and support staff uniquely trained to render full service assistance and excellent customer service. No longer will students need to traverse the campus to find the right office and/or staff member for assistance but rather they will need only to visit the support facility for full-service assistance with a one-stop specialist.

The center’s primary objective is to provide students with an easy, convenient and friendly environment to conduct business so that they can remain focused on their academics and progress to graduation in a timely fashion. The more students who encounter positive experiences when requesting information, solving problems and seeking assistance with university staff, the greater their affinity for the university will grow.

The emphasis on interaction, engagement and socialization is specifically aimed at influencing students’ future decisions to start and/or continue their education at FIU. University spirit, a culture of service and a sense of belonging will enhance affinity, encourage loyalty and ultimately improve student retention and graduation rates.
V. ACADEMIC PLAN

The university endeavors to secure national recognition and ranking as one of the top 15 public urban research universities by its fiftieth anniversary in 2015. In pursuit of this goal, the university must, among other things, improve its undergraduate graduation rates, attract more students from national, international and state-wide markets and change the mix of full-time/part-time at 60/40 to 75/25. These are significant changes but essential factors in anchoring and enhancing the university’s national ranking.

By 2015, FIU must increase its 4-year and 6-year undergraduate graduation rates to comport with national averages for public research universities which are currently at 34% and 56%, respectively. Today, the most recently published graduation rates for the first-time-in-college classes that entered in 2000 and 2002 are 20% and 48%. In order to achieve this goal, all systems and services in recruitment, admissions, degree planning, financial aid, registration, advising, student financials must be re-engineered to foster and facilitate students’ smooth transition through enrollment milestones and a successful progression to graduation. There must be a “culture of service” transparent in every business transaction between student and staff and a positive communication fostering student success at every point of contact. Building this new culture of service requires a clear understanding of the enrollment pathway, a university commitment to one-stop service, a pro-active communication campaign for degree completion and an attractive welcome center to set the foundation.

Enrollment Pathway: the chart below illustrates the essential steps required to recruit, service and retain undergraduate students; it outlines the touch points from recruitment to graduation and beyond. Managing these points requires an integrated organization with cross-trained personnel to deliver comprehensive support to students in a pro-active and anticipatory manner. This pathway represents continuous and interactive approach towards facilitating a student’s successful progression to graduation.

One-Stop Service—Organize various support units into a single support stop, or single touch point, to enable students to conduct and transact their university business along the enrollment pathway in a smooth, efficient, effective and friendly manner. This re-organization will include the following major support units: undergraduate admissions, communications center, enrollment processing center, financial aid, university registrar, enrollment information services, retention, transfer services, undergraduate advising and student financials. During peak enrollment periods, other support services
V. ACADEMIC PLAN (continued)

such as Panther ID services, parking and transportation, international student support services, wellness center, university housing and dining services will be on-site to welcome new students and ensure their smooth transition into the university with ease and comfort.

Within the major support units, one-stop service specialists will service students at the first point of contact in a holistic and comprehensive manner. Students will no longer be burdened with traveling to various offices to seek the appropriate personnel to secure information, solve a problem and remedy an error; they will no longer be burdened with figuring out the university’s vast and complex organizational structure to determine what office and/or personnel can assist them; they will not longer need to visit two, three or four offices to resolve their two or three personal inquiries. Instead, they will need only visit the One-Stop facility where a one-stop specialist, uniquely trained across disciplines, will respond to their inquiries, resolve problems and provide guidance and direction. If a service referral is needed, the one-stop specialist (not the student) will initiate the outreach to another institutional partner to secure the necessary information to respond affirmatively. The primary goal of this new one-stop facility is to deliver comprehensive support with superb customer service in order to provide students with a positive and rewarding experience during their stay at the university. As this “culture of service” is realized and appreciated by students over and over again, affinity grows, pride swells and reputation prospers.

Communications Campaign: Embed student success/timely graduation expectations into all communications from the point of entry to the post of exit; provide prospective students, at the point of inquiry, the course sequencing plan for completing a major in four years; provide them with the job/professions attained by recent graduates of selected majors so that they can see the connection between academic majors and career choices or broader opportunities. Explain the degree audit planning tools at the point of entry and the importance of utilizing this academic planning tool towards timely degree completion. Send recognition and congratulatory messages to students when they complete a specific milestones for graduation, e.g., complete UCC course requirements, pass the CLAST exam, complete summer residency and/or foreign language requirements; complete the pre/co requirements for entrance into the major, earns competitive GPA for dean’s list recognition, etc. These are but a few of the positive, up-beat messages that will be sent regularly to emphasize the importance of student success towards graduation. So, too, messages will alert students when and if they fall off-track in progressing towards graduation. Additionally, the allocation of institutional aid will be re-evaluated to ensure awards are leveraged and aligned with institutional graduation goals; and the graduation process will be re-engineered to notify students when they are eligible for graduation and providing them an expedited means for activating their candidacy for graduation. These communications represent pro-active, positive strategies that will keep students on track for graduation which, in turn, will serve to advance the university’s goal for increasing its 4-year and 6-year graduation rates.

Welcome Center: As the university endeavors to increase its graduation rates, it understands that success in this area is dependent upon success in enrolling an ever competitive class that is academically prepared for the curriculum and well-acquainted and comfortable with campus life. The more at ease and adjusted a student is with academics and student life, the more likely he/she will remain on course and successful. Thus, it is critically important that at the recruitment stage, students and parents have ample opportunity to visit the campus, obtain information, explore classes and interact with students and faculty. So, too, the university needs an opportunity—and a facility—to present the university’s history, mission and achievements in an exciting, energetic and consistent manner. They need an opportunity to host information sessions and group tours on-demand and not have to turn away prospects due to lack of presentation space.
V. ACADEMIC PLAN (continued)

As the university broadens its reach into national, international and state-wide markets, the number of campus visitations will increase as this activity, the campus visit, is considered the most influential factor in the college selection process. The more position, powerful and persuasive the visit, the more likely the prospective student will apply, enroll and graduate. With this in mind, the One-Stop: Student Academic Support Center will provide an attractive, dedicated, state-of-the-art facility to welcome visits and host individual and group tours on-demand. This component of the program will include a 100 seat auditorium for individual and multi-media presentations, a reception and information area, counseling space, computer training area and staff office space. This new facility will adjoin the new athletic complex and serve to show prospective students the opportunities for social engagement, school spirit and a sense of belonging.
VI. SPACE NEEDS ASSESSMENT

This project will provide 100,000 sq. ft of new building space for a new university welcome center and a “one stop service” facility for all undergraduate admissions, the communications center, enrollment processing center, financial aid, university registrar, enrollment information services, retention, transfer services, undergraduate advising, cashier’s, bursars office and student financials. Additionally, the new facility will also include temporary space, during high peak enrollment periods, to accommodate satellite services from other units such as Panther ID services, parking and transportation, international student support services, wellness center, university housing and dining services.

