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Campus Master Plan
Dear Friends of the University,

We’ve reached a crossroads in our great university’s life. Two paths lie before us—one merely sustains our present, while the other transforms our future. The time has come to make our choice.

Though we are Alabama’s first university—our state’s flagship—we must not fixate on past accomplishments, but instead focus on a vision to become one of the premier universities in the nation. We cannot be satisfied with merely bordering on greatness when true greatness lies ahead of us.

Our vision is to become the “university of choice for the best and brightest.” People—students, faculty, staff and alumni—are the heart of this university. They are the greatest of the four cornerstones of our vision. The other cornerstones—programs, facilities, and resources—will equip our students not only to compete in the world, but to preserve and change it for the better.

By bringing together academics and research, this university creates a synergy that benefits not only the students, but the entire state of Alabama. We intend to become—we will become—a tier one research university.

To make our vision a reality, we have created a bold new plan that includes the most aggressive goals and ambitious objectives we have ever set forth. Remember, we have no interest in merely maintaining the status quo. The University of Alabama is not about being average.

As we walk the Capstone today, we enjoy the shade of trees we did not plant, the music of chimes we did not build, and the benefit of programs we did not initiate. However, it’s now our time and responsibility to provide for the future. It’s time to plant trees whose shade we will not enjoy and to support the education of young men and women yet to be born.

Now is the time for us to choose. And we choose to transform the future.

Dr. Robert E. Witt
President
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Mayor Walter Maddox and his Staff

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Chapter 1:
Introduction
History.

Since its inauguration, the University of Alabama has been both a participant in and a reflection of the history and progress of the state and the nation. The original campus was designed by State Architect William Nichols, following a rich tradition in American campus planning. The University opened in 1831 with 52 students and seven buildings.

During the Civil War, much of the original campus was destroyed. The President’s mansion, Gorgas House, the Roundhouse, and Observatory (now Maxwell Hall) survived and remain on the campus today. In 1871, the University was reorganized and opened once again to students. The campus continued to grow and in 1893 Board of Trustees member Julia Tutwiler successfully lobbied to open the University to female students. Later, in 1956, the University would see the enrollment of its first African American student.

To support and guide the physical development of the campus, the University relied on a series of fund-raising campaigns and growth plans.

The efforts of Presidents John William Abercrombie and Dr. George Denny furthered the growth of the campus between 1906 and 1936. Abercrombie created the first non-State funding source for campus development in the Greater University campaign. During this era, the student population increased almost tenfold to over 5,000 students. Denny Chimes, one of the most recognizable
landmarks of the campus, was dedicated in honor of Dr. Denny in 1929.

Following Abercrombie’s campaign, the Million Dollar Plan was prepared in 1922, which contributed greatly to the beauty and coherency of the architectural environment of the Quad.

In the 1960s significant growth and change occurred under President Frank Rose through the Greater University Development Program. It was during this era that expansion areas took on a modern, automobile-oriented character, diverging from the formality and urban character of the classical core campus.

As the University evolved, the campus expanded and new buildings provided greater opportunities for education, including new colleges, museums, graduate and doctoral studies, computer-based education and research, continuing education, and the RISE Program.

In the last two decades, the University developed a Campus Master Plan (1985) in concert with a highly successful capital campaign. That Campus Master Plan was later updated (1993 and 1999) and subsequent capital campaigns (1998 and 2006) have been initiated to address the ongoing needs of campus growth.

**Plan Philosophy.**

The University has embarked on a periodic update of its Campus Master Plan. This plan update provides a long-term, campus-wide vision, which sets clear direction for coordinated action and leads to assignment of responsibility and authority for plan implementation. While normally a fairly routine undertaking, this plan update marks a significant departure from plans of the past half-century. The University recently determined to increase its student body over the next few years. To maintain the best of its physical character and identity while making way for innovation and expansion, this plan proposes “transformational” change to certain aspects of the campus.

The philosophy of the planning process is centered on an appropriate response to the context of the campus at every scale:

**Unique:** The campus should reflect the nature and character of the University—the institution and its role in the nation, region, state and community.

**Logical:** The campus should be a logical, physical expression of the University’s mission and purpose.

**Respectful:** The campus should account for, respect and capitalize on its physical organization and traditions.

**Customer-oriented:** The campus should serve its users and constituents.

Through implementation of the vision expressed in this plan, the University will continue to dedicate the campus core to the primary functions of teaching, research, and service. It will also commit University resources to link these critical functions more closely together in a pattern that allows students, faculty, staff, and guests to safely and conveniently get from one place to another by walking, cycling or by using a campus transit system.
Chapter 2: Master Plan
Vision.

This plan presents a clear and compelling vision: a return to the fundamental principles on which the University of Alabama campus was historically planned and designed, even as the University responds to contemporary demands. This requires reclaiming and reinforcing the campus as a prime example of the American campus planning tradition.

Therefore, the Campus will offer a complete learning environment—a hospitable, yet engaging academic setting, steeped in the beauty, climate and culture of the South, where residential villages, academic villages, outdoor gathering places, walkways, and recreation areas are interwoven into a gracious and welcoming setting that nurtures the soul and inspires the mind.
Goals. The Campus Master Plan incorporates the following goals in accomplishing the Campus vision:

- **Preserve** the campus core, its landmark structures, engaging open spaces, and sense of place.
- **Regenerate** the vitality of the campus through a comprehensive, phased strategy and implementation system.
- **Integrate** new construction through incremental infill set in traditional patterns in a manner that strengthens legibility and the open space system.
- **Adapt** buildings and facilities to accommodate innovation and expansion.
- **Plan** future campus expansions in an efficient pattern, accommodating additional housing in traditional residential villages organized around shared open spaces and featuring endearing architecture.
Development of the Plan.

The approach taken in the development of this plan included three directives:

*Develop* a long-term vision built upon American campus planning traditions consistent with the historic building initiatives of the University.

*Shape and direct* University-led expansion and improvement.

*Assure* that all decisions will be consistent with the unifying vision of this Campus Master Plan.

In response to these directives, the University’s planning team first evaluated four major periods in the University’s development and the natural systems in which the campus sits. With an understanding of the consistent patterns among the four campus planning efforts and the major influences of the natural landscape, the team then developed a strategic concept through which ongoing physical development of the campus will bring the vision in this plan to reality.

Historic Planning Models.

The classical geometries that informed the open space and building arrangements of the original campus established in its first plan continued through three successive building periods over the next century. Each following plan reinforced the establishment and reinforcement of major and minor axes in the campus. This ongoing design pattern lent to the University campus dramatic and captivating open spaces bounded by multi-storied buildings.

New buildings were positioned in response to the geometries created in previous development phases. The form of each building consciously responded to their position within the overall campus. Choosing to place certain buildings on major and minor axes added nuance to the campus design creating breathtaking vistas terminated by climactic architectural elements. Each project ensured that building sites and adjacent open spaces were woven together. Within each building period, addition of landscaping, site furnishings, and circulation infrastructure reinforced a cohesive system of beautiful open spaces framed by equally beautiful, dignified buildings.
Nichols Plan. In 1829 State Architect William Nichols developed the first campus plan - a formal arrangement of classrooms and living units around a central lawn that fronted Huntsville Road, later to become University Boulevard. It is believed that the approach was fashioned after Thomas Jefferson’s plan for the University of Virginia, an archetype of the American campus planning tradition. A central north-south axis dominated the plan composition. Dormitories stood parallel to the axis, arranged to control solar heating in the southern climate with generous open space between. The open arrangement allowed breezes to flow naturally during the warm summer months. An allée of cedars with flower beds and shrubs lined the central axis. Marr’s Spring likely influenced the open space design of the campus.

Post Civil War Rebuilding. After the Civil War, only the President’s mansion, Gorgas House, the Roundhouse, and Observatory (now Maxwell Hall) remained. In the late 1880s the University began reconstruction with Alva Woods Hall, a dormitory and classroom building. Soon after, the University built Manly, Clark, and Garland Halls. The complex was aligned on the original axis. The new buildings were designed in the Victorian style and were arranged around a central quadrangle, the Woods Hall Quad. Tuomey and Barnard Halls were constructed soon after. This reconstruction effort expanded the campus footprint and followed the formal, classical composition of the Nichols Plan by respecting the original primary north-south axis and establishing a secondary cross axis (east and west) along the length of the Quad.
President John William Abercrombie and Alumni Chair Robert Jemison led the development of the Greater University Plan in 1907, introducing a new major east-west axis between the Woods Hall building group and the original campus. The plan called for new buildings to be designed in the neoclassical style and detailed with yellow brick (Smith, Morgan, and B.B. Comer Halls).

The new architectural palette contrasted with the red brick Victorian buildings constructed after the Civil War. This departure from the original brick palette must have seemed controversial at the time; however, today, these buildings are highly valued for the architectural diversity they provided while adhering to the formal geometry of the campus and classic architectural design of the campus.

President George Hutcheson Denny led the most ambitious building program undertaken by the University, the Million Dollar Plan, yielding nearly all of the buildings bounding the Quad. They were designed in the “modified classical style” establishing the dominant architectural style on campus. Building on Nichol’s axis and central lawn, the addition of buildings facing the Quad helped enclose and activate the campus’ preeminent open space. This period also contributed significantly to the campus open space system. Continuing the direction set out under the Million Dollar Plan, the University developed additional dormitories for women and Denny Stadium. The campus’ most recognized landmark Denny Chimes, was placed along the original north-south axis.
Natural System. The campus does not exist within a void. Open spaces, buildings, and circulation elements within the campus must address natural systems to optimize the energy performance of each building, to ensure safety and environmental quality, and to infuse the beauty of nature into the campus environment.

The four historic building periods took advantage of climate, topography, and natural drainage patterns even while establishing formal, man-made geometries on the landscape. So too does the following master plan acknowledge and invest these strategies into the ongoing development of the campus.

Synthesis. The intent of the plan is to provide strong, coherent organizing systems of streets, paths, buildings, and open spaces that are simple, direct, and compelling. The synthesis of historic campus development patterns with the influences of surrounding natural systems provides an overall structure that is simple enough that most any future building project will have a logical location and site, where buildings frame streets as a primary element in a system of legible patterns of campus organization.

In concert with a strong pedestrian infrastructure, the Campus will offer a complete learning environment- a hospitable, yet engaging academic setting, drenched in the beauty, climate and culture of the South, where residential villages, academic villages, outdoor gathering places, walkways, and recreation areas are integrally woven into a gracious and hospitable setting that nurtures the soul and inspires the mind.
Expansion and Improvement. The following plan elements are the primary campus-building initiatives through which the University will actively implement the vision of this plan.

Open Space System. An organized open space system will extend the learning experience beyond the classroom and better engage students in their environs, both man-made and natural. Within the core campus, existing open spaces will be enhanced and new ones will be created by extending formal arrangements of buildings and spaces. In the outer campus, especially in athletic, recreational, and support areas, less formal, picturesque open spaces will prevail. All open spaces will be “planned” and contribute to the overall network of open spaces tying the disparate elements of the campus together.

Pedestrian Campus. To capitalize on opportunities for infill development and to ensure efficient expansion, the University is committed to enhancing physical infrastructure to encourage pedestrian activity. A campus environment designed for the pedestrian also supports bicycle use and transit accessibility, while alleviating the burden of dedicating significant areas of land throughout the campus for short-term parking. By encouraging walking and bicycling for general accessibility, the University supports more active lifestyles for students, which is essential to their full intellectual and social growth.
**Academic Expansion.** A new academic complex for engineering and sciences will be a significant addition to the academic core. In the model of other successful campus building campaigns, the proposed complex, in the areas surrounding Shelby Hall, offers beautiful neo-classical architecture complementing the historic core of the campus. This new building group is arranged in the classic tradition of the campus quadrangle, with elegant lawns, walkways and gathering areas that create outdoor extensions of the learning environment. Internal and external sidewalks and paths integrate the complex successfully into the overall campus circulation system.

**Residential Villages.** The University will develop additional on-campus housing in the form of multiple residential villages that offer a hospitable setting for living on campus, where students can live and learn comfortably and congregate together. This plan affords potential sites for new housing development throughout the areas along the perimeter of the core campus. These villages will offer endearing architecture, modestly scaled to residential use, and abundant outdoor space to foster memorable experiences and relationships. Residential building groups will be designed with the pedestrian in mind, and each village will be highly accessible to the core campus.
The Master Plan.

The illustrative plan represents a future build-out of the campus based on the goals and principles of the Campus Master Plan. This image proposes conceptual building and open space arrangements where future expansion and infill are to occur. The campus open space system is the dominant feature of the campus and ties together its historic core, modern expansions, and future development and infill. New structures are shown in red and existing structures in gray.

The illustrative plan depicts a modified transportation infrastructure that accommodates and stimulates pedestrian and bicycle travel and the use of a developing campus transit system. In the figure, the circulation elements highlighted in gold are intended for pedestrian, bicycle, transit and service vehicle access (see also Figures 21 and 22 in Chapter 4, for more detail). The remaining thoroughfares are intended for general vehicular access in combination with the other modes of circulation.
**Academical village.** The University campus is not merely a collection of academic buildings. The campus should be “complete” in and of itself and should include a diversity of facilities, services, and experiences essential to development of the student.

**Prominent outdoor spaces to support student life.** Outdoor spaces provide the student opportunities to interact with one another, which is integral to intellectual development. They also give students the opportunity to directly engage their environment or conversely, to contemplate it from a distance.

**Pedestrian-oriented.** To accommodate continued growth, it will be necessary for the campus to provide a physical environment well suited to pedestrian and bicycle circulation, as it once did. Reducing the demand for parking will create infill opportunities and more efficient use of land.

**Traditional building location and relationships.** The campus should be a place that is greater than the sum of its individual parts. Each building and open space must be designed in context—respecting the overall organization and image of the campus and visually and physically connecting to its neighbors.

**Strong sense of legibility.** Improving legibility helps students, faculty, staff, and visitors understand how to move about the campus. This also enhances the beauty and safety of the campus environment.
Chapter 3: Plan Elements
Major Elements of the Master Plan.

The primary components of the master plan are the campus open space system, functional organization, expansion and infill for new facilities, wayfinding, and circulation. A set of first principles guides each of these components.

Open Space System.

As appropriate to the American campus planning tradition, this campus is defined and organized by an overall open space system. It consists of formal and informal, landscaped open spaces (quads, lawns, plazas, courtyards, recreational parks, and athletic fields), streetscapes and paths, and natural areas. Each space is designed with respect to the campus’ natural systems and man-made geometry.

The open space network ties campus areas together physically, offering opportunities for students, staff, and visitors to interact comfortably and safely outdoors. Natural areas and wildlife habitats afford educational opportunities that cannot be substituted indoors. Finally, the overall open space system is critical to achieving an appropriate...
First Principles

- The primary purpose of the campus is to provide an appropriate setting for teaching, research, and service.
- The core of campus is for learning and for selected supporting services essential to learning.
- The surrounding of the core are for student residences and student life—an environment supportive of learning.
- Other supportive functions, including access to the core and its immediate surroundings, are directed primarily to the campus perimeter.
- A usable open space system defines the overall campus.
- Historic resources are respected and supported.
- Campus buildings are placed in a manner that helps to create and form usable, legible open space.
- Major campus streets provide the appropriate setting for major academic precincts, with key buildings organized along them in a traditional manner.
- Pedestrians take precedence over bicycles and automobiles in the campus core.
- A primary pedestrian circulation system interconnects campus residential areas with the academic core.
- All campus streets are designed to provide equal status to the movement of automobiles and bicycles.
- A campus transit system provides a dependable, convenient, and efficient alternative to the automobile.
- The pedestrian, bicycle, vehicle access and parking systems are organized to direct internal vehicular trips by way of campus transit.
- Vehicular access to the campus core is restricted during the day.
- Parking is managed as a limited resource, especially.
- New parking facilities are situated outside the core and are accessible to the surrounding road network.
- The ratio of residence hall beds to nearby resident parking spaces is 1:1. Additional parking for student residents is permitted nowhere else on campus.
- Commuter student parking is situated toward the perimeter and served by the transit system.

balance between the ongoing physical development of the campus and its effects on the surrounding natural systems.

