THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

CAROLINA NORTH DESIGN GUIDELINES 2008

October 30, 2008
DRAFT

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Aerial photograph of existing site

Introduction

Carolina North will serve the mission of the University of North Carolina at Chapel Hill by creating a world-class research and learning campus in the heart of Chapel Hill. The plan identifies a two-hundred and fifty acre footprint for University growth and development over the next fifty years.

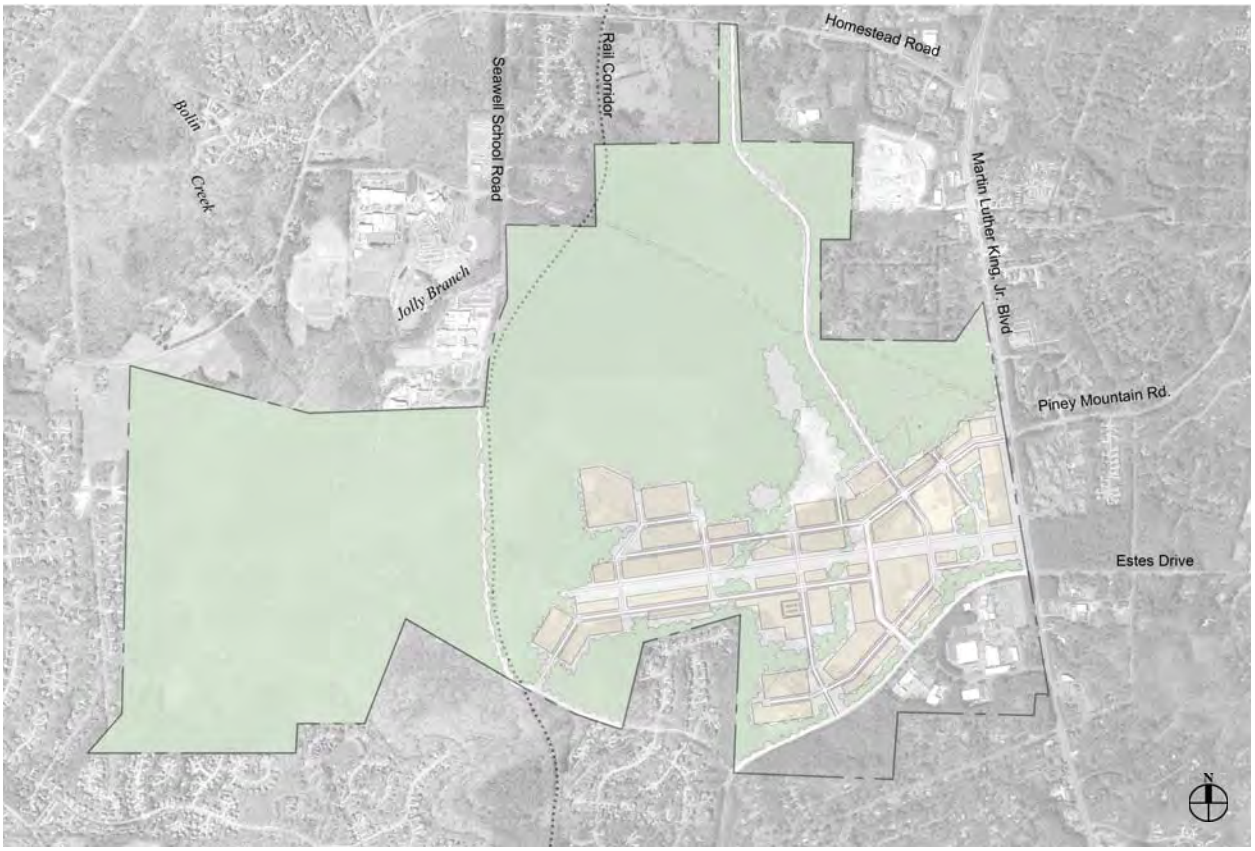
These guidelines advocate for the continued evolution of the best of Carolina's building traditions. The following set of issues should be addressed and integrated in the design of each individual project: design and operations performance, orientation, height, massing, composition, materials, and site furnishings.

By definition, a campus is a collection of interrelated buildings and supporting facilities arranged around an open space network. Establishing an open space network immediately creates distinct places in the early phases of development. The open space network addresses campus-wide design issues such as identity, open space hierarchy and variety, connectivity and accessibility, and integrated site planning for infrastructure. The open space network defines four campus districts:

- Campus Frontage – establishes identity with a stone wall, trees, and green areas
- Entry Drive – brings the community into campus
- Central Green Way – connects town and campus to the forest
- Working Landscape – integrates open space with surrounding forest and supports sustainability goals

Building at Carolina North will happen over generations, much the way it has on main campus, but for now, decisions about development of the campus will be made within the context of the open space network. Each new building will be subject to extensive review and judged on its own merits, Carolina traditions, evolving context at Carolina North, and ability to meet program needs and performance goals. The result will be much like the main campus, a rich architectural palette unified by the brick walks, low stone walls, and consistent appearance of the grounds.

Carolina North Development Plat Plan



0′ 1000′ 2000′

Photograph of existing site

Purpose

Carolina North will serve the mission of the University of North Carolina at Chapel Hill by creating a world-class research and learning campus in the heart of Chapel Hill. The implementation of this campus is a timely response to the surge in main campus development in the last decade, and reflects a trend toward public-private partnerships and economic development related to University research efforts and innovations. The plan identifies a two-hundred and fifty acre footprint for University growth and development over the next fifty years.

The plan identifies a two-hundred and fifty acre footprint for University growth and development over the next fifty years

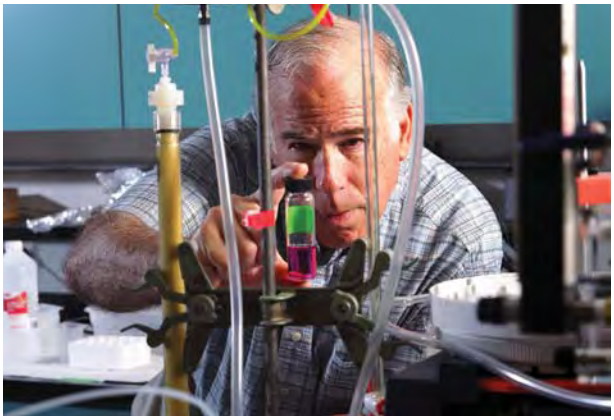
0′ 500′ 1000′

Carolina North will support the mission of the University

Facilitate new collaborations inside the University
As Carolina North takes shape existing University programs will migrate to the new campus and additional programs will be established there. Facilities at Carolina North will include innovative prototypes, create additional opportunities for on-going efforts, and establish new adjacencies which are expected to be the catalyst for groundbreaking interdisciplinary collaborations.

Create and strengthen strategic relationships outside the University
Carolina North also presents a unique opportunity for partnerships outside the University. The interaction between the University and the private sector is a growing source of research funding, collaboration, and innovation. The University will be able to attract new funding sources, stimulate economic growth, and create jobs for North Carolina by providing a setting to encourage the public-private partnerships that spur innovation and economic growth.

Provide new space for research and education
Main campus is nearing its responsible capacity, and the few remaining building sites there are constrained by existing development. As a result, Carolina North is expected to accommodate uses with complex or extensive programs needs, such as corporate partnerships or wet lab based research, and respond to enrollment growth.



Carolina North will respond to changing needs

Site selection considers the value of programmatic adjacencies. Certain programs benefit from being near to each other and certain uses are more compatible. For example, programs that rely on technical space, such as wet labs, for research might find benefit in a shared facility so that specialized equipment can be efficiently utilized and redundancy avoided.

At the same time, it is important to leave opportunities for program growth over time. As an example, Polk Place was already well-defined by a number of buildings in the early 1900's, but was not complete until Dey Hall was built in 1962. Similarly, building sites across the Carolina North campus will remain undeveloped in anticipation of needs that can only be imagined today.

Carolina North must maintain flexibility to respond to changing needs. The plans for the campus are not expected to be fully realized for at least fifty years. In that time, pedagogy and technology will change substantially. Similarly, there is the possibility that the University might incorporate additional and/or new disciplines into its academic programs.