The major support units are currently housed on the first, second and fourth floors of the Charles Perry building and the first floor of the College of Health building. The construction of the new One-Stop: Student Academic Support Center will release approximately 49,000 gross square feet in the Charles E. Perry Primera Casa Building and ____ in the College of Health building for other essential educational priorities and functions.

The new Welcome Center requires a 100 seat multi-media presentation room, acoustically sound and audio-equipped. The university anticipates the new Welcome Center will host approximately 16,000 to 18,000 visitors annually. The center also requires separate counseling space for specialists to meet with prospective students and parents about the admissions, financial aid, payment strategies and academic interests. This facility requires an open reception area as well as assembly space for information sessions and group tours. Additionally, office space is needed for student tour guides and unit specials to plan various recruitment activities both on and off campus.

The One-Stop facility requires a large, open, comfortable, attractive, visually pleasing and acoustically sound space to accommodate approximately 50,000 student visitors annually. Upon entry into the facility, students will be welcomed and escorted to a one-stop specialist to seek assistance with any aspect of enrollment or any touch point along the enrollment pathway. For example, they will be able to apply for residency re-classification, submit a final high school transcript to clear a conditional admit hold, get their AP credits posted on their FIU transcript, learn the requirements for admission to a select major, remit payment (via online credit card payment), find their class schedule, add a course and accept their financial aid---all from a single location with the help of a single one-stop specialist. The student will meet with a service agent at a service pod equipped with comfortable seating, a work space and a computer for access to MyFIU. Additional space will be available for private counseling if and when necessary. The customer service area will be absent barriers, walls, doors that separate students from customer service agents. Agents will have ready access to program specialists, supervisors and managers to ensure full resolution to inquiries and problems. Every transaction will close with an opportunity for students to assess performance and offer feedback for improvement. Customer satisfaction is a key component in creating and sustaining a “culture of service.” Thus, it will be assessed regularly from many vantage points.

One-stop specialists will also be trained to respond to student inquiries about term bill payments, financial aid disbursements and other related business items, however a separate secure space is required for in-person cashiering functions. Approximately one-third of the student body remits payments in-person while the remaining two-thirds remit payments via online credit cards or E-check.

The facility will provide space for a 25-35 station computer training and communication center, central information processing area all enrollment related documents and a work space to accommodate approximately 250 support and administrative personnel.
VII. ANALYSIS OF IMPACT ON MASTER PLAN

This project is included in the "Educational Plant Survey" recommendations of May 2006 and the 2000 – 2010 Campus Master Plan update.
VIII. SITE ANALYSIS
IX. PROGRAM AREA

STATISTICAL JUSTIFICATION:

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<th>Planned Use Factor</th>
<th>User Req'd Stations</th>
<th>Existing Stations</th>
<th>New User Req'd Stations</th>
<th>Space Factor</th>
<th>Net Area Required</th>
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</thead>
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<tr>
<td>Classroom</td>
<td>436</td>
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<td>273</td>
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<td>273</td>
<td>22</td>
<td>6,000</td>
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<td>203</td>
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<td>148</td>
<td>30,000</td>
</tr>
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<td>Student Academic Services</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td>1,600</td>
</tr>
</tbody>
</table>

The program area will be developed into detailed space requirements during the programming phase of the project. Architect/Engineering firm of record shall be responsible for complete programming services to the satisfaction and approval of the building program committee and ex-officio committee members identified in section III of this document.

Areas are to be calculated using “inside to inside” surface measurements, (do not use center line dimensions).
X. UTILITIES IMPACT ANALYSIS

The Project Budget includes all site development associated with normal utility extensions and hook-ups, grading, walkways, service yard, landscape drainage system, plant materials, screen walls, outdoor work areas, lighting, and landscape furnishings (benches, trash containers, etc.).
X. UTILITIES IMPACT ANALYSIS (continued)

In addition, this project budget includes campus infrastructure and extraordinary costs as follows:

Sanitary Sewer System:

Water Distribution:

Electrical Service:

Chilled Water System:

Telecommunications:

Storm Water System:

Extraordinary Costs:

The projected electrical and water demand and consumption are as follows:

Projected Demand:

Projected Consumption/year
XI. INFORMATION/COMMUNICATION RESOURCE REQUIREMENTS

Refer to Telecommunications Wiring Standards appendix “C”. General equipment/furniture requirements are noted in section IX - Program Area Summary, Functional Description of space Details. Detailed computer hardwire requirements and network linkage relationships will be established in the Furniture/Equipment expenditure plan which should be developed following completion of design development. The FIU Telecommunications wiring standards are designed to accommodate a maximum degree of flexibility in the arrangement of data and voice communications systems. Wiring and cabling as well as data / voice outlets are specified by space type and should accommodate all normal operations as identified in this program.
The purpose of this standard is to provide for the planning and installation of telecommunications facilities in new buildings and major renovations. This standard has been developed with little knowledge of the telecommunications equipment that subsequently will be installed. Therefore, the definitions included herewith are for generic telecommunications facilities that will support a multitude of rapidly changing telecommunications technologies in a multi-vendor and variable end user environment.

This standard recognizes three fundamental concepts related to telecommunications and buildings:

1. Buildings are dynamic. Renovation, remodeling and upgrading are more the rule than exception. This standard takes into account that change will occur.

2. Building telecommunications systems and media are dynamic. As time passes both telecommunications equipment and media change considerably. This standard recognizes this fact and the facilities prescribed herein are capable of supporting a vast array of telecommunications systems and media.

3. Telecommunications is more than telephones. Telecommunications is inclusive of a variety of building systems including data systems, environmental control, security, audio, television, sensing, alarms and much more.

Above all, this standard recognizes a fact of fundamental importance: if a building is to be properly designed, built and provisioned for telecommunications systems, it is imperative that the telecommunications design be incorporated during the architectural design phase.

The FIU/UTS Infrastructure Department developed this document in accordance with industry specifications. It is the standard by which the University defines the physical facilities required for the provisioning of telecommunications systems for new buildings and major renovations to existing buildings. These specifications take into account the physical facilities such as the size and provisioning of telecommunications rooms, cable distance limitations, vertical and horizontal cabling considerations, number and size of conduits and numbers and types of information outlets. The general cabling requirements are not addressed, however, the "Telecommunications Wiring Specifications" which are produced after consultation with the building occupants include the detailed procedures and specifications for the wiring and installation of telecommunications systems for campus buildings. The "Telecommunications Wiring Specifications" are provided to FIU Facilities Management 90 days after completion of the project design phase.
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<td>C - 10</td>
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<td>4.2 MANHOLES</td>
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<tr>
<td>DRAWINGS</td>
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</tbody>
</table>
1.0 GENERAL

1.1 RESPONSIBILITY - It is the responsibility of the project architect/engineer to ensure the inclusion of the standards for building telecommunications facilities into the design and construction documents for new and major renovation projects.