Core campus. In the academic core of the campus, open spaces are arranged in response to the prevailing, mostly formal, geometric relationships established and maintained throughout the development of the campus over the last two centuries. Buildings embrace and support the design, use, and safety of these open spaces through their arrangement and massing. Open space types include quads, plazas, and lawns.

Residential villages. For student living, open spaces provide opportunities for passive recreation and interaction and also a buffer and transition between public and private space. Each village incorporates a central green area large enough to accommodate flexibility of use. Open spaces include lawns, courtyards, and quads.

Support areas. In the eastern portions of the campus, a more picturesque or informal arrangement of open spaces and buildings prevails. In these areas, where recreational and athletic uses are provided, there is a greater ratio of open space to building footprint. Project designers will effectively arrange and design open spaces and buildings to prevent “remnant” open spaces that detract from the purposefulness and cohesiveness of the overall network of open spaces.
**Functional Organization.**

The University intends that the campus of the future build upon the best of its past while capitalizing on opportunities that may present themselves over time. With that in mind, the organization of land use or activity areas proposed by this plan—academic and administrative support, housing, athletics and recreation, and support facilities—follows and reinforces the prevailing patterns of campus development. Figure 12 represents the overall relationships of these land use elements, which are further detailed later in this document.

**Functions.**

*Academic and administrative support.* The core campus (shown in red) is intended primarily for learning—and for selected supporting services essential to learning. Many historic resources will be respected and supported within this area.

*Campus housing.* The surroundings of the core (shown in yellow) are reserved primarily for student residences and student life—in an environment supportive of learning.

*Athletics and recreation.* The eastern portions of the campus are dedicated for athletic facilities and recreation areas (shown in green).

*Support functions.* Other support functions, such as the medical and cultural facilities (shown in blue) east of the core campus are directed toward the campus perimeter—recognizing, of course, the need for selected exceptions to such a policy, where such uses provide a routine service to students, faculty, and staff and therefore need to be located near or within the core campus.

*Community interface.* To the west of the campus is a zone of interaction between the campus and surrounding community (shown in purple). This area of interface includes business areas and neighborhoods which share more than just physical boundaries with the campus. Both the City and the University have distinct interests in the success of these areas.

**Expansion and Infill.** The Campus Master Plan identifies opportunities for continued expansion and infill within existing campus areas to accommodate the functions that will be required to serve the growing student population. The following section describes the locations in which different facilities needs can be accommodated in accordance with the overall vision for the campus.

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The core of campus is for learning and for selected supporting services essential to learning.
**Academic Buildings.** New academic growth will occur primarily through an extension of the engineering facilities northeast of the historic academic core. New growth is directed to this area due to the area’s accessibility to related academic facilities and existing and future residential villages.

New buildings are arranged to complement the different geometries and axes established within the historic core and Shelby Hall. They will be massed and articulated to support and activate a central open space.

Additional opportunities for development of new academic buildings are located throughout the campus. These confirm the location of all existing and future academic facilities.

**Housing.** Several opportunities exist for continued development of on-campus housing to ensure adequate supply as the student population increases. New development will occur through expansion into previously undeveloped portions of the campus and through infill and replacement in existing residential areas. The intent is to assure proximity to the academic core and to on-campus services integral to student life. New housing will be designed into a village pattern consisting of modestly-sized blocks, or building groups, with access to open space and sidewalks and paths connecting to the core campus.

Residential infill within existing on-campus housing areas is provided east and west of the historic core and south of University Boulevard, with most buildings located within one or two blocks of the Quad. Relocation of existing surface parking lots will create ideal sites for new housing within a short walk of the core campus. The arrangement of new buildings responds to the central north-south axis extending from the Quad, while also addressing the influences of adjacent block and building geometries. Additional affinity group housing is provided west of the new 2nd Avenue extension.
Athletics. Athletics facilities are typically dedicated to the University’s athletic programs in contrast to those facilities open for general student recreational use.

With the exception of Bryant Denny Stadium, all athletic facilities are located either south of Paul W. Bryant Drive or in the easternmost portions of the campus near 5th Avenue East and the eastern end of Campus Drive. Opportunities for new athletic structures are identified in each of these two areas. Athletic fields are located primarily between the new Second Avenue extension and Fifth Avenue East.

Support. Support facilities include campus administration, student services, on-campus dining and retail, hotel and conference facilities, storage, maintenance, and other ancillary functions. The lion’s share of these functions occur along the perimeter of the core academic area with those buildings most directly interrelated with campus daily activity located closer to the core and to student living areas. The demand for additional support space is not expected to increase in direct proportion to the increase in student population. With an efficient development pattern, additional space can be afforded, as needed for these functions, over time.
Recreation. Existing recreation structures and facilities include the student recreation center, recreational fields, and tennis courts which are available to the general student population. Opportunities to expand recreational facilities for the future student population are indicated in Figure 16 above, in available sites between the Second Avenue extension and Fifth Avenue East. The architectural design and spatial arrangement of future facilities will largely be dictated by their programs.

Parking. Surface and structured parking is located throughout the campus. Parking represents a major land use for the University and separates people and key facilities from one another. This impact on the campus reinforces the current University resolve to encourage pedestrian, bicycle, and transit access while relocating surface lots from the interior of the campus to perimeter locations to accommodate infill development for new central academic and residential facilities. Commuter parking lots will be located along the campus perimeter near surrounding major roads to ensure convenient access.

It will require a concerted effort to provide safe, convenient non-vehicular circulation infrastructure in combination with transit operations and effective wayfinding strategies to provide effective transportation alternatives to students, faculty, and staff. This will then allow the University to transition central, surface parking to more advantageous uses that will accommodate the University’s desired level of growth.
Wayfinding and Circulation.

Wayfinding. The act of wayfinding is how people use visual cues from their environment to make decisions about how to get from one place to another. The campus has many destinations and multiple modes of travel. Thus, it is essential that the environment provide an organized and effective system for directing individuals to their destinations. This will be accomplished through the design of buildings and open spaces as well as through appropriate, coordinated signage.

Gateways. Gateways are the first experience of the campus for visitors. They also act as thresholds, through which one passes and senses a transition into a new place. Effective gateways aid in the campus wayfinding system and are typically placed at major decision points. Gateway features include special buildings, landscaping, signage, and streetscape elements to emphasize this sense of transition and provide visual information to aid in navigating the campus. A visitor should be able to sense arrival with or without a sign.

Image Corridors. Image corridors are the major routes through the campus along which gateways and major wayfinding decision points occur. These are primarily vehicular routes and are corridors to which the University must pay special attention in order to maintain the level of quality it wishes to portray to the outside world.

Signage. Signage is a critical element in the wayfinding system but should not be overdone. A proliferation of signage can not only become confusing but detract from the beauty and elegance of the campus. Essential signage elements for the campus will generally include landscaped monument signs at gateways, street signs (including pole-mounted banners in specific locations), pedestrian kiosks, and building signs.
Circulation. The University will reinvigorate pedestrian activity and limit routine motor vehicle access in the core campus. Not only will this allow surface parking at the interior to transition to academic and other uses but it will also help address the congestion that has already occurred from increasing student population.

However, rather than limiting access into the campus, the University intends to expand options for students, faculty, staff, and visitors. The University will put greater emphasis into improving infrastructure for multi-modal circulation. Sidewalks and paths will be improved, expanded, and extended. On-street and off-street bicycle facilities will be improved and added. A campus transit system will provide mass transportation routes connecting dispersed points throughout the expanding campus, such as perimeter parking areas.

All campus streets are designed to provide equal status to the movement of automobiles and bicycles.
Chapter 4: Implementation
Implementation.

The University of Alabama will actively implement this plan through four key initiatives: refinement of the campus open space system, academic facilities expansion, residential facilities expansion, and redefinition of the campus’s circulation and wayfinding system. Also in the near term, the University will enact and enforce design standards and a thorough design review procedure to assure that project-specific decision-making by sponsors and designers is in accordance with this plan.

University Initiatives.

Several campus improvement initiatives are currently underway and individual decisions remaining must be made to complete the various projects in conformance with the campus’s overall vision. Described following are these major initiative areas and how the overall master plan will affect their implementation over the next five years.

Open Space System. The Campus Open Space System includes the formal and informal landscape components that collectively knit together the campus environs. Each outdoor space has a specific role and purpose of its own, carefully planned, designed, and managed to accomplish its purpose.

The Marr’s Spring Preserve at Marr’s Spring Road and Campus Drive offers respite from the urban environment, with places for water recharge, wildlife habitat, and the sustenance of natural ecological systems. Meandering paths, meadows, woodlands with informal seating provide opportunities for interaction with the natural environment, with places for outdoor classrooms and laboratories. Boardwalks and bridges offer views of wildlife, with minimal disturbance.
The Crescent provides a picturesque, rolling landscape as the gateway image to the University of Alabama between 5th Avenue East and the 2nd Avenue extension north of University Boulevard. An important element in the watershed ecosystem, the Crescent is planned as an elegant, rolling meadow, where wide pathways and elegant bridges meander amongst intramural recreation fields, picnic lawns, and ponds. Here, a classical pavilion, serves as a welcome center for visitors to the campus. Graciously oak and sycamores tower over the landscape, offering shade, and comfort for park users. On game day, the tree-lined meadow and expansive lawn offers a comfortable, less congested environment for tailgating and picnicking.

An outdoor amphitheater with informal seating perches aside the sloping lawn and offers gathering space for campus events. Active sports facilities are carefully designed to minimize visual intrusion into the natural landscape. Structures for concessions, restrooms, and maintenance appear as outdoor pavilions. Seating areas and bleachers are located on sloping lawns, and are not constructed as permanent, vertical structures.

Capstone Promenade is a classical campus mall, located along the central axis that aligns Smith and Morgan Hall. The Promenade features elegant walks, seating areas, and the central Gorgas Plaza and Fountain. The Promenade serves as an important crossroads, at the approximate geographic center of the campus. It links the Quad, the Crimson Promenade, a future Seventh Avenue Pedestrian Mall, and a series of key walkways that radiate outward to form the campus open space system. The promenade features gathering areas and comfortable nodes for small groups.

The Academic Walk of Champions is a plaza dedicated to the academic achievement of the University’s students.
**Academic Facilities Expansion.**

Construction of new academic buildings is critical to properly serving the increasing student population envisioned by this plan. The most significant expansion area for new academic buildings is between Shelby Hall and the core campus along a realigned Hackberry Drive. Positioning of the buildings on the site will embrace and enliven the surrounding streetscapes while creating a dynamic central greenspace. Axial vistas and pedestrian paths converge on the open space and are reinforced with landscaping and site amenities. The urban form, architecture, and site design of this major initiative will prove a dramatic and welcome return to the traditional American campus-building aesthetic of the original campus.

In addition to this academic expansion area, the Illustrative Master Plan (Figure 9, page 2.10) indicates other opportunities for future academic buildings in infill locations and around the center of campus. Infill reduces the need to expand the campus outward, which would entail greater infrastructure investments and maintenance needs. Similarly, this pattern of concentration of academic buildings complements the desired pedestrian-oriented campus and planned campus transit system.

Renderings courtesy of HOK Associates.
Residential Villages Expansion.
Construction of additional on-campus housing is needed to accommodate the student population envisioned by this plan. Although there are instances of expansion and/or infill proposed in many locations, the highest concentration of new housing is recommended to be built near existing campus housing between Jack Warner Parkway and Campus Drive in the north part of campus. Over time older residential facilities are recommended to be either renovated or replaced, based on project feasibility analyses.

Infill. Relocating interior surface parking lots to peripheral sites will increase opportunities for residential infill in existing campus housing areas.

Design. In all cases of residential growth, this plan establishes two important design expectations: that housing be organized into clusters scaled to create a comfortable, pedestrian-oriented village environment, and be oriented to create usable open spaces. Essentially, neither megablocks nor megastructures are desirable.

Pedestrian-Oriented Campus. The campus contains a comprehensive network of streets, pedestrian walks and bicycle lanes. All will be fully interconnected and supported by an on-campus transit system. The campus access and circulation system is planned and designed to enhance the pedestrian orientation of the campus, and to assist people—pedestrians, cyclists and motorists—to find their way and thus to explore the campus. The system will help make the university experience memorable even for those who may visit only once; it will help all residents, commuters and visitors develop a sense of spatial knowledge of the campus and thereby discover the unique physical environment of The University of Alabama.

Figure 20: Residential infill
Pedestrians. To achieve a pedestrian-oriented campus, all circulation systems and other modes of travel will be planned and designed to serve and enhance the pedestrian experience. To minimize conflict with pedestrians, the academic core of the campus will be kept as vehicle-free as possible. New sidewalks and other walkways will be constructed, planned and designed to provide clearly defined routes having adequate shade and consistent paving textures that signify changes in use from solely pedestrian to a mix of pedestrians, bicycles and transit vehicles.

Accessibility. Compliance with the Americans with Disabilities Act (ADA) is a consideration in all elements of circulation. Convenient, barrier-free entrances, legible signage and pavement textures, and clear, well-lit paths should be the norm throughout the campus.
Bicycles. To support bicycle travel as an environmentally friendly, inexpensive and efficient form of transportation, the plan calls for a mix of on-street bike lanes and off-street bicycle and multi-purpose paths and trails that can be connected with other such facilities in the surrounding community. Where shared paths are necessary, distinct paving or markings will identify the portion of the path set aside for each mode. Additional bicycle racks will be necessary to further facilitate the use of bicycles across campus.

Campus Transit. A major, pedestrian-oriented campus requires a comprehensive, coordinated approach to accessibility and circulation that includes a transit system. The buildings of the academic core are generally within walking distance of one another, but not all classes are located in the core. Class scheduling often prevents walking between some academic buildings. Access to the core from the perimeter of campus and its major parking areas will also require transit. Transit system operation is an evolving process that will require periodic adjustments of routes and stops to assure efficiency. Creation of full- or part-time transit-only lanes will increase the efficiency and timeliness of transit routes—especially in the core of campus.
Private Vehicles. Given a finite amount of land on campus, the need to limit vehicular traffic is always an issue. The University of Alabama has auto/student ratios that are clearly contrary to a pedestrian-oriented campus. Providing sufficient driving and parking space for such a large number of cars conflicts with other modes of transportation. To complement the planned expansion and improvement of the pedestrian and bicycle circulation systems, access of private motor vehicles to certain places will be limited at various times during the day and week. In general, private motor vehicles will be excluded from most of the academic core during business hours. Such limited-access streets will be paved and signed to distinguish them from general access roads.

Service and Delivery Vehicles. To foster a pedestrian-oriented campus, service vehicle access to some core streets should be limited during certain times to minimize conflicts with pedestrians and bicycles. Pedestrian facilities ideally should be used for service access only when and where absolutely necessary—particularly in instances where buildings lack a street-accessible service entrance or where site infrastructure requires repair. In all cases, the allowable speed of service vehicles in shared environments must be slower than that of a pedestrian.

