University of Northern Colorado

Campus Landscape Development Plan

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1. Introduction

1.1 Background

As with any physical plant that is the size of the University of Northern Colorado, the evolution of the institutional landscape has occurred in various phases that represent periods of growth and expansion. As incremental and project-specific development has occurred, an articulated vision of the Campus landscape with respect to the structure and aesthetics has become blurred. A strong sense of spatial organization, wayfinding, and uniformity of the Campus environment as a whole has been compromised as a result of this situation.

The University of Northern Colorado recognizes that the quality of the educational experience is a longstanding tradition. At UNC, the facilities and grounds provide a critical setting for daily campus life and activities, which support the diverse academic functions of UNC. The *Landscape Master Plan*, a supplement to the Campus *Development Guidelines* and the *Campus Master Plan* has been developed to guide future site and landscape improvements of campus facilities and grounds. This Plan provides the framework to establish a unified and beautiful UNC campus.

1.2 Project Intent

The project intent establishes the strategy by which the *Landscape Master Plan* will achieve its goals, and serves as the guiding philosophy for landscape and site development of the Campus.

Develop a Unified and Beautiful Campus

- Unite campus legibility, structure, and organization by defining uniform treatment of circulation corridors, outdoor spaces, and campus perimeters.
- Utilize a common palette of construction and plant materials to provide continuity and recognizable order throughout the entire campus environment.
- Preserve the picturesque landscape character of the Central Campus, and enhance its informal romantic landscape qualities with new site and landscape improvements that do not detract from its historic and cultural landscape qualities.
- Accommodate redevelopment of the West Campus in a manner that is similar to the scale, structure, and qualities of the Central Campus, yet appropriate in response to the more eclectic character of the West Campus.

Encourage High Quality Landscape Design and Development

- Accommodate projected expansion and construction of buildings in a manner that strengthens the structure, spatial organization, functionality, and wayfinding of the campus.
- Encourage complimentary and collaborative design of new facilities and adjacent exterior spaces that adhere to campus landscape concepts and guidelines.
- Reinforce the concept of the Campus as a primarily pedestrian/bicycle environment, clarify the pathway network, and enhance aesthetic elements of these corridors.
- Develop functional and artful social gathering spaces at primary building entries, buildings, crossroads and plazas, and passive lawn spaces such as quadrangles.
- Encourage landscape design forms and concepts that respond to existing and future architecture while respecting campus landscape traditions, appropriate scale and materials.
- Incorporate principles of sustainable design that conserve resources, endorse energy efficiency, and promote durability and low maintenance of landscape projects.

1.3 Relationship to other Projects

The *Campus Landscape Development Plan* has been developed as a companion document to the following campus planning projects. The relationship of the landscape development concepts and guidelines contained in the *Campus Landscape Development Plan* to these other projects are as follows:

Architectural Standards

The UNC *Campus Guidelines* (2002) provide design principles for the purpose of incorporating traditional building and architectural concepts throughout the Campus environment. The recommendations focus on design for UNC building entries, light fixtures, masonry details, roofs, fenestration and decorative attributes. Many of the goals outlined in this document are shared by the Campus Landscape Development Plan that provides similar guidance for site amenities, such as furnishings, paving, lighting, and landscaping.

Facilities Master Plan

The *Facilities Master Plan* is a broad scale strategy that establishes principles for campus land uses, facilities, housing, circulation, parking and open space. The *Plan* establishes a framework to guide general and physical growth of the Campus, and establish the long-term facilities capacity and open space organization. The *Campus Landscape Development Plan* compliments

the *Facilities Master Plan* by providing design concepts for macroscale and microscale landscape and site design elements.

1.4 How to Use this Document

The intent of this *Plan* is to provide clear direction concerning landscape development and site design issues at UNC. This manual should be used by campus planners, facility managers and various design and construction consultants as future development occurs. The *Plan* should also be used by University boards to evaluate development proposals during the review process.

Macro Scale Frame of Reference

The visual structure and spatial organization of the Campus contributes to the manner in which the exterior environment functions and is perceived by students and faculty. Features of the macro scale design framework include circulation corridors, gathering spaces, and exterior use areas. The conceptual ideas for macro scale components summarized in this *Plan* focus on qualitative depiction, desired intent, and general effect, while affording flexibility of design expression.

Micro Scale/Landscape Design Vocabulary

The sense of place and legibility of the UNC environment will be further advanced by establishing a campus-wide common landscape design vocabulary. The intent is to promote consistent and predictable use of micro scale elements such as paving, monumentation, lighting, furnishings and planting. The design vocabulary delineated in this Plan is a specific and quantitative description, and application is essential if unification of campus districts is to be achieved.

Flexibility

Unlike performance standards that require strict adherence, the recommendations presented in this *Plan* are broad and adaptable, thereby enabling application to a range of sites or situations. In order to avoid misinterpretation, the guidelines are somewhat specific and prescriptive, yet flexible for the purpose of allowing for design creativity and innovation.

1.5 Document Organization

The *Campus Landscape Development Plan* has been developed in a logical sequence that leads from an examination of campus landscape and site development concerns to design concepts and solutions. Since knowledge of campus origins is necessary for a complete understanding of the Campus, this report commences with an inventory and description of campus landscape components, and summary of key issues and opportunities for the long-term future development of the Campus environment (*section 2*). Next it proposes a master plan framework (*section 3*) for future campus development. Included are recommendations for improving the macro-scale elements that provide organization and structure to the landscape, as well as micro-scale elements that comprise the Campus landscape design vocabulary. An appendix (*section 4*) contains materials and detailed data that are referenced in the main body of the document.

2. The Present State of the UNC Campus

2.1 The Inventory

The evaluation of the existing conditions of the UNC landscape was primarily achieved through site observations, and allowed for a site condition inventory, a functional analysis, and an aesthetic appraisal of the campus environment. Identification of primary landscape organizing elements and features that contribute to the existing physical character has been noted, and relevant problems and issues described. An inventory map was developed to describe the various landscape features, and a photographic data bank was compiled to illustrate in detail the conditions of the UNC Campus during the summer of 2002. The map and inventory photos are included at the end of this section as a frame of reference.

Trees

The UNC Campus landscape is characterized by a variety of native and introduced tree species that are predominately deciduous in nature. The central campus is noted for its beautiful, mature, "romantic" urban forest, extensive canopy and numerous specimen trees that are planted in a somewhat casual and informal fashion. However, the landscape structure is also provided by linear rows of trees planted along the north south streetscapes (10^{th}, 9^{th}, 8^{th},) and several east west campus walks and pathways. The tree component within the west campus is much less dense and established than the older central campus. As redevelopment of the Campus occurs, there are numerous opportunities to provide for a coherent landscape treatment, provide a greater level of formal structure, and to "naturalize" the setting with specimen shade trees.

Lawns

The park-like campus landscape allows for the existence of a variety of different lawn spaces that accommodate passive uses, active uses, special garden uses and athletic uses, and vary as result of location, vegetation arrangement, and maintenance requirements. The passive use lawn area encompasses the majority open "green space", and typically functions as a buffer between buildings and circulation systems. However, this surface treatment does not spatially distinguish one space from another, and does not provide the unique quality of year round interest that is possible on the UNC campus. Numerous opportunities exist to organize the spatial characteristics of passive lawn areas, to add more landscape variety to these areas, and thereby provide for more interesting, varied, and useable outdoor rooms for both organized and spontaneous activities.

