

# **CHAPTER I: GENERAL PRINCIPLES**



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## I. GENERAL PRINCIPLES

### A. OVERVIEW

#### Celebrating Carolina's Natural Landscape and Historic Core

The seat of the University is on the summit of a very high ridge. There is a very gentle declivity of 300 yards to the village, which is situated on a handsome plain considerably lower than the site of the public buildings, but so greatly elevated above the neighboring country, as to furnish an extensive and beautiful landscape, composed of the heights in the vicinity of Eno, Little and Flat rivers. The flat country spreads out below like the ocean, giving an immense hemisphere, in which the eye seems to be lost in the extent of space.

*William R. Davie, North Carolina Journal, Halifax, September 25, 1793 (from Chapel Hill: 200 Years: "Close to Magic," Chapel Hill, NC: Chapel Hill Bicentennial Commission, 1994, 3.)*

The UNC-Chapel Hill campus has long been praised as among the most beautiful in America. The essence of this beauty resides certainly in its topography, but also in the character of its buildings and landscaped grounds. The older buildings of North Campus, which line McCorkle and Polk Places, epitomize the Carolina aesthetic. The purpose of these design guidelines is to ensure that future buildings and grounds are as well-conceived and designed as those of the past:

On October 12, 1793, the Eagle Lodge Masons of Hillsborough planned and led the noontime laying of the cornerstone of the North Wing, the nation's first building constructed on a public university campus, now known as Old East. As the North Carolina Grand Master of Masons and the recognized "Father of the University," William R. Davie laid the cornerstone; afterward John Grant Rencher auctioned off the town lots.

*James Vickers, Images of America: Chapel Hill. Dover, New Hampshire: Arcadia Publishing, 1996, 9.*

To be successful, this campus' best architectural and landscape traditions, reflecting our architectural heritage and the innovative spirit of the university and the Chapel Hill community, must inform design decisions. These guidelines establish a framework for future designers, in order to ensure that the civic nature and beauty of the historic core extends to the entire campus.

This does not mean that historic buildings and open spaces should be replicated. Rather, it suggests the continuing evolution of the best of Carolina's built traditions. Using similar scale, proportions, form, materials and hierarchy, new designs can find harmony with existing buildings and grounds. The designer should thus refer to these guidelines in the spirit of both recollection and invention.

Above all, buildings and landscaping at Carolina should reflect the University's essence: its intellectual climate. Our physical space should promote vibrant intellectual exchange, such that barriers to the intellectual life are removed while new venues for intellectual life are created. The Piedmont region's natural beauty; Carolina's architectural roots in Polk Place; and a considered balance of buildings, open space and streetscapes will work together to serve Carolina's intellectual climate.

## **B. CAMPUS MASTER PLAN**

The underlying goal of the architectural design of any new construction is to enhance and unify the campus. New construction, located within the building envelopes identified in the Campus Master Plan, should relate to adjacent buildings in character, mass, dimension, scale, building materials, and fenestration.

In keeping with the University's goal of enhancing and unifying the campus, the Designer must consider the impact of new construction on the existing campus infrastructure. This includes careful consideration of the project's utility, pedestrian, parking and vehicular access, open space and landscape requirements and storm water run-off. The project must comply with the vehicular/pedestrian open space and utility systems detailed in the Campus Master Plan. <http://www.fpc.unc.edu/campusmasterplan>

### **1. Environmental Goals: Balancing Growth and Conservation**

In keeping with its commitment to maintaining the natural beauty and environmental health of the UNC-Chapel Hill campus and surrounding area, the University has adopted the following goals, proposed by the Environmental Master Plan. These goals address issues of land and water resource management and guide the development of the land to sustain the quality of the University's natural resources.

- a) Balance growth with preservation of the natural drainage system.
  - (1) Maximize water conservation
  - (2) Protect and enhance our signature campus landscapes
- b) Manage storm water as an opportunity, rather than a problem.
- c) Manage total storm water volume change on-site. To the extent feasible, maximize on-site infiltration or reuse of storm water (existing and future) to mitigate impacts of flood and drought.
  - (1) Protect water quality, minimize erosion and sedimentation, and provide for beneficial reuse of rainwater.
  - (2) Provide for no increase in 2 year storm run-off volume.
  - (3) Control the peak discharges of larger storm intervals to pre-development levels.
  - (4) Recognize that the University of North Carolina at Chapel Hill is part of the Cape Fear Watershed.
- d) Enhance and protect the water quality of streams to meet water quality standards.
- e) Protect Jordan Lake, a major downstream drinking water supply and recreation area.
- f) Optimize open space/habitat protection and management to restore ecological functions of natural areas along streams and on steep slopes adjacent to streams.
- g) Reinforce the University as a Role Model using our land management and resource conservation practices as a tool for educating the public.
- h) Reduce dependence on single occupancy vehicles and adopt energy and materials management strategies that protect air quality.
- i) Implement best management practices.