1.2 REFERENCES - In addition to the specifications included herewith the architect/engineer is encouraged to refer to the following publications for guidance during the design of the communications infrastructure:


Electronic Industries Association, Telecommunications Industry Association (EIA/TIA) Building Telecommunications Wiring Standards.

NFPA's National Electric Code (NEC).

FIU/UTS Infrastructure Department.

1.3 COORDINATION - Prior to the start of any telecommunications related work, the contractor shall contact the UTS/Infrastructure Department to coordinate the installation.

2.0 CABLE PATHWAYS

2.1 INFORMATION OUTLETS

2.1.1 REQUIREMENTS - Specific requirements for information outlets for each room and each project must be coordinated with the building occupants at the onset of the design phase of major renovations and new construction projects. The architect/engineer for major renovation and new construction projects is cautioned that the Building Program for the project includes requirements, but may not be all-inclusive regarding communication facilities. Therefore, the project architect/engineer must work closely with the building occupant and the FIU/UTS Infrastructure Department to minimize the need for revisions and changes after the completion of the design phase.

2.1.2 FLOOR MOUNTED - The use of floor mounted information outlets is strongly discouraged as it does not allow for flexibility in furniture layout and inhibits future changes to the telecommunications system.

2.1.3 ELECTRICAL BOXES - Locations for information outlets must be equipped with a 4 in. X 4 in. X 2.5-in. electrical box equipped with a mudring sized for the installation of a standard duplex outlet.

2.1.4 MOUNTING HEIGHT - Electrical boxes installed for information outlets must be placed at the same level as the adjacent duplex electrical receptacles or at least fifteen (15) inches above the finished floor.
2.1.4.1 Electrical boxes installed for information outlets located above counters equipped with a splash back must be placed at 6 in. above the top of the counter. (Measure to the center of the outlet.)

2.1.4.2 Electrical boxes installed for information outlets located above counters not equipped with a splash back must be placed at 12 in. above the top of the counter. (Measure to the center of the outlet.)

2.1.5 FACULTY/ADMINISTRATIVE OFFICES must have a minimum of one (1) information outlet per designated occupant, however two (2) are recommended for furniture relocation of additional staff.

2.1.6 CLERICAL/STAFF OFFICES shall have a minimum of one (1) information outlet per designated occupant plus one (1) information outlet for every two (2) additional occupants.

2.1.7 SECRETARY/ADMINISTRATIVE ASSISTANT OFFICES shall have a minimum of one information outlet per designated occupant plus two (2) outlets per office or two (2) extra outlets per five (5) people.

2.1.8 CLASSROOM/LECTURE HALLS/Auditoriums shall have a minimum of one (1) to four (4) information outlets depending on occupancy size:

<table>
<thead>
<tr>
<th>Classroom Size (Student Occupancy)</th>
<th>Minimum Number of Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td>1</td>
</tr>
<tr>
<td>51-100</td>
<td>2</td>
</tr>
<tr>
<td>101-200</td>
<td>3</td>
</tr>
<tr>
<td>201 or more</td>
<td>4</td>
</tr>
</tbody>
</table>

2.1.8.1 The recommended location priority relationship for the information outlets must be: chalkboard/dry erase board, lectern, projection booth/rear wall and remaining sides.

2.1.9 GRADUATE STUDENT OFFICES shall have a minimum of one (1) information outlets per designated occupant.

2.1.10 LABORATORIES shall have a minimum of one (1) information outlet per room; actual number may be more depending on function and occupant requirements.

2.1.11 CONFERENCE ROOMS shall have a minimum of one (1) information outlet per room. Rooms with more than 500 ft\(^2\) shall have a minimum of two (2) information outlets installed.

2.1.12 STORAGE AREAS shall have a minimum of one (1) information outlet for rooms over 500 ft\(^2\) and one (1) additional outlet for each additional 2000 ft\(^2\).
2.2 CONDUITS

2.2.1 A 1 inch EMT conduit must be installed from each information outlet electrical box and "stubbed" up above the ceiling level to cable tray. (Please see attached drawing, Fig. 2.2.1-A)

2.2.2 If fixed ceilings are installed cable trays cannot be used and conduit from information outlets must be "homerun" to the telecommunications room or cable tray.

2.2.3 The open ends of conduits and/or sleeves must be equipped with bushings to avoid damage to cable sheaths and must be readily accessible and not concealed within walls.

2.2.4 Telecommunications rooms contain the vertical cable riser space. Conduits and/or sleeves must be used to interconnect telecommunications rooms. The open ends of conduits and/or sleeves must be located a maximum of 3 in. from the wall and extend a minimum of 1 in. above the finished floor.

2.2.5 REQUIRED NUMBER - The minimum number of conduits, and/or sleeves interconnecting the telecommunications rooms must be determined as follows:

<table>
<thead>
<tr>
<th>Building Total (Square Footage)</th>
<th>Quantity of Conduits</th>
<th>Size of Conduit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50,000 ft(^2)</td>
<td>3</td>
<td>4&quot;</td>
</tr>
<tr>
<td>50,001 ft(^2) to 100,000 ft(^2)</td>
<td>4</td>
<td>4&quot;</td>
</tr>
<tr>
<td>100,001 ft(^2) to 300,001 ft(^2)</td>
<td>5-8</td>
<td>4&quot;</td>
</tr>
<tr>
<td>300,001 ft(^2) to 500,000 ft(^2)</td>
<td>9-12</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

2.2.6 PULL BOXES - A pull box must be installed in sections of conduit longer than 100 ft. or containing more than two 90-degree bends or if there is a reverse bend in the run.

2.2.7 Minimum requirements for installed conduit, such as support, end protection, and continuity, are found in appropriate electrical codes.

2.2.8 The inside radius of a bend in conduit must be at least 6 times the internal diameter. When the conduit size is greater than 2 in. the inside radius must be at least 10 times the internal diameter of the conduit.

2.2.9 PULL CORDS - All conduits must have a fish tape or pull cord, rated for 200 lbs. of pull force, and installed end-to-end.

2.2.10 ELEVATOR - A \(\frac{3}{4}\)" conduit must be installed from each elevator equipment room to the nearest telecommunication room or cable tray.

2.2.11 EMS - A \(\frac{3}{4}\)" conduit must be installed from each mechanical room "homerun" back to the nearest telecommunication room or cable tray.
2.2.12 FIREALARM - A ¾” conduit must be installed from the fire alarm panel to the nearest telecommunication room or cable tray.