Parking. The size of the campus and the lack of significant, alternative modes of transportation have led to the automobile becoming the predominant means of campus circulation. When combined with
recent growth and development, this fact has led to surface parking in virtually every corner of the campus and the addition of several parking structures in recent years. This practice has consumed an enormous amount of land and separated people and places. A pedestrian-oriented campus requires that most surface parking be removed from the campus core. In general, major surface parking will be relocated to the perimeter of campus. New structured parking will be limited to a mix of larger facilities on the campus perimeter, while smaller ones may be located just outside the academic core, closely surrounded by academic and administration buildings.

Wayfinding and Signage. Getting to know and understand the University campus requires presenting many types of environmental information in locations and in ways that help people understand where they are in relation to the campus as a whole. At the largest scale, the wayfinding system is organized using several primary image corridors. These streets and their intersections are the backbone of the system, for they lead to key destinations and other important elements of the campus.

Wayfinding signage is organized into a hierarchy. It begins at key entry points, from which vehicular pathways through the campus and to parking areas will be marked. The signs will reinforce pathways for bicycle and pedestrian traffic, and emphasize various aspects of the university that make it unique and interesting. Overall, the signage system will enhance the perception of the campus as a safe, clean and attractive environment by providing a consistent visual hierarchy of information and identification.
Design Guidelines.

Implementation of the Campus Master Plan’s design policies is achieved largely through the Campus Design Guide, which establishes measurable strategies for development and redevelopment on campus. Consultant selection and project definition and feasibility are also critical to accomplishing the plan goals for design.

Campus Design Guide. Where the Campus Master Plan provides direction to the University regarding overall campus development, the Campus Design Guide provides more detailed expectations for individual projects. The Design Guide is organized into the following categories:

Urban Design. There are three campus urban design “districts” in which varying expectations are established. The primary purpose is to ensure that new development: 1) is harmoniously integrated into the historic campus fabric, 2) provides pleasant, attractive relationships between buildings, open spaces, and natural areas, 3) ensures a desirable relationship between the campus and the community, 4) supports pedestrian activity and transit use, and 5) enhances campus safety. A project’s urban design decisions may also be affected by supplemental conditions.

Architectural Design. The primary purpose is to ensure that all new buildings are in harmony with the campus, the building’s architectural “realm”, and the building’s immediate context. The classical architectural styles of historic campus buildings are the basis upon which new projects should be designed, though variation is allowed for details and materials outside of the core campus.

Site and Landscape Design. While the Urban Design guidelines address the design of campus open spaces at a larger scale, these guidelines address detail requirements for the design of all open spaces, e.g. gathering spaces, building perimeters, streets and paths, and surface parking areas. The intent is to ensure high-quality open spaces that provide a level of consistency throughout the campus. They also lend flexibility to the designer to respond to a site’s context, such as the materials and styles of buildings and site furnishings present in adjoining open spaces.

Sustainable Design. These guidelines provide goals parallel to the Leadership Energy and Environmental Design (LEED) rating system and are calibrated to the unique needs of the campus. The intent is to encourage greater energy efficiency and environmental quality while reducing negative impacts of development on the natural environment. Individual projects are not required to achieve a specific threshold within each sustainability goal. Instead, these goals are a challenge to the designer to incorporate
sustainable development techniques within budget constraints and in synergy with other guidelines.

**Design Review.** The Design Review process is administered by the Facilities Planning Department but also incorporates reviews by the University administration, as well as the University Board of Trustees, whose concern is the promotion, development, and maintenance of the campus' public realm.

To assure successful and efficient design and review processes, the sponsor, consultant, and Facilities Planning Staff must work together from the outset of a project. It is the responsibility of the Facilities Planning Department to engage consultants early in the process, ensuring a strong understanding of the Design Guide.

Upon initiation of a project request, there are six major phases of project development, design, and review:

- Concept Review and Feasibility Analysis
- Program Development
- Conceptual Design
- Schematic Design
- Design Development
- Construction Documentation

The initial “conceptual design” review addresses the larger-scale concerns of the project’s urban design as well as preliminary architectural and sustainability concepts.

The subsequent “schematic design” review addresses the evolving details of the project in the context of the guidelines. Schematic design review confirms the urban design, where revisions have occurred, and considers the evolving details of the project, e.g. architectural style and materials, programming of spaces, landscape design, and building systems design.

Design development review confirms the remaining elements of the architectural, landscape, and systems design and is the final review by the Design Review Committee. Upon Design Development approval, the project team is released to finalize construction documents and any construction phase sustainability efforts. During this phase, project submittals are reviewed and approved by the Facilities Planning Department.

Final review is primarily handled administratively by the Facilities Planning Staff to assure that construction documents are in keeping with the approved design.
The University of Alabama
*Campus Design Guide*
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1 Introduction

1.1. Purpose of these Guidelines

These Guidelines act as an extension of the University of Alabama Campus Master Plan, which establishes the overarching principles and recommendations for the ongoing physical development and improvement of the University. This document includes general Design Guidelines for the campus as a whole, as well as specific standards for precincts with particular design needs. Each major project also requires project-specific guidelines, to ensure the unique features of the site and its context are respected, and the project scope includes the site and landscape improvements described herein.

The use of the word 'shall' is not meant to prohibit alternative design solutions. The best solution for a site should not be rejected because it was not conceived of within these Guidelines. When project designers prepare a design solution which departs from these Guidelines, they must also present a design solution which conforms to them. As a rule, the University shall not approve projects in conflict with these Guidelines except where the design solution is of truly exceptional quality and is generally in keeping with the spirit of these Guidelines.

These Guidelines also outline the process by which projects are to be designed, reviewed and approved in accordance with the Campus Master Plan and these Guidelines.
1.2. Campus Master Plan

It is not enough for a project design to simply satisfy the requirements of its own program or even to satisfy the needs of a particular site. Each project must also respect and positively contribute to the continuing evolution of the University Campus as intended by the Campus Master Plan. In this way, each project helps fulfill the vision for the future of the University represented in the Master Plan. These guidelines are intended to establish parameters or standards against which design solutions may be measured with respect to their achievement of the principles that together form the vision in the Master Plan. Each project must either be consistent with the Campus Master Plan or demonstrate how project decisions will improve upon it.

1.3. American Campus Planning Principles

One of the primary foundations of traditional campus planning and design in America lies in the relationship between landscape and building. The term “campus” is Latin for “field” or “open space”. Emphasis on green, open spaces within the built environment sets American campus design apart from its historical practice in Europe.

The quadrangle is the ultimate expression of this art form and illustrates the integral relationship between landscape and building intended in the traditional practice of American campus planning. The “quad” functions similarly to a room, providing space for activities and movement while also creating a sense of enclosure and protection. The buildings surrounding the quad act as the walls of the room and the spaces between buildings act as the doors and windows. This organization allows freedom of movement and experience vital to social and academic exchange, supporting that freedom with a balance of intimacy (at multiple scales) and protection. This is symbolic of the campus as a whole, in which it is the pursuit of the University to provide a secure yet open environment for its students and employees. Maintaining this balance is of concern at the scale of the campus, but also each precinct, block, open space and building.
1.4. Urban Design Precincts

For the purposes of reviewing projects with respect to the varied urban design conditions across the campus, the following precincts or districts are established, in which varying urban design concepts may be appropriate:

1. **Core Campus.** The Core Campus (shown in orange in Figure 1 on page 1.4) is a traditional planning precinct heavily influenced by classical/beaux arts planning, architecture, and landscape design. Buildings and open space arrangements are based on axial relationships, symmetry, and formal vistas. It includes those historic building groups surrounding the original “Antebellum Campus”, centered around the main Quad, and the “Victorian Campus” and immediate surroundings.

2. **Residential Villages.** The campus features several residential villages (shown in yellow in Figure 1), each with a unique identity and take on traditional village design. Each village features a careful proportion of buildings to open space, with modestly scaled buildings and courtyards that offer a comfortable setting and the comforts of home to on-campus residents. The Campus Master Plan recommends that new development in these areas maintain a limited scale, both vertically and horizontally, so that each cluster of buildings can be experienced as a small neighborhood.

3. **Cultural Campus.** The Cultural Campus (shown in green in Figure 1) is organized around a central park and open space network, where buildings are arranged in the picturesque tradition and overlook the central greensward. Active recreation facilities are carefully blended with passive open spaces to create a unified, but informal, setting emphasizing the rolling, natural landscape. Buildings within the Cultural Campus are often larger than other campus buildings, as they house large auditoriums and multipurpose spaces. However, buildings are carefully designed to ensure compatibility with the traditional architecture of the campus.
1.4 The University of Alabama

Density, and types and levels of activity present in those areas where the campus meets the community. See §2.4 for guidelines at the community edge. Also, designers should review the University Area Neighborhoods Specific Plan for more information on how these adjacent areas are planned and what contextual issues may affect applicable projects.

1.5. Supplemental Conditions

In addition to the guidelines for the urban design precincts, supplemental consideration shall be given to those areas of the campus along the river and along the community edge.

1. Riverfront. As the campus grows northward toward the Black Warrior River, new development should respect the sensitive nature of the river, while utilizing it for the unique educational and recreational opportunities it affords. See §2.4 for applicable guidelines.

2. Community Edge. The University Campus does not exist in a vacuum and the community context in which it grows must be properly considered. Campus development must respect the scale, density, and types and levels of activity present in those areas where the campus meets the community. See §2.4 for guidelines at the community edge. Also, designers should review the University Area Neighborhoods Specific Plan for more information on how these adjacent areas are planned and what contextual issues may affect applicable projects.

1.6. Standard Specifications

The Facilities Planning Department is responsible for developing and updating the University's Standard Specifications. Designers should consult with the Department for information on standard specifications that may apply to a project in addition to those referenced in this Design Guide.
1.7. Glossary of Terms

The following definitions are provided to assist in the interpretation of the guidelines herein.

1. **Abutting.** Touching along a common edge, such as a property line or similar site boundary.

2. **Adjacent.** Abutting or separated only by a street, path, or open space.

3. **American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).** An international technical organization authoring professional standards referenced in Chapter 5 of this document.

4. **Arcade.** A series of arches supported by a row of columns or piers creating a covered passageway typically at the edge of a building.

5. **Background building.** A building with a façade designed to frame a streetscape, open space or viewshed. The façade of a background building is intended to not visually compete with that of a foreground building.

6. **Base, Shaft, and Crown.** The three-part composition of the building envelope and façade based on classical architecture. The building’s cornice forms the *crown*, sitting atop the primary wall area or *shaft*, which rests upon the building *base*, which may be a plinth/pedestal or that portion of the façade enclosing the ground floor.

7. **Bio-retention.** An engineered process to manage stormwater runoff, using the chemical, biological and physical properties afforded by plants, microbes and soil. Bio-retention is used to control stormwater and improve water quality through removal of pollutants and nutrients associated with runoff.

8. **Blackwater.** Wastewater from toilets, kitchen sinks, and dishwashers and containing higher levels of nitrogen.

9. **Build-to line.** A requirement for a building to be set up to a street, path, or open space to ensure proper enclosure. Certain variations are permitted as described in these guidelines.

10. **Canopy tree.** A large tree with a ten foot or greater understory at maturity, used to create enclosure and provide shade.
11. Classical / Beaux Arts. A design style which focuses on formal and generally symmetric, axial relationships between buildings and open spaces.

12. Colonnade. A row of columns placed at regular intervals generally supporting an entablature, used either as an independent feature (a covered walkway) or as part of a building (portico).

13. Community edge. An area of interface between the Campus and the surrounding community.

14. Crime Prevention through Environmental Design. For the purposes of the guidelines, a multi-disciplinary approach intended to deter criminal behavior by the design of the built environment.

15. Entablature. Part of a building façade, often highly decorated, above the column or shaft; traditionally composed of an architrave, frieze, and cornice.

16. Foreground building. A building designed to reflect importance often located at the termination of a vista or other prominent site.

17. Frontage. That portion of a building or building site which borders a street, path or open space.

18. Gray Water. The wastewater produced from baths and showers, clothes washers, and lavatories.

19. Green Roof. A roof partially or completely covered with plants to mitigate stormwater runoff and control temperature variations within the building.

20. HVAC. Heating Ventilation and Air Conditioning.

21. Lawn. A grassed area between the front of a building, or building group, and a street.
22. **Leadership in Energy and Environmental Design (LEED)**. A program of the U.S. Green Building Council establishing a rating system to promote environmentally sustainable design and construction practices.

23. **Natural surveillance**. An urban design strategy intended to deter crime by the placement of physical features, activities, and people to maximize visibility and interaction among users of private and public spaces.

24. **Ornamental tree**. A tree, with a small understory at maturity, generally used to define edges or to articulate a space, but not necessarily to provide shade.

25. **Path**. A non-vehicular corridor accommodating one or more modes of circulation, including sidewalks and multi-use paths and trails.

26. **Pedestrian Table**. A pedestrian crossing area raised slightly above the surface of the vehicular way it crosses.

27. **Picturesque**. A landscape design style which focuses on informal and generally organic relationships between buildings and open spaces.

28. **Portico**. A colonnaded porch generally at the entrance to a building.

29. **Quadrangle**. An open space enclosed on four sides by buildings or, at a minimum, mostly enclosed by buildings and having four defined edges.

30. **R-Value**. The measure of resistance to conductive heat transfer of building materials.
31. **Rain Garden.** A shallow depression, typically planted with native plants, strategically located to collect, infiltrate and filter stormwater draining from impervious surfaces to minimize negative impacts of excessive runoff.

32. **Renewable Materials.** Building materials derived from sources that can be replenished within a ten-year time frame.

33. **South Coast Air Quality Management District (SCAQMD).** A governmental organization in Southern California, which established source specific standards to reduce air quality impacts.

34. **Stilted Arch.** An arch in which the springing line is some distance above the impost, the space between being occupied by a vertical member.

35. **Swale.** A depression in the landscape used to temporarily convey, store, or filter runoff. To prevent erosion, a swale is often lined with rip-rap, or native grasses.

36. **Transition zones.** Portions of a site arranged to create appropriate relationships between public, semi-public and private spaces, whether within a building, open space, or both. A lawn is considered a semi-public space connecting a public path to the private spaces within a building.

37. **U-value.** The measure of heat transmission through a part of building or through building materials.

38. **Understory tree.** A tree, with a six to ten foot understory at maturity, used to define edges and provide shade.

39. **U.S. Green Building Council (USGBC).** A national coalition of building industry leaders promoting environmentally responsible design and construction practices. The USGBC is responsible for creation of the LEED rating system.

40. **Viewshed.** A view created by any or a combination of landforms, landscaping, streets, paths, and buildings, often terminating in a panoramic view.

41. **Vista.** A view, as seen through a grouping of objects or structures which frame the view, often terminating in a specific focal point.

42. **Volatile Organic Compound (VOC).** Carbon compounds found in certain building materials that have negative impacts on indoor air quality and the Earth’s atmosphere.
2 Urban Design Guidelines

2.1. Campus Geometry

The geometric configuration of the project shall reflect the prevailing geometry of the precinct (whether buildings or building groups are of a picturesque, classical or other arrangement) while also respecting the geometry of the campus as a whole and those elements which cross or tie together the various precincts. This is affected by orienting buildings and spaces along existing or extended axes and/or cross-axes and by protecting important vistas or viewsheds created by the geometric arrangements of adjacent portions of the campus.