### **2. Consistency and Diversity**

The unique beauty of the UNC-Chapel Hill campus lies both in its consistency and its diversity. The consistency resides in its brick walks, low stonewalls, and an abundance of green spaces studded with old

oaks and other trees. These elements unify the three campus districts (North, Southeast, and Southwest), and unify the campus with the town:

“Characteristic of Chapel Hill are the low stonewalls that run about the campus and town. The newer ones are mortared, but the older walls, weathered to a brownish gray, consist simply of field stones piled one upon the other in New England style. “

*Phillips Russell. These Old Stone Walls. Chapel Hill: Chapel Hill Historical Society, 1977, 13. From Chapel Hill: 200 Years, 9.*

“Lost amid oaks, hollies, cedars, redbud, dogwood, and flowering fruit trees, stand the buildings of the University, ranging from the first structure completed in 1794 to the last dormitory built with the assistance of PWA funds in 1940. Near the Carolina Inn—Chapel Hill’s premier hostelry—there is a cluster of Georgian fraternity houses huddled together as if for comfort ...

Scattered throughout the woods are the tree-secluded homes of the faculty. Here are no factories, no hum of industry, and no stain of black smoke against blue sky. This seems a rural Arcadia filled with woodsy innocence and naïve delight. But don’t be deceived ...”

*David L. Cohn, “Chapel Hill,” Atlantic Monthly, March 1941. Qtd. in Chapel Hill: 200 Years, 64-65.*

While outdoor elements are consistent, campus architecture varies in scale, material and style as one moves North to South across campus, so that building typology, scale and siting is consistent within districts, but varies across campus. Therefore, while some design guidelines apply campus-wide, some are specific to the three campus districts: North, Southeast and Southwest. The designer should remain aware of the specific traditions of his or her district when planning a project.

### 3. Open Space Typologies

In setting guidelines, our goal is for the UNC –Chapel Hill campus to retain its natural beauty and signature appearance, even as new buildings are constructed and more students enroll. We require a landscape that our community will continue to use and enjoy – as outdoor rooms where we can hold classes, study, meet colleagues for conversation, eat lunch, lose ourselves in thought, and relax. We traditionally have used our beautiful campus to recruit prospective faculty, staff, and students. We want a landscape that brings harmony to buildings, that is appropriate to our climate, and that fits our university traditions. We regard our campus landscape as one of our most valuable assets.

“As I saw Franklin Street in 1912 it was a dusty red avenue cut through a forest of magnificent trees. “ ...

“My first impression of Chapel Hill was trees; my last impression was trees. A few weeks ago [in 1964] I went out at dusk on the roof of Craige Dormitory. Buildings, streets, fields were hidden. All that met my eye was trees. “

*Robert Burton House, former University chancellor, from The Light That Shines. Chapel Hill: University of North Carolina Press, 1964. Qtd. in Chapel Hill: 200 Years, 47.*

a) Carolina’s open space typologies belong to three categories:

(1) Natural and Controlled Natural (as typified by the Pinetum and the Arboretum)

- (2) Formal Quad (as typified by Polk Place)
- (3) Composite (as typified by McCorkle Place)

More detailed information about open space typologies can be found in the Campus Master Plan, Design Guidelines.

To analyze the landscape, the designer should investigate those elements that create the best open spaces and streets on campus. The landscape, broadly interpreted, covers many elements on the campus:

- a) The ground plane both as a walking and planted surface;
- b) The garden walls;
- c) The outdoor furniture; and
- d) The plant materials themselves.

All of these elements should remain consistent as the campus continues to grow. For example:

- a) The current ground plane of simple turf and trees should be a model for future quadrangles and open spaces, both large and small. (Outside of high profile areas, introduce xeriscaping and plants most appropriate to their microclimate to minimize water and fertilizer requirements, and encourage stormwater filtration).
- e) Simple brick walks should be used in all paved walking surfaces, and also are encouraged for use in small parking and service areas.
- f) The stone walls found throughout campus should be carried forth, both in material and in the way in which the stone is set.
- g) Outdoor furniture should be incorporated campus-wide.

#### 4. Site Analysis: Balancing Built and Open Spaces

The first step in any design process should be an extensive analysis of the site: its history, vistas, topography, vegetation, massing, architectural character, pedestrian and vehicular traffic, infrastructure and service. New projects should result from a careful study of the balance between built form and open space that is unique to Carolina, and should seek to broaden that tradition. When designing a balance between built and open spaces at Carolina, the goal should be to create clear, simple open spaces and quadrangles that connect to other existing or proposed spaces.