Note: (1) Under no circumstances will flexible metallic conduit be used for any telecommunication wiring.
(2) Under no circumstances will any conduits be “daisy-chained” together.

2.3 CABLE TRAYS

2.3.1 Cable trays are rigid structures for the containment of telecommunications cables.

2.3.2 GROUNDING - Cable trays must be installed and grounded in accordance with the National Electric Code (NEC) and local requirements. (Please see attached drawing, Fig. 2.3.2-A)

2.3.3 TYPE - Cable trays must be of the 12-in. ladder type, equivalent to Wiremold, Part No. A060612, unless otherwise specified by the UTS Project Manager.

2.3.4 Cable trays must be installed above false ceilings and run down hallways and corridors providing a pathway for telecommunications cable from the information outlets to the respective telecommunications closet.

2.3.5 Cable tray installation must be coordinated with all work of other trades to avoid any interference. Cable trays must be installed such that they are not obstructed by other trades equipment, i.e. air conditioning ducts, electrical conduit etc. Cable trays must be easily accessible for the installation of cables and, future changes to telecommunications systems.

2.3.6 A minimum of 3-in. clear vertical space must be available between the top of the ceiling tiles and the bottom of the cable tray. A minimum of 12 in of clear horizontal space on each side of the cable tray must be available. Also, minimum of 6 in of clearance must be available between the top of the cable tray and any other utilities.

2.3.7 Under no circumstances, shall any other utilities pass within the distances specified in 2.3.6.

2.3.8 To avoid electromagnetic interference, all cable pathways must provide clearances of at least:

4 ft. from large motors or transformers.

1 ft from conduit and cables used for electrical power distribution.

5 in. from fluorescent lighting. Pathways should cross perpendicular to fluorescent lighting and electrical power cables or conduits.
3.0 TELECOMMUNICATIONS ROOMS

3.1 DESCRIPTION/DEFINITION

3.1.1 Telecommunications rooms must be dedicated to the telecommunications function and related support facilities. Telecommunications rooms must not be shared with janitorial facilities or other trades especially with electrical installations other than those required for telecommunications systems.

3.1.2 Telecommunications room refers to any room where telecommunications facilities terminate and telecommunications system equipment is housed.

3.1.3 The term building Intermediate Cross Connect (IC) is used to indicate the telecommunications room where the campus backbone facilities enter the building.

3.1.4 The term Telecommunications Rooms (TR) is used to designate the telecommunications room required for the distribution of facilities to adjoining floors and areas exceeding distance limitations.

3.1.5 NUMBER OF ROOMS. There must be a minimum of one telecommunications room per floor and centrally located in the building, unless otherwise specified by the UTS Project Manager. Additional telecommunications rooms must be provided when:

(1) The floor area to be served exceeds 10,000 ft\(^2\), or
(2) The horizontal distribution distance to the workstation exceeds 295 ft.

3.1.6 SIZING OF ROOMS. Telecommunications rooms must be sized as follows:

<table>
<thead>
<tr>
<th>Serving Area (net bldg. ft(^2))</th>
<th>Room Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 ft(^2)</td>
<td>10 ft. X 11 ft.</td>
</tr>
<tr>
<td>8,000 ft(^2)</td>
<td>10 ft. X 9 ft.</td>
</tr>
<tr>
<td>5,000 ft(^2) - less</td>
<td>10 ft. X 7 ft.</td>
</tr>
</tbody>
</table>

10 ft. X 7 ft. is the minimum size for telecommunications rooms.

3.1.7 Telecommunications rooms must be stacked vertically to provide for the installation of telecommunications facilities between floors. Telecommunications rooms must be interconnected as specified in section 2.2.5.

3.1.8 BACKBOARDS - All four walls must be covered with rigidly fixed 3/4 in. x 4 ft. X 8 ft. A-C plywood, preferably void free, capable of supporting attached equipment and painted with black fire retardant paint.

3.1.9 LIGHTING - Lighting must be a minimum of 50-ft. candles measured 3 ft. above the finished floor, mounted 8.5 ft. minimum above finished floor.
3.1.10 CEILINGS - False ceilings are not allowed in any Telecommunication Room.

3.1.11 DOORS - The door must be a minimum of 36 in. wide and 80 in. high, without doorsill, hinged to open outward and fitted with a lock.

3.1.12 KEYING - Access to all telecommunication rooms will be through one uniform master key system. Facilities Management will establish the lock type to be used.

3.1.13 TREATMENT - Floors, walls, and ceiling must be treated to eliminate dust. Floors must be covered with VCT tiles.

3.1.14 ELECTRICAL REQUIREMENTS - Two dedicated 30 A, 110 or 208 V AC electrical outlets (L5-30R/120, L6-30R/208), each on separate circuits, must be provided for equipment power, unless otherwise specified by UTS Project Manager. In addition, a third 20A, 110 V AC circuit shall feed duplex outlets, which must be placed at 6 ft. intervals around the perimeter wall, at a height of 18 in above the floor. If emergency power (generator) is available, dedicated outlets must be connected to the emergency power system. Dedicated circuit outlets must be readily identifiable by using a different color outlet.

3.1.15 GROUNDING - Each telecommunications room must have direct attachment to the closest point in the building's electrical service grounding electrode system. A Number 6 AWG solid conductor cable must be placed between the ground source and a bus bar of the type: Chatsworth Products, Inc. part number 13622-010 or equivalent.

3.1.16 SLEEVES/CONDUIT - Sleeves or conduit passing through the telecommunications room floor should be adjacent to the door with a minimum of 1 in. exposed above the finished floor. Sleeves and conduit must be no more than 3 in. away from the wall. Sleeves and conduit shall not be left open except during cable installation and must be properly fire stopped per the applicable codes.

3.1.17 FIRE PROTECTION - Fire protection of the telecommunications rooms, if required, must be provided as per applicable code. All conduits and cable trays penetrating any Telecommunications Rooms must be properly sealed with the appropriate fire stopping material, as per NEC and local fire codes.

If used, fire sprinklers shall not be water based. An optional gaseous system must be used.

3.1.18 AIR CONDITIONING - HVAC must be provided on a 24 hours per-day, 365-days-per-year basis. If the building system cannot assure continuous operation for large equipment applications, a stand-alone unit must be provided for the equipment room.

3.1.19 TEMPERATURE - The temperature and humidity must be
controlled to provide continuous operating ranges of 64 degrees F to 75 degrees F with 30% to 55% relative humidity.

3.1.20 COLLOCATION OF OTHER TRADES - No water, sewer etc. pipes must be placed within or pass through the telecommunications rooms.

3.1.21 PLENUM AIR SPACE - All Telecommunications Rooms must be completely separated from Plenum air space in accordance with NEC and BICSI standards. (Please see 1.2 reference)

3.1.22 LOCATION OF ROOM - All Telecommunications rooms must be accessible at all times. The IC (building main telecommunications room) must be designed to be adjacent to an outside wall in order to facilitate the addition of entrance conduits if needed, unless specified by UTS Project Manager.