Circulation Systems

The primary element that gives structure to the Campus is the vehicular, bicycle and pedestrian circulation system. The network of paths, streets, and parking exerts a high level of influence on the spatial organization of the Campus, and represents critical functional and aesthetic elements of the UNC campus landscape.

City Streets

The traditional grid pattern of streets in Central Greeley provide for an efficient and understandable means of circulation, access and campus visibility along the perimeter, and strengthens the connection to adjacent neighborhoods. Streetscapes at the Central Campus are rather well developed and can accommodate site-specific improvements to improve key corners and pedestrian access routes entering and leaving the campus. Streetscapes and major intersections/gateways on the Western campus are quite undeveloped at this point with very minimal landscape improvement other than turf and irrigation. Future landscape improvements to the City of Greeley street network could reinforce the character of the important perimeter circulation corridors as they meet and connect to the campus, and assist to define the edge of the UNC Campus precinct as attractive multimodal corridor used by private vehicles, transit, bicyclists, and pedestrians. The lack of streetscape improvements is particularly severe at the West campus where it is surrounded by two major arterial roadways (11th Avenue and 20th Street), which provide access to and through the Campus and Central Greeley.

Pedestrian Paths/Bicycle Corridors

The pedestrian walk system includes the main and secondary routes, and comprises the majority of the internal campus circulation network. Pedestrian pathways within the central campus are formally arranged and generally adhere to a north-south or east-west orientation of buildings and perimeter grid roadways. The west campus path system is less ordered than that of the central campus, and a number of superfluous and uninteresting walkways create obstacles for wayfinding and campus legibility. In tandem with redevelopment of the west campus, more functional and direct pedestrian and bicycle routes should be constructed.

A single corridor comprises the bicycle route that extends from 10th Avenue along the west edge of the Central campus, through the University Center area, and through the central area of the West campus. Portions of this route are signed for “bicycle use only”

or are shared with pedestrians. While the corridor traverses the entire length of the Campus, the route is impeded by two street intersections, and access to portions of the Campus are limited. There is no attempt to distinguish this corridor with appropriate landscaping or amenities that would make this a more legible, attractive and comfortable corridor for campus access and activities.

Transit Stops

Existing transit stops on the West and Central campus provide places where students, faculty and staff can park once in a convenient peripheral parking lot, then ride a UNC bus to their classroom or facility destination. Other City managed transit stops are located along 11th. These Campus and City sites do not provide comfortable settings for transit access, and could be dramatically improved with new uniform campus shelters, amenities, art, landscape and site improvements to help increase transit ridership and to improve the overall transit experience at UNC.

Street and Pedestrian Intersections

Major and minor street intersections occur along the Campus periphery, and provide a logical crossing for pedestrians and bicycles. Not only do these serve as primary points of ingress and egress, but also function as "windows" to the Campus environment. Opportunities exist to enhance the "pedestrian domain" at street intersections through corner improvements, and formal gateway monumentation that continues the tradition of monumentation that currently exists on the Central campus.

Throughout the Campus, several pedestrian intersections characterized by the convergence of five to six paths are found. These "campus crossroads" serve as informal gathering places for students and faculty. Opportunities to enhance these nodes through various design treatments would establish greater importance and functionality to these spaces.

Special Campus Features

Special landscape features that can provide for the development of the campus personality, inspiration, interest and identity include campus monumentation, building entries, building courtyards, drainages and slopes. These are the small-scale spaces and settings used for campus identification and diverse campus activities and events. These are the campus places used for activity areas, art, conversation areas, buffers, and other purposes related to campus life. These areas are established and recognized on the Central campus, but rather undeveloped and

unrecognized on the Western campus. A stronger visual unity between campus districts could be established through the quality design of places on both campuses, with common special features and characteristics that include site furnishings, monumentation, lawns, trees, and lighting.

2.2 Summary of Key Issues

Existing landscape components and site features that comprise the UNC landscape have generally been designed as a response to individual building architecture or developed in an *ad hoc* manner. Landscape spaces have not historically been identified and recognized as equal importance to buildings and other facilities at the University, and the relationship between the landscape, furnishings theme, signage, circulation system, lawn spaces, and special features is indistinct. Additionally, the general absence of unified design in terms of site furnishings, landscaping, lighting, outdoor spaces, circulation, and edges has resulted in a somewhat illegible campus environment. Primary issues of landscape design identified in the inventory are as follows:

Overall Campus

- Lack of visual consistency of campus landscape design.
- Weak campus landscape image and character.
- Incoherent structure and spatial organization of landscape components.
- Lack of built features that promote social gathering and interaction.
- Inconsistent use of furnishing and lighting styles.
- Absence of a clearly organized and functional pedestrian-bicycle pathway system.
- Inconsistent perimeter streetscape treatment that defines the campus precinct.

Central Campus

- Ill-defined pedestrian circulation hierarchy to promote ease of wayfinding.
- Lack of traditional-style built landscape features and structures.
- Lack of edging to control access and stormwater.
- Absence of pedestrian improvements at roadway intersections.

West Campus

- Lack of memorable outdoor spaces that maintain a comfortable pedestrian scale.
- Inadequate or unclear arrangement of the pedestrian-bicycle pathway system.
- Weak relationship between campus passive spaces, special use lawns, and athletic fields.
- Absence of strong planting design concept and mature vegetation.
- Oversized and unattractive parking areas.
- Weak relationship of the Campus precinct to neighboring land uses.

2.3 Existing Landscape Conditions Map and Photo Diary

The map and photos on the following pages describes the existing conditions/issues described in this chapter. These summary maps and photos included on the following pages are:

Figure 2a - Existing Landscape Conditions Map

Figure 2b - Flatwork/Paving Existing Conditions Photos

Figure 2c - Furnishings/Lighting Existing Conditions Photos

Figure 2d - Landscape Existing Conditions Photos

Figure 2e - Opportunity Areas Existing Conditions Photos

3. The Development Plan

3.1 Introduction

Unification of the UNC campus environment should be achieved through common landscape forms, colors and materials. Simple, timeless and enduring styles of furnishings, paving, and landscape treatments should be used in a highly uniform manner, and the repetition at which they occur would serve to strengthen the sense of campus unity and order. Furnishings and materials could vary slightly between the two major campus districts, and thereby respond more appropriately to their respective environments. However, it is recommended that the degree to which landscape features vary is minimal, and that shared attributes, such as scale, materials, patterns, style, application, spacing and color be shared.

Design of exterior spaces, such as quadrangles, pedestrian crossroads, and building entries would be less bound to design guidance, and the treatment of these larger spaces could potentially vary in form, scale and layout. Although execution of the designs for these sub-areas would provide for variation of form within a larger unified landscape framework, it is important that recommendations in this document that outline materials, furnishings, and location of certain landscape elements be considered prior to design implementation.