For example, buildings and open spaces should be axially composed, forming enclosing exterior space and creating outdoor rooms. At the same time, new buildings should integrate with the broad surrounding context. This tenet is in keeping with buildings and open spaces constructed from the University's founding to the prewar era, when planners achieved a balance between built form and open space. In the modern era, the placement of buildings as individual objects rather than as part of a great whole discontinued the tradition of architecture forming quality open spaces. As a result, the open space created during this period was characterless and residual. In the spirit of reviving Carolina's tradition of vibrant space making, planners now strive to knit the campus into a complex fabric of old and new, open space and built form.

#### 5. Street Typologies

As part of the open space network, streets should be as carefully designed as quadrangles and courtyards. Two good examples on the Carolina campus are Franklin Street and Cameron Avenue. Franklin, though a busy street, has an intimate and dynamic feel. Cameron is a quintessential campus street, combining all the desirable elements of slowed traffic, narrowness, tree-lined landscaping and pedestrian friendliness.



The streets in and around the Chapel Hill campus have traditionally been, and should remain, simple and uncluttered. They must work with the overall built geometries of the campus, making navigation easier without requiring signage at every corner. Street hierarchy also should compliment the overall plan of the campus: few if any primary streets, some secondary and mostly tertiary. The goal should be to make the campus less car dependent. Thus, campus streets should be:

- a) As narrow as possible;
- b) Lined with street trees;
- c) Pedestrian and bicycle-oriented.
- d) Suited to public transit.

Trees and narrower streets slow traffic, making the street more pedestrian-friendly. Wide streets without trees create a gulf that separates both sides. If a street needs many lanes, a median should be considered. Planted with street trees, the median would allow pedestrians a place to stand if they are unable to cross all lanes of traffic.

In most cases, streets should be lined with buildings, so that the road mediates between the two sides rather than separating them. This kind of streetscape again slows traffic, makes navigation easier and encourages pedestrian activity. Locating main entrances to buildings and public and/or commercial functions on the street further integrates building, open space and streetscapes, unifying the elements.

## 6. Building Typologies

In order to understand Carolina's interwoven typologies, a designer should examine existing building styles, studying their siting, massing, scale, fenestration, and materials. The designer should become familiar also with the six typologies that now exist on the campus. Existing building styles include:

- a) Traditional
  - (1) Domestic (e.g., Old East)
  - (2) Monumental (e.g., Wilson Library)
- b) Modern
  - (1) Domestic (e.g., Hinton-James and Craige Dormitories)
  - (2) Monumental (e.g., medical buildings)
- c) Transitional
  - (1) Domestic (e.g., Carmichael Dormitory)
  - (2) Monumental (e.g., McColl Building)

For more specific information on building typologies, see Part I, Campus Wide Design Guidelines of the Campus Master Plan. These typologies should serve as models for future buildings, and can be used to solve most any programmatic or site design challenge.

Beyond the typologies, campus architecture should define the public realm, much as the walls of a room define a space. Critical in this equation are a building's height and mass, location of primary entry, and facades. General guidelines are as follows:

- a) Facades should be sufficiently planar and continuous to form and emphasize the spaces they define.

- d) The ground floor should be differentiated from the upper floors, with the possibility of an “attic” story.
- e) In general, buildings should be sited perpendicular to or parallel to the outdoor spaces they form.

## 7. Historic Preservation

As the first state university in the United States, the buildings and landscapes that make up the historic resources of The University of North Carolina at Chapel Hill are an invaluable asset and artifact not only to the University but also to the State of North Carolina and the nation as a whole. These buildings along with the landscapes they help define are a vital part of what makes Carolina special and unique. It is absolutely imperative that the historic resources are preserved, rehabilitated and in some cases restored at the University of North Carolina at Chapel Hill.

The historic resource of the Campus is literally an essay in built form of the history of the University. On the Historic North Campus, one encounters buildings built in the eighteenth, nineteenth and twentieth centuries all of which convey how the mission of the University, to educate and serve, has evolved over the past two centuries.

There are sixty-nine buildings on the Carolina Campus that are considered historic in nature. Twenty-six buildings, sculptures and objects that form McCorkle Place are contributing resources to the Chapel Hill National Historic District. The Carolina Inn is the only building listed individually on the National Register of Historic Places while, Old East and Smith Hall-Playmakers Theatre are the two designated National Historic Landmarks on Campus. Ten more Campus buildings will soon be eligible for consideration as historic resources worthy of consideration for placement onto the National Register of Historic Places. It is the intent of the University to approach the historic preservation of the historic north Campus as a whole and consider the level of significance and architectural and historic integrity of each building in relation to the historical and architectural significance of the entire Campus. A comprehensive historic preservation survey has been conducted for the historic buildings on Campus and can be found on the Facilities Services website at <http://www.fac.unc.edu>.