4.0 OUTSIDE PLANT

4.1 DEFINITION DESCRIPTION

4.1.1 All new building construction planning must provide for connection of the building to the campus communications infrastructure.

4.1.2 CONDUIT SIZE - All direct buried conduits used to connect to the University Telecommunications infrastructure must be 4” PVC, Schedule 40.

4.1.3 NUMBER REQUIRED - The minimum number of conduits connecting the building IC to the campus MC must be at least four four-inch (4 - 4”) conduits. Note: More entrance conduits might be needed depending on the size and utilization of the building.

4.1.4 DEPTH - The top of the conduit bank must be buried at least 30 inches below the ground surface and separated from other service structures as required for fiber optical cable under EIA/TIA specifications.

Separation of telecommunications conduits from other utilities shall meet the following guidelines:

<table>
<thead>
<tr>
<th>Structure</th>
<th>Minimum Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power or other conduit</td>
<td>3 inches in concrete</td>
</tr>
<tr>
<td></td>
<td>4 inches in masonry</td>
</tr>
<tr>
<td></td>
<td>12 inches in earth</td>
</tr>
<tr>
<td>Pipes (gas, oil, water)</td>
<td>6 inches when crossing pipe</td>
</tr>
<tr>
<td></td>
<td>12 inches when parallel to pipe</td>
</tr>
<tr>
<td>Power conduit terminated on poles</td>
<td>Separate poles, if possible.</td>
</tr>
<tr>
<td></td>
<td>If on same pole, 180 degree separation</td>
</tr>
</tbody>
</table>
Preferable, but not less than 90 degrees.

Railroads

At a crossing: 5 feet below top of the rail.
Terminating on poles: 12 feet from the nearest rail, except 7 feet at sidings.

The conduits must be placed in accordance with the requirements specified in the FIU building manual. In particular, bidders must pay special attention to the Telecommunications requirements specified in Appendix C.

4.1.5 DUCT BANK PROTECTION - Conduit must be encased in concrete when:

(1) Minimum conduit depth of 30 inches cannot be attained.
(2) Conduits pass under roads, driveways, or railroad tracks.
(3) Bend points are subject to movement.

Note: A detectable warning tape must be placed 18 inches above all duct banks (detectable: containing metallic tracings).

4.1.6 SLOPE - Underground conduit must be installed such that a slope exits at all points of the run to allow drainage and prevent the accumulation of water. A drain slope of no less than .125 in. per foot is desirable.

4.2 MANHOLES (MAINTENANCE HOLES)

4.2.1 DESCRIPTION - A manhole (maintenance hole) is used to pull in and splice cables in an underground, concealed manner. Manholes must be equipped with a sump, corrosion resistant pulling iron, cable racks, and manhole ladders. Concrete used for manholes must be of at least 3500 lb./in**2** strength. All manholes must be properly grounded as required by BICSI. (Please refer to 1.2)

4.2.2 SIZE - Manholes must be sized at 6-ft. width X 12-ft. length X 7-ft. height, unless specified by the UTS Project Manager. All manholes must be equipped with a round ring and cover, clearly labeled "TELECOM" or "TELEPHONE". (Please see attached drawing, Fig. 4.2.2-A)

4.2.3 WHERE REQUIRED - Manholes must be placed when the conduit section length exceeds 500 ft, whenever a cable splice will be required, when bends exceed a total of 180 degrees or two bends, or the section length of conduit requires the pulling in of cable in two segments.

4.2.4 HANDHOLES are not an acceptable alternative to manholes described in section 4.2.1, 4.2.2. Handholes can only be used in place of manholes after consultation with and receipt of written approval from the UTS/Infrastructure Department. (Please see attached drawing, Fig. 4.2.4-A)

4.2.5 PULL POINTS - Wherever distances between manholes exceed
200 feet or there are more than two 90 degree bends in the conduit run, a 4’ x 4’ x 4’ pull box must be placed. The number of conduits going in and out of the pull box shall not exceed six. Under no circumstances shall a pull box replace a manhole. (Please see attached drawing, Fig. 4.2.5-A)

4.2.6	POSITIONING OF CONDUITS IN MANHOLE - Conduits entering a manhole shall do so only through the manhole walls designed for conduit penetration. Under no circumstances shall the structural integrity of the manhole be compromised.

Note: Conduits being added to a manhole must be placed as deep as possible in order to accommodate future expansion of ductbanks and guarantee maximum utilization of the manhole.
WALL STUB-UP DETAIL

FIGURE 2.2.1 - A

Wall Stub-Up Detail
XII - CODES AND STANDARDS - BUILDING STANDARDS

A. This building shall conform to the following applicable building standards. In case of conflict, the strictest requirements shall govern. Written approval shall be obtained when required from the State of Florida Fire Marshall, Miami-Dade County Water and Sewer Department, Miami-Dade County Health Department, Florida Department of Environmental Protection (DEP), Miami-Dade County General Services Administration (Elevator Section), and DEP’s National Pollution Discharge Elimination System Permit.

1. All construction shall comply with the 2004 edition of the Florida Building Code including the High Velocity Hurricane Zone (HVHZ) including annual amendments, if any.

2. Other statewide Impact Codes.
   a. All referenced standards listed in Chapter 35 of the Florida Building Code.
   c. Florida Accessibility Code (Chapter 11 of the Florida Building Code)
   d. HRS (Health and Rehabilitative Services Codes)
   e. Water Management District Standards
   f. Space Criteria as applicable. (State requirements for educational facilities)
   g. The Department of Transportation
   h. The Corps of Engineers
   i. South Florida Water Management District
   j. The Department of Natural Resources
   k. Public Works Department Standards

3. New or Revised Legislation
   a. Threshold law s.553.77, F.S.
   b. Building Code and Enforcement s.553.71, F.S.
   c. High hazard occupancy new definition s.633.021, F.S.
   d. Fire Marshall inspection s.633.085, F.S.
   e. Fire Marshall authority to order vacating of building s. 633.121, F.S.
   f. Master Planning (University Campus Master plans and development agreements) s.1013.30.
   g. Trench Safety Act CS/SB 2626 which adopts OSHA excavation safety standards.
   h. Compliance with Florida Statutes on Xeriscape and mature plant usage.

5. Compliance with applicable local ordinances as required.

B. It is the express intent of this program to acknowledge this building as a continuum relating the existing and future developments on this campus, as outlined in the University Campus Master Plan, through the selection of design, materials, and systems utilized. Comprehensive systematizing of the campus complex provides energy and construction cost efficiencies, maintenance and repair savings by reducing replacement parts inventories and simplifying service needs, aesthetic cohesiveness, and overall life cycle cost savings based on existing plant experience.