Campus-wide Design Guidelines

DESIGN GUIDELINES BY LANDSCAPE DISTRICT

Building at Carolina North will happen over generations, much the way it has on main campus. At the outset, establishing a landscape structure immediately creates distinct places in the early phases of development. The open space network defines four distinct campus districts:

- Campus Frontage – establishes identity with a stone wall, trees, and green areas
- Entry Drive – brings the community into campus
- Central Green Way – connects town and campus to the forest
- Working Landscape – integrates open space with surrounding forest and supports sustainability goals

Open Space Network

The open space network defines four distinct campus districts

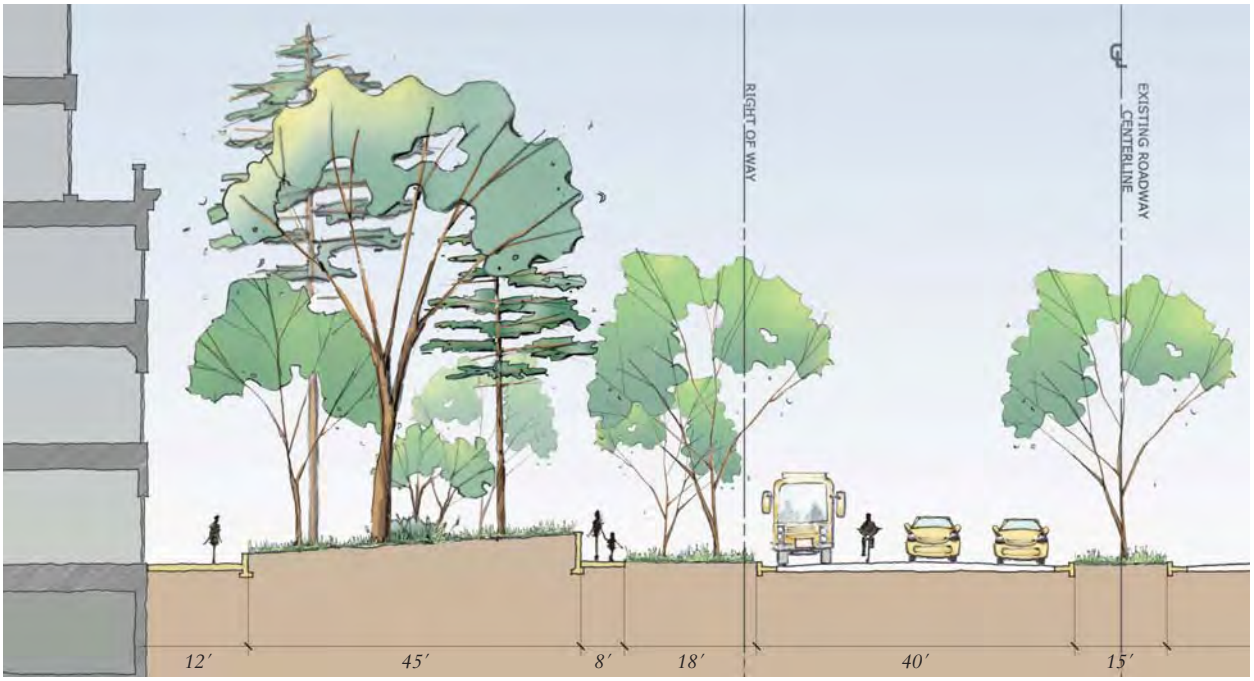
0′ 500′ 1000′

Campus Frontage

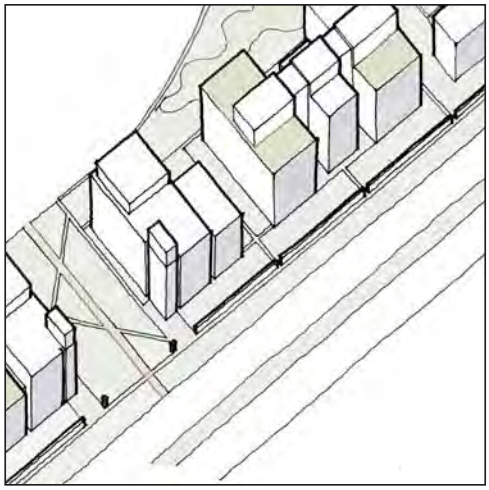
Carolina North will rely on touchstone elements from the main campus and the Chapel Hill region to establish a strong, visible presence on Martin Luther King, Jr. Boulevard. The most striking of these will be the Chatham-stone wall common on campus and around town. The stone wall will be complemented by a brick sidewalk on the east side and a double row of canopy trees typical of the main campus. All three will run parallel to Martin Luther King, Jr. Boulevard from Municipal Drive south to Airport Drive. A parkway (landscaped area between the sidewalk and street) will be planted with non-turf grass and canopy shade trees to buffer pedestrians from the traffic.

Improvements to Martin Luther King, Jr. Boulevard could also include a central planted median where the continuous turn lane is today. The median would offer traffic-calming benefits and a midpoint landing for pedestrian crossings. The parkway and median (if implemented) will be planted with diverse indigenous deciduous trees, including ornamental species for seasonal color and interest. Trees will be irregularly placed to create a natural feel. The parkway and the median will be low maintenance and require no irrigation. Both areas will accommodate stormwater run-off from nearby impervious surfaces. The combination of these simple elements will create an elegant public identity for the campus.

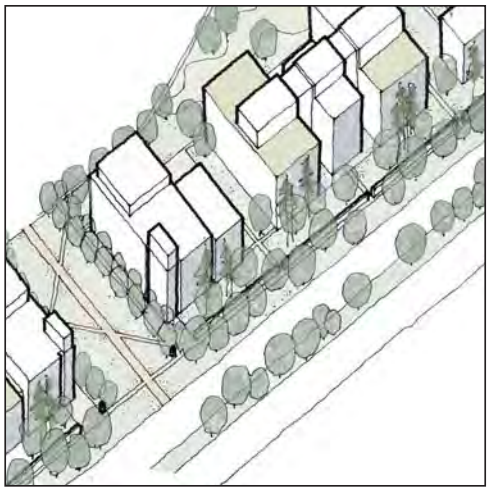
Carolina North will rely on elements from main campus and Chapel Hill to establish a strong presence on Martin Luther King, Jr. Boulevard



Cross-section of Campus Frontage



Building massing and geometry will be straightforward and address the street and the community



Building stepbacks provide sun and views into midblock areas

Campus buildings along Martin Luther King, Jr. Boulevard will be densely developed and include mixed use activities to support town/campus interface:

- **Building height** will be approximately six stories. Height should be balanced with appropriate massing, texture, and articulation of the first two to four stories to establish a rich pedestrian experience and human scale at the street level.
- **A major campus crossroads** will be created at the intersection of Martin Luther King, Jr. Boulevard and the Central Green Way; design and height (approximately eight stories) of adjacent buildings should respond to this prominent location.
- **Building massing and geometry** will be straightforward and address the street and the community.
- **Building setbacks** will be uniform from Martin Luther King, Jr. Boulevard with approximately 85% of the street facing elevations built to the parcel boundary.
- **Building stepbacks** will be integrated to provide sun and views into midblock areas, and allow for green roofs, roof gardens, and solar energy collection.