This survey examines each historic Campus building and states issues and concerns for rehabilitation or restoration projects that could affect the building’s architectural and historical significance. The survey also defines and points out all elements, spaces and features that are significant to the building’s integrity. The objective of the survey is to clearly state all of the historic preservation parameters and noted elements to designers and users in order to insure that both the designers and users of the historic building will make special consideration for the preservation of these buildings and features. All questions and concerns of items stated in the Historic Preservation Survey should be directed to the Campus Historic Preservation Manager.

In approaching the rehabilitation of a historic building on Campus, the designer should make every effort to preserve the distinctive character of a historic building and its immediate site on Campus while simultaneously developing design solutions that allow reasonable change which meet the building’s current or proposed needs and its universal accessibility. Designers should incorporate The Secretary of the Interior Standards for Rehabilitation during the design of a rehabilitation of a historic building on Campus. The Standards should be applied to these projects in a reasonable manner, taking into consideration economic and technical feasibility.

The Secretary of the Interior’s Standards for Rehabilitation are as follows:

- a) A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

- b) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- c) Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
- d) Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
- e) Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
- f) Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
- g) Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
- h) Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
- i) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- j) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Rehabilitation projects should utilize all of the best aspects of the historic buildings. Elements such as limestone entries, columns, entablatures and dormers should not only be retained but any new design work with these elements should be sympathetic in nature to these elements. Whenever possible, materials for proposed additions or alterations of historic buildings should match the existing. This includes the use of limestone for architectural trim elements, North Carolina granite for steps and matching brick and mortar not only in color, texture and form but also in strength and finally, wrought iron for railings. Several buildings on Campus have unique exterior historic finishes, which are vital to the historic character of the Campus. Lime wash finishes found on buildings in McCorkle Place should be carefully analyzed and reproduced for additions and repairs or alterations of existing wall surfaces whenever it is possible and feasible. Sandstone elements also found on historic buildings in McCorkle Place should either be matched or repaired not replaced with a noncontributing material. Wood trim and distinctive moldings should be carefully matched when replaced. The designer should consider historic roof massing and materials in order to insure the most appropriate treatment possible. Finally, the designer should carefully consider the fenestration, doorways and portals of historic buildings on Campus in order to achieve the most appropriate design solution.

Rehabilitation projects on historic buildings that contribute to or are adjacent to the local historic districts must be submitted to Town of Chapel Hill for review and shall be required to obtain a Certificate of Appropriateness. Any proposed work that alters the architectural integrity of any historic Campus buildings that contributes to the Chapel Hill National Historic District or is individually placed on the National Register for Historic Places is subject to design review by the Division of Archives and History, Restoration Branch of the North Carolina Department of Cultural Resources. The designer shall submit proposed work to the Department of Cultural Resources during the State's project review process of the project.

When federal funding is involved in the rehabilitation, alteration or demolition of historic buildings, sites or features on Campus, the designer must submit the proposed scope of work to the N.C. Department of

Cultural Resources who will forward the proposed project to Federal Advisory Council on Historic Preservation for review and comment on the appropriateness and effect the proposed project has on the historic resource. This process should be done in full compliance of Section 106 of the National Historic Preservation Act. For more information please contact the North Carolina Department of Cultural Resources, Restoration Branch at (919)-733-7305 or access the department online at <http://www.ncdcr.gov/> Designers may also contact the UNC Campus Historic Preservation Manager at (919)-843-3238 or at <http://www.fpc.unc.edu>.

### **C. PROJECT PERMITTING**

Permitting for University projects typically includes both local and state agencies. The permitting requirements for a specific project will be determined by Facilities Planning during the pre-design phase of each project. More information on each type of permit is available in [Chapter III](#), Section A. Site Design.

### **D. SUSTAINABILITY**

University buildings are designed with a long lifespan in mind. Many of our buildings are already approaching 200 years of age. Our new buildings should be built to endure. Building materials and systems should be selected with consideration to lifetime costs, not just first costs.