C. Design of this building and infrastructure must be closely coordinated with plans of the existing structures, systems development, campus utilities development, and University Campus Master Plan for building development.

D. The Architect/Engineer is responsible, as part of the basic services requirements, for the compliance of the construction documents with all codes until the date the project is released for bidding.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS

It is the intent of this program to define building standards and specifications which will ensure environmental sensitivity, construction materials quality, construction system efficiency, adherence to building codes and standards, and awareness of university requirements to ensure functionality, ease of maintenance, energy efficiency, and cohesiveness to the existing campus megastructure.

Planning of this building will include review and updating of the University's Building Standards for University Park. Review of this document will be coordinated with the University's Facilities Management staff. This document sets forth standards for construction materials, interior and exterior finishes, paving surfaces, common building elements, accent materials, utilities, environmental and building systems, landscaping, and other design guidelines appropriate for this campus. The current FIU Building Standards are to be followed unless specific deviations are agreed upon in advance with the Facilities Management Department.

In the development of conceptual design, careful consideration must be given to the following items:

1. Building design should be functional and take advantage of prevailing breezes and the subtropical climate. Natural ventilation should be developed wherever practical and desirable based on initial costs, operating costs, energy conservation, and the degree of environmental control required in various functional areas. Building design should eliminate the need for excessive mechanical controls through the use of such design parameters as building orientation, sun control, breezeways, operable windows, insulating exterior materials, etc.

2. Careful consideration must be given to alternative means of accommodating level changes. The nature of the functions housed in this facility requires that most of them be directly and conveniently accessible. Design should attempt to maximize vertical accessibility to all floors in this building. Concepts to be explored include ramped walkways, exterior multi-level design and terracing. Where stairs are used, they must be prominent, inviting, and readily accessible.

3. The building shall be designed for functional flexibility.

4. The A/E's documented monitoring of overall project costs, as well as costs of specific design elements, shall be reviewed with the Facilities Management Department. Construction cost control is understood to be a major developmental objective.

5. Together with planning for user convenience, organize and arrange classrooms into building/floor zones and provide accessibility for changes in mechanical and electrical services and for maintenance access requirements. Consider future economies in spacial revisions, and plan to affect economies in operations of mechanical systems.

6. In order to affect maximum flexibility, the building should be designed around a public circulation core which includes all required public access areas and all building services. This core would provide the vertical circulation, and contain all non-academic functions in a sound-isolated envelope which would aid in maintaining acoustical levels in the office and classroom areas. All non-academic, and classroom areas should have direct access to the public circulation core.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

7. Interior finishes should be responsive to the traffic levels to which they will be subjected with a recognition of the permanence of the facility and a desire for low maintenance while providing an inviting and attractive ambiance. Hard or resilient floor surfaces shall be specified for high volume, public traffic areas. Specific room areas should be carpeted with strong, tight weave fibers, and easily replaceable colors, easy cleaning and/or repair. Wall surfaces in public traffic areas should anticipate wear and abuse due to student traffic volumes; use tough-wear paints.

8. The interior environment of this building should be reflective of the international character of the student body and the community. This international flavor should be reflected in the signs, color schemes, and appurtenances. Consideration should be given to the use of interior landscaped areas to reflect the South Florida sub-tropical environment.

9. Furnishings and equipment, interior finishes, and color selections shall be coordinated with University Facilities Management personnel in design stages of project development prior to implementation.

10. Large glass areas which may cause sun and weather problems peculiar to South Florida should be avoided, but daylight illumination should be present, if possible, on all floors for psychological reasons. Use of shaded or screened glass windows to permit views of the campus are encouraged. All exposed glazing must be provided with storm wind protection shutters which are manually operable, or impact resistant glazing.

11. Vending areas including all utility services (electrical, plumbing, floor drains, etc.) shall be provided in conditioned spaces.

12. Provide alcove with electric service within clerical office area to accommodate photocopy machines, if a separate and independent photocopy room is not identified.

    Provide at least one corridor alcove per floor in office areas to accommodate waste paper recycling bins. Bins should be highly visible to encourage usage without obstructing normal circulation patterns.

13. There should be one custodial work room for each 18,000 square feet or less of floor space. All space within the building should be reachable from one of these work rooms without negotiating any stairways. Each work room should be at least 80 net square feet with an 8' minimum dimension and a 36" minimum out-swinging door. Each room shall include a wall hung slop sink extending 14" from wall, 20" wide, and 11" deep; it shall be of cast iron exterior and porcelain interior with a metal guard rim and an outlet trap.

    There shall be a 3" diameter floor drain in front of the sink to catch spillage. No telephone panels, electrical panels, alarm system panels, or pipe chases are to be included in these rooms.

14. The A/E shall include in the project design, fabrication, and installation of an informational graphics and signage system in accordance with University standards. To be coordinated through the Facilities Management Department.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

15. Roofing construction details shall be designed in accordance with the 1988 National Roofing Contractors Association Construction Details publication. A reference copy is available in the University Facilities Management Department. Slope roofs (1/4” per foot) for positive directional drainage.

16. At construction completion inspection, provide the following to the University:
   a. Complete set of reproducible "As Built" drawings.
   b. Operating manuals on all types of equipment used in the building.
   c. List of all Contractors, Subcontractors, and their suppliers of materials and equipment.
   d. Three copies of cut sheets on all door hardware, window hardware, keying schedule, and all interior and exterior mechanical, electrical, fixed equipment, and plumbing installed in the building, shall be provided in loose leaf binders.
   e. One copy of all "as-built" construction drawings (site and floor plans) in electronic medium, compatible with AutoCAD systems located in University Facilities Management offices.
   f. 10% of each type and color of: ceiling tile, carpet, vinyl tile, and ceramic tile.
   g. One gallon of each color paint and five gallons of primary color paint.

17. Door hardware shall be specified to be an electronic locking system (ELS) matching and compatible with the FIU building standard. The system shall be coordinated with the University Key Bank and approved by the Facilities Management department.

18. All service kitchenettes should be provided with exhaust fan to the exterior of the building.

19. All fluorescent lighting should have an electronic ballast and energy efficient bulbs.

20. Acoustical ceiling tile system should be easily removable for maintenance access.

21. Provisions should be made for one air-conditioned voice/data communication (telephone) equipment room on each building floor level, each with an area of not less than 10’ x 10’ with a door not less than 3’ wide for equipment access, and a 125 Volt 20 Amp electrical power outlet.

