

SECTION 1
DIVISION 01
GENERAL PRINCIPLES

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PART 1 - GENERAL PRINCIPLES

ARCHITECTURAL GUIDELINES

The design guidelines that follow provide a cohesive set of standards applicable to the UNC Charlotte campus. The guidelines are not intended to prescribe solutions nor limit creativity but rather to establish a flexible framework that respects UNC Charlotte's past, adequately addresses its present needs, and retains innovation for future projects.

The guidelines present design principles common to all buildings and sites within the University, addressing topics such as building typologies, massing, materials, and fenestration. The guidelines also specify treatments for open space connections. All new buildings and site improvements should be consistent with these principles or carry the burden of showing how they improve upon the proposed recommendations. The guidelines also address specific functional design considerations applicable to building projects. These considerations include topics such as building access, crime prevention, service and loading access, and sustainability.

A related document to this manual is the UNC Charlotte Campus Master Plan, completed in 2010. Designers are expected to adhere to the intent of the current UNC Charlotte Campus Master Plan and this Design Manual.

The Master Plan can be found at: <http://facilities.uncc.edu/>

CAMPUS IDENTITY

While accommodating program needs, new construction should respect the scale of its context to establish a campus of related building forms that is welcoming and highly identifiable. The design of new buildings should take into account the campus vernacular, especially of those buildings adjacent to the site. By incorporating the architectural character of the existing campus into the design of new buildings, the University will build an interesting and varied collection of visually related buildings, as opposed to a collection of "carbon-copied" buildings.

BUILT ENVIRONMENT

Respect for the carrying capacity of the land is critical. As often as possible, new construction should be infill projects, promoting the best and highest use of the land. In multiple locations, the Master Plan indicates that UNC Charlotte should continue consolidating surface parking into parking structures around the campus perimeter. The Plan recommends new campus buildings, recreation fields, or general open space for the existing parking lots closer to the interior of campus.

Decisions about how campus land is used will have direct implications for the University's transportation networks. Access to a site, via road, foot, or bike will be considered when determining a building site. Certain land uses will create a reciprocal need for additional roads and parking. The Master Plan tested multiple scenarios to ensure that proposed uses created a minimal burden to the University's transportation system. The University can further minimize the impact by incorporating creative, alternative means of access to the campus, which will reduce the need for personal vehicles. New construction will include improvements to the sidewalks surrounding the building. As well, buildings will connect to the existing circulation network of paths, bike lanes, and roads. Appropriate bicycle parking,

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as outlined by LEED, will be provided in new projects. New buildings will also be mindful of orientation, shading, and the effect on adjacent buildings and spaces

ECOLOGY AND HYDROLOGY

UNC Charlotte will act to connect habitat, stream, and river corridors within its campus grounds. Habitat fragmentation will be evaluated by the University during new construction projects. The University will not disturb steep slopes, and new construction will utilize buildings as retaining walls to work with the natural topography of campus. Disruption to wooded areas will be kept to a minimum. The University will also support connections to the larger region through greenway trails and waterway protection of Toby and Mallard Creeks.

The massing of new buildings will allow daylight to reach active outdoor spaces, as well as natural daylight into indoor areas to the extent possible. New landscape projects on campus will work with a palette of native species. Over time, labor- and resource-intensive lawns will be supplanted with native grasses that require less irrigation, chemical-inputs, and general maintenance. This will occur in areas identified by the Master Plan.

Toby Creek, Mallard Creek, and two unnamed tributaries run through parts of campus. Toby Creek is most prominent, as it bisects the campus into eastern and western halves. Therefore, the University is invested in the health of its waterways on campus, as well as aware of the ways in which its treatment of these resources affects those further downstream. As part of the Campus Master Plan, a campus-wide onsite storm water management plan addresses both the quantity and quality of run-off. This plan identifies opportunities to cleanse, calm, and treat storm water. The University will look inward to supply some of its water needs by collecting rainwater for reuse in buildings and irrigation. Ultimately, the University would like to use landscape design to create healthy and ecologically appropriate spaces, provide pleasant outdoor environments, minimize storm water runoff, and reduce the “heat island” effect.

LANDSCAPE AND OPEN SPACE DESIGN CONSIDERATIONS

The Master Plan recommends several treatments to enhance existing open spaces, develop future spaces, and better connect the two. Strong axial sight lines, appropriate brick paving, benches, distinctive lighting, seat walls, and architecturally integrated handicap ramps will all contribute to an inviting campus setting. The sighting of buildings to frame quadrangles, courtyards, and other pedestrian spaces will keep new construction projects consistent with the design intent of the Campus Master Plan and the 1997 Sidewalk Master Plan (Section 2).