The University is mandated by North Carolina Executive Order 156 to seek opportunities to reduce environmental impacts associated with capital improvements throughout project planning, site and building design, and construction. Agencies shall, to the extent feasible and practicable, implement project initiatives or modifications that result in energy efficiency, water conservation, pollution prevention, solid waste reduction, and land preservation during the construction and operation of agency facilities. <http://www.p2pays.org/ref/03/02221.pdf>

The University of North Carolina at Chapel Hill is a member of the US Green Building Council. <http://www.usgbc.org> We recognize the USGBC's LEED rating system as the most widely accepted standard for evaluating sustainability of the built environment. While we do not yet require projects to seek LEED certification, every project is expected to incorporate measures that would enable it to be certified at the silver level. Achieving this standard requires close cooperation among the design team, eventual occupants, owner representatives, contractors, and staff who will operate and maintain the building. Incorporation of these standards and design approaches begins at pre-design and includes early meetings with a range of owner representatives on campus. Refer to "Section B: Project Development Sequence, Programming Phase" in [Chapter II](#) for a list of departments to include.

The designer will be provided with a campus-specific LEED checklist, showing credits that are to be attained on every project through adherence to the Design Guidelines. These add up to 25 points above and beyond the seventy LEED prerequisites that must also be satisfied. The design team must then select and fulfill the requirements associated with a minimum of eight (8) additional credits to bring the project to the silver level. Each project should strive to attain the maximum number of credits possible within the constraints of the project program and budget.

The sustainability goals for each project are established during the programming phase and recorded in the Program Document. An updated LEED checklist, along with supporting documentation, must be completed and included with each subsequent design phase submittal.

Pre-Disaster Hazard Mitigation Plan  
Disaster Resilient University  
The University of North Carolina at Chapel Hill

**Suggested Language for 2007 UNC Design Guidelines**

(suggested placement: insert following “Sustainability” section of Chapter 1, “General Principles”)

**NATURAL HAZARD MITIGATION**

Although located within the relatively mild climatic region of the Piedmont, the University of North Carolina at Chapel Hill is vulnerable to a number of recurrent natural hazards. These hazards have the potential to impact the University community in long-lasting and damaging ways, including, but not limited to: loss of life or personal injury; impairment of University function; loss of revenues; and interruption of the University’s fundamental mission of teaching, research and public service. In addition, recovery from natural hazard events that impact physical assets on campus can be exceedingly costly, requiring public expenditures for the repair or reconstruction of damaged facilities and infrastructure.

An integral component of the University’s measure of sustainability is its capacity to withstand the impacts of potential natural hazards. Buildings that are built to endure must be strengthened against the anticipated effects of identified hazards. Consideration of potential hazard impacts must be incorporated into the design and site selection process of new buildings and infrastructure, and into the decisions regarding renovation and retrofit of existing structures. Incorporating an awareness of natural hazard impacts into the decision-making processes of the University entails the process of *hazard mitigation*.

Hazard mitigation is defined as any action taken to reduce or eliminate long-term risk to people and property from hazards and their effects. Hazard mitigation focuses attention and resources on actions that produce successive benefits over time. In this way, hazard mitigation is often a cost-effective way of preventing disasters before they occur. As articulated in the UNC-CH Natural Hazards Mitigation Plan, [\[insert link here\]](#) the University has adopted a policy that ensures all existing and future building on campus will be as resilient to the impacts of identified natural hazards as is cost effective and feasible. For some facilities that are considered high-priority or particularly vulnerable structures, this may involve building to standards that are above those contained in the NC Building Code and/or the NC State Construction Standards.

Through an extensive risk assessment process, the University has identified several natural hazards to which the campus and surrounding areas are vulnerable. The most highly probable of these hazards include: high winds (whether emanating from hurricane, tornado, thunderstorm or isolated high wind event); severe winter weather (including snow, ice, freezing rain, and cold temperatures); extreme heat; drought; and localized flooding.

Among the natural hazards that are less likely to occur in our region, but which may nevertheless have dire consequences are seismic shift and earthquake tremor. Although no significant seismic incidents have been recorded in recent history within Orange County, the location of Chapel Hill in relation to the New Madrid Fault and the seismic risk area surrounding Charleston, South Carolina may be considered a risk factor for the University.

In addition, the UNC-CH Institute for Marine Sciences at Morehead City in Carteret County is susceptible to the unique hazards of the North Carolina coastal zone, and facilities associated with the Institute should be designed and built accordingly. These hazards include hurricanes and nor'easters with associated severe winds of speeds up to and beyond Category III Hurricane strength; severe flooding; saltwater intrusion; and estuarine erosion.

Strengthening the campus against these hazard impacts through prudent land use planning and building design contributes directly to the overall sustainability of the University community. Life safety is of paramount concern, and ensuring that our campus populations – students, faculty, staff and visitors – are protected from the impacts of natural hazards fosters a safe and secure campus environment.