22. The first floor elevation shall meet a minimum of +9 feet.

23. Asbestos and lead-based Paint Survey, operations & Maintenance, and Abatement:
   1. Rules of the Florida Department of Labor and Employment Security
   2. Requirements of Sections 255.551-565 and Chapter 469, Florida Statutes
   3. Rules of the Florida Department of Environmental protection.
   4. Regulations of OSHA and the Environmental Protection Agency
   5. Licensing regulations of Asbestos Consultants, the Florida Department of Business and professional Regulation.
   6. Lead-based paint minimum abatement standards of the Department of Housing and Urban Development and current state of the art procedures to protect university personnel, students and visitors.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

7. All asbestos abatement contractors are to be pre-qualified under the SUS owner Provided Insurance Program.

It is intended that this program will generate an overall building facility that will be attractive, dignified, easy to maintain, economically staffed and operated, and functionally and aesthetically satisfying to the majority of persons who see and use it. These ends can probably be best achieved through a plan that is devoted to flexible use of space with appropriate materials, light, and color, as opposed to a plan centered upon a particular architectural style, symmetry, or other non-functional planning considerations.
XII. CODES AND STANDARDS - BARRIER FREE DESIGN

It is the policy of Florida International University to provide all architectural features to permit accessibility for the physically disabled. The University has adopted ANSI 117.1 - 1998 and the Department of Community Affairs Accessibility Requirements Manual and current revisions for standard handicapped design materials, for compliance, as a part of the University Building Standards and should be used in conjunction with the State of Florida Handicap requirements and Americans with Disabilities Act (ADA) accessibility guidelines identified under "Statewide Impact Codes" in the Codes and Standards - Building Standards section of this program.

Accessibility

4. HUD Fair Housing Act for Multi-Family Residential Construction.
5. Florida Public service Commission - installation and replacement of public telephones.
7. Agency for Health Care Administration - hospital and health care facilities.

Of particular interest in these regulations shall be provisions for physically handicapped students and staff in the following areas:

1. Wheelchair, crutches, and braces restrictions to mobility.

2. Building access: entrance door thresholds, closers and handles, interior and exterior multi-level transitions by means of ramps (slope 1:16), stairs, elevators, or escalators, emergency exit from all levels for the physically handicapped, and hallway and corridor clearances.

3. Design criteria for public service areas, such as, restrooms (with doors), drinking fountains, telephones, etc.
   (a) Visual fire alarm signals in all toilet rooms.
   (b) Door levers approved for handicap use in all major rooms. Coordinate locations with Facilities Management/Design.
   (c) Handicap drinking fountains.
   (d) Handicap telephones.
   (e) Handicap water closets, urinals, lavatories and mirrors.
   (f) Handicap parking stalls minimum 12' x 20' plus 5' x 20'.
   (g) Braille numbers on elevator doors, cabs, and room identification plaques.

4. Increase ANSI standards of 32" for closet doors to 36".
5. Decrease slope of access ramps below maximum as much as possible.
6. Electric door for main access entrance.
XII. CODES AND STANDARDS - SITE DEVELOPMENT AND CAMPUS INTEGRATION

Site and building planning and design shall conform to the current Campus Master Plan Update. In the development of the conceptual designs, careful consideration must be given to the following items:

1. Site design shall be coordinated with all physical facilities existing and/or currently planned for the campus. The Campus Master Plan outlines all facilities, existing or planned. Site boundaries for this project are outlined in this building program.

2. Pedestrian circulation systems between the proposed building and existing adjacent buildings must be integrated into the design which will preferably provide weather-protected connections. Perimeter walkways, exterior courtyards, and plaza areas should be designed to visually relate to the other campus adjacent buildings.

3. The service road and/or yard shall be constructed according to the Dade County standards for vehicular blacktop surfaces; additional road and service yard requirements include planting, landscaping, irrigation system, lighting, signage, and graphics.

   In engineering design and construction, particular care must be exercised for positive storm water drainage and disposal. This requirement shall be strictly enforced by the University.

4. In design planning and construction staging, consideration should be given to disruption of the existing entrance road to ensure orderly traffic flow.

5. Energy efficient exterior lighting is required for service road and/or yard, site, and building. Because of the heavy use of the facility at night, particular care should be taken in the design of exterior lighting for vandal resistance, security, and aesthetics. Lighting of the service yard should be controlled by clock timers with electric photo cells. Investigate use of lighting color differences to differentiate exterior functions, i.e., service road and/or yard vs. pedestrian walkway.

6. All site utilities shall be provided underground from the nearest existing primary services (power, telephone, and sanitary sewer and water distribution systems). Communications and control systems shall be provided as extensions of the campus underground network to and/or from existing and future adjacent buildings to engage with central terminal (control) equipment.

7. Site design should be developed to take full advantage of South Florida's subtropical climate including the use of Xeriphytic concepts. Landscaping should be used to articulate exterior areas, provide shade for outdoor use, and provide natural buffer between zones of conflicting use and future development.

8. Particular care should be taken to provide attractive site boundaries, and building vistas from surrounding campus areas. Native landscape materials which are capable of withstanding the sun and wind conditions found in South Florida should be used. Irrigation systems should be planned to be water efficient.

9. The A/E shall exercise particular care in designing storm drainage for the site and walkways. Topographic site plans must specifically illustrate existing and established grades for drainage. Site construction must comply with contract documents. "As-builts" of the drainage system shall be reviewed in the field at Substantial Completion of the project. All components of the construction exposed to weather shall have positive drainage to a storm-water drainage system or equivalent (planters, grassed areas, etc.). Scuppers or roof run-offs shall not occur over pedestrian walks or terraces. Primary circulation paths shall require trench drains to ensure against storm-water accumulation during heavy rainstorms. The A/E shall provide a comprehensive storm-water drainage plan for the building, connecting walkways, all weather-exposed stairways, and site, as a part of the Design Development stage.
XII. CODES AND STANDARDS - SITE DEVELOPMENT AND CAMPUS INTEGRATION (continued)

10. Exterior handrails shall be of a non-corrosive material and shall not overheat when exposed to the sun.

11. Roadway and walkway post lights should be located at least 4 feet from the edge of the roadway or walkway.

12. Loading docks and service areas should accommodate the needs of a commercial recycling program, such as corrugated cardboard compactor. An area should also be identified for the separation and collection of other recyclables, such as glass, aluminum, paper, etc.
XII. CODES AND STANDARDS - ENVIRONMENTAL SYSTEMS

Mechanical and electrical systems should be designed to afford maximum energy efficiency and operating economy. Mechanical systems should be designed in as efficient a manner as possible in order that these systems not preclude vital space essential to the building’s main purpose. Particular attention should be paid to the following:

1. Zone controls of air-conditioning to permit emphasis to selected areas; alleviating total operation when necessary, particularly as relates to exhaust hoods where applicable. Design systems which maintain air movements for humidity control. Control equipment shall be pneumatic coupled to an electronic energy management system compatible with existing EMS in other campus facilities.