3.2 Principles

The following principles summarize the intent of the concepts described in this chapter. These principles were developed based upon the analysis of existing conditions, and discussions with UNC staff and administration

Campus Legibility and Structure

- Improve active campus gathering spaces with site design and landscape improvements.
- Maintain and enhance larger passive courtyards, campus greens and quads with site and landscape improvements.
- Establish new larger scale multipurpose pedestrian plazas and gathering places
- Reinforce circulation patterns and campus spaces with the development of distinct landscaped edges.
- Establish simple and direct circulation patterns.
- Develop uniform Campus monumentation at key locations along the edge of the Campus.
- Provide streetscape improvements to buffer surrounding busy city streets and to enhance safe vehicular, pedestrian, transit and bicycle access.

- Encourage quality civil improvements by the City of Greeley along major City roadways on the perimeter of the campus.

Beautification and Appearance of the Campus

- Establish a more distinct and sustainable campus character that reflects/interprets attributes of the foothills/plains northern Colorado landscape.
- Develop a more diverse palette of site and landscape improvements that are maintainable by UNC staff.
- Improve the visual quality of the Central and West campus landscape.
- Improve the character and appearance of parking lots with new buffers and interior islands.
- Establish a more visible and compelling public art presence.
- Reduce the number of duplicate paths and increase the efficiency of existing pathways.
- Develop signature amenities and improvements along major campus pathways.
- Develop attractive and interesting site features at existing drainage and detention areas.

Unification with Common Design Vocabulary/Elements

- Develop uniform landscape and site treatments for common problems and issues.
- Establish a more unified palette of materials for lighting, site furnishings, and landscape and hardscape elements.
- Reinforce uniform pedestrian/bicycle connections between the west and central campus.

3.3 Macro-scale vs. Micro-scale Landscape Elements

The components that make up the design of the Campus landscape falls into two basic scale categories. The first can be defined as macro-scale elements that contribute to the structural organization as a whole, and provide visual or design coherence to the various parts of the Campus. Examples of these elements include building entries, crossroads, quadrangle spaces, and pathways. The second category is composed of micro-scale elements, which include detail features, and materials that collectively form the landscape design "vocabulary" used through the Campus. These include furnishings, plantings, exterior lighting, paving, walls, and shelters. The design quality of these elements is quite independent from the larger structural elements of the Campus. In part, these features serve in the capacity of ornaments or objects; however, they represent a crucial landscape component that assist to unify the campus-wide environment.

3.4 Macro-Scale Elements : Giving Structure to the Campus

Introduction

The structure of the Campus is provided by the design and site planning of large-scale spaces and corridors that complement buildings, parking lots and campus infrastructure. The assemblage of these elements furnish coherence and clarity to the spatial organization of the campus landscape and contribute to wayfinding, human perception and functionality of exterior campus spaces. The pattern of proposed Macro-scale elements are defined diagrammatically in the Landscape Development Framework map, and specific landscape development concepts and guidelines for each of these elements are defined in the following section.

The Landscape Development Framework Map

This map on the following page describes the recommended pattern and structure of the macroscale elements. This map should be used as a guide to implement new projects at UNC, and to establish landscape and site development improvements that are typically a part of specific facility improvement and building projects. The following section defines and illustrates the concepts and patterns described on the map.

1. Campus Landscape Zones and Open Spaces

The development framework map illustrates the Central and West Campus Landscape Zones. These two zones establish the open space design context for a variety of the recommended site/landscape concepts. Concepts and guidelines for these two zones include:

Central Campus Zone Guidelines

- Continue to develop and improve the romantic landscape pattern with turf, specimen shade trees, accent trees, and a common landscape furnishings palette (the Design Vocabulary).
- Develop a cultural landscape assessment to describe significant landscape features and their preservation objectives.
- Establish a major art presence on the Central Campus.
- Enhance the campus landscape with the development of special activity nodes at building entries and campus crossroads/plazas.
- Improve the internal north-south pedestrian spine with a common landscape furnishings palette (the Design Vocabulary).
- Improve the north-south bike path along 10th Avenue with landscape and site development improvements that include a common landscape furnishings palette (the Design Vocabulary).
- Establish new gateway improvements at 10th/16th with a common landscape furnishings palette (the Design Vocabulary).
- Develop a detailed landscape planting and maintenance plan to address landscape development and maintenance deficiencies.
- Seek means to reduce turf and maintenance by planting native grasses, shrubs and perennials along campus edges, at key entry areas, and along campus streetscapes.

West Campus Zone Guidelines

- Develop a distinct and structured landscape pattern that addresses existing and new campus development while also including a common landscape furnishings palette for the whole campus (the Design Vocabulary).
- Portions of the West campus landscape should reflect the indigenous character of the plains/foothills landscape, while continuing to address the functional requirements for servicing, special events, recreation use, circulation, and maintenance
- Establish a major art presence on the Western Campus
- Enhance the campus landscape with the development of special activity nodes at building entries and campus crossroads/plazas.
- Formalize the 11th Avenue and 20th Street streetscapes with new streetscape improvements that incorporate a common landscape furnishings palette (the Design Vocabulary).
- Formalize the north south across 11th Avenue with new landscape and site development gateway improvements including art, trees, lighting and furnishings and a common landscape furnishings palette (the Design Vocabulary).
- Establish new gateway improvements at 11th/24th, 11th/20th, and 20th/14th that incorporate a common landscape furnishings palette (the Design Vocabulary).
- Seek means to reduce turf and maintenance by planting shrubs and perennials along campus edges, at key entry areas, and along campus streetscapes
- Develop comprehensive circulation, drainage and landscape improvements in perimeter parking lots that incorporate a common landscape furnishings palette (the Design Vocabulary).

2. Streetscapes and the Campus Perimeter

Greeley streets exert a significant influence on the campus experience and character, and commonly traverse the boundary of the university Campus. Streetscapes are a component of the vehicular circulation corridor, and represent a highly visible landscape component that serves to unify and delineate the university district perimeter. The linearity of the street is typically reinforced with vertical elements such as lighting and street trees that run parallel to the curbline of the roadway. Other landscape elements associated with the streetscape zones, such as bollards and paving at street intersections, further strengthen the visual component of vehicular corridors and help diminish dominance of the automobile within the corridor by enhancing and providing for pedestrian related functions and activities.

Intent

To create a hierarchy of streetscapes that effectively buffer pedestrians and campus development from automobiles and parking lots, as well as to establish an identifiable and distinctive campus edge and transition to surrounding area neighborhoods

Core Streetscape Guidelines

This is the primary north-south corridor that visually and functionally links the Central and West campus. These corridors include 11th Avenue, from 24th to 20th, a wide arterial roadway corridor providing access and entry to the Western campus from the south; 20th Street, from 17th to 8th providing a major east west connection from the West campus to the Central campus; and 10th Avenue, from 24th Street to Arlington Street along the west edge of the Central Campus. Concepts for these areas include:

- Implement a formal tree-planting (and revegetation) program along the core campus streetscapes that strengthen the linear form and legibility of the campus perimeter.
- Establish a maintainable curbside buffer zone between the curb and the sidewalk. This buffer should include a single row of wide canopy deciduous street trees. The ground plane should include low water use/xeriscape and native plantings with low maintenance mulch or accent paving material to contrast with the sidewalk.
- Establish a maintainable campus buffer zone between the sidewalk and the campus. This buffer could include a single row of wide canopy deciduous street trees. The ground plane should include turf, or low maintenance mulch or accent paving material to contrast with the sidewalk. If there is enough room, this zone should also include modest berms to increase the

effectiveness of the buffer next to parking areas, and to increase the visibility of attractive corridor landscaping.