Mitigation is also a fiscally responsible decision in circumstances where specific actions are warranted by the degree of risk posed. Through mitigation strategies carried out prior to a hazard event, the University may be able to avoid or shorten the length and extent of power outages; protect the ongoing operation of university services; and decrease the need for University closure. In the event that closure or partial closure is required, hazard mitigation can enable the University to quickly and efficiently resume full functioning capacity.

During site selection and planning, a policy of preserving the integrity of biological and physical systems contributes directly to environmental sustainability as well as hazard resilience. This involves limiting the degradation of the environment and preserving natural systems – such as wetlands, floodplains, and steep slopes – that increase the University's resilience to natural hazards.

## **E. MAINTAINABILITY**

Designers also should take the following measures to ensure that personnel can access maintenance equipment without disrupting campus activities:

- a) Size of equipment rooms to permit maintenance, repair and easy removal of equipment.
- b) Do not combine service closet and equipment room.
- c) Provide permanent ladders and platforms as required.

Designers should comply with North Carolina Occupational Safety and Health Authority (OSHA) regulations for employee access to equipment via industrial stair, working platforms, ladders, etc.

- a) Locate mechanical and electrical equipment rooms with access to the exterior.
- d) Provide convenient service vehicle access.
- e) Do not combine service closet and equipment functions.
- f) Provide direct access to each individual service closet and equipment room.

## **F. WASTE MANAGEMENT**

### **1. Site and Space Planning for Recycling and Solid Waste Management**

Designers are required to work with the University Office of Waste Reduction and Recycling to develop convenient spaces for waste handling containers and service access.

The University is mandated by the “North Carolina Solid Waste Management Act of 1989” and North Carolina [Executive Order 156](#) on State Government Environmental Sustainability, Reduction of Solid Waste, and Procurement of Environmentally Preferable Products, Section 4.b. (signed July 20, 2000) to establish recycling programs and meet waste reduction goals.

“As set forth in North Carolina General Statute 130A-309.14, all state agencies shall ensure that employees have access to containers for recycling (at a minimum) aluminum cans, high-grade office paper, and corrugated cardboard. All state employees are required to separate identified recyclables materials generated in the course of agency operations and place them in the appropriate recycling containers.

State agency facilities that routinely house the general public, such as highway rest areas, state parks and recreation areas, employment security offices, state historic sites, etc., shall implement programs for the collection of recyclable materials discarded by the public at all such locations (e.g., aluminum cans, glass, and plastic beverage containers) when feasible and practicable.

State agencies that operate or contract for the operation of food service establishments, such as snack bars, cafeterias, dining halls, etc., are encouraged to implement programs to recover and recycle leftover food when practicable and feasible.”

Design considerations for waste and recycling containers must be based on the building’s usage and occupancy. In addition to indoor recycling, a building must, at a minimum, have access to a dumpster for trash, one for cardboard and outdoor recycling carts.

When the building contains food service operations, containers and exterior space must be allocated for grease collection and food waste recycling. Animal labs and quarters require exterior space for the collection of animal bedding for composting. Theatres, art studios, and maintenance shops often produce bulky waste that cannot be collected in front load dumpsters. Any building containing offices will generate some quantity of high grade waste paper (all purpose printer paper from computer labs, copiers, printers, and routine administrative business) and must have loading dock or service area access for paper collection. Residence Halls require extra refuse and recycling containers.

a) UNC-Chapel Hill collects the following materials for recycling:

- (1) Animal Bedding—Collected on the interior by the animal lab staff, and then stored outside for pickup
- (2) Bottles & Cans—Collected throughout the building on a space usage basis and in outdoor carts (especially in high volume areas like residence halls, catering areas, dining halls, etc.)
- (3) Cardboard—Housekeeping brings flattened boxes out of the building to dumpsters outside
- (4) Food Waste—Collected at kitchen areas inside and then stored outside for pick up
- (5) Grease—Collected at dining facilities and picked up by outside contractors
- (6) Newspaper & Magazines—Collected throughout the building on a space usage basis and in outdoor carts (especially in high volume areas such as residence halls, libraries, etc.)
- (7) Office Paper—Collected throughout the building on a space usage basis
- (8) Scrap Metal—Collected at shops and taken to county or in-house facilities
- (9) Clean Wood Waste—Collected at shops and taken to county or in-house facilities

For a list of UNC-Chapel Hill’s recycling programs and detailed information about planning needs for these programs, see [Chapter V](#), Sections 02870, 02475, 11170 and 12300 and the Site and Space Planning section of the OWRR design guideline website: <http://www.fac.unc.edu/OWRRGuidelines>. For more

information about the recycling and waste collection needs based on building use, please see Needs Based on Building Use within the Site and Space Planning section of the website.