2. Zoned lighting controls to allow for selective control of all overhead lighting. Lower ambient light levels and increase task lighting.

   Flexibility to adjust lighting levels as needed for particular functions.

   Lighting design should reflect studies conducted in recent years concerning reading lighting in academic buildings.

3. The building mechanical and electrical system should be designed to allow incremental expansion as future needs require additions and alterations and should follow guidelines indicated in the Master Plan Update.

4. All HVAC Systems must be designed and specified with special consideration for sound transmission and quiet operation. Appropriate air duct velocity and vibration isolation must be designed and field verified during construction. Air handlers should be remote from instructional and office space and enclosed by sound resistant partitions.

This building should be designed to function for short time periods with limited power consumption and without the use of air-conditioning. Features listed above - such as natural ventilation, sun control, zoned environmental controls - should be coupled with overall building design considerations such as sitting to take advantage of prevailing winds, window design to accommodate breezes, and minimize head build-up, etc. In order to service the building economically and preserve the architectural plans for flexibility, the following mechanical systems for the building should be incorporated:

   (1) Central utility core with minimum distribution distances.
   (2) Accessible vertical and horizontal chases where flexibility is required.
   (3) Provisions for changing power and telephone distribution.
   (4) Accessible mechanical rooms housing no other functions.

5. Basic systems:
   a. Heat/air-conditioning distribution and control. Design criteria to be 76 degrees Fahrenheit with 50% relative humidity.
   b. Lighting fixtures with local controls and central monitoring and disconnect control panel.
   c. Automatically starting battery powered emergency lighting. An emergency diesel or propane electrical generator for emergency lighting and elevator use should be provided to facilitate the exit of the handicap, in case of a power failure and a U.P.S. system back-up for communications/computers.
   d. Smoke detection and fire alarm with central annunciator panel at or near the main entrance. The fire alarm system should be an addressable system, not a zone system.
XII. CODES AND STANDARDS - ENVIRONMENTAL SYSTEMS (continued)

e. Electric power reserve shall be 150% greater than initial demand. The electrical distribution system shall also be designed and constructed to accommodate this reserve.

f. Water - hot water and cold water with sufficient shut-off valves as required by academic programs and/or maintenance functions. Hose bibs inside and outside of the building as required.

g. Sanitary waste system - as required by applicable codes.

h. Storm drainage - positive drainage from room entrances and all exterior areas.

i. Gas lines, properly tested, with shut-off valves as required; add 30% reserve over initial building demand.

j. Hydraulic elevator - combination service and passenger-type with electrical eye equipped doors; self-lowering and automatic open doors in accordance with fire codes.

k. Clocks - battery emergency powered.

l. Inter-campus and public telephone system. Two phone service source.

m. Irrigation - Central.

n. Exterior building lighting - Energy efficient and vandal resistant.

o. Exterior door security system.

p. Energy management systems in compliance with the Master Plan Update guidelines (Control in Central Utility Plant).

q. Security system connected to the campus Public Safety Department.

6. Central controls for this facility connected to the Central Utility Plant should be provided for the following:

a. Clocks should be connected to the existing Simplex Time Clock System.

b. Environmental systems (HVAC).

c. Fire alarm. Connect system to the campus Public Safety Department.

d. Exterior lighting.

7. Reserve utilities capacity for power and gas (refer to items above), chilled water, water and sewer, and communications are to be provided.
XII. CODES AND STANDARDS - FURNITURE STANDARDS AND EQUIPMENT

In order to facilitate the design of the specific functional areas, lists have been compiled indicating the anticipated equipment needs of each. These lists have been included in the detailed description of each area. These lists may not be complete, and include items which will not be purchased under the projects Capital Outlay Furniture and Equipment budget; however, their inclusion in the design is required for efficient space planning by the Architect and Engineers.

It is also important to recognize that some of the office equipment presently utilized in other buildings on campus may be re-utilized if, after inventory, they are deemed to be in satisfactory condition for relocation.

Installation for all fixed equipment, built-in shelving, counters, and any equipment requiring hook-up other than electrical convenience outlet shall be included in the construction cost and bid documents.

All movable equipment and furnishings shall only be included in the equipment and furniture design layouts, but should be indicated as "not-in-contract". All movable equipment will be furnished by the University and funded from the Furniture and Equipment budget; see Project Budget.

All special equipment shall be specified to be on contract for servicing. A complete set of "as-built" drawings from manufacturers and installers is required. The A/E and contractor shall field demonstrate and discuss maintenance procedures with appropriate personnel from the department of Physical Plant upon Substantial Completion of the construction.

Inventory of equipment, other than in this construction program, shall be provided by the Office of Facilities Management.
XIII. PROJECT SCHEDULE

Mutual coordination between the A/E and the University will be required to resolve questions of scheduling, compatibility, finishes, environmental systems, connections, etc. Scheduling of these meetings and establishment of dates for this coordination will be the task of the University's Office of Facilities Planning. Among those items which will require coordination are the following: Pre-design Informational conferences, Design Submissions and Presentations, Project Reviews, Evaluations and Approvals by the Board of Trustees, Final Document Approvals, Bidding Dates and Procedures, Award of Contracts and Construction Start, Pre-construction and Periodic Construction Conferences, Construction Interfacing with University Operations, Disruption of Services for Utility Connections, Substantial and Final Completion Inspections, and Guarantee Expiration Inspection.

<table>
<thead>
<tr>
<th>Milestone (Completion Dates)</th>
<th>Scheduled Date</th>
<th>Calendar Days</th>
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<tr>
<td>Submit Legal Adv’t. to F.A.W.</td>
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<td>14</td>
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<tr>
<td>A/E Qualifications Deadline</td>
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<td>Shortlist Meeting</td>
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<td>A/E Presentation &amp; Interviews</td>
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<td>Advanced Schematics</td>
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XIV. PROGRAM FUNDS

The planning, construction, and equipment funding source is projected as follows:

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### XV. PROJECT BUDGET SUMMARY

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<th>Facility/Space</th>
<th>Net Area (NASF)</th>
<th>Gross Area Conversion (GSF)</th>
<th>Unit Cost (Cost/GSF)*</th>
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<th>Date</th>
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#### SCHEDULE OF PROJECT COMPONENTS

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<th>2011-12</th>
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<th>Funded &amp; In CIP</th>
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Total Construction Costs $0 $18,822,053 $3,424,836 $0 $0 $0 $22,306,889

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<tbody>
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Total Other Project Costs $2,500,000 $2,642,350 $3,438,187 $0 $0 $0 $8,580,537

**ALL COSTS 1+2** $5,000,000 $5,333,103 $6,863,187 $0 $0 $0 $17,443,224

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<tr>
<th>Appropriations to Date</th>
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TOTAL $2,500,000 TOTAL $30,887,426