Carrington Hall

Johns Hopkins University

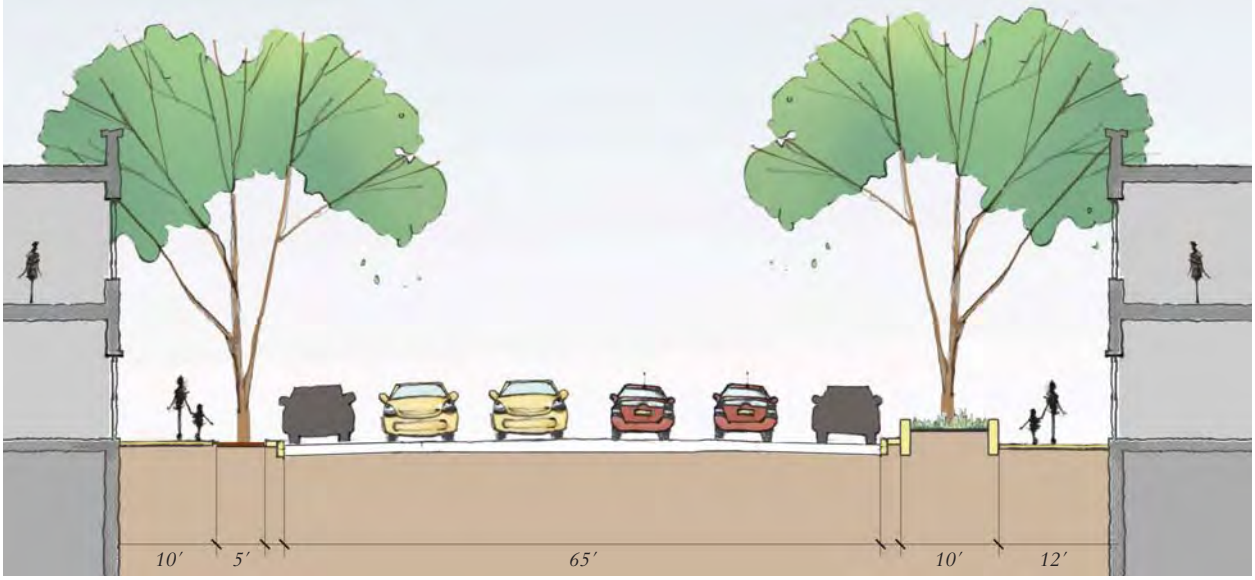
George Washington University

Entry Drive

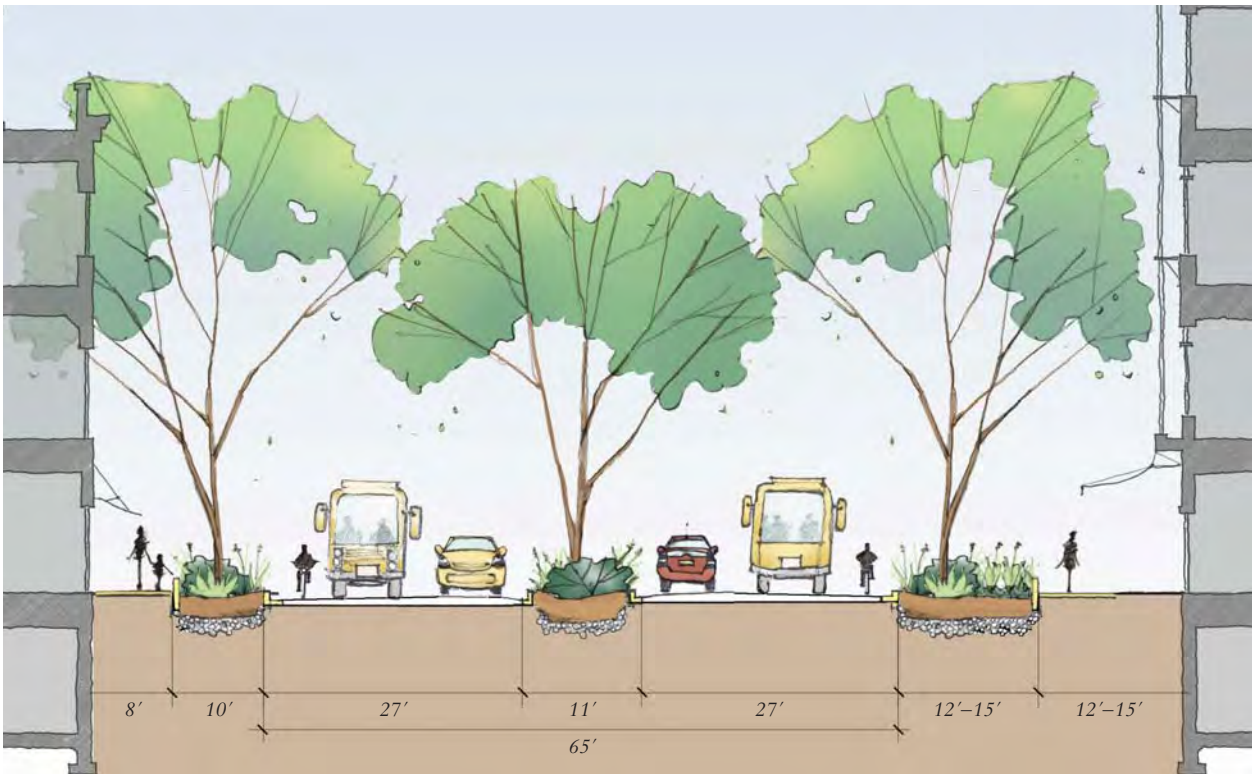
The Entry Drive will be an especially active part of the campus. The streetscape will include larger active outdoor areas on the southern facing sidewalk, making it usable for a greater number of days throughout the spring, fall, and winter. This extra room will accommodate outdoor seating and gathering spaces. The northern facing sidewalk will be more modest, but will comfortably accommodate a heavy volume of pedestrian activity.

The landscape will incorporate stormwater management features to accommodate run-off from adjacent impervious surfaces. These features will be planted with low maintenance, native species that not only contribute to the quality of the streetscape, but also support stormwater management goals. While the function of these features will be consistent, the aesthetic detail of these features will vary in response to the design of surrounding buildings.

The Entry Drive will be an especially active part of the campus



Cross-section of Franklin Street



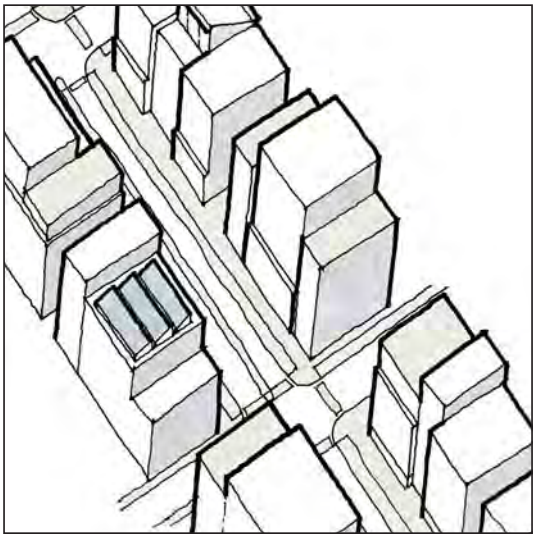
Cross-section of Entry Drive

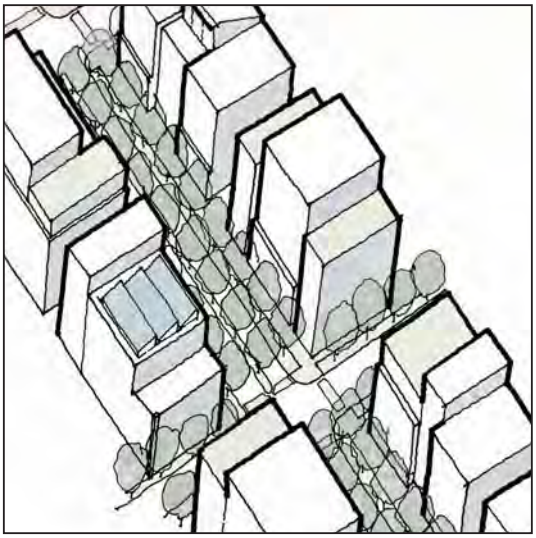
A median will be included for the first several hundred feet at the north and south ends of the Entry Drive. The median will encourage incoming traffic to slow down and organize outgoing traffic. Planted with street trees, it will allow pedestrians a place to stand if unable to cross all lanes of traffic at once.

A plaza at the intersection of the Entry Drive and Central Green Way will be a natural campus gathering place; adjacent buildings should respond directly to this space and its prominence.

