

2.1 General Guidelines

2.1.1 Campus Design Philosophy

General Guidelines

Intent

This section provides designers with guidelines for adhering to the University's Master Plan Goals and for designing facilities that are flexible, creative, beautiful, and maintainable.

Resources

In addition to this manual, which provides both broad guidelines and, in some cases, detailed specifications regarding the elements of facility design, designers should consult the *Campus Physical Master Plan* (Master Plan). The Master Plan has been formulated to provide flexibility and creativity, while at the same time providing firm guidance on facility siting.

Documentation

The designer is expected to provide design documentation and construction drawings that indicate thorough assessment of the design challenges and field conditions and that meet the program for the facility. Refer to *State Construction Manual*, sections 112 for Design Criteria and section 203 for details on requirements for submissions of documents for review. Also see *UNC-Pembroke Construction Guidelines*, sections 2.1.2 and 2.1.3 for UNC-Pembroke requirements on drawing standards.

Design Criteria

The underlying goal of architectural design for UNC-Pembroke shall be to provide effective designs for new construction and renovations.

For renovated facilities the expectation is that the design not only meet the new program for the space, but allow for future flexibility in adapting to expanded and enhanced uses.

For new construction, the project is expected to enhance and unify the campus and to be in harmony with the Master Plan. The designer is expected to fully assess, document, and address the project's impact on existing campus infrastructure, including utility services, parking, pedestrian circulation, vehicular access, open space requirements, landscape and maintainability.

In their design and arrangement, university buildings are fundamentally different from other building types.

The architecture of the campus should express its unique function; buildings should express the creation and communication of knowledge.

In addition, campus architecture must create campus space. This is most often accomplished in conjunction with other existing or proposed buildings. Larger buildings can be arranged so that exterior courtyards or arrangements with wings of the building make an enclosed space. Campus buildings are contextual, rarely signature buildings, as they become part of an open-space campus fabric.

The designer should establish a building system in harmony with the campus neighborhood structure, circulation, network structure, and focal points. This

system should be oriented towards campus space, which is the focus of the neighborhoods. Assure that the architectural elements should increase in delicacy, variety, and structural complexity as they interface with people or public areas. At this interface, designers should locate the more interactive activities. Conversely, on the service side of a building, texture or grain can increase the volume or scale. Assure that glass and openings are used to express and make visible activities within the building. Architectural elements should be related to the function and character of the activities they contain. Assure that the materials and scale of the architecture provide continuity with other buildings in the neighborhood.

The designer is required by contract to design a project that meets the program within the given budget. As the design is being produced, the designer is expected to be proactive in monitoring the budget and alerting the NC State Facilities Planning and Construction project manager if problems arise. If at any time the designer believes that satisfying the stated program requirements at the level of quality desired will exceed the budgeted funds available, then he or she must inform the project manager without delay.

2.1.2 Use of Archives

General Guidelines

Intent

This section provides the designer with a 'user's manual" for the Facilities Planning and Construction--Facilities Information Systems Archival Unit. This unit is a working library which maintains UNC-Pembroke facility as-built data, including record drawings, project documentation, specifications, operation and maintenance manuals, and survey and utility information. The library supports staff and contract design firms and provides hard copies as requested. Operating hours are 8am-5pm, Monday through Friday.

Resources

The resources available from the Archival Unit are extensive. Below is a user's guide.

Document Location/Access:

All as-built construction documents, specifications, manuals, all drawings, specifications and operation/maintenance manuals are organized in numerical order, according to building number.

Alphabetical and numerical building lists are posted in the plan room.

Current Record Drawings for all campus buildings are organized in labeled drawers.

Refer to 2.1.3, CADD Procedures for requests involving **digital versions** of building floor plans.

Utility and Survey information may be made available upon request.

Obtaining Prints

Facilities are not available on campus to make copies of blueprints. Designers are required to sign out prints, and provide their own copies.