## 2. Construction and Demolition Debris

The University, State, Orange County and Chapel Hill are committed to reducing waste and the use of landfills. Waste reduction and recycling practices aren't limited to routine day-to-day functions and events on campus; they also apply to construction and renovation activities. Construction waste management practices include deconstruction, reuse, salvage, recycling and disposal.

Executive Order 156 calls on all state agencies to: "seek opportunities to reduce environmental impacts associated with capital improvements throughout project planning, site and building design, and construction. Agencies shall, to the extent feasible and practicable, implement project initiatives or modifications that result in energy efficiency, water conservation, pollution prevention, solid waste reduction, and land preservation during the construction and operation of agency facilities."

Related sections include Chapter II: Construction Documents Submittal requirements and Chapter V: Sections 01606, 01505, and 02070. Resources and more information are available on the Construction and Demolition Waste Management section of the OWRR design guidelines website: <http://www.fac.unc.edu/OWRRGuidelines>

## 3. Office of Waste Reduction and Recycling Services to Buildings During Construction

In order to maintain services to buildings under construction and adjacent buildings, OWRR and its contractors must be able to access dumpsters and loading docks during all phases of construction and renovation.

Also see [Chapter III](#), Section A.10. Construction Staging Areas, Section A.24. Pedestrian Safety, and Section A. 26. Driveways. Important information relevant to maintaining solid waste services is on the "Services to Buildings During Construction" section of the OWRR design guideline website:

<http://www.fac.unc.edu/OWRRGuidelines>

## G. UTILITY PLAN

Reserve

## H. STORM WATER MANAGEMENT PLAN

The goals of the plan are consistent with the storm water goals described in the Environmental component of the Campus Master Plan:

- a) Balance growth with preservation of the natural drainage system
- b) Manage storm water as an opportunity rather than a problem.
- c) Recognize UNC-Chapel Hill as part of the Cape Fear watershed.
- d) Reinforce the University's role as a model.

To this end, the University seeks to reduce and minimize impervious cover and improve land cover conditions to increase storm water infiltration and reduce runoff. Standards established for the Development Plan regulate the change in volume and rate of runoff from pre to post development conditions. These standards allow no increase in volume for the two year storm and no increase in peak runoff rate from pre to post development conditions. Water quality improvements are directly tied to volume reduction and it is the intent that by meeting the net zero volume



increase on each site, water quality standards will also be met. Development Plan requirements, the NPDES Phase II permit requirements include treatment of the first 1 inch of rainfall for removal of 85% of the total suspended solids. However, the above standards are a minimum requirement. Each project is expected to seek additional opportunities for on-site storm water infiltration to the maximum extent possible through recharge beds under pavement, rain gardens, or landscape improvements. Volume reduction on an individual project basis, through capture and re-use of storm water in gray-water systems for toilet flushing or irrigation, will also contribute to the overall success of the plan. The comprehensive plan illustrates areas where particular improvements might be made but it is up to the individual project design team to evaluate the strategies that can best be incorporated into each project.

As part of the comprehensive storm water plan, an inventory of existing storm water infrastructure main lines was performed. This is available as a layer on the campus GIS. It is important that this information is kept current. As old storm water pipes are removed during construction and new pipes installed, a survey is required, tied to existing campus benchmarks and state plane coordinates. Survey information shall be conveyed to the Mapping Department for incorporation into the GIS.

This inventory also identified areas of reported flooding. Existing flooding is considered part of the existing on-site storm water detention and needs to be accommodated in the site storm water design.

1. Related documents:

- a) Campus Master Plan -- <http://www.fpc.unc.edu/CampusMasterPlan/>
- e) Development Plan -- <http://www.fpc.unc.edu/DevelopmentPlan>, Chapter VI, Storm Water Management and Standards
- f) Campus GIS -- <http://www.unc.edu/atn/gis/>
- g) Storm Water Management Plan
- h) NPDES Phase II permit– UNC EHS Department

## **I. TRANSPORTATION PLAN**

Every construction project, no matter how small or large at UNC-CH, impacts people. The need and degree of detail for a transportation plan is determined by the amount of impact. Each project shall be reviewed to assess the impact before, during and after construction on students, faculty and staff. The minimum transportation plan will address how vehicles, pedestrians, bicycles, disabled persons, services, buses and visitors will be impacted before, during or after construction. A transportation plan should be submitted during the development and construction phase of a project. The plan can and does change as more information is available during the development and construction phase of the project. The Department of Public Safety will review, comment and approve all transportation plans.