The UNC Charlotte campus is nearly 1000 acres; yet, it maintains a highly identifiable campus core. Future construction projects should respect the pedestrian scale of the campus core and create intimate, memorable spaces such as courtyards, pocket parks, and small plazas. The introduction of plantings, seat walls, water elements, and public artwork to frame these areas will enhance their sense of intimacy. Seating, so that members of the campus community can enjoy, study, and congregate in these areas, should be included in the plans.

To further enrich the quality and interest of the University’s open spaces, the design guidelines and Master Plan identify three types of open spaces on the campus to be cultivated throughout campus: manicured open spaces, working landscapes, and natural landscapes.

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Manicured open spaces are the formal quads used to organize the campus's buildings. Manicured open spaces may consist of formalized landscaping that includes plantings, shrubs, trees, and turf grass; or, they may consist of formal "hardscaping," that includes materials such as brick, wood, and pre-cast pavers. Formal plantings are often incorporated into the hardscaping design.

In certain settings, the University may choose to implement "*working landscapes*": landscaped settings that perform dual purposes of visual interest and stormwater management function. Please consult the appendix of the Master Plan for a full description of opportunities for working landscapes.

Natural landscapes on campus are open space areas in which native species grow "freely." Native grasses and flowers replace non-native turf grass areas along the campus's edges and streams. Natural landscapes require less maintenance and chemical inputs for their care and upkeep. Again, the Master Plan identifies areas for natural landscapes to be cultivated, as they are not appropriate for all areas of campus. Natural landscapes will create greater bio-diversity on campus and strengthen UNC Charlotte's connection to its unique region, climate, and ecology.

ENERGY

Energy can be the single greatest operating expense for a university and the single greatest source of carbon emissions. Reducing energy consumption provides benefits on both fronts. UNC Charlotte will explore the use of natural resources such as solar (for heating and hot water), wind (for ventilation and cooling), and geothermal (for heating), and will not prohibit the incorporation of these features into a building's design. However, the University retains final approval to ensure life cycle cost savings.

The University will also reduce energy requirements of buildings through design, equipment selection, and use/operations guidelines. Building systems will strive to be closed loop, so that waste heat and other process byproducts can be recycled for other building functions. As new technologies become available and affordable, the University will evaluate and, as appropriate, implement these practices.

Building design will minimize maintenance and operating costs by employing whole-systems lifecycle evaluation and by integrating innovative building engineering solutions at project inception. Building design should also adopt monitoring, measuring, and feedback systems to establish baselines of energy usage and building performance, against which the University can evaluate improvements and set goals for future projects

SUSTAINABILITY

To create a campus that improves the quality of life and environment for its students, faculty, and staff, the University addresses issues of sustainability as a continuous process affecting environmental and fiscal concerns. The design guidelines encourage sustainability at the "campus scale" by addressing goals within four broad categories: ecology and hydrology, energy, built environments, and public education through learning landscapes.

The University is committed to environmental sustainability and stewardship of the physical environment and is committed to procedures and products that both sustain the environment and produce savings for the University over time.

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It is the goal of the University of North Carolina at Charlotte that new buildings be designed to meet a minimum standard of "LEED¹ Certified" criteria. For additional information about these criteria, please consult Annex A. The University Project Manager (UPM) will advise the designer whether s/he should pursue Green Building Council certification on a project-by-project basis.

BUILDING TYPOLOGIES

A building can be described by its program, size, form, location on campus, and the way it is used to define an exterior space. Campuses are composed of collections of buildings with similar programs representing academic, residential, athletic, and student life uses. The program contained in a building often dictates the building's size and location. Groupings of similar uses frequently occur because of the desire to maximize functional adjacencies and congregate similar typologies.

Intuitively, a building should portray its use with characteristics embodied in the building envelope, mass, and detailing. For example, numerous windows, well-detailed entries, a relatively narrow width to length footprint, and connections to pedestrian pathways and open space will characterize residence halls. The Master Plan identifies areas suitable for new residential housing in the South, East, and North Villages.

Large expanses of glass, tall floor-to-floor heights to accommodate interstitial utility distribution, roof treatments to conceal fume hood exhaust stacks, and wide width to length proportions to satisfy classrooms, lecture halls, and lab module requirements will characterize academic buildings.