2.2. Open Space and Preservation Zones

The following guidelines are intended to properly shape the creation of open spaces and improvement of existing spaces within the campus and to guide the treatment of natural areas within and at the edges of the campus. Buildings create edges for the open spaces by being carefully planned and designed around build-to lines.

1. Plazas and Courtyards. Plazas and courtyards represent those open spaces, other than lawns and quads, which are directly related to a building or group of buildings, generally serving as an entryway or gathering space. Plazas tend to be hardscaped, in contrast to lawns and quadrangles. Courtyards may be either hardscaped or softscaped and tend to have more enclosure provided by the building or buildings they serve. Plazas and courtyards shall include plantings to soften the space and provide scale and shade.

2. Lawns. Lawns vary in size depending on location and should be of a relatively continuous depth along a block. Additional lawn depth may be required where a vista is to be provided.

3. Quadrangles. Quadrangles shall be lined with background buildings and shall have a foreground building along one edge to create a visual focus to the space (see also §2.3).

4. Streetscapes and Paths. Streetscapes and paths shall be designed to accommodate multi-modal circulation, landscaped to provide shade and comfort, and properly lighted for safety. Refer also to §2.5 for detailed standards.

Above: The plaza at the Student Services Center. Below: The main quad with the Gorgas Library in the background
5. Vistas and Viewsheds. Examples of existing vistas and viewsheds include:

- axial vista between the Gorgas Library and President’s Mansion
- axial vista between Morgan and Smith Hall
- axial vista of Gorgas House along Colonial Drive
- open viewshed along the central greensward within the Cultural Campus
- open viewshed from north campus to the Black Warrior River

A. Protect existing views. Existing vistas and viewsheds shall be protected and no new structures shall be constructed that will interfere with sight lines.

B. Create new views. New vistas should be created through the construction of buildings in prominent locations such as the terminus of a viewshed, street, or axis of an open space.

6. Natural Preservation Areas. Open spaces not to be used for gathering spaces or paths shall be preserved in a natural state or improved as needed to accommodate passive uses. These include the ravine, creek, riverfront, Marr’s Spring, and Palmer Lake. These areas shall be treated in accordance with the applicable sections of Chapter 5: Sustainability Guidelines.

2.3. Building Form and Disposition

The following guidelines are intended to ensure that the scale and arrangement of new buildings optimizes the design of usable, comfortably proportioned open spaces and streetscapes and minimizes the creation of remnant spaces.

1. Building Form.

A. Scale. The scale of new buildings on campus shall respect the scale of buildings within the precinct as well as that of the community edge, where adjacent or abutting. Buildings in a residential village should generally not be taller than three stories. In other precincts, buildings may exceed three stories or equivalent height.

B. Massing. Individual buildings shall be designed to avoid excessively deep footprints. This may be accomplished by designing large buildings as a cluster of smaller modules.

- For most building types, the typical module will be based around a double-loaded corridor (see prototypes at top of facing page).
- Buildings shall be massed in accordance with their spatial purpose: whether to define the edges to space in the case of background buildings or to act as a focal point of a space in the case of foreground buildings (refer to the next section).
C. Foreground and Background Buildings. The following guidelines are to be applied carefully within the Core Campus to reinforce classical geometry and hierarchy and within residential villages to address axes and vistas of the larger campus and to create hierarchy and harmony around internal open spaces. More flexibility may be permitted within the Cultural Campus where each building may act as a foreground element within the landscape.

Buildings are categorized as **foreground buildings**, when they are of special importance (such as of a civic or historic nature or in a prominent location) or **background buildings**, when they are intended to be visually secondary to foreground buildings.

- Foreground buildings shall occupy sites at the end of viewsheds, streets, and major paths to create a special focal point terminating the view. This may be accomplished by orienting special building features such as entrances, cupolas, or towers toward the view.

- Open spaces immediately bordered on two or more sides by buildings, shall only have one foreground building, for which views are created and protected by the arrangement and modest, rhythmic façades of background buildings.

- In some cases, a building may act as a background element within a streetscape or other open space but also serve as a foreground element within another open space.

Top left: Smith Hall terminates vista along Capstone Drive.
Middle left: Comer Hall acts as a background building along Seventh Avenue.
Bottom left: Clark Hall acts as a foreground building on the Woods Hall Quad.
2. Orientation/Disposition. Buildings shall be located and arranged to create appropriate transitions between public, semi-public and private zones (see §2.6.3) and to provide enclosure to streets and open spaces. Buildings shall also be oriented to reduce energy consumption (see Chapter 5).

A. Buildings to Enclose Space. Each building in the Core Campus and Residential Villages shall be positioned and its façade(s) designed to enclose adjacent open spaces and streetscapes and to frame views.

B. Buildings within Spaces. Generally, open spaces shall not be encumbered with buildings except in the Cultural Campus. However, certain buildings may be necessary and desirable to support the function(s) of an open space, such as pavilions or gazebos. Such buildings shall be designed to be transparent and shall be placed with respect to an intended axial relationship of the space.
C. Build-To Lines. Figures 2 and 3 represent streetscape and open space edges with required build-to lines where building edges shall be located to ensure that the adjacent space is properly framed by the building wall and transitions zones are properly defined through building and site design.

- The façade of foreground buildings may vary up to 50% of the façade span from the build-to line to allow for façade articulation.
- Background buildings shall not vary more than 35% of the façade span from the build-to line.
- Variation is measured in linear feet of the façade along the build-to line.
D. *Functional Relationship to Public Spaces.* To the degree possible, those uses within the ground level of buildings, located alongside an open space, streetscape or path, shall be more public in nature given the particular program for the building. This ensures a logical transition between the public/civic character of the open space or path and the uses and spaces within the building. This also provides “eyes on” the space (see also §2.6.1).

3. *Proportional Relationships to Open Space.* Within the Core Campus and Residential Villages, building height shall be proportionate to the width of the adjacent streetscape or open space.

A. *Along Open Spaces.* When located adjacent to an open space, the designer shall strive to provide a building height to open space width ratio of 1:4 or greater. This width is measured between the outermost faces of opposing façades along the short axis of the space.

Desired scale can be achieved with wider spaces through the use of a row of trees on either edge of the space as shown in the illustration at left.

B. *Along Streets.* Buildings fronting on a street should create a building height to street width ratio of 1:3 or greater. This width is measured between the nearest façades on opposing sides of the street.

For exceptionally wide streets, street trees and/or landscaped medians can be used to achieve desirable ratios.

2.4. *Supplemental Conditions*

The following guidelines apply to all areas of the campus where the described conditions exist.

1. *Building Uses and Forms at Community Edges.* Along the community edge, building functions shall be designed to provide the most compatible relationship with surroundings. Designers should review the University Area Neighborhoods Specific Plan for additional guidance.
A. *Use Impacts.* When directly abutting the community, how building uses impact immediate surroundings should be carefully considered. To minimize disruption, building entrances and areas of high activity shall be located toward the campus and away from the community.

B. *Parking and access.* Parking structure entrances and driveways should be located away from city streets wherever possible.

- Parking shall be screened in accordance with §4.3.4.
- Parking decks located along the community edge should be carefully designed to fit into the campus and community context. When a deck site fronts on a city street, liner buildings or façades should be incorporated into the design to minimize visual incompatibility.

C. *Light and Noise.* Uses which generate light or noise that may be disruptive to adjoining community areas should be located away from the community and toward the interior of the campus. Light and noise shielding or buffering may also be appropriate in minimizing unwanted impacts (see §4.4).

2. *Massing and Orientation at the Community Edge.* Along the community edge, building massing and orientation shall be designed to provide the most compatible relationship with surrounding community areas.

A. *Abutting Edges.* When directly abutting the community, building heights should not significantly exceed that of neighboring community buildings.

Height differences shall be mitigated by orienting taller building masses toward the campus. Similarly, upper floors may be stepped back away from the street frontage.

B. *Adjacent Edges.* When adjacent but not abutting the community, such as facing from across a street, campus building heights may exceed the height of adjacent community buildings but should not overpower views of the street. Similar methods as described in A above should be used to minimize scale incompatibility.


A. *Building Orientation.*

- Buildings on the south side of Jack Warner Parkway shall be oriented to maximize views of the river.
- The riverfront area north of the Parkway shall be maintained as open space and development shall be limited to small buildings supporting passive recreational uses.
B. Accessibility. Paths and open spaces shall be provided, as appropriate, for recreational and educational activities.

C. Environmental Considerations. Impervious surfaces shall be minimized and care shall be taken to control sedimentation and erosion during and after construction. See also Chapter 5.

4. Gateways and Image Corridors. Buildings, signage, and landscaping at gateways and along major corridors (see Figure 4 above), as identified in the Campus Master Plan, shall be designed to ensure a welcoming, attractive appearance into and through the campus. Gateway beautification improvements shall be consistent in overall treatment.

A. Gateway Landscaping. At gateways, landscaping shall be provided to create a sense of arrival.

- Landscaping shall include signage (as detailed in the Wayfinding Graphics Master Plan), lighting, and other

Gateway sign from the Wayfinding Graphics Master Plan.
streetscape details to enhance the sense of transition from the community into the campus.

- Changes in paving materials at intersections, for instance, demark the gateway and prove attractive, easily identified crosswalk areas.

B. Gateway Buildings. Buildings at gateways shall create a sense of arrival. This can be accomplished by placing the building mass closer to the street, forming part of a symbolic gate into the campus.

- The location of building entrances and vertical building masses may also enhance sense of arrival and physical transition.

- Buildings may be, but are not necessarily, foreground elements.

2.5. Circulation and Accessibility

The following guidelines apply to all precincts and are intended to provide safe and attractive street and pedestrian environments. These guidelines seek to limit vehicular traffic on the Campus to that which is necessary by providing other convenient, effective options for circulation and access.

1. Streets. All streets shall be designed as “complete streets” providing adequately sized travel ways, sidewalks, landscaping, lighting and, where applicable, bicycle lanes, and on-street parking.

A. Street Types. Streetscapes shall be designed in accordance with the cross sections for Hackberry Drive, Campus Drive, and typical campus local streets.

B. Access. Vehicular access to buildings and parking areas shall be limited in size and shall require adequate spacing from intersections and adjacent driveways to reduce traffic conflicts along streets.

- Wherever possible, access to new buildings and parking areas, shall be through shared driveways. Relocation of existing driveways to create new, shared entrances is encouraged.

- Driveways shall be at least 100 feet from existing or planned intersections, measured between radius returns.

- For buildings which front on a community street, driveway access should be from an adjacent campus street wherever possible.

- Curb radii at intersections and driveways shall be as small as practical, given the types of vehicles needing access and desired speed of the subject streets.

- For streets with on-street parking or an on-street bike path, an “effective” curb radius may be used rather than an unnecessarily large physical radius that would encourage higher speed turns.
2. Pedestrian Facilities.

A. Size. Sidewalks and other paths shall be of a width to accommodate the level of foot traffic within the area. See §4.2.2.

B. Access. Pedestrian paths shall be directly connected to building entrances by the extension of the path or by a plaza or similar hardscaped entrance area extending to the path.

C. Lighting. Pedestrian paths shall be adequately lit for safety by pedestrian-scaled fixtures. Paths that receive higher pedestrian traffic in the evening shall have lighting at decreased spacing intervals to ensure a continuous lighting level. Refer also to §4.4.

D. Crosswalks. Crosswalk improvements shall be provided wherever pedestrian paths cross vehicular ways. Parking areas shall be designed to concentrate pedestrian passage into a limited number of continuous, protected paths which utilize pedestrian tables at crossings with vehicular ways.

3. Bicycle Facilities. Improvements for bicycle accessibility shall be provided as shown in Figure 5, including on-street bicycle lanes (shown in red), multi-use paths (shown in blue), and bicycle storage.

A. Bicycle Lanes. For those streets designated for bicycle lanes, adequate width, signage, and pavement marking shall be provided. Each designated street shall have a one-way bicycle lane along each side.
B. Multi-use Paths. Multi-use paths shall have adequate width, signage, and surface marking designating that portion of the path intended for bicycle use separate from the area intended for pedestrian use.

C. Bicycle Storage. Bicycle racks (see Detail #__) shall be provided in accessible, visible locations and mounted on concrete pads. To avoid visual obtrusiveness, bicycle racks may be at side entrances or partly screened with low hedges.

4. Transit Facilities. Transit stops and related facilities shall be located to provide safe, convenient access to sidewalks and buildings and shall include adequately sized signage to identify the facility to pedestrians.

5. ADA Accessibility. Sidewalks, paths, parking areas, and building entrances shall be designed to maximize accessibility for students, faculty, employees and visitors with disabilities in accordance with the Americans with Disabilities Act (ADA).

A. Sidewalks and paths. Sidewalks and paths intended for access by the handicapped shall have properly designed ramps wherever the path crosses a vehicular way.

B. At street intersections. Ramps shall be aligned in the direction of the sidewalk/crosswalk, not aligned toward the center of the intersection. See illustration below.

C. Ramps at building entrances. Ramps at building entrances shall be designed as integral components of the building design, not as afterthoughts.

2.6. Environmental Safety.

The following guidelines are intended to maximize safety and comfort throughout all campus precincts by incorporation of Crime Prevention through Environmental Design (CPTED) strategies.

1. Natural Surveillance.

A. Building design. Place windows overlooking sidewalks and parking lots.

B. Site and lighting design. Create landscape designs that provide surveillance, especially in proximity to designated and opportunistic points of entry.

- Use the shortest, least sight limiting fence appropriate for the situation.
- When designing lighting systems, avoid light placement that creates blind-spots for potential observers and misses critical areas. Ensure potential problem areas are well-lit:
paths, stairs, entrances/exits, parking areas, ATMs, phone kiosks, mailboxes, bus stops, recreation areas, laundry rooms, storage areas, dumpster and recycling areas, etc.

- Avoid security lighting that creates blinding glare and/or deep shadows. Eyes adapt to night lighting but have trouble adjusting to severe lighting disparities. Using lower intensity lights may require more fixtures.

- Place lighting along pathways and other pedestrian-use areas at proper heights to light the faces of the people in the space.

C. Additional measures. Complement natural surveillance measures with mechanical and organizational measures, such as cameras where window surveillance is unavailable.

2. Access Control. Place entrances and exits, fencing, lighting and landscape to limit access or control flow.

A. Points of entry.

- Clearly define legitimate points of entry for the public.

- Eliminate design features that provide access to roofs or upper levels.

- Use low, thorny bushes beneath ground level windows.

B. Fencing. Refer also to §4.7.

- Between public and semi-public spaces (such as front lawns), use waist-level fencing to control access while allowing natural surveillance.

- Use taller, closed fencing (for example, masonry) in areas with limited natural surveillance but that are otherwise accessible, such as loading and service areas.

3. Territorial Reinforcement. Use buildings, fences, pavement, signs, lighting and landscaping to define public, semi-public, and private spaces.

A. Design and Maintenance.

- Maintain premises and landscaping to communicate an alert, active presence occupying the space.

- Plant trees. Outdoor spaces with more trees are seen as safer and more likely to be used.

- Display security system signage at access points.

- Place amenities such as seating or refreshments in common areas to attract larger numbers of desired users.

- Avoid cyclone fencing and razor-wire fence topping, as it communicates absence of a physical presence and cues a reduced risk of being detected.

B. Activity.

-Restrict private activities to defined private areas.