Documentation

This section details requirements for submission of documents to Facilities Planning and Construction. Documents, drawings, CAD files, etc., that do not meet the requirements of this section will be returned to the designer for rework and resubmission.

Submittal of Record Drawings and Final Report

Refer to *UNC-Pembroke Construction Manual*, section 206.1 Record Drawings, section 206.2 Final Report. Record drawings will only be accepted if they meet requirements in *North Carolina State Construction Manual*, section 206.1.

Record Drawings Specifications

All projects shall be designed using CAD software. The designer will be required to furnish a diskette or CD Rom copy in addition to reproducible hard copy of plans and specifications as described in the section referenced above. Diskettes shall be 3.5" 2 MB, high-capacity, IBM-compatible. Drawings shall be in Autocad "dwg" format to match the current Autocad software version release number as used by Facilities Planning and Construction. If an Autocad dwg file cannot be created, a "DFX" file will be accepted.

Preferred Media Types

Permanent As-Built Reproduces (**all drawings shall be no larger than 24x36**)

Autopositive:

Trade name of Eastman Kodak Co. for certain photographic direct positive intermediates. (See Direct Positive).

Direct Positive:

A generic term for prints made on either paper or film by means of a positive to positive silver type emulsion. Polyester based film, photographic, .004" thick reproducible, known by several trade names such as Mylar, Cronaflex, and Silver Slick, which are trade names of the Dupont Company, and Estar which is a trade name of Eastman Kodak. This material is dimensionally stable and will not stretch or shrink with changes in temperature and/or relative humidity. Almost indestructible, it can not be torn or ripped.

Silver Slick:

1. Double matte photographic nylon-highest quality
2. Single matte .004" thick, 100-year shelf life, the most inexpensive and the most common autopositive.

Either are preferred over Xerox 2510 vellums.

2.1.3 Computer-Aided Design and Drafting (CADD) Procedures

General Guidelines

Intent

This section provides the designer with information on computerized drawings, CAD submissions requirements, and layering. Facilities Planning and Construction maintains electronic data for University facilities, including as-built data, current building floor plans, mapping, and survey and utility information

Resources

A few of the university's building floor plans are on computer. Requests should be made to the project manager.

Documentation

The following are requirements for design projects on CADD, by contracted designers.

Record Drawings Submission

Record Drawings and survey information provided to Facilities Planning and Design shall be accompanied by transmittal and include the following information:

Company Supplying Information
Contact Person/Project Manager
Address
Telephone
E-Mail
Date of Final Updates
Related Project Name(s)
Project Number(s)
Building Name
Floor(s)
Room Number(s)

Drawings shall be in Autocad 'dwg' format to match the current Autocad software version release number as used by Facilities Planning and Construction. All information contained within Autocad drawings shall be separated into individual "layers" in accordance with Facilities Planning and Construction Layering System as outlined in the Appendix.

Layering Requirements

Building and mapping information is created in Autocad and stored in a layering system. See Layering Table(s) in the Appendix. (Note: Layers are subject to revision at Facilities Planning and Design's discretion.)

2.1.4 Programming

General Guidelines

The university will provide the designer with the project program. If the programming phase of a project has not been performed when a designer is contracted for a project, the university will provide explicit instructions to the designer for any programming work to be performed by the designer. Programming work is considered an added service.

2.1.5 Design for Maintainability and Flexibility

General Guidelines

Intent

University buildings are to be constructed to institutional standards, generally having an expected life of 50 to 100 years. The design of the building should promote long life by encouraging good maintenance through ease of access. Also, as the use of the building will be fluid, with programs ever changing, the building should be able to adapt to a reasonable degree of change. This section outlines general expectations.

Resources

Resources available to designers are section 2.6.5 Mechanical and Electrical Room Standards and section 2.8.10 Equipment Access and Maintainability.