BUILDING PLACEMENT

Campus buildings generally define two types of areas: streets and open spaces. In some cases, buildings will define both. On UNC Charlotte's core campus, like other traditional campus cores, buildings most frequently define open spaces, forming the edges of campus quads. Regardless of the space a building frames, it should be designed as "edge definer," actively shaping the spaces around it with public interfaces at the street level that relate to existing adjacent buildings.

To define outdoor space, build-to lines are established as part of the guidelines. These build-to lines are not set-back requirements, but space-making edges that the buildings should adhere to.

- Buildings shall remain parallel and perpendicular to adjoining streets and spaces. This geometry reinforces view corridors, street edges, wayfinding, and entry locations.
- Buildings shall retain a minimum of *60 percent* of their frontage along the build-to line. This recognizes that buildings are designed with setbacks and variations in mass and height to balance proportions and create visual interest.
- Buildings shall meet build-to lines on more than one façade when sited on a corner condition. The intent is for a building in this condition to present a strong visual presence in multiple directions when facing a street, quad, or major pedestrian path.

Each project should take responsibility for improving adjacent streets and pedestrian ways by including funds in its budget to bring these areas up to campus standards. Siting and design of new structures should result in areas that are lively and secure through twenty-four hour use. Designers are encouraged to use the campus palette of building and landscape materials, walkways, lighting, signage, and street

¹ LEED: Leadership in Energy and Environmental Design
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furniture to create both active gathering and contemplative spaces. These types of spaces should reinforce linkages and gateways within the campus and at its edge.

DEFINED QUADS AND HIERARCHY

Due to prominent locations and/or specialized civic uses, certain buildings on campus will need to be designed as iconic, or “hero” buildings. Robinson Hall is an example of building with a civic programming component and high visibility from University City Boulevard. Its design and presence is iconic and elegant, befitting of the functions it contains. However, not all buildings on campus need to have iconic status. Several buildings on UNC Charlotte’s existing campus serve successfully as “soldier” or background buildings. The design of “soldier” buildings should still be exceptional, but toned down so as not to compete for attention with the hero buildings, like the Fretwell Building. This approach establishes a hierarchy among campus buildings that allows visitors to intuitively understand the arrangement and function of the buildings.

Campus Axes and Landmarks

Landmarks or Heroes should be determined by location (such as terminating an axis, creating a gateway, or anchoring an entrance) or uses (library, art museum, performing arts, administration) which develop a legible hierarchy on campus.

Soldier Buildings are well crafted unique buildings which form the edges of spaces, maintain rhythm and massing of the context, and allow the hero buildings to act as landmarks.

BUILDING MASSING

The massing of a building is defined by several key elements including: building height, geometry of plan (length and width), and roof form. Most of the older buildings on campus are one to two stories in height and rectangular in plan geometry. Newer buildings are typically three to four stories.

Architectural scale is important because it helps to define the overall character of a campus. This is accomplished by how the features of buildings, particularly at the ground level, relate to the scale of the human body. It is further reinforced by how buildings relate to each other and the surrounding open space.

Much like the campus, buildings are composed of many different elements such as door treatments, window types, columns, arches, cupolas, chimneys, and cornices. How these elements are applied often gives intuitive visual clues as to the programmatic use of the building. Future buildings must reflect the intimacy of the existing campus’s scale in their details. This respect will allow a wide range of architectural styles to coexist in an elegant and cohesive manner.

Wings, setbacks, and porticos will also reduce the overall size and scale of a building. It is imperative that future buildings maintain these characteristics so that the campus aesthetic remains consistent. The potential mass of a new building will be dictated by topography, site area, build-to setbacks, and the height of adjacent buildings.

The difference in scale between the main campus and the CRI campus is visually evident. This difference is not necessary contradictory; it represents the difference in place and function between the

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two campuses. Future projects on each campus should be responsive to its individual context and be relatable to the human user of the building.

Buildings placed along streets and paths should be spaced at a regular rhythm.

- Buildings should be no longer than 125-250ft in length
- Longer buildings should have massing that reduces their scale
- Pedestrian portals should be created to allow for functional campus circulation

Building heights should maintain consistency along the entire connection.