- Schedule activities in common areas to attract more people and increase the perception that areas are controlled.
3 Architectural Guidelines

3.1. Purpose

The architectural guidelines herein address building form and character to ensure harmony and coherency, not to create "sameness".

1. Responsibility to the Campus. New structures should be designed to relate appropriately to adjacent campus buildings. Existing axes should be recognized and extended. Symmetry of form and detail should be shared with surrounding buildings.

2. Responsibility to Context. There are both subtle and dramatic shifts in architectural style throughout the campus. Even within the seemingly harmonious core surrounding the main Quad there are distinct variations. Together, the varying architectural styles of individual buildings contribute significantly to the character of the campus. These variations also create a more dynamic context in which new buildings will be placed.

A. Adjusting for Context. Due to the diversity of campus architecture, the context in which a project is placed should affect how the guidelines are interpreted and applied. For example, red brick is common throughout the campus and highly recommended; however, a red brick addition or auxiliary structure for Morgan, Smith, or B.B. Comer Hall would be inappropriate given the use of yellow brick in these locations. Context modifies the way these guidelines are to be applied. Certain contexts will require a relaxation in the strict application of classical detailing, though the form and geometry of traditional architecture should still be considered appropriate.

The images above represent the architectural diversity and beauty of the classical, core campus.
Recent examples of “bridging context” include the addition of the curved pediment on Coleman Coliseum (above) and the addition to the western side of Student Services Center (right). In each case, a 1960s or 1970s era building was modified to create greater harmony with its context.

B. Bridging Context. Additions and/or renovations to existing structures shall be designed to bring them more into conformance with the desired character of the campus and the specific context in which they sit.

3. Architectural Realms. Where the guidelines of Chapter 2 divided the campus into urban design precincts, these architectural guidelines are organized around three architectural realms: Central, Intermediate, and Residential. See Figure 6.

A. Central Realm. The Central realm (shown in green in Figure 6) includes the neoclassical buildings surrounding the main Quad and two residential areas of similar character but lesser scale. Other than this shift in scale, architectural design for these residential areas shall be consistent with the rest of the realm.
B. **Intermediate Realm.** The Intermediate realm (shown in blue in Figure 6) creates a physical transition from the center of the campus outward. Placement, form, massing, and materials should be consistent with that of the Central realm while architectural detailing may be more relaxed.

B. **Residential Realm.** Scale, geometry, placement, massing, and building form within the Residential realm (shown in yellow in Figure 6) will be different from the other realms though classical architectural detailing should be maintained.

4. **Gateway Projects.** Establishing campus character and a positive “first” impression in gateway locations is as important to the architectural design as the campus/community context in which the site is located. Gateway buildings shall reflect the classical image of the campus.

On-campus fraternity houses (below) feature classical architectural styles similar to the Central Realm.

Classical architecture (left) exemplifies the character of the Central realm. More modern and post modern architectural styles (middle) are seen in the Intermediate realm.
3.2 General Guidelines

1. Campus Geometry. The placement of a building in relation to adjacent buildings and contextual geometry is both an urban design and architectural gesture. In placing new structures, the architecture shall recognize existing and proposed axes.

A. Axes. All new buildings and additions should respond to existing incidences of symmetry within their environment and should present a symmetrical appearance of their own.

B. Symmetry. The building form should be manipulated early in the design process to obtain the symmetry needed to respond to an existing or desired axis. Even very complicated footprints can be worked into a symmetrical arrangement.

2. Building Form. The following architectural guidelines address massing, scale, proportions, symmetry, and the horizontal and vertical organization of building elements.

A. Massing. Classical building design should begin with a simple volume to which additional volumes are added to meet the spatial needs of the building program and the building shape needed by the context.
The Classical style ensures appropriate treatment of unique building shapes that result from programmatic and/or functional needs.

B. Scale. Generally, two scales shall be observed throughout the campus, “residential” and “non-residential”. Non-residential buildings have a larger scale than residential buildings, both in terms of massing and detail.

Building massing shall be adjusted to maximize scale compatibility with surrounding buildings, especially at the community edge.

The basic form of a residential building will likely be derived from a 10 ft x 12 ft module (approximate size of a basic sleeping room), while the scale of academic and other non-residential buildings is based on a larger module (often over 30 ft x 30 ft). The academic portion of the campus has its own scale; most structures are three to four stories. These buildings have heroically-scaled, classical architectural features—24 ft to 30 ft tall colonnades and porticos and 6 ft to 8 ft entablatures.

Potential responses to the need for symmetry within a design problem tending toward asymmetry. Left: symmetry about diagonal. Middle: “L” shape without corner entry. Right: Rotate primary element to address corner with balance of program in wings.
C. Gravity.

- “Heavy” building materials, such as stone and masonry, shall be used in the lower portions of the building envelope to visually carry building loads. Stone or masonry is typically used at the building base, whereas lighter materials (or more fine-grained stone or masonry) are used above.

- Building elements shall be scaled proportionately to the load they carry (visually, if not physically). Disproportionately slender or wide columns appear disingenuous or clumsy, even if they are structurally sound. In the classical orders, slender columns are used in the upper portions of the building where less weight is to be carried.

- Other building elements should be treated similarly, as mentioned throughout these guidelines.

D. Proportion. Architectural features should accentuate verticality. Classical architectural features shall be proportioned in accordance with the classical orders. For instance, there is an established ratio of height to diameter (at base) for classical columns (Doric 7:1, Ionic 8:1, and Corinthian 9:1). The bulkier Doric column is used at the building base whereas narrower columns are used in upper levels, visually reinforcing how the design responds to gravity.
The “golden rectangle”, is the most recognized height-to-width (1.6103:1) proportioning system in classical architecture and its use in establishing architectural proportions is desirable in all realms.

- The diagon ratio (1.414:1) may also be used.
- When, due to programmatic, functional, or contextual reasons, the overall mass of a building is horizontal, verticality should be emphasized through facade articulation and extrusion of building volumes.

3. Building Envelope. Building envelopes shall be designed to reflect the “crown, shaft, and base” vertical organization of traditional architecture.

A. Materials. Appropriate materials and details shall articulate this organization. See the following sections §3.3-3.5.

B. Proportions.

- Crown height shall be less than that of the base or shaft.
- Shaft height shall be equal to or greater than the sum of crown and base unless three-part organization employs "stacked orders" of classical elements where other rules apply (see §3.7).
- Avoid near-equal heights of bases and shafts. When sizing crown (cornice), consider how large it would be with an appropriately scaled column supporting it.

Campus buildings use classical architectural elements, such as columns that span two stories, vertical openings, and extruding building volumes to accentuate verticality in otherwise horizontal building masses.
3.8 The University of Alabama

The most common masonry bond on campus is running bond although several exceptions do exist. Common bond was used on Nott Hall and the Victorian Gothic campus structures. Flemish bond is used on the Gorgas House.

Crown, shaft, and base. On Reese Phifer Hall (above left), the steps establish the base, the columns establish the shaft, and the entablature makes up the crown. The original east and west wings of Gorgas Library (above right) are a perfect example of the three-part design. The stone base supports all above it; walls and engaged pilasters form the shaft based on the height of the columns. The crown is composed of a classically-proportioned entablature and pediment supported by the shaft.

3.3. The Base

Each building shall incorporate a “base” feature, either as a pedestal upon which the building sits (for one and two-story buildings) or a ground floor articulated through the materials and details of the lower portions of the building façade (for three-story and taller buildings).

1. Materials. Base materials shall be either brick, limestone, or a stone-like material. Other materials may be accepted in special situations, as described below.

A. Brick. For most applications, brick should be red with "burnt" black and grays and little orange (except in the context of Morgan, Comer, and Smith Halls or the Woods Hall Quad) and mortar color should be a very light buff to whitish gray.

- Brick and mortar color should be considered during schematic design and selected early in the design development phase.
- Brick color, mold, and bond choices should harmonize with, not imitate, that of adjacent buildings. Brick, in all realms, should be laid in common bond or running bond.
- Unless context dictates otherwise, such as additions to existing structures, wood mold or simulated wood mold (distressed wire cut) brick shall be used in the Central realm.
- Either wood mold or wire cut brick may be used in the Intermediate and Residential realms.

B. Stone. Limestone is common throughout campus buildings and is recommended.
C. Other Base Materials. Cast stone and precast concrete may also be acceptable.

- Joint spacing used on slabs or panels in vertical applications should resemble that of natural stone.
- In precast construction, actual panel size may be detailed with faux-joints to obtain the necessary effect.
- Oversize concrete masonry units and precast and cast-in-place concrete detailed to resemble natural cut stone may be used in the Intermediate realm. Proper detailing shall be used to avoid the look of "concrete blocks". For durability, a smooth finish product shall be applied directly to concrete masonry.
- Stucco and ground face concrete masonry may be used in the Residential realm. Stucco shall be detailed with joints to resemble that of natural stone.
- Stucco bases should be designed with sub-bases of concrete or concrete masonry where they touch the ground.

2. Composition.

A. Three-part design. In the Central realm, a stone base taller than four feet from grade shall have its own three-part vertical organization with base cap, wall material, and sub-base.

B. Projection. In the Central and Intermediate realms, the base should project outward from the façade.

- The amount of projection should increase with the size and monumentality of the base.
• For bases less than 24 inches tall, a one-inch projection is recommended. For bases greater than 24 inches, two to four inches is recommended. For bases of one-story or more, the projection should be four to eight inches. Bases in the Central realm shall project at least two inches.

• To shed water sheeting down the face of a wall, the water table shall have a sloping top surface. If the cap is over a stone base, it must project to provide a drip to improve weatherability and prevent stains.

• With a brick base, the projection shall be limited to two to four inches unless a stone base cap is used. An historic means of creating an all-brick base is through use of a water table brick unit, a custom shape that allows the wall to thicken, creating a base out of the same brick material. This same effect can be achieved with special shapes or jobsite cutting. Outside corners will require special shapes.

Water table is sloped to shed water and protect stonework below.

Water table brick unit used in an all-brick base.

Above: Base projecting outward from the shaft. Below: Stone base with its own “base, shaft, and crown”.
3.4. The Shaft

Each building shall have a “shaft” feature, the middle portion of the façade (one-story buildings) or the portions of the façade enclosing upper floors (multi-story buildings).

1. Materials. Brick, limestone, cast stone, or a combination of these shall be used within the shafts of buildings in the Central realm. In the Intermediate and Residential realms, stucco, wood, and metal may also be acceptable.

A. Brick. Refer to §3.3.1.A for brick selection. Wall surfaces in the Central realm shall generally be brick although other materials may be acceptable in other realms.

B. Stone. Refer to §3.3.1.B for stone selection.

- Limestone is used in the shaft area as trim (belt courses, pilasters, window and door surrounds, keystones, and quoins).
- Architectural precast concrete may be used in lieu of stone in the Intermediate and Residential realms.

C. Stone-like materials. Refer to §3.3.1.C for stone-like materials selection.

- Oversize masonry units may be used as simple trim shapes in some Intermediate realm areas and within the Residential realm.
- Use of stucco as a trim material may be acceptable in limited applications in the Residential realm.

D. Other Materials.

- Wood siding in residential structures in the Central and Intermediate realms may be acceptable. In the Residential realm wood siding and wood-like materials (cement bond plank) may be acceptable.
- Composite metal wall panels may be used in the Intermediate realm. Panel color shall match that of stone or of windows/storefront; shall be flat (not corrugated); and shall be fabricated.
3.12 The University of Alabama

Left: Flat or jack arch, as used on campus. Middle: Stone surround of a round arched opening. Right: Wedge cut brick arches.

Details to avoid when designing jack arches:

- Metal siding is prohibited as an exposed wall material in any realm.

2. Composition. The primary components of the shaft include the wall surface, vertical pilasters, openings, ornament, and horizontal belt courses.

A. Symmetry. In all realms, façade elements shall respond to the symmetry of the building.

B. Openings. Arches or stone lintels shall be used to span wall openings.

- Wedge-cut brick shall be used with round brick arches to maintain consistent mortar joints.

- Use of stone as a surround with round arches is appropriate.

C. Ornament. Ornament shall be detailed using stone or stone-like material, brick, or metal as appropriate to the overall building design and context.

- Ornament should emphasize the order of a façade and embellish entrances. Use ornament to provide monumentality and human scale simultaneously.

- In the Central and Residential realms, ornament shall be used to enhance the principal features of the façade.
Above left: Details to avoid in stone lintels and surrounds.

Left: Do’s and don’ts of stone arches.
Examples of stone ornament on campus.

Examples of brick ornament on campus.

• Ornament shall be applied to support the order of a building's façade, not distract from it.

• Use of ornament and horizontal belts shall enhance, not detract from, the hierarchy of a building's massing.

• Care shall be taken in ornamental detailing with brick due to weatherability of its numerous joints.

• Metal leader heads and downspouts shall be treated as integral elements of the building design, not afterthoughts. Appropriate materials shall be consistent with §3.8.2 (for roof metal).

• Wrought-iron and similar ornamental metal are appropriate for decorative features, such as sconces.

D. Belt Courses. Belt courses shall be used to bridge the base and shaft, though they may also appear within the shaft. When there is a belt within the shaft, it traditionally occurs as an extension of a pedestal feature about a building's entry portico, or it separates an arcade from the wall surface above.
3.5. The Crown

Each building shall incorporate a “crown” element within the uppermost portion of the façade.

1. Materials.

A. Brick. Refer to §3.3.1.A. for brick selection. Brick is used primarily as an extension of the wall surface such as in the parapet.

B. Stone and Other Materials. Refer to §3.3.1.B-C for stone and other materials selection.

- Use of limestone in the entablature and other trim features is recommended in the Central realm.

- Architectural precast concrete may be used in crowns in the Intermediate and Residential realms. In the Central realm, it may only be used in this manner when the crown is no closer than 25 feet to grade.

- In the Central realm, where stone or stone-like elements of the crown act as lintels, material thickness and joint design shall respond to the structural needs of a lintel.
In many campus buildings only a portion of the entablature is extended around the building. Often it is the cornice, or derivation of it, that forms the crown. Sometimes, either the frieze or architrave is the portion of the entablature that becomes a part of the crown along with (or without) the cornice.

- When designing architectural precast concrete cornices, joints that extend vertically through a cornice should be concealed. When using stone-like materials, obvious oversize pieces diminish the appearance of historical character.
- Stucco may be used as a crown material in the Residential realm.

C. Other Materials:

- In residential structures, the soffit and eave are part of the crown, and wood and metal profiles may be used.
- Metal gutter shapes may be used in all realms.
- Metal finishes should match the corresponding roofing metal (such as copper) or have a durable color coating selected to match the balance of the cornice.
- In the Intermediate and Residential realms, metal is an acceptable coping material. Color shall match stone, windows, or roofing metal color (refer to §3.8.2).
- In the Central realm, metal copings are allowed to substitute for stone if the color and finish are indistinguishable from stone from a distance of 25 feet.

There are many examples of crowns on campus that consist of a parapet-like element used in conjunction with a portion of the entablature. The parapet may be treated as a balustrade with its own three-part organization.
2. Composition.

A. Composition by roof type. The composition of the crown shall be appropriate to the roof type.

- Buildings with pitched roofs shall have a crown composed of a cornice element at the eave.
- Buildings with flat roofs shall have a crown composed of the entablature and/or parapet.