- Diversify the character and function of the buffer strip by planting shrubs, decorative grasses and perennials where possible
- Increase the scale of detail and complexity of planting at intersections, pedestrian entry areas, and points of interest
- Vary paving materials on the ground plane and add vertical hardscape elements along pathways that run parallel to the campus core streetscape.
- Establish an attractive year round pedestrian experience by developing a diverse and varied layout of plant materials, landform, and surface materials.

Secondary Streetscape Guidelines

These are the corridors that define the edge of the campus and establish a buffer to the surrounding established and developing neighborhoods guidelines for these areas include:

- Implement a formal tree planting (and revegetation) program with more varied species of trees will help define the secondary corridors from the core campus streetscape.
- Establish a maintainable curbside buffer zone between the curb and the sidewalk. This buffer should include a clearly distinguished pattern of deciduous street trees. The ground plane should include native plant materials and low maintenance mulch.
- Establish a maintainable campus buffer zone between the sidewalk and the campus. This buffer could include deciduous street trees, shrubs, grasses and or perennials. If there is enough room, this zone should also include modest berms to increase the effectiveness of the buffer next to parking areas, and to increase the visibility of attractive corridor landscaping.
- Increase the scale of detail and complexity of planting at intersections, pedestrian entry areas, and points of interest
- Plant native materials as part of the streetscape design to help reduce maintenance and need for supplemental irrigation.
- Consider designing for walks that are six feet in width and represent a curvilinear or non-geometric configuration when space allows.
- Develop standard streetscape lighting fixtures which are uniform on all the streetscapes

3. Campus Gateways

Campus gateways are significant institutional symbols and physical statements of ingress and egress and define the Campus precinct. The visual progression of a "front gate" to the campus interior is a hallmark of institutional properties. Ceremonial landmarks and monumentation associated with campus entries raise the quality of the campus entry, and serves to bolster an identifiable image of the Campus. Additionally, the campus entry can be strengthened by contrasting crosswalk paving patterns at street intersections when planned in conjunction with entry monumentation and landscaping. The landscape development framework map highlights major intersections, secondary corner intersections and corner landscapes as major features to be improved as campus gateways.

Intent

- To create a standard hierarchical system of campus gateways that greet visitors upon entrance to the Campus and communicate an identifiable and memorable traditional Campus image.

Guidelines

- Highlight major and secondary entrances to the Campus with site walls, piers, landscaping and ornamental ironwork that reflect the traditional architectural character of the campus.
- Establish a uniform vocabulary of entry monuments. Distinguish each entry with unique art and site/architectural features related to the campus.
- Establish the scale of the entry features to create a portal for vehicular and pedestrian traffic to enter through.
- Utilize a traditional and enduring palette of materials in the construction of formal campus entries, which conform to or borrow from the existing palette of brick, stone and concrete at UNC.
- Gateways at major intersections should be developed in a compatible manner that considers public infrastructure, crosswalks, sidewalks, lighting and signage.

4. The Parking Lot Canopy

Although parking areas primarily serve a singular land use of accommodating parked cars, they can include pedestrian circulation and landscape features as well. The expanse of pavement would benefit by treatments that include vegetative canopy and buffering, designed circulation corridors, and minor modifications to the design of the paved lot. Additional amenities to improve the parking, such as drainage swales, incorporated as part of vegetation design, would assist to minimize the volume of stormwater runoff and serve to enhance irrigation for trees and shrubs.

Intent

- To create parking areas that incorporate a uniform vegetation canopy and buffer, as well as a pedestrian circulation network

Guidelines

- Modify existing parking lots to include landscaped traffic islands and or "tree diamonds" spaced appropriately to provide for an extensive shade canopy and "orchard" effect. Trees should consist of dense, broad crowned, deciduous trees that are drought tolerant specimens and can withstand the urban impacts of parking lot environments.
- Use dense vegetation screening "walls" and mounded berms along the periphery of parking areas that border streets and major access drives to provide a visual buffer.
- Utilize methods to direct, collect, and filter stormwater runoff from parking lots such as detention basins and swales. Consider developing a system that contributes to the irrigation of parking area vegetation.

5. Pedestrian Crossroads & Plazas

Campus crossroads and plazas are defined as places where pedestrian walkways intersect. These "hubs" are important for the functional, social and visual role that they represent on campus, and it is therefore desirable that the form of treatment encourages social interaction and contributes to the visual character of the campus.

Intent

- To provide an attractive and comfortable open space "node" where multiple paths converge. This node will provide opportunities for rest, social interaction and special event staging .

Guidelines

- Maintain a clear pedestrian path through these areas that does not hinder the functional purpose of the route and enables efficient pedestrian flow.
- Provide appropriately sized space, furnishings, and seating that promotes social gathering, sitting and group gatherings.
- Provide pedestrian amenities, lighting and furnishings from a standard palette as a component of the design.
- Create visual interest and encourage design responses that consider incorporation of appealing pavement patterns, artwork, walls and spatial organization.
- Reinforce the edge of the crossroad area with landscape or hardscape elements to prevent "corner cutting." Avoid barrier planting that creates too much enclosure and security hazards.

6. Quadrangles

Quadrangle spaces function as outdoor rooms and open spaces for campus rituals, social encounters, informal, unstructured recreation and relaxation. These geometrically arranged yards and fields provide access to the buildings that bound their perimeter, and serve as important campus spaces. As a complimentary space to neighboring architecture, quadrangles represent one the most basic spatial components of the campus landscape and are often recognized as a hallmark or signature of campus design.

Intent

- To provide human scaled “greens” that encourage passive and active recreational use, allow for efficient pedestrian movement, and visually organize and enhance neighboring buildings.

Guidelines

- Maintain an area of uninterrupted expanse of turf-covered open space within the quadrangle interior so that multiple and flexible uses can be accommodated.
- Retain larger spaces for active use and non-programmed activities.
- Plant trees and shrubs in a formal and geometric pattern that provide shade and define smaller scale spaces of the quadrangle .
- Provide pedestrian amenities, lighting and furnishings from the microscale design vocabulary.
- Create simple pedestrian and bicycle circulation pathways that lead pedestrians to the desired destination in an efficient manner.
- Ensure that landscape development, paths and other features of the quadrangle discourage development of haphazard and undesignated “social" trails which are created by pedestrians making their own “shortcut” routes.
- Develop subtle changes in grade to create interest and diversity within the quadrangle, and to ensure positive stormwater runoff control
- Develop unique and distinguishing quadrangle landscape design themes that reflect the surrounding academic uses.

7. Building Entrances

Building entrances allow for a visual transition from exterior to interior environments. Functionally, entries accommodate significant volumes of pedestrian traffic in a two-way flow that typically "bottleneck" during various times of the day. Moreover, these spaces are commonly used for social gathering and geographic reference.