Documentation

Construction documents, specifications, and maintenance manuals are expected to contain the level of detail that will be required to maintain the building fully. Owner training on new systems is required to orient maintenance personnel regarding operations. See Design Criteria below regarding requirements to provide for future facility flexibility. In this regard, plans should show how spaces can be adjusted to fit various needs.

Design Criteria

Maintainability

Designers are required to consider long-term durability and maintainability when selecting equipment, materials, and finishes for either new facilities or renovations. First cost is not the only consideration. First cost, long life, and low maintenance costs are considered in equipment selection. Please refer to section 2.6.5 for Mechanical and Electrical Room design guidelines, and to section 2.8.10 for Equipment Access and Maintainability guidelines.

Service personnel should be able to access equipment and perform routine maintenance without disruption to campus activities. Designers should comply with NC OSHA regulations for access to equipment via stairs, platforms, and on rooftops. Equipment clearances must be sufficient to permit replacements over the life of the facility. Mechanical equipment rooms must have access to the exterior and have convenient service-vehicle access. The designer shall take into account the needs for service vehicles when providing parking designs for new facilities.

Flexibility

Flexibility in the arrangement and use of a building is a fundamental requirement, and the ability to accommodate growth and change is an important criteria in the design of structural, mechanical, and electrical systems and

selection of materials. The designer should accommodate in the design of new buildings reasonable flexibility for future expansion, growth, or change of programs. Designers are also required to incorporate the principles of "Universal Design" to new facilities in order to provide accessibility for people with disabilities. Building type shall not be a reason for limiting accessibility. For example, gymnasium and athletics dressing rooms and showers, Public Safety locker rooms, and research and laboratory buildings should all be designed to be accessible to the greatest extent possible for the greatest number of people.

2.1.6 Accessibility for People with Disabilities

General Guidelines

Intent

University policy on accessibility is to go beyond the minimum requirements of building code and accessibility standards to provide more than minimally adequate accommodations for everyone. Where federal and state or local standards conflict, the university's preference shall be used. If no preference is mentioned in these guidelines, then the most stringent or most favorable standard for accessibility shall be used. The desired goal is eventually to make all buildings, programs, services, and activities accessible to the greatest extent possible for the greatest number of people. Universal design--"The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design"--is the overriding guideline for every application. All elements for handicapped use only shall be avoided wherever a universal design solution can be used. Designed elements stigmatize users when they segregate people who need access. See *The Principles of Universal Design* in the Appendix.

Resources

Resources available to the designer are

North Carolina State Building Accessibility Code, volume 1-C *The Principles of Universal Design*, contained in the Appendix Americans with Disabilities Act Accessibilities Guidelines (ADAAG)

Disabilities and Business Technical Assistance Center (DBTAC)

UNC-Pembroke Facilities Planning and Construction personnel

UNC-Pembroke Accessibility Assessment

US Department of Justice, Architectural and Transportation Barriers

Compliance Board

Documentation

Design documents shall include the designer's accommodation of universal design in the scope of the project.

Design Criteria

Campus Design Philosophy

Facilities that house university programs, services, and activities offered to the public must comply with local, state, and federal codes and standards for accessibility. University policy is to make all new construction and renovation of existing buildings, destination points, and outdoor spaces within the campus physically accessible to all students, staff, faculty, and general public to the

greatest extent possible for the greatest number of people without need for specialized design or special adaptation.

Designers and contractors shall at a minimum meet the ADA Standards for accessibility and the *North Carolina State Accessibility Code*, volume I-C. Designers shall follow the principles of Universal design in alterations, renovations and all new construction.