B. Composition by realm.

- In the Central realm the elements of the crown shall be derived from the entablature over a building's principal entry or façade. At the eave of a pitched roof, the cornice shall be derived from the cornice of the entablature over the principal entry. In the absence of an entablature, the cornice shall be based on the cornice of a similar height consistent with the classical orders of architecture.
- In the Intermediate realm, detail and articulation within the cornice may be reduced or deleted. Where present, detail should reflect the classical tradition.
- Parapets shall not project beyond the face of the shaft wall in any realm.
- In the Central realm, where a parapet is part of the building’s crown, the parapet should resemble the three-part design of a balustrade or raised pedestal. The parapet shall recede back from the face of the exterior wall below the cornice.
- In the Residential realm, the projection and height of the cornice shall be based on the height of the shaft in accordance with the classical orders of architecture.
- In the Central realm, the vertical joints in a crown shall be staggered or concealed.
3.6. Fenestration

1. Doors and Entrances. Entrances and doors shall be consistent with the architectural realm and building style.

A. Openings.
   - Doors should be inset from the exterior surface of the wall to accentuate the thickness of the wall.
   - In the Central realm, main entrances should be recessed and project a monumental appearance.

B. Door Style.
   - In the Central realm, doors shall be custom architectural stile and rail with raised panels.
   - Aluminum stile and glass “storefront” doors shall not be permitted in the Central or Residential realms but may be permitted in the Intermediate realm if consistent with building use and style.
   - In the Intermediate and Residential realms, doors shall be wood or metal, stile and rail with raised panels.

2. Windows. Windows shall be consistent with the architectural realm and building style.

A. Proportions.
   - Emphasize the vertical and subdivide windows into panes, which shall also generally be vertical (between 5:6 and 4:7).
   - In unique applications panes may be square, but never horizontal.
B. Glazing and Size.

・ All glazing shall be double-paned, insulated, and clear, except where due to programmatic constraints, tinted glazing is needed.

・ Large expanses of glass are discouraged; however, some variation is acceptable within special building types in the Intermediate realm.

・ Minimize variation in pane size. Where applicable, the thickness of the horizontal member between a transom and window in a stacked window can be adjusted to maintain equal pane heights.

C. Details.

・ Inset windows from the exterior surface of the wall to accentuate the thickness of the wall.

・ Mullions and muntins shall have the appearance of thickness from the exterior. Muntin width shall be no less than 7/8 inches and no less than 1/12 pane width.

・ Sight line at head and jambs of window shall be the same. Sight line at fixed sash and operable sash shall be the same.

・ Combined sill and bottom sash rail height shall be no greater than width of jamb sight line.

・ Typical sight line on windows with (faux) operable windows shall be six inches.

・ Minimum width of fixed glazing jamb / head shall be four inches.

・ Avoid single-hung windows where there is a difference in apparent sash width.

Typically, double-hung window jambs and heads on historic campus buildings are four inches wide (measured from the brick return to the start of the hung sash). Most sashes are a nominal two inches in width. This, combined with the jamb/brick mold dimension, is six inches and is referred to as the "sight line". Modern windows often do not maintain the traditional two inch sash width. A total six inch width is preferable. If a sash width is greater, then the jamb width must be less.

Far left: A retrofit on campus includes a stacked window, providing consistent pane dimensions, however, the Mullions and muntins have no thickness on the exterior of the window. Left: An historic example of the stacked window design.
3.7. Arcades, Colonnades, and Porches

When arcades, porticos, and porches are used in new building projects, the details and proportions of their classical antecedents should be considered.

1. General Guidelines.

A. Materials. The following guidelines apply particularly in the Central realm. Variation elsewhere is acceptable.

- Cast stone and architectural precast detailing may be used (rather than limestone) where it occurs 25 feet or more above grade.
- Columns shall be of limestone.

B. Proportions and Details.

- All visible vertical joints shall course and appear to be developed from structural need.
- When possible, stone columns shall be load-bearing or independent of the building structure altogether to avoid vertical joints required for wrapping structure.
- When arches are used in combination with columns and entablatures, follow the classical orders.

2. Arcades.

A. Proportions. In all realms, arcades shall follow Roman proportions. In absence of columns, openings should be no greater than 2/3 of the center-to-center dimension between arches.

B. Depth. Provide sufficient depth within the arcade to allow passage and gathering. Generally, arcades shall be no less than eight feet deep.

C. Arches.

- All arches shall appear to be "live" (structurally sufficient).
- In the Central and Residential realm, arches in arcades shall be single or triple-contoured or flat (jack).
- Pointed arches are prohibited beyond the Gothic Revival area of campus.
- Single-centered arches shall be Roman (half round) or channel (segment) type. All Roman arches shall be stilted.

Use of classically-inspired colonnaded porticos is a consistent feature of campus buildings.
3. Porticos and Colonnades.  
Colonnades and porticos shall only be used to serve a specific purpose such as to embellish a main building entrance and provide cover.

A. Proportions and Details.

- Base proportions on the classical orders of architecture.
- In the Central realm, follow details of the classical orders of architecture.
- In the Intermediate realm, detail may be removed from colonnades as long as the proportions remain consistent with the classical orders.

B. Materials.

- In the Intermediate and Residential realms, cast stone and architectural precast concrete may be used throughout a colonnade.
- In the Residential realm, wood and wood-like materials may be used throughout a colonnade.
- Non-stone like materials may be used in the Intermediate realm.

4. Porches. Porches occur on the campus primarily in residential buildings and shall be constructed of wood, iron, or similar materials.

A. Proportions and Details.

- In the Central realm on non-residential construction, porches shall be based on the classical orders.
- In the Intermediate realm, proportions of porch elements shall be consistent with the classical orders though detail may be abstracted or reduced.

- Within the Residential realm, detail porches in a similar manner as a portico, with columns and an entablature. Columns may be square and slender relative to classical proportions. The height of the base and capital should be in proportion with the overall height of the column. Column and entablature proportions of porches may be reduced in width while horizontal elements may be reduced in depth.

B. Materials.

- In the Residential realm, wood and wood-like materials may be used in the construction of porches.
- In the Residential realm, painted steel and wrought iron may be used with porches. Color shall be black to match President's Mansion.
- In the Intermediate realm, porches may be constructed of non-stone like materials. Color shall match trim or window.

In designing colonnades, the architrave should be the same thickness of and aligned with the column at the necking.
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3.8. Roofs

The following guidelines are applicable to the visible portions of a roof. A roof is considered "visible" if it can be seen by an individual standing at grade from a distance of 1000 feet.

1. Roof Form. Roofs should be conceived of as simple, functional shapes in the early stages of building design and become articulated as the building design takes shape to accentuate important features of the building.

A. Favor Simplicity. The design of the roof should not be “busy” or unnecessarily complicated. Roofs should be subordinate to the design of the building.

B. Pitch. Roof pitches shall be consistent with that of buildings in the project’s contextual area.

• High, narrow buildings can support steeper roof slopes; steep roofs should be avoided on low, wide buildings.

• Roofs of low, wide buildings should have no visible slope, or they should have a parapet or partial hip/faux mansard roof to disguise or conceal roof slope.

• Acceptable slopes for visible pitched roofs will range between 5:12 and 8:12. Shallow (faux mansard) roofs and equipment screens may be as steep as 12:12 when placed behind a parapet.

2. Roof Materials.

A. Pitched Roofs. Materials for visible, pitched roofs shall be consistent with the following:

• Slate: Natural gray to black slate is the most historically appropriate.

• Simulated Slate: Three-dimensional, synthetic slate shingle that matches the gray to black color of natural slate

...
Avoid designs where the roof becomes dominant in the visual experience of the building.

Roof pitches should generally be between 4:12

is an acceptable alternative to slate. Similarly, cement fiber or recycled rubber products may also be an acceptable slate-like alternative.

- Asphalt shingles fabricated to provide "slate like" appearance within the natural gray to black color range are acceptable.

- Metal: Pitched, metal roofs shall not be permitted in the Central realm except in accent applications and on isolated roof elements, such as narrow roofs above pediments within a façade. Acceptable metals include copper and "terne coated" steel (TCS). Copper has no substitute; however, it may be replaced by steel or aluminum panels in long lasting coated finish of similar color.

- Multi-tab shingles simulating wood shake, clay tile, and other non-slate material are discouraged.

B. Special Roof Shapes. Materials for other visible roof forms such as domes and vaults, shall be consistent with the following:

- Metal: Flat seam and low profile standing seam metals of approved material are acceptable.

- Stone: Beyond the central realm, a single-ply white to light gray membrane may be substituted, provided the seams, when visible, are placed to simulate stone.

- Slate-like materials as covering for domes, vaults, and similar roof elements are discouraged.

C. Shallow Roofs and Screens. Use the following on shallow roofs and equipment screens occurring behind a parapet:

- Slate-like shingle may be used where slope does not exceed 8:12.

- Metal of approved type may be used where slope ranges between 5:12 and 8:12.
3. Roof Appurtenances.

A. Chimneys and chimney-like structures. The size and shape of non-functional, decorative chimneys shall match that of a functioning one. Visible portions of chimneys should respond to gravity, narrowing upwards. Visible chimneys should be of masonry construction with brick or stone articulation at the crown.

B. Dormer Windows. Dormer windows shall include the window, window casing, and a triangular tympanum or arched pediment. The sides of a dormer shall be clad consistently with the main walls within the crown. Pitched roof dormers shall be consistent in slope and material with the main roof. The roofs of arched-top dormers shall be of approved metal in either standing seam or flat seam construction.

C. Dormer Vents. Dormer vents shall typically be the half-round type, as seen in the Central realm, and metal-covered. Copper is common in the Central realm.

- Retrofitting existing dormer windows as vents may be acceptable in certain projects. The casing and tympanum shall be consistent with that of dormer windows.

- As an alternative to the half-round design, dormer vents in new buildings may be designed similarly to dormer windows within the same project.
4 Site and Landscape Design Guidelines

4.1 General

1. Purpose. The site and landscape design guidelines herein support the enhancement of the campus open space system as described in the Campus Master Plan.

2. Designer Qualifications. The landscape designer shall be a Landscape Architect registered in the State of Alabama.

   A. New spaces. New landscape design should open views to historic and architecturally significant existing buildings.
   B. Open space diversity. Site development should create a variety of open space types and experiences for campus users.
   C. Support safety. Site amenities and plantings should enhance campus security through careful attention to circulation routes, lighting and maintaining visibility. See also §2.6.
   D. Respecting the site. The site development plan must demonstrate consideration for unique site features including topography, hydrology and existing vegetation and acceptable methods to preserve aspects of the site deemed desirable by the University.
   E. Site preparation. Mass clear-cutting or grading of a site to the extent that all native or existing conditions are lost is prohibited.

4.2 Hardscape

1. Application. Hardscape is to be used to provide a durable, all-weather surface to accommodate pedestrian activity and outdoor gatherings and activities. Wherever possible, hardscape materials shall be chosen to maximize pervious surface area.

2. Location. Hardscape is intended generally for sidewalks and paths, plazas/building entrances, transit stops, and in gathering places adjacent to buildings or building groups. Materials should be chosen based on the activities intended for the location, including such considerations as the use of a combination of materials for prominent locations and compatibility with the materials and styles of adjacent buildings.

A. Sidewalks and Paths.
   - Most sidewalks and paths require only scored concrete while more prominent pedestrian areas, such as a concourse, may require additional accent surfaces, such as brick pavers, to visually reflect their importance. Such paths may also include brick banding.
   - Sidewalks shall be a minimum of eight feet wide.
   - To the extent possible use walkways as the edge of planting beds to reduce edging of lawn.

B. Plazas, Building Entrances and Gathering Places. A combination of hardscape materials shall be used to distinguish...
building entrances, public spaces and gathering places.

- Pavement patterns in plazas and gathering spaces shall include a brick field in a herringbone pattern surrounded by scored concrete banding.
- All walkways for building entrances, plazas and feature areas shall consist of compacted dense grade base, concrete subslab, mortar bed and brick pavers or concrete topping slab.

C. Transit Stops. A suitably sized, all-weather surface shall be provided along with other furnishings for transit stops.

4.3. Surface Parking

Surface parking areas shall be minimized from public views, to the degree practicable, by location and/or through landscape screens. Parking areas shall be arranged properly for vehicular and pedestrian safety and landscaped for shade and scale.

1. Disposition in Relation to Buildings, Open Spaces, and Circulation Areas. Surface parking areas should be located away from open spaces and streets. Preferably parking lots are located internally to each “block” behind buildings. In this manner, access to and use of the lot may be shared among neighboring buildings.

2. Pedestrian Access. Convenient pedestrian paths should be designed into the arrangement of large parking lots to direct pedestrians to designated crossings and pedestrian linkages.

3. Vehicular Access. See §2.5.1.B.


Landscaping shall be provided along the perimeter and within the interior of surface parking lots. Landscape areas shall be protected from vehicle encroachment by wheel stops located no less than two feet from the curb or landscape edge.

A. Perimeter Landscaping. Landscaping shall be provided along the perimeter of any parking areas not bounded by a building.

- Define the edges of and limit access to/from the parking area to designated points using landscaping consisting of all or a combination of hedges, trees, and walls/fences.
- Hedges and walls/fences shall be between three to four feet in height to block vehicle headlights from off-premise views. Such screens shall not be of a height to compromise natural surveillance (see §2.6.1).

B. Interior Landscaping. Landscape islands and circulation should be arranged to break down the overall scale of a large surface parking area so that it might be experienced as a group of small parking areas.

- Landscaping islands shall be sized to provide sufficient root growth for canopy and/or understory trees.
- Internal landscape islands shall be a minimum of 160 square feet (9 feet x 18 feet, typical).
- Include a landscape island for each contiguous 15 spaces.

C. Parking Lot Lighting. See §4.4.4.C and §4.4.5.D.
4.4. Lighting

Provide lighting for safety and design consistency throughout the campus. Refer also to §2.6 for environmental safety strategies applicable to lighting.

1. Application and Location. Provide lighting in the following locations:

- Along streets, sidewalks, and other paths
- Within open spaces and parking lots
- At building entrances
- In locations appropriate for accenting of buildings, signage, gateway, and landscape elements

2. General Lighting Guidelines. For the lighting of landscaping, buildings, signs and gateway features, the following guidelines shall apply:

A. Fixtures. See Construction Administration (CA) Standard #16500. Where taller fixtures are needed, heights above 16 feet are discouraged. In no case, shall fixtures taller than 20 feet be permitted. This shall not apply to lighting for sports and recreational fields.

B. Avoid overly bright lights and frontal floodlighting. Use lower-wattage light sources. Lighting of landscape elements from a distance can interfere with nighttime vision and is discouraged. Up-lighting should only be used where it will not interfere with the vision of passersby.

C. Minimize light trespass and glare. Fixtures should be designed to direct light only where it is intended and appropriate shielding should be used to prevent light trespass and glare.

- Exterior fixtures with output greater than 3500 lumens shall be full cutoff.
- Exterior fixtures less than 3500 lumens shall be cutoff or full cutoff.

D. Choose appropriate light sources. Consideration should be given to the intensity and color of the light to ensure it complements the elements to be illuminated. High-pressure sodium lighting is prohibited.

E. Design and locate fixtures for service accessibility and safety. Fixtures should be of a type that is easy and safe for changing of lamps. Accessible locations encourage more regular maintenance. Tamper-resistant hardware should be used wherever a fixture is accessible to the public. Place “hot” fixtures so that physical contact with a hot lamp or fixture is normally avoidable.