Campus buildings along the Entry Drive will be densely developed to support a vibrant, mixed-use campus center:

- **Building height** will be approximately eight stories. Height should be balanced with appropriate massing, texture, and articulation of the first two to four stories to establish a rich pedestrian experience and human scale at the street level.
- **Building setbacks** will be uniform with approximately 85% of the street facing elevations built to the parcel boundary
- **Building stepbacks** will be integrated to provide sun and views into midblock areas, and allow for green roofs, roof gardens, and solar energy collection.
- **Entries and street level design** will reinforce pedestrian activity and visual interest. Building programs will include active uses such as retail services, cafes, galleries, and recreation on the ground level to create a lively and pedestrian-oriented street environment. Windows and doors will face the street and be visually open. Multiple entrances will promote interaction. Canopies, colonnades, and archways should be integrated to support retail services and amenities. Buildings may have multiple primary entries; primary entries must accommodate universal access. Doors should be wood or metal with glazing.





Larger active outdoor areas on the southern facing sidewalk make it usable for a greater number of days

University of Pennsylvania

Johns Hopkins University

Charles Village

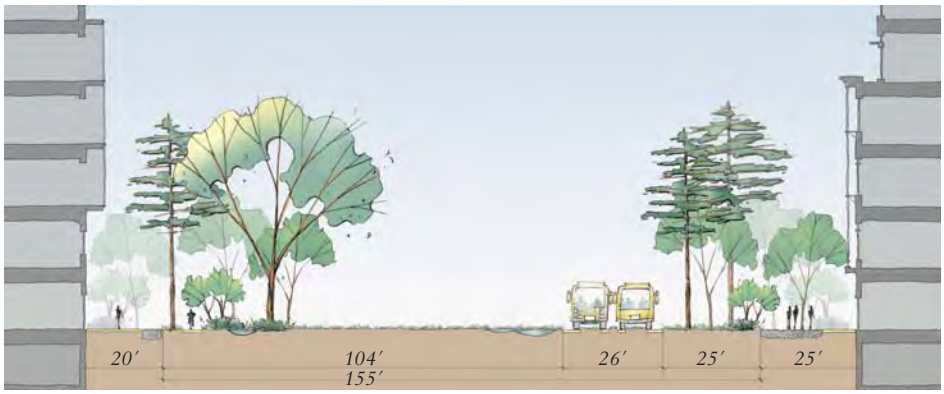
A plaza will be a natural campus gathering place

The Central Green Way will be the largest and most dramatic open space at Carolina North

Central Green Way

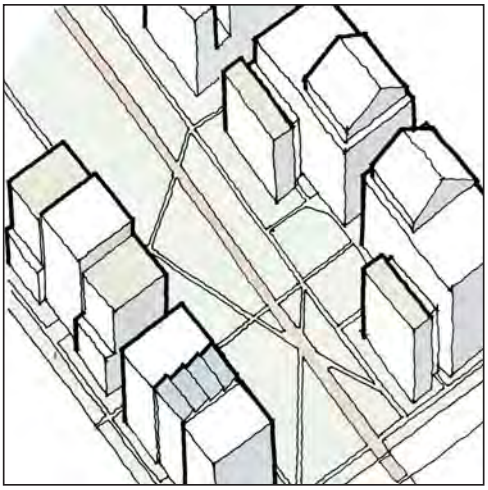
The Central Green Way will be the largest and most dramatic open space at Carolina North. Because of its scale and unusual character the Central Green Way will be a landmark campus space.

The north and south edges of the Central Green Way will be defined by canopy shade trees. A clear view will be maintained the length of the Central Green Way from Martin Luther King, Jr. Boulevard in the east to the Carolina North Forest in the west. Other landscape features will include: lawns to accommodate uses such as recreation, areas of Working Landscape (see following section) that will contribute to holistic stormwater management for the site, and smaller courtyards and gardens near buildings.

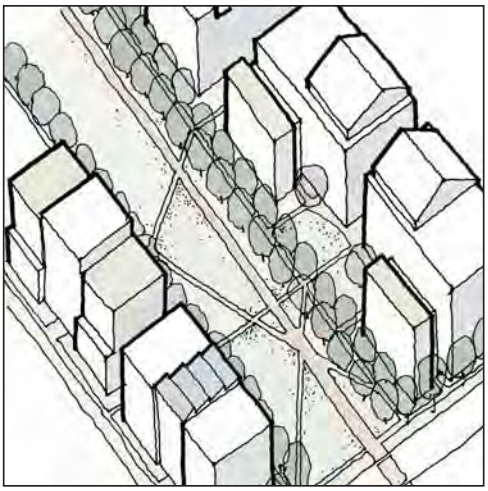


Cross-section of Central Green Way

Cross-section of Polk Place



Lawns will accommodate such uses as recreation, areas of Working Landscape that contribute to holistic stormwater management for the site, and smaller courtyards and gardens near buildings



The buildings that define the Central Green Way will have direct access to transit and will be densely developed to create a critical mass of activity and interdisciplinary adjacencies:

- **Building height** will be approximately eight stories with the tallest buildings along the transit spine. Height should be balanced with appropriate massing, details, and articulation at the street level.
- **Building setbacks** on the south side of the Central Green Way will be uniform with approximately 85% of the street facing elevations built to the parcel boundary. Building setbacks will be more varied on the north side of the Central Green Way with approximately 70% of the street-facing elevations built to the parcel boundary; massing will incorporate courtyards and gardens to maximize the benefits of solar exposure.
- **Building step backs** will be integrated to provide sun and views into the Central Green Way and midblock areas, and allow for green roofs, roof gardens, and solar energy collection.
- **Bridges** may be needed to provide necessary connectivity between buildings but should reinforce the open space network; bridges between buildings will not cross the Central Green Way or campus streets.

University of Maryland, Baltimore

Caudill Laboratories

George Washington University

Johns Hopkins University

Working landscapes connect the existing natural areas and reach into the developed area of the campus

Color and texture will vary with the seasons

Johns Hopkins University

Near Morrison Residence Hall

Working Landscapes

The master plan prioritizes already disturbed land for the development of Carolina North; this area is adjacent to existing natural areas including the Carolina North Forest. The plan takes advantage of this relationship by building landscapes that connect the existing natural areas and reach into the developed area of the campus; these are referred to as Working Landscapes.

These Working Landscapes will provide aesthetic, social, and recreational benefits. They will also facilitate utilitarian functions such as stormwater management and wastewater treatment, shallow groundwater recharge, native plant nurseries, native habitat for targeted species, and ecological research and learning opportunities. While common to the natural areas of the region, Working Landscape has rarely been employed as a feature of public space. It will be a unique and defining physical feature of Carolina's commitment to a sustainable campus.

- **Character** will be rustic with native grasses and other native plants.
- **Seasonal variety** will be emphasized in this area. While color and texture will vary with the seasons, quality of the overall appearance will be consistent.
- **Scale** of campus development will step down in scale near Working Landscapes. Adjacent buildings and grounds will include elements that support the functions of these areas.
- **Built structures** within the Working Landscapes will be limited, but might include support facilities (pump houses, research stations, etc.) and simple bridges or boardwalks for circulation and observation.

Franklin Street at McCorkle Place

Morehead-Patterson Bell Tower

Campus Identity

The campus is expected to exhibit the character of Carolina and Chapel Hill while having its own personality. To accomplish this, the campus will employ touchstone features of the main campus and incorporate new elements to define it.

Campus sidewalks will be paved with brick. Low stone walls will also be a typical campus feature. These simple elements can be combined to establish a unique identity for the campus that is rooted in the local culture and values of Carolina.

Seasonal changes in the landscape are expected of a high-performance campus. The landscape will be dominated by native plants that will vary in color and texture, but quality will be consistent throughout the year.