- Building height should match that of existing buildings along the connection
- Building height for new connections should be consistent
- Taller buildings should be recessed at the limit line
- Stories above the limit line should be distinct from the façade below
- Material, color, and pattern of upper stories should help to reduce their visual impact

FAÇADE RHYTHM

There are several features comprising a building's façade that, when employed correctly, will reduce a large scale into a more human scale. Arranging a façade into three major vertical pieces is a principal approach to accomplishing this. The three vertical pieces include:

- A base of cast stone or brick. The height of the base will be proportional to the height of the building.
- A middle portion of brick generally with pre-cast accents.
- A top or roof that caps the project rather than a condition in which there is no defined top edge to the building.

Base

Cast stone bases are encouraged for all buildings fronting quads, principal streets, or major pedestrian spines in order to distinguish the building at street level. The stone should be predominately light in color and should be of a height proportionate to the overall building size. Articulation of the surface is encouraged. Brick is also an acceptable material for bases, particularly when detailed to differentiate the base from the upper levels.

Middle

The primary material of the walls above the base should consist of standard sized Boren "Special Morrocroft" #02-79-1 (Now Hanson Brick) brick, traditionally associated with UNC Charlotte's architecture. Other brick sizes may be used for decorative purposes and/or on secondary walls internal to the site. Consideration should be given to the compatibility of brick and stone colors of adjacent and opposite buildings. This should not, however, discourage visual richness on the campus. Window frames and mullions, sun screens, metal elements, and railings may be used to introduce color into building façades when appropriate.

Top

The manner in which a building 'meets the sky' also contributes to its sense of scale. Articulating a building's roofline provides visual termination to a façade and further minimizes one's perception of its scale. Future buildings should incorporate treatments into their design that will accomplish this goal. A

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change in plane and/or a change in material will create shadow, texture, and visual interest. Unless incorporated into a building's design, mechanical equipment should be screened from view and placed away from main pedestrian circulation paths.

The standard for vertical division is to maintain symmetry with respect to the primary entry and to express a sense of order and repose elsewhere along the same facade. Expression of rhythm via cast stone banding, brick reveals, brick projections, or other elements is desirable.

Consistent vertical expression and rhythm of facades

MATERIALS AND COLORS

UNC Charlotte has already established a detailed materials palette for the campus, as outlined below. By respecting this palette, new building designs will foster a sense of architectural continuity with existing buildings across the campus. Other approved materials may be employed to highlight particular features of the façade, and the University encourages architects and designers to use these accent materials in a way that explores and expands upon the basic vocabulary of the campus building. The interplay of materials and textures with the traditional campus building palette is one way to respect the campus' historic building styles while creating an aesthetic that is modern.

Standard materials and colors should generally reflect those of Robinson Hall: (For more specific information, refer to the Design and Construction manual, Section 2,):

ENTRANCES

Articulation of the main public entry on the façade of a building is crucial for promoting clear visual and intuitive access to campus buildings. The primary building entrance should be articulated through architectural elements that instill a sense of hierarchical importance. Canopies, loggias, change in vertical plane, change in grade, change in material, and placement of signage can all help to highlight and distinguish a building entry. Vestibules, to limit heat and cooling loss, should be predominately glass to provide unobstructed visual access into the interior of buildings.

Secondary entrances should also be clearly defined using a combination of brick and pre-cast stone material. All entrances should be covered to protect building users from inclement weather. Secondary entrances should be recessed from the building face or covered using a canopy.

Building entrances should contribute to the life and activity of the streets and walks surrounding the building. Well-lit and glass entries will enhance security in the areas adjacent to the building. Building entrances are frequently the meeting and gathering places of those using the buildings, and they should be designed to encourage interaction.

Main entrances should be accessible for individuals with disabilities. Accessible pathways to buildings within the immediate vicinity as well as major walkways to other parts of campus shall be integrated into the design of the building.

Entries should be clear and pronounced.

- Entries should be distinct in massing, scale, and material from other façade elements
- Entries should have exterior and interior spaces that reinforce arrival and interaction

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WINDOW EXPRESSION

Window openings should be vertically oriented (or articulated as such by use of frames and mullions), and should generally consist of masonry or stone heads and sills. Ample fenestration at the base of a building will maximize visual connections between the building's 'public' ground level and the street or open space on which it is located.

Recessed window openings which emphasize depth and shadow lines are recommended. A minimum depth of two inches is recommended from the face of the facade to the face of the window frame. Design of "curtain walls" is not desired except in special circumstance where they are subordinated to the solidity and massing of the facade.

The academic activities of the University, so far as they are compatible, should be visible to passers-by. Windows should be placed to light and provide views to internal spaces, and also to give walks and streets the security and richness that derives from the visibility of adjacent activity.