F. Connect lighting to a control system. Lighting should be connected to a photocell to turn fixtures on and a time clock to turn them off.

3. Architectural Lighting.

A. Highlight a building's most prominent features. When the exterior of a building is to be illuminated, those features which are unique or significant about the building should be highlighted. Blank wall spans and other indistinct features should not be lighted except as needed for safety. “Close-in” lighting can be used to accent the textures of building finishes such as stone and brick.
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B. Integrate lighting equipment into the building design. Fixtures and wiring should be concealed by architectural elements. This ensures that equipment has a minimal visual impact during the daytime. Alternatively, building-mounted fixtures shall be designed as integral features consistent with the building’s geometry and architectural style.

C. Place ground-based accent lighting to avoid glare. Ground-based building lighting should be designed and/or positioned to avoid interfering with the vision of passersby.

D. Design parking deck lighting to minimize light pollution. Direct and indirect lighting shall be contained to minimize stray light. Idle modes should be used during off-peak hours to reduce light pollution and energy consumption.

4. Site Lighting. Landscape lighting may be used selectively to highlight specimen trees and plantings and to define major building entrances. Fixture selection should strike a balance between minimizing the number of units required to accomplish the desired effect and the ability to conceal light sources from view. In general, lamping for landscape illumination should be metal halide. Illumination shall be consistent with §4.4.5.

A. Fixtures along sidewalks and paths. Pedestrian-scale, pole-mounted lights shall be provided along streets, sidewalks, and paths. Generally, spacing between pedestrian-scale fixtures shall be no greater than 100 feet nor less than 25 feet.

B. Fixtures along streets. Where lighting is also needed along the vehicular way, a combination fixture shall be used to light the street and adjacent pedestrian way or open space, with a taller fixture lighting the street and a pedestrian-scale fixture lighting the adjacent sidewalk, path or open space.

C. Fixtures within parking lots. Lighting shall be provided at the perimeter of and within surface parking areas. Illumination shall be consistent with §4.4.5.

• Light fixtures should be of the least height to provide the desired lighting level and shall be located in landscaping islands.
• Building-mounted lights may be used in combination with pole-mounted lights to provide adequate illumination in those portions of the parking lot near a building.

D. Fixtures within open spaces. Lighting in open spaces shall be provided through pedestrian-scale, pole-mounted lighting, lighted bollards and, where practical, building-mounted lighting.

E. Fixtures at building entrances. Grand building entrances, such as those which front on a plaza, shall include pedestrian-scale pole-mounted fixtures and building-mounted fixtures. More modest building entrances may include only building-mounted fixtures.
5. **Illumination Standards.** Provide lighting of a height, spacing and intensity so as to create comfortable, safe, and consistent illumination. In determining illumination levels, adjacent, existing lighting shall be considered. Where approved by the Facilities Department, existing lighting not consistent with these guidelines may be modified as needed to create the illumination pattern and level desired for the project and surrounding area.

A. **Community edges.** Lighting shall be shielded to prevent glare and designed so that illumination does not exceed 0.2 footcandles on abutting community residential edges or 0.5 footcandles on abutting community nonresidential edges.

B. **Streets.** Illumination at pavement level shall be maintained between 0.5 and 1.0 footcandles. The ratio of average to minimum illumination shall be no less than 4:1*.

C. **Sidewalks, paths, and open spaces.** Horizontal illumination at grade level shall be no less than 0.5 footcandles. Vertical illumination at six feet above grade level shall be no less than 1.0 footcandles. Light sources shall have an initial output of no more than 1000 lumens, generally. The ratio of average to minimum illumination shall be no greater than 5:1*.

D. **Parking lots.** Illumination at pavement level shall be no less than 0.5 footcandles for low-to-moderate activity areas and 1.0 footcandles for higher-activity areas. The ratio of average to minimum illumination shall be 5:1*.

E. **Building entrances.** Illumination shall be maintained between 2.5 and 5.0 footcandles.

F. **Signs.** See the Wayfinding Graphics Master Plan.

*The ratio of average to minimum illumination may be higher in peripheral locations, such as adjacent to natural areas or community residential edges, where decreased illumination along the site boundary would be more appropriate.

4.5. **Planting Materials**

Planting design is an important component in enhancing the appearance of a successful campus. Plant selection, quality of plant material and ongoing maintenance should be consistent throughout the campus to convey the visual image of a single integrated open space. Plant materials used for landscaping purposes under these guidelines shall be selected from the Recommended Plant List in Appendix A.

1. **Irrigation, Drainage, and Maintenance.** Planting and irrigation design shall promote water conservation through selection of plant materials with low water requirements, by grouping plants with similar water needs together, and by utilizing water-conserving irrigation design and equipment.

   - High maintenance areas shall be limited to building entrances and other easily accessible, prominent locations.
   - Yard inlets and area drains in landscape areas shall be located in grass areas, where practical, instead of planting beds.
2. Recommended Plant List. The recommended plant list in Appendix A classifies planting materials under the following categories: ornamental tree, understory tree, canopy tree, groundcover and vines, shrubs, ornamental grasses, and annuals.

A. Plant Selection.

- Evergreen plants shall be a primary selection in open space designs.
- Place emphasis on the selection of native trees and trees with spring and/or fall color.
- All trees shall be hand-selected by the University’s representative at the growing source to ensure consistent quality.

3. Trees. Trees shall be used to provide shade; define edges of streets, paths and open spaces; and to support the intended pedestrian-scale of the Campus.

A. Street and Path Trees.

- Street trees shall be located within the planting strip between the sidewalk and curb. The strip shall be of sufficient width to prevent damage to hardscape due to root spread.
- Streetscapes with building setbacks of twenty-five feet or more (measured from curb) shall include canopy trees to reinforce the intended street width proportions described in §2.3.3. Streets with narrow building setbacks may use ornamental or understory trees.
- Off-street paths shall be lined with ornamental trees, at a minimum, and spaced between 40-80 feet.

B. Trees in Open Spaces. Trees located within open spaces shall be arranged consistently with the intended geometry of the open space and shall be located so as to preserve intended views across or through the space.

- Larger open spaces should include a combination of understory and canopy trees.
- Understory trees are sufficient for most plazas.
- Sufficient room shall be provided in tree wells to accommodate the expected root spread of the tree type.

C. Trees in Parking Lots. Understory and canopy trees shall be used in surface parking areas to provide shade and reduce heat islands. All parking spaces shall be within 100 feet of a shading tree, which may include trees within perimeter landscaping areas. See also §4.3.4 and §5.2.3.

4. Shrubs.

A. Defining Space. Shrubs shall be used to define spaces as needed but shall not interrupt the open flow of grassed areas.

B. Pruning. Select shrub material that performs well with limited pruning.

C. Maintenance. All shrubs shall be planted a minimum of five feet from buildings for ease of building maintenance and window cleaning.

5. Existing Plantings. The University places a high value on its existing tree canopy and requires its partners in development, contractors and all vendors working on campus to respect and preserve existing trees.
A. *Existing Trees.* Generally, only those trees which are necessary for construction on the site shall be removed.

- Removal of trees having a diameter at breast height of four (4) inches or more is discouraged.
- Methods, as described in CA Standard #022331, shall be used to protect all trees and major plant material designated by the University during construction. The entire area below or within the drip line shall be enclosed with fencing to protect root systems during construction.
- The University will monitor protection fencing and will assess fines up to $1,000 per infraction if tree protection fencing is not kept in place and maintained during construction.

4.6. *Site Furnishings*

Site furnishings shall be provided consistent with the intended use of and desired level of activity within the open space, streetscape, or path. Site furnishings at building entrances or within building-specific outdoor spaces may vary from CA Standards, but shall be designed in harmony with one another and the character of the building.

1. *Benches.* Benches shall be provided along streets, paths, and along the perimeter of open spaces and as otherwise desired due to the nature of the space. Benches may be grouped at larger plazas, building entrances and features where larger groups may gather. All benches shall be placed facing pedestrian routes to maximize the ‘people watching’ aspect of the open space. See CA Standard #02870.

2. *Trash Receptacles.* Trash receptacles shall be provided near street intersections, entrances to buildings, along paths, and along the perimeter of open spaces and as otherwise necessary due to the nature of the space. See CA Standard #02870.

3. *Kiosks.* Kiosks shall be provided in accordance with the Wayfinding Graphics Master Plan.

4. *Signage.* All signage shall be provided in accordance with the Wayfinding Graphics Master Plan.


6. *Bollards.* Consult with Facilities Planning Department for standard specification. Steel bollards and chain may be used to edge lawns and direct pedestrian traffic along perimeter paths. More substantial precast concrete bollards may be used to control vehicular access. Removable steel bollards may be used where major pedestrian walkways must accommodate service and emergency vehicles. Bollards shall be consistent with the character of surrounding building(s) and other site furnishings.
7. **Post and Chain.** Where temporary or adjustable barriers are needed, a simple post and chain type shall be used. For fixed uses, bollard and chain may be used to control pedestrian movement. Consult with Facilities Planning Department for standard specification(s).

8. **Bicycle Racks.** Consult with Facilities Planning Department for standard specification.

9. **Outdoor Dining.** Furniture for outdoor dining shall be durable powder-coated steel tables and chairs. In areas that may be secured, weighted free-standing tables and stackable chairs will allow flexibility in seating arrangements. In more open areas, steel tables with permanently fixed seats will be used. Where fixed seating is used, an appropriate portion of the overall seating should accommodate wheelchair access.

10. **Other.**

   A. **Newspaper Boxes.** Consult with Facilities Planning Department for standard specification.

   B. **Art.** Sculpture and similar types of public art should be included in prominent open spaces and located in harmony within the intended geometry of the space.

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4.7. **Fences, Walls, and Screening**

1. **Use of Fences and Walls.** Fences and walls shall serve one or more of the following purposes: to define transitions by providing physical boundaries between public, semi-public and private zones; to provide visual screening from service/support areas; or to retain soil.

   A. **Fences and walls used in prominent locations.** Generally, a combination of decorative fence/wall and shrubs, shall be used in locations of greater visibility. See CA Section 2 Standard #04.

   B. **Barrier fencing.** Non-decorative fencing (such as chain-link) used to restrict access shall only be used in areas away from streets and paths and areas not visible from off-Campus. See CA Section 2 Standard #04.

2. **Site and Seat Walls.** In addition to their functional purposes, such as retention or control of access and pedestrian movement, walls within open spaces should also be considered for opportunities to provide seating, where appropriate.

   A. **Retaining walls.** Retaining walls, where practical, should be designed to provide seating in gathering places and other high-traffic areas.

   B. **Materials.** When located within an open space with pre-existing site walls, consistent wall materials should be used. In the absence of such precedents, wall design and materials should complement the materials of neighboring buildings, especially
wherever the wall connects to a building. Segmental block retaining wall systems are prohibited. Acceptable materials are:

- Stone veneer over cast in place concrete or CMU
- Brick veneer over cast in place concrete or CMU
- Precast concrete veneer over cast in place concrete or CMU
- Cast in place concrete with sandblast or parged finish.
- Wall caps shall be stone, precast concrete or brick.

3. Transition Zones. Fences or walls may be provided, as desirable, to distinguish between public, semi-public, and private spaces (see also §2.6.3).

A. Potential applications. Limited height ornamental fences or walls (including retaining walls) may be used to define the transition between a public space, such as a streetscape or path and a semi-public lawn or gathering space.

- Generally, fences/walls located between a building front and the public space shall not be taller than four feet.
- Fences/walls taller than four feet shall only be located away from public views.

4. Parking.

A. Surface Parking. Surface parking lots shall be screened in accordance with §4.3.4.A through a combination of landscaping and fence/wall.

B. Parking structures. Parking structures shall be screened from both campus and community residential uses through dense evergreen landscaping.

- Landscaping in combination with a fence/wall may be desirable in certain contexts.
- Variation from the above may be acceptable when the structure is designed integrally with (and/or attached to) a campus residential building. In these cases, portions of the structure visible from residential units, such as the top level, shall be landscaped or the views shall be otherwise mitigated.

5. Sports and Recreation Areas. Fencing required for sports and recreation areas shall be of a design, opacity, and height appropriate to the function. Where used, all chain-link fencing shall be vinyl-coated, black.

6. Loading and Service Areas. Loading and service areas shall be screened from public view through a combination of location, landscaping and fence/wall.

A. Screening. Bulk trash containers and building equipment shall be concealed within enclosures designed as integral elements of the building design.

- Screens for bulk trash containers shall be compatible with the style, materials, and colors of the adjacent building(s) and shall be at least the height of the container.
• Above ground utilities and building appurtenances, such as air conditioners and similar building equipment, shall be screened from public view and access restricted by walls or fencing compatible with the style, materials, and colors of the adjacent building(s).

B. Security fencing. Uses requiring security fencing shall be located away from community edges where practical.

• Where location is not sufficient to minimize public views of uses requiring security fencing, razor-wire and similar treatment are discouraged. Instead, a masonry wall or another fencing system should be used, such as black, “ornamental” galvanized fencing.

• Where public views are effectively screened by landscaping, buildings, or other methods, fencing may be black, vinyl-coated, chain-link. See also CA Section 2 Standard #04.

• All chain-link fencing shall be vinyl-coated.

4.8. Utilities

1. Underground Utilities. Generally, all new utilities lines shall be placed underground for new building projects. For new construction projects in locations where surrounding buildings are served by above-ground utilities, the Facilities Planning Department shall be consulted regarding the application of this guideline.

2. Above-ground Utilities. Above-ground utilities and utility appurtenances shall be placed to minimize their visibility from open spaces, streets, and paths and shall be placed as recommended by the Facilities Planning Department. Where location is not sufficient to minimize public views, screening shall be provided consistent with screening concepts of §4.7.6.
5 Sustainability Guidelines

5.1. Application

The following section establishes the recommended goals and strategies, and technical references to be considered during the design and construction of projects to promote sustainable design.

1. Project applicability. Selected strategies from these guidelines shall be incorporated into the design of individual projects if the University determines that such strategies are prudent and feasible. This determination will be based on evaluation of the following:

- Environmental benefits
- Capital cost differential
- Operational cost benefits
- Implications for maintenance
- Consistency with other design guidelines
- Compatibility with the project

2. Goals. The goals, which form the foundation of the following guidelines, are based on the LEED (Leadership in Energy and Environmental Design) rating system of the U.S. Green Building Council (USGBC). It is not the intent of the University to require LEED certification for University projects but to use the LEED rating system as a benchmark to encourage and measure the sustainability of campus development.

Parallel with the LEED program, the University’s sustainability goals are categorized under the following subject areas:

- Sustainable Site Planning
- Water Efficiency
- Material and Resource Conservation
- Energy Efficiency
- Indoor Environmental Quality

5.2. Sustainable Site Planning

1. Efficient Growth Pattern. Encourage infill development and use of suitable new sites to minimize extension of infrastructure and impacts of development on the natural environment.

A. Site selection.

- Ensure consistency with the Campus Master Plan with regard to new building sites.
- Take advantage of previously developed/disturbed areas for new development.

B. Site improvements and disturbance. An Erosion and Sedimentation Control Plan shall be developed indicating the strategies to be used during construction to minimize soil erosion, sedimentation into storm sewers and/or receiving streams, and minimize dust and particulate pollution.