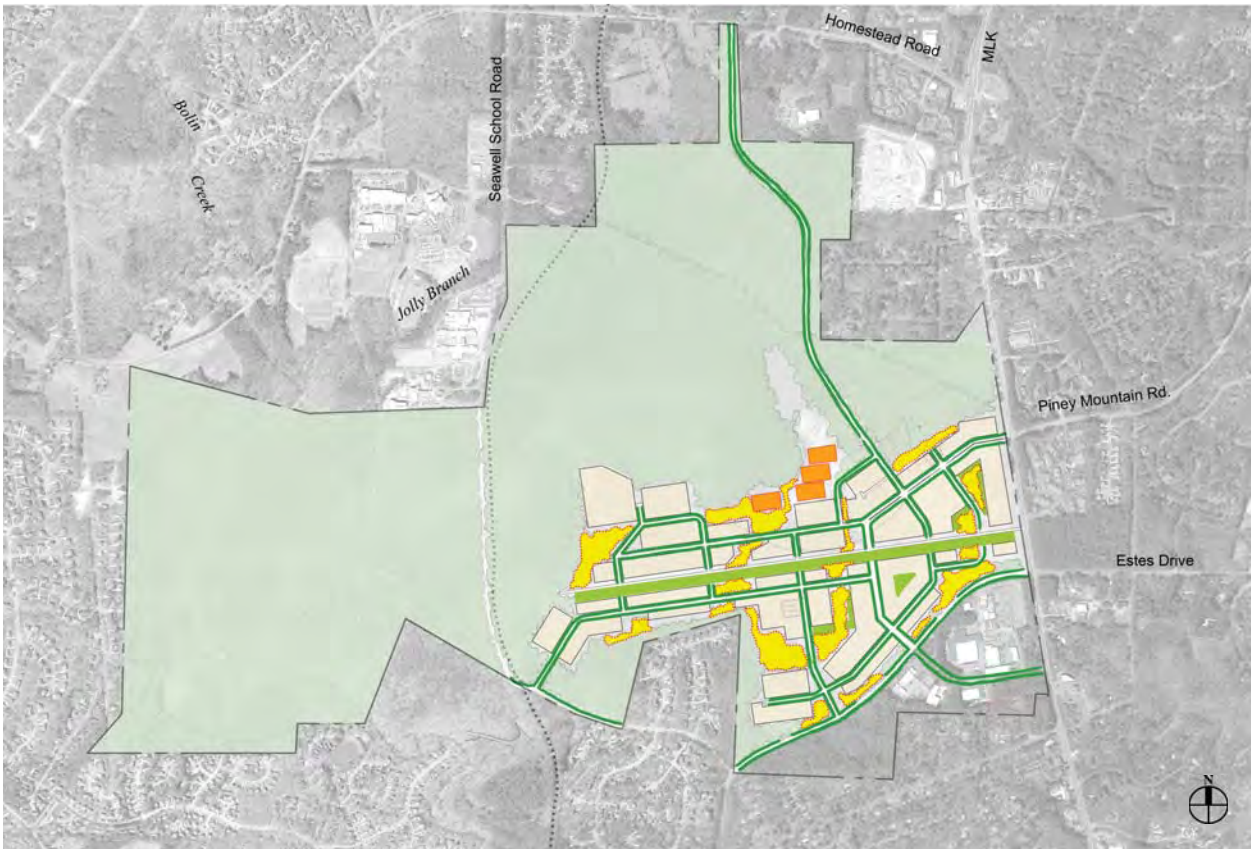
As the campus develops over time, sites will be identified to include other landmarks, such as iconic indoor and outdoor spaces, gathering areas, signature buildings, and public art.

Seasonal changes in the landscape are expected of a high-performance campus

Open Space Hierarchy and Variety

The open space network will encompass a number of other outdoor spaces. These spaces will vary in character, scale, and function. As a part of daily life, they will accommodate informal play and organized recreation. The range of open spaces will accommodate an event of several hundred people as easily as an impromptu gathering of a few. They will create connectivity between destinations on and adjacent to the campus.

Campus Open Space



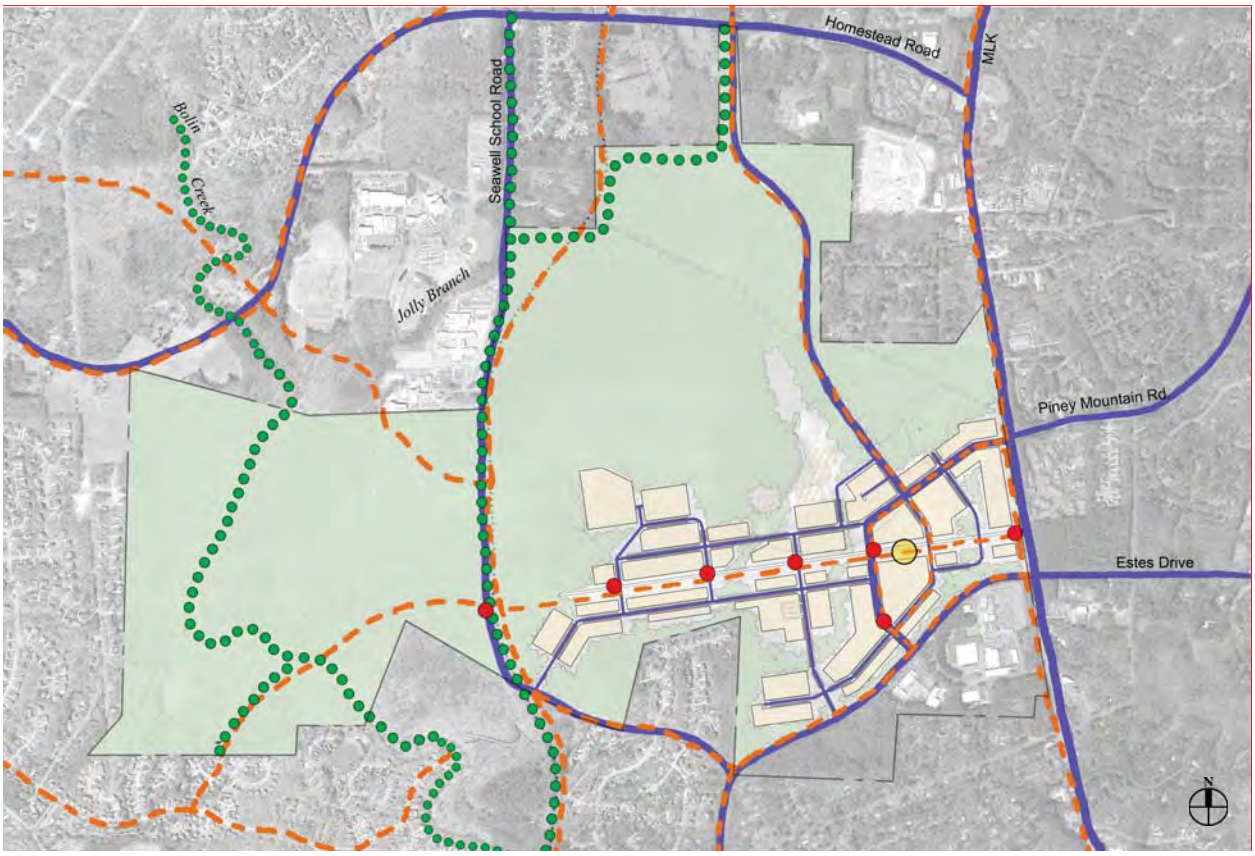
Central Green Way Working landscape Recreation fields Streetscape

0′ 1000′ 2000′

Connectivity and Accessibility

The open space network will be an integrated component of campus infrastructure. As a result, the open space network and streets will support various transportation networks and supplement the community's multi-modal transportation network for pedestrians, bicycles, and transit. It also will make connections with the recreational trails and natural areas of the Carolina North Forest and local greenways.

Campus Connections



Municipal Green Way · Bike path · Bike facility · Transit stop · Local streets

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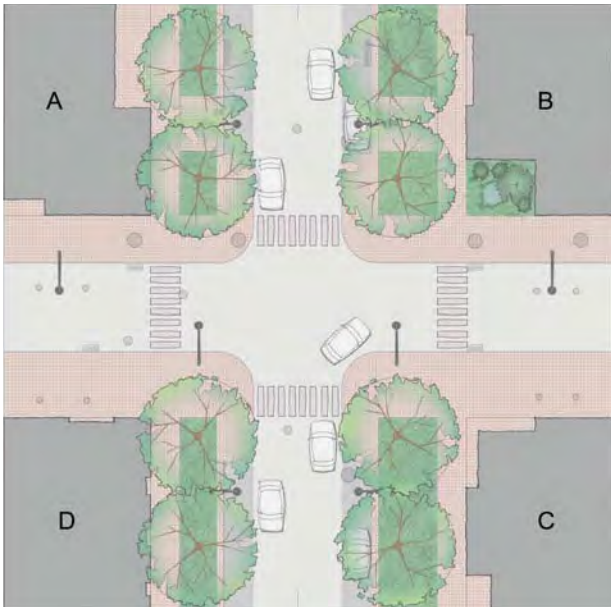
Clarity of route is an essential quality of a successful pedestrian campus. Paths should follow direct and desire-based routes. The University of North Carolina at Chapel Hill is committed to making all buildings and areas physically accessible to all faculty, staff, students, and visitors. Regulatory compliance with the latest editions of the Americans with Disabilities Act (ADA) and the North Carolina State Building Code will be required as a minimum goal. Universal design principles that provide equal access to building entrances will be encouraged.