Intent

To provide an exterior transition space adjacent to the main portals of buildings that reflect the architectural design of the building and adjacent campus open space, while adequately accommodating pedestrian traffic flows and social gathering.

Guidelines

- Ensure that building entrances are appropriately scaled to the architecture as well as to the adjacent campus open space.
- Provide pedestrian amenities, lighting and furnishings from the campus design vocabulary.
- Maintain a clear simple pedestrian access to buildings that lead from pathways.
- Utilize plant materials in the design to strengthen the visual significance of the entry, as well as to mitigate climatic elements.
- Utilize hardscape materials and forms that reflect the building architecture, yet are compatible with the campus design vocabulary.

8. Pathways

The campus-wide system of pathways is a comprehensive and effective system of linkages to buildings, parking and activity sites, and helps to organize the form and pattern of other campus development. Without proper planning, an unorganized and haphazard system of paths will be constructed that results in a pedestrian movement network that functions in a confusing manner. The presence of a distinctive pathway hierarchy that is characterized by a range of path widths, paving materials, and landscape treatments assists with wayfinding and user orientation, and allows the user to clearly perceive the spatial organization of the campus environment.

Intent

To create a hierarchy of paths, including a "pedestrian /bicycle spine" corridor which links the Central Campus to the West Campus and parking areas, while providing a clear system of circulation for the pedestrian and the bicyclist.

Pedestrian/Bicycle Spine Guidelines

- Vary paving materials at edges, nodes or intersections to create interest in the ground plane and alert the user near campus crossroads and plazas and entries to campus facilities.
- Include amenities such as signs, benches, trash, and lighting as components of the pathway system, particularly in area of heavy use, but allow for safe and efficient movement within 5 feet of pathway edge.
- Configure the main pedestrian-bicycle route "spine" so that access is provided to well-used facilities, quadrangles, and major street intersections.
- Strengthen the axial relationships by planting linear rows of trees and installing vertical lighting, and terminate the "spine" at important architectural features or open landscapes.
- Maintain a "clear zone" of at least 10 feet from the pathway edge, and determine methods to mitigate safety concerns at building entries, crossroads, and street intersections.

Pathway Guidelines

- Utilize functional paving materials throughout, with minimal use of accent paving and special patterns.
- Plant trees along portions of secondary pathways, but to a lesser extent than those that comprise the pedestrian/bicycle spine design.
- Maintain a "clear zone" of at least six feet from the pathway edge.

9. Athletic Areas

Athletic lawn areas typically function in a singular-use capacity and are characterized by level use areas that are typically void of amenities and landscaping. Relegated to peripheral areas of the campus, these extensive open spaces comprise significant acreage of the open space system and often form a foreground viewscape from which developed portions of the campus may be viewed.

Intent

To provide visually attractive yet functional large-scale athletic lawn areas that encourage and accommodate multiple uses through site design and development.

Guidelines

- Consider ways in which athletic fields can be utilized for multiple purposes, and develop site amenities that would encourage diverse uses such as special events, unprogrammed play, picnicking, etc.
- Define the perimeter of active athletic areas with berms , trees and tall shrubs to provide for windbreaks and visual screening and for seating/gathering to watch sporting events.
- Integrate large lawn spaces with adjacent campus use areas by developing informal pathways, which utilize a standard palette of paving, site furnishings and lighting fixtures (The Design Vocabulary).

3.5 Micro-Scale Elements: the Campus Landscape Design Vocabulary

Introduction

The following section describes the recommended site and landscape materials selection and design detail opportunities that will comprise the campus landscape design vocabulary. It is intended that repetitive use of this design vocabulary in the various campus development projects will result in a more organized, memorable and beautiful campus. These elements have been chosen to encourage creative design solutions for campus development, while also being able to adapt to the diverse architectural and site development conditions of the central and west campus.

The detail landscape/site design treatment of the campus with these micro-scale elements should:

- Help to unify the image of UNC, and bring about a sense of coherence among numerous landscape and site improvements dispersed throughout the Central and West Campus
- Maintain aesthetic and functional consistency from one project to the next within the UNC Campus, by using a common palette of materials, and design themes.
- Achieve a timeless design quality throughout the campus.

The recommendations for the design vocabulary provide a means through which a set of appropriate improvements are identified and organized. This provides for a uniform treatment of campus spaces described in the Landscape Development Framework Plan. The Design Vocabulary Guidelines supplement the information set forth in the Building Standards by further identifying a specified palette of materials that when implemented, will project the desired image of the University of Northern Colorado.

This palette is broken down into five general categories of improvements. They are listed as follows:

- Site Lighting
- Gateway Monumentation
- Site Walls
- Site Furnishings
- Paving
- Landscaping

This chapter will identify these materials and discuss their general application on the UNC Campus. At the end of the chapter, product cut sheets and specific improvement items will be grouped to describe the proposed design vocabulary for campus improvements.

1. Site Lighting

Intent

- Develop a high quality exterior lighting environment that provides improved nighttime visibility and attractive character in all parking lots, pedestrian and multiuse ped/bike corridors, campus public spaces, and other campus locations.
- Advance lighting designs, which contribute to campus safety and security, promote wayfinding along campus corridors, and highlight important campus features, nodes, and building entries.
- Require lighting designs to minimize glare, eliminate offsite impacts such as light pollution and light trespass, and reduce energy consumption. In most cases, the minimum illuminance adequate for the intended purpose shall be used with consideration given to recognized standards which include recommended practices adopted by the Illuminating Engineering Society of North America (IESNA).
- Exterior lighting designs shall comply with Colorado Revised Statute 24-82-902 which requires “full cutoff luminaires” when the source or lamp used has an output greater than 3200 lumens.
- Establish lighting theme to complement campus facilities.
- Develop landscape lighting in parking lots which complement street and pedestrian lighting.
- Select and install a uniform lighting equipment style, to reinforce campus design theme. Coordinate selection of lighting equipment with Campus Standards.

Parking Area Lighting Guidelines

- Standard parking area lighting to be established in all campus parking lots on Central and West Campuses.
- Lighting assembly placements shall provide minimum illuminance and uniformity consistent with the recommended practice by the I.E.S. Generally, a minimum level of 0.5 footcandles with an average of 1.2 fc shall be adhered to. These values are to be calculated for a “typical” spacing and are not meant to be values for extreme perimeters or edges.
- Acceptable sources shall include 150-250 phosphor-coated metal halide, 85-165 watt 3k induction, and high wattage compact fluorescent. Luminaires shall use electronic ballasts and be full cutoff to reduce glare, protect dark skies, and minimize light pollution.

- Lighting shall be placed in landscape areas adjacent to parking lots when possible. Fixtures placed in landscape areas shall have a common concrete wrap connect detail flush with grade to reduce maintenance around pole base. When necessary to install lighting in paved parking areas, a 36" above grade foundation shall be utilized for placement of the pole and luminaire.
- Single and double luminaire assemblies are encouraged for parking lot areas. Lighting assemblies with more than two luminaries require review by Campus Architect.
- Light pole, base, and luminaire to be UNC standard Sherwin Williams Powdura Coating.