ROOFSCAPES

Rooftop terraces, garden areas, or other designed roofscape elements are desirable. The topography of campus is such that one often has a view looking down upon the roofs of buildings at lower elevations. Roofscapes should be designed with this in mind. No highly reflective materials, such as metallic materials or mirrors, may be used on the surfaces of roofs. By painting or using materials light in color, roofs can deflect heat from the sun and lessen cooling costs for the building. Sustainable green roofs are encouraged when appropriate as the "fifth façade" of buildings.

Mechanical equipment located on building roofs shall be adequately screened with structures integrated into the building design so as not to be visible from the ground level or from windows of adjacent buildings.

Glazing, such as clerestories or skylights, should appear as recessed openings.

PARKING DECKS

The designer should apply the University's architectural guidelines to new decks, specifically those regarding setbacks, massing, façade rhythm, and scale. New decks will define streets and open spaces on campus. They should align with streets, courtyards, and view corridors. Additionally, decks should have at least one façade that addresses the street and respond to the character and organization of the space it faces.

Decks should be designed to have a clear distinction of vehicular and pedestrian entrances. Most visitors to campus go directly to a parking deck, as their first destination on campus. Therefore, the design of should attempt to make the transfer to foot, shuttle, or bike as efficient and safe as possible. Special consideration should be given to pedestrian paths when they intersect with vehicular routes. Using specialized pavers or simply changing the paving material from asphalt will visually enforce pedestrian crossing. The design should also consider opportunities that facilitate bus and bicycle usage, such as sheltered shuttle stops and bicycle storage on site.

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The University would like to encourage a mix of functions within its parking decks, when possible. Parking deck ‘wrappers’ literally wrap around the exterior of decks and house multiple uses such as commercial, residential, office, or a combination of the three. This creates a true mixed-use space that enhances pedestrian movements and encourages activity on the street well beyond parking hours. The Master Plan recommends deck wrappers at certain locations, and these should be designed following the University’s architectural design guidelines.

The University expects that new parking decks will respect the UNC Charlotte’s commitment to environmental sustainability. Although LEED certification for parking garages is not applicable, the garages shall be designed to minimize impact on the ecology and environment of the campus.

CAMPUS SIGNAGE

With the Campus Master Plan and these design guidelines, the University strives to strengthen its identity and brand. This is accomplished through many means, from the cohesiveness of the campus’s architectural character to the scale and intimacy of its open spaces, from its presence on abutting city roadways to the use of native, regional plant species. The most obvious, and perhaps basic, means of accomplishing a strong campus identity is through campus signage, particularly signage that appears on campus buildings. The University has created and adopted Campus Signage Standards that should be followed by all construction projects.

Specifically, the name of all buildings must be permanently attached to, or architecturally integrated into, the facade of the building. As a general guide, the building name should be integrated in the design of the primary entrances. The font and size shall conform to the Campus Signage Standards (Section 2, Annex D). If a formal name has not been designated, the design should include an integrated position of pre-cast stone for future building name signage. Such position should be designated in the construction documents for future installation.

The University may decide to supply/install the building signage by separate contract. The UPM should be consulted to determine the delivery method.

FUNCTIONAL DESIGN CONSIDERATIONS

Whereas the architectural guidelines of the previous section provide a set of practices to affect the physical appearance of the campus, its buildings, and its open spaces, the functional design considerations outlined within this section are intended to ensure that the campus operates in a seamless, safe, and secure manner.

CRIME PREVENTION

Of primary importance to the University is the health and safety of its students. Crime prevention is one factor contributing to the safety of students. As designers approach new projects, they should consider the implications a new building or open space will have on safety and security. Construction projects should include plans for well-lit pedestrian paths, particularly in areas on the edge of campus. Designers should ensure that potential problem areas in general are well-lit; examples of such areas include stairwells, entrances and exits of buildings, parking areas, ATMs, public telephones (including security phones), bus stops, recreation fields and courts, storage areas, and recycling areas. Building windows should provide views of activities occurring outside the building, including views of parking lots.

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Entrances and edges of campus should have multiple surveillance points from adjacent buildings. Where appropriate, campus police sub-stations may be included in the building design. Features that may allow criminal activity to go unnoticed – fencing that obscures views, heavy foliage or shrubbery along pathways or building entrances, spaces that cannot be seen from adjacent buildings and pathways – should be avoided. In general, the University prefers ATMs to be located in the interior of buildings.

During construction, the Electrical Contractor must provide adequate temporary security lighting within the limits of construction site.