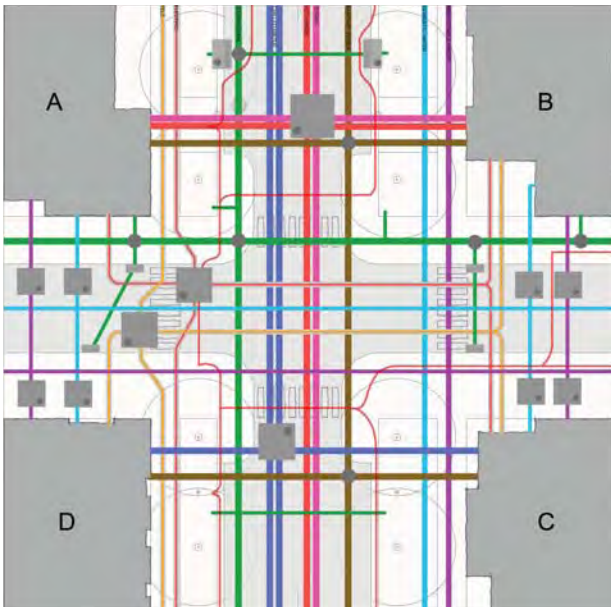
Generally, the campus streets will be organized in a grid pattern. Campus streets will be pedestrian-oriented, as narrow as possible, and designed to include shade trees. They will provide access for daily users in addition to service access for building maintenance, deliveries, and other essential functions. Campus streets will also incorporate stormwater management features that can accommodate run-off from adjacent impervious surfaces.

Integration

The open space network has been planned in concert with utilities infrastructure. Buildings, open space, transit, parking, stormwater management, utility infrastructure, and energy technologies were integrated at a conceptual level. The location and alignment of utility corridors have been considered in light of the open space network to eliminate conflict and increase ease of access.



Above ground infrastructure



Below ground infrastructure

- Non-potable water
- Domestic water
- Sanitary sewer
- Steam
- Hot water
- Chilled water
- Storm drain
- Electric
- Telecom

Plat Parcels

Plat parcels define discrete areas within the 250-acres planned for development. These parcels do not represent building footprints, but rather building sites. Development in each plat parcel should include all of the support functions and activities that buildings will require, such as open space, building entry and service, and site specific infrastructure.

Lettered Plat Plan

	TECHNICAL DATA		PROGRAM		CHARACTER	
Plat ID	*Acres*	*Bldg Height Range*	*Potential Land Use*	*Jordan Lake Determination (Redev./New)*	*Site Features*	*Challenges*
A	1.27	4-6	Partnerships Retail Academic	R	Visible from MLK Retail street section North side adjacent to natural habitat/wetlands/streams	
B	4.82	6-8	Partnerships Academic Retail Housing	R	Visible from MLK North parcel on retail street section Working Landscape on western edge South parcel on transit/Central Green Way	On municipal yard site Includes main transit entrance/exit
C	0.78	4-6	Academic Partnerships	N	Visible from MLK West/south sides adjacent to Working Landscape North side on Central Green Way	Long access via car
D	1.49	6-8	Retail Partnerships Academic	N	Retail street section North side adjacent to natural habitat	Majority of site on landfill Portion of site on chemical site Need to be mindful of permanent monitoring wells Portion of site within chemical plume mapping
E	5.09	4-8	Partnerships Housing Retail Civic	R	North Side along retail street section South side adjacent to Central Green Way and Working Landscape	On existing municipal yard site
F	0.69	4-6	Academic Partnerships	R / N	South and East side adjacent to Working Landscape North Side on Central Green Way	
G	4.77	2-6	Utility Retail Academic Partnerships Recreation Support Housing	N	Retail street section along south side North side adjacent to Working Landscape Southwest parcel adjacent to Plaza	Entire site on landfill
H	3.76	6-8	Academic Partnerships Retail Civic	R / N	Retail street section on north side East side adjacent to Plaza South parcel adjacent to transit/ Central Green Way	North side on landfill

	TECHNICAL DATA		PROGRAM		CHARACTER	
Plat ID	*Acres*	*Bldg Height Range*	*Potential Land Use*	*Jordan Lake Determination (Redev./New)*	*Site Features*	*Challenges*
I	6.51	6-8	Academic Retail Housing	R / N	North Side adjacent to Central Green Way	Parcel is on existing airport tie-downs
J	1.42	2-4	Partnerships Academic	R / N	Visibility from Estes Dr. Ext. Marks entrance to Carolina North from Estes Dr. Ext. South side adjacent to Working Landscape	Portion of site on existing airport tie-down area
K	0.63	4-6	Academic Civic	R / N	North side adjacent to Central Green Way West side adjacent to Working Landscape	
L	2.28	4-6	Academic Partnerships Housing	R / N	Visible from entrance off of Estes Dr. Ext. West side adjacent to Working Landscape Portion of side on existing airport tie-down area	Coordinate with realignment of Airport Drive
M	1.98	2-4	Partnerships Academic	R / N	Visibility from Estes Dr. Ext. Marks entrance to Carolina North from Estes Dr. Ext. South side adjacent to Working Landscape	Portion of site on existing airport tie-down area Coordinate with realignment of Airport Drive
N	2.53	6-8	Partnerships Academic Housing	N	East side adjacent to Working Landscape North side adjacent to recreational fields West side adjacent to Working Landscape Site expansion potential beyond 50 years	
O	2.27	6-8	Academic Partnerships	N	East side adjacent to Working Landscape South side adjacent to transit/ Central Green Way	Majority of site located on landfill Preserve green edge
P	0.65	4-6	Academic Partnerships	R / N	East side adjacent to Working Landscape North side adjacent to Central Green Way	
Q	2.18	6-8	Academic Housing	N	East & South side adjacent to Working Landscape	
R	1.78	6-8	Academic Civic	N	West side adjacent to Working Landscape South side adjacent to transit/ Central Green Way	Portion of side on existing landfill Preserve green edge