West Campus Pedestrian Lighting Guidelines

- Develop 12'-16' high fixtures located along all pathways and featured streetscapes.
- May require internal house side-shields to avoid glare and light trespass into residence halls and adjacent residential dwellings.
- Lighting assembly placements shall provide minimum illuminance and uniformity consistent with the recommended practice by the I.E.S.
- Lighting installations shall be coordinated with existing tree locations and proposed vegetation to provide optimum lighting levels.
- Acceptable sources shall include 50-70 watt phosphor-coated metal halide, compact fluorescent, and 55-85 watt induction. Luminaires shall use electronic ballasts and be full cutoff to reduce glare, protect dark skies, and minimize light pollution.
- Maintain consistency of design throughout the West Campus, including the University Center site.
- Lighting assemblies placed in landscape areas shall have a common concrete wrap connect detail flush with grade to reduce maintenance around pole base. When necessary to install lighting in paved areas, base shall be installed flush with grade.
- Compatible luminaires can be selected for special campus buildings and facilities with approval from the Campus Architect.
- Single luminaire assemblies are encouraged for most applications. Lighting assemblies with more than one luminarie require review by Campus Architect.
- Light pole, base, and luminaire to be UNC standard Sherwin Williams Powdura Coating.

Central Campus Pedestrian Lighting Guidelines

- Maintain design consistency throughout Central Campus.
- Use historic acorn light fixture described in these guidelines.
- Develop 12' – 14' high fixtures located along all pathways and featured streetscapes. Avoid glare and light trespass into campus buildings and residence halls, which may preclude the use of the historic acorn lighting assembly at some locations.
- When historic acorn assemblies are appropriate, they shall have a internal lamp/reflector system designed to minimize glare, reduce light trespass, and provide illumination only where intended.
- Lighting assembly placements shall provide minimum illuminance and uniformity consistent with the recommended practice by the I.E.S.
- Acceptable sources shall be rated at 2500 (initial) lumens or less and shall include 50-70 watt phosphor-coated metal halide, 32 or 42-watt compact fluorescent, and 55- watt induction. Luminaires shall use electronic ballasts. The color temperature of compact fluorescent and induction sources shall be 3 k.
- Lamp shall be rated for 3500 (initial) lumens or less. Recommend 32 or 42-watt compact fluorescent lamps or 55-watt induction lamps. The color temperature of compact fluorescent and induction sources shall be 3000 K.
- Single luminaire assemblies to be used for all applications.
- Provide a round, tapered, fluted pole with a decorative base.
- Compatible luminaires can be selected for special campus buildings and facilities with approval from the Campus Architect.
- Lighting assemblies shall be placed in landscape areas with no wrap connect detail.
- Light pole and base to be UNC standard Sherwin Williams Powdura Coating.

Special Lighting Guidelines

- Signage, sculpture, architectural and landscape features may be accent lighted in compliance with State Statute and the lamp must be shielded from offsite view.
- Accent lighting equipment shall be of sufficient quality to resist vandalism and minimize maintenance. Preferred luminaire shall be flush to grade.

- Backlit, reverse pan channel signage systems are preferred for optimum readability of signage. LED systems are encouraged.
- Façade lighting shall require special review by Campus Architect and must comply with State Statute

2. Campus Gateway Monumentation

Intent

- Establish vertical architectural features, signage and markers at key points of entry to enhance the identity of the campus, to enhance wayfinding for visitors, and to identify campus entry points and the campus boundary.

Gateway Monumentation Guidelines

- Entry monuments should be integrated into a total design concept that may include pedestrian circulation/surfacing, site landscaping, lighting, sitting areas/campus amenities, campus signage, and buildings.
- Develop campus entry monuments to recall the campus architectural heritage, and to reinforce campus academic units and UNC identity.
- Ensure that the scale and proportion of campus monuments reflect both the vehicular and pedestrian scale of the setting, and establish a portal for access to the campus.
- Use durable, long lasting and permanent materials to facilitate quality maintenance.

Central Campus Style and Materials

- Establish red brick historic theme monuments on the Central campus.
- Continue use of articulated bases and caps with precast concrete and stone accents.
- Complement existing blond monuments with approved campus signage, campus logo, and ironwork railing

West Campus Style and Materials

- Develop red brick monuments on the West Campus. Develop a character that is compatible with existing historic monumentation.
- Establish an articulated base and cap feature with precast concrete or buff sandstone . .
- Incorporate gateway fencing to establish perimeter boundaries.
- Incorporate traditional bronze University identification signage as appropriate to each setting

3. Walls

Intent

- Develop a common vocabulary of site walls for sitting, retaining grade, edging planting areas, security and for other design purposes.
- The common architectural vocabulary for walls should be compatible with campus facilities, paving and other site and campus improvements
- The height, materials and design of site walls should reflect the character of campus buildings.

Seat Wall Guidelines

- The campus affords many pleasurable experiences for outdoor student life and activities. This campus life is enhanced with outdoor amenities such as the seat wall. Walls which enclose landscaping and provide sitting places that should be included in site development to improve campus life
- The height of the wall should range from 12”-20”. The width of the wall should be no less than 16”.
- Sitting walls should be made of brick that is similar to the Sheffield brick used in the Western campus.
- A wall cap or coping may be used where appropriate. This coping should be no less than 3”. This cap can be made of buff colored sandstone or buff colored precast concrete.

Retaining Wall Guidelines

- The rolling grade of the campus should be retained to hold desired grades, control erosion, improve stormwater runoff, provide screening, establish circulation, and for other design purposes. Walls are also often extensions of campus buildings in the landscape
- Retaining walls should be made of reinforced concrete or stone that is compatible with other adjacent buildings or campus districts.
- A wall cap or coping may be used where appropriate on retaining walls. This coping should be no less than 3” thick. This cap should be made of brick, stone, or buff colored precast concrete.

4. Site Furnishings

Intent

- The campus environment can be improved greatly with the addition of campus furnishings that would enhance campus life and appearance. A single style of furnishings for each element described below, should be used exclusively to establish a unified, memorable and attractive campus character.
- The style of campus furnishings should integrate traditional and contemporary design styles by using traditional materials in a contemporary design context.
- Furnishings should be built of durable materials to reduce maintenance effort. They must be easy to access and service.

Bench Guidelines

- Install strap metal benches with backs.
- Strap metal bench finished in Sherwin Williams Powdura Coating, in the UNC standard color.
- Select bench locations to create comfortable settings conducive to conversation as well as security.
- Locate in comfortable setting protected from vehicles/elements, and preferably with landscaping and shelter to the back and shading from sun.

Trash Receptacle Guidelines

- Trash receptacle to be strap metal compatible with benches and other furnishings and building architecture.
- Place in unobtrusive locations yet in areas where people need them in sitting areas or 3' setback along main pathways.
- Trash receptacle not to be permanently mounted on concrete pad or sidewalk pavement.
- Receptacles shall be located at sitting areas, building entries, patios, bus stops and campus plazas.
- Strap metal receptacle finished in Sherwin Williams Powdura Coating, in the UNC standard color.
- Use 32-gallon capacity.

- Provide removable insert to dump trash.
- Ensure trash receptacles are simple and unobtrusive design and easy to service.