## **J. PUBLIC AND PEDESTRIAN SAFETY**

The Design of campus facilities should optimize opportunities for pedestrians, cyclists, and motorists to travel safely. Safe travel for all modes of transportation should be created and maintained at all times, especially during construction. Pedestrian safety planning shall be part of all University construction projects. The Department of Public Safety and Facilities Planning will review, comment, and approve all pedestrian plans during all phases of a project. The University Pedestrian Safety Committee will also review all plans that affect pedestrian routes where they meet roadways.

## **K. ACCESSIBILITY**

The University of North Carolina at Chapel Hill is committed to making all buildings and areas of the campus physically accessible to all faculty, staff, students, and visitors. As a matter of course, the Designer is expected to provide a design that will comply with the North Carolina State Building Code and the American with Disabilities

Act. However, the Designer should be aware that the University views compliance with these regulations as a minimum goal. A universal design principle that provides the same access to all is encouraged.

All new construction shall fully comply with the Americans with Disabilities Act (ADA) of 1990 and the ADAAG, (July 1, 1994) and the latest edition of the North Carolina State Accessibility Code.

To the greatest extent possible, renovation projects shall bring the project area and the accessible route of the facility to full ADAAG and the NCAC compliance.

In many instances, the Designer is expected to provide accessibility that exceeds the federal and state regulations.

The ADA Accessibility Guidelines may be accessed at: <http://www.usdoj.gov/crt/ada/stdspdf.htm>

For additional information about required Accessibility requirements, refer to [Chapter III](#), “Accessibility”.

## **L. HISTORICALLY UNDERUTILIZED BUSINESSES (HUB)**

The goal of the University of North Carolina in adopting its plan for expansion of participation by Historically Underutilized Businesses (HUB) is to ensure and promote equal and increased opportunities for all segments of the design and construction community to participate in University construction projects; to prohibit discrimination against businesses on the basis of race, color, national origin, or gender; to encourage full and open competition; to promote equal access to contracting opportunities among the various contractors and vendors that do business with the University; and to assist the owner in identifying and notifying prospective minority businesses of potential contracting opportunities. The term “Minority Persons” is defined in North Carolina General Statutes 143-128.2. The University seeks to include those businesses owned by minorities that have been historically underutilized and excluded from the prime contractor or subcontractor market. The University encourages all those associated with the University construction program to commit to this goal through a good faith effort.

The University is committed to a verifiable minimum participation goal of 10% for participation by minority businesses in the total value of work for each campus construction project. The Designer shall consult the most recent versions of “The Plan to Increase Utilization of Historically Underutilized Businesses” in State Construction Projects. These guidelines may be downloaded at the following sites:

- a) [http://intranet.northcarolina.edu/docs/finance/projects/UNCGuidelines2002\\_4-03-Rev3.doc](http://intranet.northcarolina.edu/docs/finance/projects/UNCGuidelines2002_4-03-Rev3.doc)
- b) North Carolina GS.143 – [www.ncga.state.nc.us/statutes/statutes.html](http://www.ncga.state.nc.us/statutes/statutes.html)
- c) UNC Chapel Hill HUB website – [www.fpc.unc.edu/HUB/](http://www.fpc.unc.edu/HUB/)
- d) For more information, also refer to [Chapter II](#), “Bidding Phase”.

## **M. PUBLIC ART**

The University of North Carolina’s goal is to become the nation’s leading public university. Toward that end, the University plans to implement a public art program that becomes a model both with the state and among public universities nationwide. The intent is for the campus to become a museum without walls, making art an integral part of the University, and a vital and indispensable part of the campus community.

Public art is art that appears outside of the traditional art settings of museums and galleries and found in publicly accessible spaces such as plazas, parks, classrooms, hallways, offices, cafeterias, sidewalks, bridges, and parking decks. It can stand alone or be integrated into the form and function of a building or open space, taking shape in the pattern of a terrazzo floor, a carved wooden bench, the forged metal railings of a pedestrian bridge, the concrete pavers of a sidewalk, or other architectural or landscape elements. Simply stated, public art takes an artist’s ideas and integrates them into the fabric of everyday life.

Public art is not about decorating the campus. It is a vital element that enlivens and enriches the quality of campus life – providing experiences, provoking responses, creating dialogues, reexamining opinions, and expanding boundaries. The Campus Arts Advisory Committee will review and make recommendations to the Chancellor’s Buildings & Grounds Committee on specific public art projects proposed for the campus.

For more information, refer to [Chapter II](#), “Design Reviews”.





THE UNIVERSITY  
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*at* CHAPEL HILL

DEPARTMENT OF FACILITIES PLANNING & CONSTRUCTION