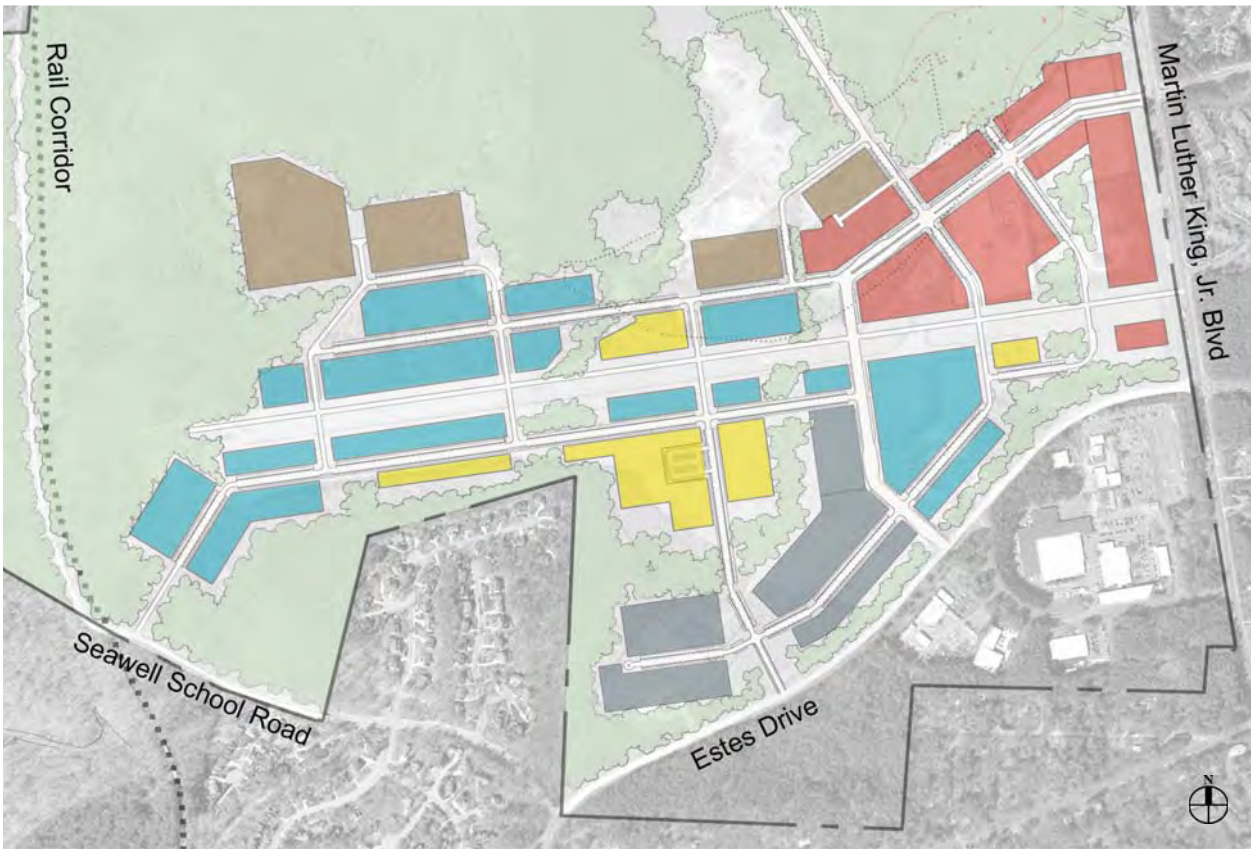
	TECHNICAL DATA		PROGRAM		CHARACTER	
Plat ID	*Acres*	*Bldg Height Range*	*Potential Land Use*	*Jordan Lake Determination (Redev./New)*	*Site Features*	*Challenges*
S	1.24	4-6	Academic Housing	R / N	West side adjacent to Working Landscape North side adjacent to Central Green Way	
T	4.05	2-4	Housing	N	East side adjacent to natural habitat West side adjacent to natural habitat South side adjacent to Working Landscape	
V	2.95	4-6	Civic Partnerships Academic School	R	North side adjacent to Working Landscape West side adjacent to existing habitat Suitable for public facing programs	Parcel located on existing University storage parking lot Coordinate with realignment of Airport Drive
W	2.80	4-6	Civic Partnerships Academic School	R	West side adjacent to existing natural habitat South side adjacent to Working Landscape Suitable for public facing programs	Parcel located on existing University storage parking lot Coordinate with realignment of Airport Drive
X	1.56	4-6	Partnership Academic Housing	N	North side adjacent to natural habitat East side adjacent to Working Landscape Site expansion potential beyond 50 years	Portion of parcel on existing landfill
Y	1.05	4-6	Academic Partnerships	N	East side adjacent o Working Landscape South side adjacent to transit/ Central Green Way	Preserve green edge
Z	3.90	2-4	Utility Partnerships	N	North and east sides adjacent to natural habitat Site expansion potential beyond 50 years	
AA	3.36	4-6	Partnerships Academic Housing	N		
BB	4.16	4-6	Academic Partnerships	N	South side adjacent to transit/ Central Greenway	Preserve green edge
CC	2.47	4-6	Academic Partnerships Housing	R / N	North side adjacent to Central Greenway	Mindful of relationship to neighbors

	TECHNICAL DATA		PROGRAM		CHARACTER	
Plat ID	*Acres*	*Bldg Height Range*	*Potential Land Use*	*Jordan Lake Determination (Redev./New)*	*Site Features*	*Challenges*
DD	1.27	2-4	Housing	N	West/south sides adjacent to natural habitat East side adjacent to Working Landscape	Parcel adjacent to existing neighborhood
EE	7.52	2-4	Utility	N	North, west, and south sides adjacent to natural habitat Site expansion potential beyond 50 years	
FF	1.06	2-4	Academic Civic Housing	N	North and west sides adjacent to natural habitat South side adjacent to transit/ Central Greenway	Preserve green edge
GG	1.29	4-6	Partnerships Academic	R / N	West side adjacent to Working Landscape North side adjacent to Central Greenway	
HH	3.00	2-4	Civic Partnerships School	N	East and South sides adjacent to existing natural habitat Parcel just off entrance from Seawell School Road Suitable for public facing programs	Severe topography Mindful of relationship to neighbors
II	2.58	4-6	Civic Partnerships School	N	North, west, and south sides adjacent to natural habitat Parcel just off entrance from Seawell School Road Suitable for public facing programs	Severe topography
A1	1.64	4-6	Partnerships Retail Academic	R	Retail street section North side adjacent to natural habitat/wetlands/streams	West side included in chemical site Need to be mindful of permanent monitoring wells Portion of site within chemical plume mapping
B1	0.98	6-8	Partnerships Academic Retail Housing	R	North parcel on retail street section Working Landscape on western edge	On municipal yard site
L1	4.34	4-6	Academic Partnerships	R / N	Visible from entrance off of Estes Dr. Ext. West side adjacent to Working Landscape Portion of site on existing airport tie-down area	Coordinate with realignment of Airport Drive

Land Use

The combination of University programs and supporting activities will result in a transit-oriented, mixed-use campus. Multiple uses across the campus create a dynamic environment. Housing for graduate students, researchers, and faculty will be located across the campus; on-campus residents will help reduce traffic trips and provide 24-hour activity.

Campus Land Use



Academic Partnerships Housing Mixed use Support

0′ 500′ 1000′

Caudill Laboratories

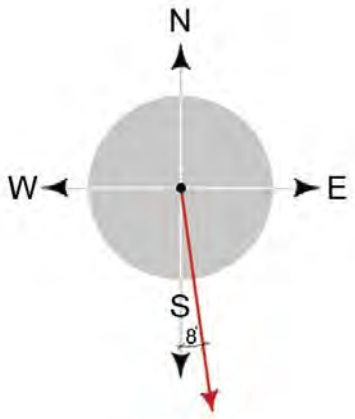
Building Design Guidelines

While the main campus is an important touchstone, these guidelines do not advocate replicating historic buildings and open spaces. Rather, they suggest the continued evolution of the best of Carolina's traditions. The following set of topics should be addressed and integrated in the design of any individual project in the previously described districts or elsewhere on the secondary streets of the campus.

Definition of Terms

Solar South
Solar south is different from magnetic south, which can be determined with a compass. It is instead dictated by the geographic location and latitude of a site. The solar south angle takes into consideration the sun's path from sunrise to sunset and is the alignment that allows the full potential of the sun's energy and position to be used. At Carolina North, solar south is 8 degrees east of magnetic south.

High Performance Buildings
A high-performance building is defined by the US Department of Energy as a building with energy, economic, and environmental performance that is substantially better than standard practice. Because it is energy efficient, it saves money and natural resources. It is a healthy place for its occupants to live and work and has a relatively low impact on the environment.