Bicycle Rack Guidelines

- Select a bicycle rack style that complements other furnishings and is attractive within the campus environment.
- Use a simple, space efficient and serviceable design.
- Locate in visible secure locations where demand for bike parking is expected.
- Use large galvanized rack for larger bicycle parking areas.
- Use U locks for 5 or less parking stalls.

Planting Pot Guidelines

- Use planting pots to provide color and scale at key campus plazas, patios and gathering areas.
- Ensure that pot locations are compatible with access and service functions.
- Select warm earth or theme dark blue tones to be compatible with brick architectural features and concrete paving.
- Use precast concrete pots that are compatible with other furnishings.
- Use larger containers to enhance livability and maintenance of plants.
- Ensure maintenance free finish and resistant to urban impacts.

Tree Grate Guidelines

- Use tree grates to protect trees in paved areas and to provide for safe and accessible pedestrian circulation.
- Use expandable cast iron tree grates, cut stone grates, or grate frames with pavers.
- Ensure flexibility for tree growth and maintenance (center portions of grate can be removed to allow for tree growth).

Pedestrian Shelter/Information Kiosk Guidelines

- Shelters should be integrated into a total design concept that may include pedestrian circulation/surfacing, site landscaping, lighting, sitting areas/campus amenities, campus signage, and buildings.

- Ensure that the scale and proportion of shelters reflect both the vehicular and pedestrian scale of the setting. Develop distinctive designs for different campus districts to enhance the identity of that campus.
- Use durable, long lasting and permanent materials to facilitate quality maintenance and life of the facility.
- Develop shelters in open campus areas to function as sheltered sitting area, an event stage, a group picnic facility, transit stop, and other purposes.
- Ensure that shelter provides for wind protection for cold days.
- Ensure that facility is constructed for visibility and security.
- Use brick/stone theme base with UNC official dark blue metal roof.
- Incorporate campus art and academic theme ideas.
- There shall be no advertising placed on the shelter.

Bollard Guidelines

- Locate at intersections and other areas which require a barrier between pedestrians and vehicular traffic.
- Use bollards to complement and reinforce vertical curbs.
- Locate carefully to avoid path and street clutter and to accommodate street cleaning, snow removal, and campus operations.
- Use precast concrete bollards with accent scoring. Use white concrete or warm earth tones that contrast with brick or concrete pavement.
- Use removable mount bollards or the knock down approved bollard in applications to accommodate emergency fire access.
- Heights for bollards shall be in the range of 18”-36"

5. Paving

Intent

- Paving design should achieve a visual rhythm as perceived by the pedestrian and bicyclist through a uniform organization of paving materials. Paving will guide movement define spaces and provide interest on the campus.
- Paving colors, patterns and textures should be complementary to campus facilities and infrastructure.
- Paving will provide attractive settings for pedestrian activities and building entries.
- The location and design of accent paving will imply special use and circulation zones.
- Accent paving should be selected to contrast with the simplicity of the surrounding concrete paving and to complement buildings, walls and vertical site features
- Special pedestrian areas along streetscapes should receive larger areas of accent paving, i.e., corners, entry areas and possible crossing locations.

General Paving Guidelines

- Concrete including plain gray, integral colored concrete, and special aggregate finishes, a minimum of 4” thick, or 6" thick for fire access corridors.
- If colored concrete is chosen as accent paving material, use earthtone colors which will complement natural materials and concrete paving. Avoid rich or bright colors.
- Develop a uniform and modular scoring pattern scored to reflect buildings and circulation pattern

Campus Spine Guidelines

- Develop a spine pathway, distinctive from the common concrete campus paving materials, that will provide continuous link from the Central Campus to the West Campus
- Width of the spine path should be minimum of 16’-20’ to accommodate pedestrians and bicyclists, and service vehicle access.
- Compatible warm earth toned integral colored can be used to highlight specific intersections or facility areas
- Develop uniform and modular scoring pattern scored to reflect buildings, lighting and circulation pattern.

Secondary Path Guidelines

- Use poured in place concrete flatwork
- The scale, pattern and layout shall complement adjacent campus buildings and development patterns.

Accent Paving Guidelines

- Intersperse concrete sidewalks and plazas with accent paving panels and patterns to provide texture and interest at special locations such as building entries, crossroads, furnishing locations, entries, etc. Accent paving panels should be Sheffield brick or other warm tones to complement sidewalk concrete paving. Use simple and memorable patterns that complement the campus architecture and reinforce use and circulation patterns.
- Use Sheffield brick, modular concrete pavers, granite, buff colored flagstone or other materials which will complement sidewalk and brick wall materials.
- Next to sidewalks along major streetscape corridors at UNC, develop low maintenance and attractive curbside surfaces which enable maintenance of street trees, and provide an attractive curbside appearance. Use brick, flagstone, concrete pavers or crushed rock, of subdued earthtone colors which will complement sidewalk materials.
- Develop simple paving patterns to reflect the site functions and overall design context.
- Use flush joints (no mortar in between pavers).
- Develop a detail pattern in large areas, simple pattern in small areas.
- Width of areas to receive pavers to be a dimension evenly divisible by the module size.

Crosswalk Guidelines

- Distinctive pedestrian crosswalks should be developed to reinforce pedestrian right of way, alert drivers and pedestrians
- Use painted crosswalks on all public streetscapes.
- Use concrete unit pavers on the interior campus.

6. Planting

Intent

- Develop a hierarchy of landscape materials to distinguish key areas of the campus and to reflect site-specific functional objectives (shade, buffering, solar access/climate control, etc).
- Reinforce campus edges and streetscapes with simple and memorable linear planting patterns of canopy trees that reflect circulation patterns and reinforce the campus perimeter.
- Emphasize campus entries with ornamental shrub plantings and accent trees to establish unique color and form to complement architectural features.
- Establish pockets of native / low maintenance landscape materials in low-use areas to save costs, conserve water and to reinforce xeriscape planting appearance and technology.
- Create interest and low maintenance landscape along major streetscapes with use of mass ornamental grass beds.
- Continue and refine a "heritage" arboretum concept on Central and West Campus by planting non-native and specimen tree varieties in special locations that reflect campus heritage themes and values. These special locations should be developed to reflect detailed campus arboretum objectives, themes, and maintenance capabilities of UNC.
- Maintain more open lawn area on the Central Campus where buildings exist within close proximity of each other to create pedestrian-scaled "outdoor rooms".
- On the West Campus establish small garden rooms and garden courts to break up large landscape areas between buildings.
- Evergreen trees are encouraged in areas where icing and security will not be a problem to help create a live look to the campus in the winter months. A variety of forms and sizes of trees are encouraged.

Irrigation Guidelines

- Develop efficient irrigation systems that reduce spray onto adjacent hardscape areas.
- Update and improve irrigation system to adhere to campus and city water conservation objectives.
- Where possible, use non-potable water supply to reduce consumption and dependency upon domestic water.

- A mixture of spray and drip irrigation should be implemented into designs that are appropriate to the planting of that area.
- Existing quick-coupler irrigation systems should be updated to standard electronic irrigation systems.
- All irrigation systems should be planned on external taps and not taken off building water systems.
- Irrigation systems shall irrigate each area per the plant material selection and water-zoning concept. i.e. low water plant zones should be irrigated less frequently to conserve water.
- A 2-foot zone of cobble, concrete flatwork or flagstone shall be planned around all existing structures to decrease amount of water being emitted near buildings.