Definition of Universal Design

"Universal design is an approach to design that incorporates products as well as building features and elements which to the greatest extent possible can be used by everyone. While accessible or adaptable design requirements are specified by codes or standards for only some buildings and are aimed at benefiting only some people (those with mobility limitations), the universal design concept targets all people of all ages, sizes, and abilities and is applied to all buildings. What is an universal feature? [An universal feature is] Any component of a house (or public building) that can be used by everyone regardless of their level of ability or disability. Universal features are generally standard building products or features that have been placed differently, selected carefully, or omitted. For example, standard electrical receptacles can be placed higher than usual above the floor, standard but wider doors can be selected, and steps at entrances can be eliminated to make housing (or public buildings) more universally useable. Examples of other universal features in housing (or public buildings) are (universal features include, but are not limited to the items listed)

- * handles for doors and drawers that require no gripping or twisting to operate--such as louver or loop handles
- * living (or public) space on one floor or stair landings big enough to accept lifts
- * audible and visual alarm systems
- * storage space within reach of both short and tall people

Some products and design elements are already universal. Others can be made so. Manufacturers and builders who use the universal design concept will design their products and buildings to be as usable as possible by a larger population including children, (people of small body size), older people, and people with disabilities."

Ronald L. Mace, FAIA
Architect and Product Designer

The idea is to plan for providing accommodations for all groups of the university population, including older people, children, short people, wheelchair users, and others using walking aids, those who are hard of hearing and deaf, and people with a need for visual access. Accessibility requirements shall be surpassed in all locations except where site limitations make it impossible. All campus destinations shall be connected with an accessible pedestrian route.

2.1.7 North Carolina Products

General Guidelines

Whenever possible, building materials and equipment that are manufactured in North Carolina should be specified for the construction of university projects. Quality, schedule, cost, and design intent should be considered when specifying North Carolina products.

2.1.8 Standard Stock/Items

General Guidelines

Intent

To provide the university with a facility that can be maintained using standard stock items that can be readily and inexpensively ordered and shipped, designers are required to design facilities that do not rely on custom-built items. Standard stock items must be used whenever possible. Custom-built fabrications and equipment must be clearly identified in the design documents and discussed with the university.

2.1.9 Historic Preservation

General Guidelines

Intent

Old Main is currently the only building on campus on the National Register. Any renovation to this building must preserve the historical context of the building and follow applicable federal and state guidelines.

2.1.10 Recruitment and Selection of Minority Businesses

General Guidelines

Intent

To allow the participation of minority business in building projects at the university, the designer is expected to take all material measures to ensure that all prime contractors fulfill their responsibilities in complying with state regulations in this area. The designer is obligated to ensure that all bid documents comply with standards established by the State Construction Office. The designer is responsible for making certain that project documents comply with the most current requirements as set forth by the State Construction Office.

Resources

Refer to the State Construction Office for lists of minority contractors and design firms.

Documentation

Designers are required to submit evidence of solicitation of minority contractors with the certified bid tab. Please see the *NC State Construction Manual* for updated details on reporting requirements.

2.1.11 Special Scheduling and Construction Restraints

General Guidelines

Intent

When special scheduling and construction restraints are imposed, they are to protect the safety of campus users, the continuance of the work of the university, and to maintain flow of pedestrians and vehicles around construction sites.

In addition to initial programming, which reveals special scheduling concerns, please consult the project manager the latest edition of the UNCP Supplemental General Conditions,-contained in the Appendix of this book.

Documentation

Designers must show construction staging areas, relocated roadways and walkways, and other special requirements on drawings. Specifications shall contain details of "quiet hour" periods in areas such as the Library and residence halls.

Design Criteria

Continuation of campus services on and around the construction site is to be the prime objective. Designers and contractors shall be aware of the presence of students, faculty, and staff who require mobility, or visual or hearing accommodations. This group of the university population shall be protected from injury and provided adequate warning and accommodations to access at all temporary walkways, or around stockpiles of materials, excavation, fences and barricades. Pedestrian and nonambulatory traffic areas around the construction limits must be maintained in a clean and safe condition at all times. Consideration for people who have disabilities shall be planned to provide appropriate detours subject to university approval and shall be included in construction documents. Handicapped parking shall not be used for staging areas.