Carolina North Forest

Design and operations performance

The campus as a whole and its composite elements are expected to achieve a high level of design and operations performance. The following is a synopsis of the site development guidelines and high-performance building standards for Carolina North:

1. Climate, Culture, and Place
    - Respond to climate, culture, and place in planning and building
    - Sustain, restore, and mimic the structure, function, and beauty of an indigenous North Carolina Piedmont forest in areas identified for conservation and development
    - Account for existing and potential natural capital of the site to inform the design process and associated conservation/ development strategies
    - Respect surrounding neighborhoods

2. Carbon Footprint Reduction
    - Design, construct, maintain, and operate Carolina North pursuit of carbon neutrality
    - Coordinate with American College and University Presidents Climate Commitment action plan and other University initiatives

3. Conservation, Efficiency, and Reliability
   - Provide highly efficient buildings and distribution systems
   - Optimize operations
   - Provide reliability and functionality of systems
   - Treat waste as a resource

4. Collaboration, Education, and Outreach
   - Increase human potential
   - Encourage collaboration
   - Provide campus-wide information regarding individual building energy use, distribution system energy flows, and general performance
   - Provide education and training on central systems, building systems, and transportation for employees and campus users
   - Integrate research, education, and outreach in both built and non-built conditions

McColl Building

Orientation

Building orientation impacts performance characteristics, and should be integrated into the overall form and design aesthetic. For example, differentiated sun shading and screening strategies in response to the angle and direction of the sun result in a single building having four distinct facades with consistent elements to unify design. Building orientation should also address other aspects of performance, such as incorporating daylight into the interior lighting plan.

A building's relationship to the adjacent streets and open space is just as important. Buildings should be sited to create outdoor spaces. Generally, all buildings should be sited perpendicular or parallel to the spaces they form.

Building entry and arrival require particular attention. With extensive variety in the open space network the design of each building's facades will vary in kind. Many buildings will have multiple, active entry points. Service access should be considered in the context of building orientation. Where possible, buildings should share mid-block service points.

Height

Building height at Carolina North will range from approximately two to eight stories. Building height will vary in response to program and site capacity. In general, buildings with fewer stories will be located at the perimeter of the site to maintain a scale similar to that of the closest residential neighbors. Along the thoroughfares that border the campus there will be mid-size buildings that respect the scale and character of existing development in the Town of Chapel Hill. The tallest buildings will be in the campus core where there is direct access to transit. The campus core will be densely developed to create a critical mass of activity and interdisciplinary adjacencies.

Campus Building Height

Massing

A building's massing is defined by a combination of its footprint, height, and overall shape (stepbacks, setbacks, roof form). Massing reflects and reinforces the overall scale of the open space that a building fronts and steps up or steps down to adjust to context and topography.

Generally, building footprints will be simple, efficient, and rectangular; they will respond to the street network and east-west textured blocks which maximize southern exposure. To accommodate a wide range of program needs, the development plat plan provides room for a variety of building footprint sizes. Extremely large buildings should break down mass into a composition of well-scaled parts.

By articulating the lower portion of a building's vertical surface, such that it appears to be distinct from the rest of the building, the perceived scale of a building can be made more comfortable. Building design should be clearly articulated in the first two to four stories to establish human scale at the street level. The number of stories before a building's first stepback will vary with the composition of the building, including the total number of stories.

Buildings will have a variety of roof forms – pitched or flat. Buildings with small footprints and the fewest number of stories are most appropriate to have pitched roofs, while larger, taller buildings are more apt to have flat roofs. High performance features such as green roofs and solar collectors should be carefully integrated.

Articulating a building's roofline helps to provide a visual termination to a façade and further helps to control its overall scale. Buildings should incorporate clearly articulated eaves, cornices, or parapets into their design. This can be achieved by a change in plane and/or a change in material.

Bridges may be needed to provide necessary connectivity between buildings but should be designed to reinforce the open space network; bridges between buildings will not cross major open spaces or streets.

George Washington University

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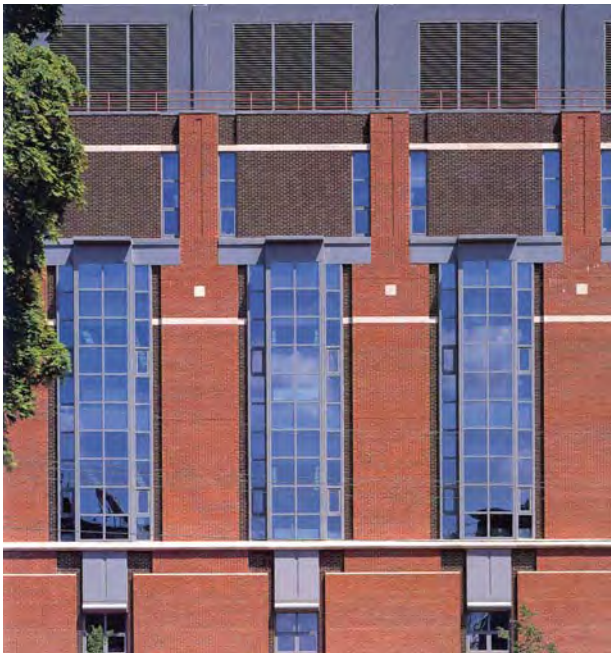
Rams Head Center



Syracuse University

Student Academic Services Buildings

Carrington Hall

Composition

To accommodate program demands, many of the buildings at Carolina North will be tall in height, large in footprint, and consequently, large in scale. The scale of these buildings can be controlled with thoughtful composition and proportions.

Well designed elevations have hierarchical patterns and rhythms that are visually stimulating and contribute to the liveliness of a street or open space. Openings (doors, windows, loggia) can help to reduce the perceived scale of a building by dividing a continuous wall surface into smaller, more comprehensible parts.

Program and design and operations performance should be integrated into building design but never at the expense of beauty. Proportion of the overall building, the façade, or an individual component, such as a sunscreen, window, door, cornice, etc., should be fully integrated.

Component elements of building facades should be legible. Building elements should balance innovation and function. Building efficiency or style should not be achieved at the expense of practical concerns such as maintenance and renovation.

Entries will be clearly expressed and created by a hierarchy of openings. Terraces, porches, and other transitional devices should be considered. Main entrances will be proportional to entire facade. Consideration should be given to shade and overhead cover. Buildings may have multiple primary entries; primary entries must accommodate universal access. Doors should be wood or metal wtih glazing.

Windows should be operable where technically feasible and integrated into the building's energy strategy. Window frames should be wood or metal, colored to be compatible with other exterior materials. Clear glass will be preferred; any use of colored glass should be subtle. No reflective glass should be used.

Materials

Duke University

George Washington University

Johns Hopkins University

The campus will incorporate a variety of materials as it strives to "be a new model of sustainable community." Buildings and the open spaces that they define will rely heavily on natural materials, such as brick, stone, and glass. The campus will incorporate high performance materials and components that will be chosen because of their innovation, efficiency, and/or composition from renewable resources. Use of locally-sourced materials will support the sustainability goals of the campus and incorporate cultural and vernacular influences into the design of the campus.

Building form will be innovative to achieve high-performance goals. For example, buildings will employ screening and shading to optimize solar benefits. Familiar materials will be assembled and detailed in new ways, creating a rich texture that is reminiscent of the main campus.

Site Furnishings

Lenoir Dining Hall

Light fixture

Bench

Trash receptacles

Generally, site furnishings at Carolina North will be in keeping with those used on the main campus. The existing University signage standards will be used to provide building and parking information to campus visitors. Other site furnishings that will be consistent across the University include benches, trash receptacles, and bicycle storage racks.

Site furnishings will deviate from the current University standards when it is necessary to realize design and/or operations performance efficiencies. For example, alternate lighting standards have been identified for Carolina North. The fixture selected for Carolina North is similar to the main campus fixture in color and scale. This fixture has been selected for its simple style, ease and versatility of installation, simplicity of maintenance, ready availability, and performance efficiency. This fixture uses less energy than the main campus fixture and minimizes light pollution.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Process

The University has a long-established design review and approval process. This thorough process evaluates site selection, designer selection, and design. The process engages individuals from across the University, including:

- Board of Trustees
- Board of Trustees Building and Grounds Committee
- Chancellor's Buildings and Grounds Committee
- Facilities Planning
- Design Review Committee
- Project User Group

The design process for any building or open space on campus should start with a comprehensive look at campus context and Carolina traditions. This first step should include an analysis of the site: its history, views and vistas, topography, vegetation, massing, architectural character, pedestrian and vehicular traffic, infrastructure, and service. This analysis should lead to a primary goal of all building projects creating clear, simple open spaces and quandrangles that connect to other existing or proposed spaces.

ACKNOWLEDGEMENTS

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Carolina North Steering Committee
Leadership Advisory Committee
Chapel Hill Community

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