Soil Preparation Guidelines

- Encourage laboratory soil tests on in place soils to determine the proper amendments to the soil in the appropriate ratios to best benefit the plantings.
- Prior to adding amendments or fertilizer determine whether or not the problem with the soil is related to poor nutrition (lack of amendments) or poor physical property of the soil.
- Poor nutrition soil will benefit from organic amendments, however if the soil is lacking many nutrients a commercial inorganic fertilizer will be better suited to improve the soil in a timely manner.
- Soil texture is very important to successful growing of plant materials. The soil should be uniform through the root zone of the plant. Soil should not be so tight where oxygen cannot flow to the plants (aeration and addition of organic amendments will help this problem) and soil with excessive drainage (mostly sandy soils) will not be able to retain enough water to nourish the plants. Soil amendments should be tilled through the depth of the root zone to improve these growing conditions.
- A subsurface drainage system is encouraged for planting areas that are bound by structures and roadways (i.e.: medians, planters, etc.).
- Structural soils are encouraged in areas where minimal root development is present. Trees located in hardscape streetscapes and plazas are good candidates for structural soils, to help the roots develop in minimal area.

Campus Landscape Development Concept Guidelines

- The campus landscape concept plan on the following page outlines a conceptual and diagrammatic campus planting pattern that reflects the intent of the framework plan to structure and organize the Central and West Campus through sustainable landscape development.
- Streetscape plantings should reflect a structured pattern of street trees and "allees" complemented by gateway "groves" of trees, shrubs, grasses, and perennials. "Allees" are trees planted in straight, formal rows to establish a structured sense of space along the street; the "groves" are plant materials layed out in a formal geometric pattern or informal cluster to distinguish the special gateway areas of the campus.
- The parking lot canopy should include a "bosque" pattern of plantings within the parking lots. The "bosque" is a French term to describe trees planted in a grid pattern.
- Pathways are defined by a pattern of "allees" planted along the edge of the spine pathway, and key intersections marked by the planting of "groves".
- Unification is desired between campuses, however an individual character per each campus is also desired to give each campus a sense of place unique to it. The West Campus can be developed to be an attractive eclectic campus with contemporary applications of site/design principles that complement the traditional common Design Vocabulary. The Central Campus should be preserved and enhanced as a traditional campus setting.

Plant Species Chart and Landscape Concepts

- The following table depicts plant species for the 9 different functional landscape concepts as shown on the Landscape Development Concept Map. The chart also describes specific applications on the Central Campus (❍) and West Campus (●).
- The numbers on the top of the chart reflect the numbered categories of functional landscape concepts described below and conceptually defined in the previous chapter, section 3.4, macro-scale elements.

Streetscapes

1. Gateway Tree*: Large groves of trees planted in a geometric pattern at campus gateways and entry areas.*

    -Large deciduous tree with fall accent color

    -Small ornamental tree with spring bloom accent

2. Core Streetscape *Tree: Formal rows of trees planted along the 10th/11th internal core campus streetscape.*

    -Large deciduous canopy tree

3. Secondary Streetscape Tree: *Formal rows of trees planted along perimeter campus streetscapes.*

    -Large deciduous canopy tree

    -Large deciduous tree with distinctive form

4. Mid-Block Streetscape Accent Tree: *Formal groves of trees planted in the midblocks of internal core and perimeter campus streetscape.*

    -Large deciduous tree that is distinctive by form, canopy, or fall color

The Parking Lot Canopy

5. Parking Lot Circulation Tree: *Formal rows of trees planted along pedestrian paths within the parking lot.*

    -Large deciduous canopy tree

6. Parking Lot Interior Landscape Island Tree: *Groves of trees planted within the parking lot in a geometric pattern to establish a uniform canopy to the greatest extent possible.*

-Large deciduous canopy tree that contrasts with circulation trees in form or fall color

Pathways

7. Internal Corridor Tree: *Formal rows of trees planted along campus pedestrian paths.*

   -Large deciduous tree with varying form, canopy, and fall color

   -Small ornamental tree with spring bloom accent or varying shades of foliage

8. Internal Crossroads Tree: *Small groves of trees planted in the crossroads of internal campus pedestrian paths.*

   -Small ornamental tree with spring bloom accent

Other

9. Campus Landscape Tree: *Specimen trees planted at special areas to reflect unique themes, uses, and architectural purposes.*

   -Large deciduous tree with varying form, canopy, and fall color, emphasis on native species and non-native specimen trees

   -Small ornamental tree with varying shades of foliage and spring bloom interest

Accent Shrubs, Grasses, Perennials, and Annuals Guidelines

- Accent shrubs and grasses should be focused at campus gateway entries, building entries, and campus crossroads. More traditional plant materials should be used on the Central Campus, while more xeric and native materials should be used on the West Campus.
- Perennials and annuals should be focused at campus gateway entries and campus crossroads.
- Ornamental grasses shall be used as an accent / form planting throughout the campus to provide contrast to the manicured turf landscape, and to establish a more regional character.
- Perennials and Annuals may be planted in the traditional UNC colors of yellow and blue.

Suggested Shrub Species

Ornamental: Butterfly Bush, Spirea, Dogwood, Rose, Daphne, Burning Bush, Forsythia, Hydrangea, Plum, Cherry, Rhododendron, Rose, Lilac, Viburnum, Weigela

Native: Sumac, Willow, Leadplant, Sagebrush, Cliffrose, Apache Plume, Currant, Winterfat, Rabbitbrush, Kinickinick, Oregon Grape, Sand Cherry

Xeric: Leadplant, Sage, Saltbrush, Barberry, Rabbitbrush, Cliffrose, Apache Plume, Privet, Juniper, Rock Spirea, Sand Cherry, Buffaloberry, Yucca, Sumac

Suggested Ornamental Grass Species

1-3 ft height: Blue Lyme Grass, Blue Avena Grass, Blue Fescue

3 – 6 ft height: Tufted Hairgrass, Maiden Grass, Moor Grass, Switchgrass, Fountain Grass

Suggested Perennial Species

Ornamental: Gazania, Poppy, Catmint, Bleeding Heart, Salvia, Cranesbill, Penstemon, Iceplant, Coneflower, Russian Sage, Salvia, Aster, Sedum

Blue Bloom: Columbine, Aster, Bellflower, Cupids Dart, Plumbago, Clematis, Larkspur, Foxglove, Geranium, Iris, Lavender, Lupine, Bee Balm, Penstemon, Primrose, Salvia, Meadowrue, Veronica

Yellow Bloom: Columbine, Clematis, Coreopsis, Sulphur Flower, Spurge, Blanket Flower, Sunrose, Daylily, Iris, Groundsel, Lily, Primrose, Penstemon, Coneflower, Black-eyed Susan, Lavender Cotton, Painted Daisy, Zinnia, Alyssum

Suggested Annual Species:

Petunia, Mallow, Larkspur, Begonia, Salvia, Marigold, Dahlberg Daisy, Vervain, Zinnia, Marguerite Daisies, Cosmos, California Poppy

4. Appendix