- Avoid disruption to land within 100 feet of designated wetlands. Install or retain vegetated buffers in proximity
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- Avoid development on lands less than five feet above designated 100-year floodplains. Strive to exceed mitigation requirements.
- Avoid disturbance of threatened and endangered species habitats.
- Conserve natural areas consistent with the Campus Master Plan and restore damaged natural areas.
- Establish limits of disturbance for previously undisturbed sites, including construction staging areas.
- Limit disruption of trees and vegetation in coordination with the University’s Arboretum Environmental Education Program. Favor use of native or adapted plant species for low maintenance, water efficiency, and pest tolerance.
- Plan for maintenance access to avoid unnecessary disturbance.
- Where applicable, building downspouts and drainage shall be routed to underground stormwater systems to reduce erosion in landscape areas.

2. Multi-modal Accessibility.
Encourage walking, bicycling, and use of campus and city transit systems.

A. Transportation impacts of site selection.
Evaluate transportation impacts of potential sites to reduce the need for vehicular travel and maximize transit, pedestrian, and bicycle accessibility.

B. Bicycle and pedestrian improvements.
Maintain and improve pedestrian and bicycle accessibility through new development and renovation.

3. Microclimate Impacts. Develop site features to minimize impacts to site microclimates.

A. Avoid flat roofs. However, where a flat roof is most appropriate, comply with EPA Energy Star® Guidelines and/or consider a green roof.

B. Design for shade.
- Reduce heat islands by maximizing shade with trees, trellises, and canopies.
- Where applicable, locate large paved areas on north side of buildings to allow shading by the building. Otherwise, shade parking areas up to 50% within five years.

4. Light Pollution. Minimize light pollution of the night sky and negative effects on nocturnal environments. See also §4.4.

5.3 Water Efficiency

1. Stormwater. Reduce stormwater runoff impacts on the quantity and quality of campus water resources.

A. Minimize impervious surfaces.
- Consider use of vegetated roofs for flat or low-sloping roofs. Use native or adapted species. See also §5.2.3.
- Consider use of permeable paving materials for drives and surface parking.
B. Site improvements.

- Prevent stormwater flow increases leaving the site. Provide infiltration on all sites.
- Where feasible, collect rainwater and store for reuse or slow release.
- Use landscaping with high absorption.
- Reduce need for stormwater utilities and detention basins through use of bio-retention basins, swales, or rain gardens within the site or vicinity.

2. Water Consumption.

A. Minimize outdoor water consumption. To reduce potable water consumption in landscape irrigation, consider the following:

- Use drought tolerant planting and turf mixes.
- Where irrigation is necessary, use high-efficiency irrigation systems.
- Use native vegetation beds and meadows that require no irrigation, pesticide use, and/or mowing.
- Use non-potable sources, such as ponds and collected rainwater, for irrigation needs.

B. Minimize indoor water consumption. To reduce water consumption in buildings, consider the following:

- For renovation, replace plumbing fixtures to meet or exceed the Energy Policy Act of 1992 for fixture performance.
- Install low-flow, power-assisted toilets. Use dual-flushing toilets in women’s restrooms.
- Use showers and faucets with flow restrictors to meet or exceed the Energy policy Act of 1992. Use infrared sensors on faucets.
- Use washing machines that comply with EPA Energy Star® Program.
3. Alternative Technologies.

A. *Gray Water*. Consider gray water systems for water collection and conveyance to reduce stormwater impacts and consumption of potable water.

Consider reuse of collected wastewater from sinks, mechanical condensate, and drinking water fountains in toilet/urinal flushing. Work with local public health department to determine parameters for approval.

B. *Alternative Wastewater*. Explore use of alternative wastewater treatment methods to reduce demand on campus waste treatment operations including systems to treat black water: composting toilets, living machines, and constructed wetlands.

5.4. Material and Resource Conservation

1. Recycling.

A. *Campus recycling program*. Maintain and expand campus recycling programs.

B. *Recycling Stations*.

- Provide easily accessible recycling stations for collection and separation of paper, cardboard, glass, plastics, and metals.
- Provide recycling stations at convenient locations inside and outside of buildings, and in events areas, parking lots, and plazas.
- Size recycling stations to accommodate the University’s standard recycling containers.

2. Construction and Demolition Waste. To reduce construction and demolition waste from University projects, consider the following:

A. *Adaptive reuse*. Favor reuse of existing structures in lieu of new construction.

B. *Demolition Waste*. Strive to recycle and salvage demolition waste.

C. *New Construction*.

- Consider future reuse when determining floor-to-floor heights and planning modules. Use open environments, flexible systems furniture, and modular partitions for office areas.
- Design projects to be recyclable, using products that can be easily disassembled and/or recycled.
- Use durable materials that extend the life of the project.
- Use carpet, ceiling tiles, and other products from companies with reclamation programs to take back products after their useful life.
- Require a construction waste management plan from contractors that will reduce construction waste going to landfills.

3. Materials Selection. Consider environmental impacts, both globally and locally, when selecting materials.

A. *Favor local materials*. Maximize use of locally produced materials and locally manufactured products made from raw materials that are locally extracted.
B. **Favor durable, recycled, recyclable, renewable, and biodegradable materials.**

- Use durable products with a long service life. Evaluate initial cost, service life, and annual maintenance costs over 50-year life cycle for comparison with other products.
- Maximize use of recycled (20% post-consumer content or 40% post-industrial content) materials.
- Consider use of recyclable (wood, concrete, asphalt, brick, drywall, metals, etc.) and salvaged materials. Reduce use of composite materials that are costly to recycle.
- Consider use of renewable materials such as natural linoleum, bamboo, wood, and wheatboard from millwork substrates.
- Use biodegradable materials where appropriate, such as the use of earth dikes and straw bales for soil and erosion control.

C. **Toxic and ozone-depleting materials.** Avoid materials with toxic constituents: CCA (pressure-treated wood), mercury (thermostats), and chrome (plumbing fittings). Avoid ozone-depleting substances (such as CFCs and HCFCs in refrigerants and fire suppression systems).

### 5.5. Energy Efficiency

1. **Energy Consumption.** Reduce total energy consumption of existing and new buildings.

   A. **Reduce dependence on mechanical heating and cooling:**

   - Model energy performance to include interaction of multiple strategies.
   - Optimize R-values. Exterior wall assemblies should be a minimum of R-19, and roof assemblies should be at least R-30.
   - Favor use of double-glazed glass units with a low-E coating, argon-filled with a U-factor of 0.27 or less.
   - Use passive solar design strategies and incorporate thermal mass within buildings.

   B. **Choose operationally-efficient systems.**

   - Use Energy Star® products wherever appropriate: equipment, transformers, and appliances. Use energy-efficient equipment with premium efficiency motors acceptable to local utility. Use variable speed drives.
   - Use high-efficiency lighting with only electronic ballasts. Use sensors to control lighting in spaces not regularly occupied.
   - Avoid over-sized equipment so that equipment runs at peak efficiency.
• Use demand-controlled ventilation strategies for classrooms and other spaces with large occupancy swings.
• Use heat recovery systems that capture and reuse waste heat.

C. Adhere to Alabama Building Energy Code.

D. Harness site energy.
• Consider feasibility of mixed-mode natural ventilation and operable windows in combination with micro-switches to control ventilation and cooling in residential buildings. Require air economizers.
• Explore use of solar hot water heaters.
• Maximize use of natural daylighting in combination with sensors and light modulation features.


A. Commissioning.
• Require new buildings be fully commissioned by a third party commissioning agent (HVAC, building control systems, duct work and piping insulation, lighting controls, heat recovery, and automatic sensors). Involve the commissioning agent early in the design process.
• Require the commissioning agent produce a manual that describes the process for re-commissioning the building.

B. Training. Perform and record building operations training. Cover procedures for start-up, normal operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, alarms, systems interaction, adjustments, optimizing energy conservation, special maintenance and replacement sources, use of operations and maintenance manuals, and review of control drawings and schematics.

5.6. Indoor Environmental Quality

1. Air Quality. Ensure that indoor air quality is acceptable and free from known contaminants.

A. Minimize pollutant infiltration.
• Comply with ASHRAE 62-2004 Ventilation for Acceptable Indoor Air Quality for all new construction.
• Locate designated smoking areas away from building entrances and air intakes.
• Locate air intakes away from loading areas and building exhausts.
• Prevent airborne contamination from housekeeping, maintenance, copying/printing, and other areas where chemicals are used through use of dedicated exhaust systems that maintain negative pressure with respect to adjacent occupied spaces. Also maintain physical isolation of these spaces with deck to deck partitions and automatically closing doors.
• Place permanent entrance grates, grilles, or slotted systems—at least six feet in length in the direction of travel—at all entrances to capture dirt and particulates.
• Prevent water infiltration and mold development through building envelope design, including use of enclosure systems with vented cavities with drainage at the cavity bottom.

B. Prevent long-term contamination from construction practices.

• Require contractor to prepare plan for scheduling and on-site storage of absorptive materials (e.g. insulation, carpeting, ceiling tile, and gypsum wallboard) to prevent moisture contamination.

• Avoid use of permanently installed HVAC system during construction. If permanent air handlers are used, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 or better shall be used at all return air grilles.

• Replace filtration media after construction is completed. Use filtration media with a MERV of 13 or better to process both return and outside air to be delivered as air supply.

• Flush-out buildings following construction and prior to occupancy by supplying a total air volume of 14,000 cubic feet of outside air per square foot of floor area while maintaining an internal temperature of at least 60°F and a relative humidity no higher than 60%.

• Protect exterior wall assemblies and absorptive materials during construction to prevent mold development within the completed building.

C. Use low-emitting materials for interior finishes.

• Use no- or low-VOC sealants, adhesives, and primers for interior applications. Refer to South Coast Air Quality Management District (SCAQMD) Rule 1168. For aerosol adhesives refer to Green Seal Standard for Commercial Adhesives GS-36.

• Use no- or low-volatility organic compound (VOC) paints for building interiors. Refer to Green Seal Standard GS-03 and GS-11. For clear wood finishes, floor coatings, stains, sealers, ad shellacs, refer to SCAQMD Rule 1113.

• Use carpets that comply with the Carpet and Rug Institute Green Label Plus program.

• Use only composite wood and agrifiber products (e.g. particleboard, medium density fiberboard, plywood, wheatboard, strawboard, panel substrates, and door cores) inside buildings that contain no added urea-formaldehyde resins.

D. Monitor air quality.

• Consider carbon dioxide (CO₂) monitoring to test ventilation, especially in high-occupancy spaces.

• Consider carbon monoxide and VOC monitoring to enable unhealthy air conditions alerts.
2. Healthy Interiors. Create healthy interior spaces comfortable to users.

A. Thermal conditions.
   - Consider the use of a building humidification system where desirable and not in conflict with building use (such as artifact conservation).
   - Use operable windows where practical to provide user controllability. Balance window operability with energy efficiency strategies.

B. Light and shade.
   - Optimize natural light throughout buildings where not in conflict with building use.
   - Optimize user-controllability of lighting wherever practical.
   - Allow for internal shading in building designs to reduce glare.

C. Visual access to the outdoors. Provide outside views from most interior spaces.

Skylights are an essential way of providing natural lighting in building interiors where windows are not possible. Photo credit: www.inhabitat.com
6 Design Review

6.1. Reviewing Authority

The Facilities Planning Department is responsible for administering these guidelines through project review and approval in conjunction with the Campus Design Review Committee.

6.2. Project Development and Review Procedure

There are six major sequences for project development, review and approval as described herein. The three project development stages—Conceptual Design, Schematic Design, and Design Development—are subject to the guidelines herein; however, decisions made in the first two phases should be considered within the context of these guidelines as they will have a profound impact on the developing design.

The following descriptions of the phases may vary depending on the scale and type of project. Refer to Appendix B for submission requirements of each review phase.

1. Project Scope and Feasibility Analysis includes the initial documentation and analysis of project needs, justification, site selection, and feasibility. The project sponsor initiates this phase through consultation with the University Facilities Department. This phase ends with approval for the project to proceed to program development and initial design.

2. Program Development involves detailed estimation of space needs for the project based on the various functions to be accommodated. The project sponsor initiates this phase through consultation with the University Facilities Department. Depending on the scale of the project this phase may initiate the hiring of a consultant to assist in building program development. As the program becomes finalized, conceptual design begins.

3. Conceptual Design includes preliminary design development for the project. It is during this phase that the designer fully develops the project “response” to the site, context, and the program. This conceptual design response should include a description of project/site-specific guidelines or principles to be maintained throughout the evolution of the project design. For building projects, the general architectural character should be considered during this phase with regard to the applicable Architectural realm (as described in Chapter 3) and the scale, style, and materials of adjacent buildings. This phase concludes with the Urban Design Review.

Urban Design Review is the first stage of review under these guidelines. The primary emphases for this review are conformity with the Campus Master Plan and major design elements of Chapter 2 of these guidelines. At this stage, the building location and orientation and site disruption shall also be reviewed for consistency with Chapter 5.
4. **Schematic Design** includes finalization of the urban design and refinement of the architectural design in accord with Chapter 3 and of the site design in accord with Chapter 4. At this stage, project design should address the major components of water and energy efficiency and material and resource use in accord with Chapter 5. This phase concludes with the Schematic Design Review.

*Schematic Design Review* is the second stage of review under these guidelines. The emphases for this review are: 1) final confirmation of the urban design; 2) preliminary approval of the architectural design concept; 3) preliminary approval of the landscape design component; and 4) preliminary approval of sustainable design elements. Projects will also be reviewed for ADA compliance during this review.

5. **Design Development** involves refinement and continued detailing of the architectural design, landscape design, and all sustainable design components. As applicable building commissioning, in accord with §5.5.2, should be fully underway. This phase concludes with the Design Development Review, including documentation of site preparation techniques, building materials, and building systems necessary to measure compliance with Chapter 5.

*Design Development Review* is the final stage of review under these guidelines. Projects are reviewed in detail for their conformity with Chapters 3, 4, and 5.

Upon design development approval, the designer is released to develop construction documents in accord with the submittals requirements listed in Appendix B. At this point the design and construction team shall provide the Facilities Planning Department with a final Construction Management Plan, describing the timeframe, phasing, and general construction process, as well as specific information confirming the techniques to be used to limit site disruption. The waste management plan described in §5.4 may be included in the Construction Management Plan.
Appendix A: Approved Plant List

Minimum Acceptable Plant Sizes

<table>
<thead>
<tr>
<th>Material Graded by Caliper</th>
<th>Height</th>
<th>Spread</th>
<th>Rootball</th>
</tr>
</thead>
<tbody>
<tr>
<td>2” – 3” Caliper</td>
<td>14’ – 16’</td>
<td>8’ – 9’</td>
<td>28” – 32”</td>
</tr>
<tr>
<td>3” – 4” Caliper</td>
<td>16’ – 18’</td>
<td>9’ – 10’</td>
<td>32” – 42”</td>
</tr>
<tr>
<td>4” – 5” Caliper</td>
<td>18’ – 20’</td>
<td>10’ – 11’</td>
<td>42” – 54”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Graded by Height</th>
<th>Spread</th>
<th>Rootball</th>
</tr>
</thead>
<tbody>
<tr>
<td>5’ – 6’ Height</td>
<td>2.5’ – 3’</td>
<td>16” – 18”</td>
</tr>
<tr>
<td>6’ – 8’ Height</td>
<td>3’ – 4’</td>
<td>20” – 22”</td>
</tr>
<tr>
<td>8’ – 10’ Height</td>
<td>4’ – 5’</td>
<td>22” – 24”</td>
</tr>
<tr>
<td>10’ – 12’ Height</td>
<td>5’ – 6’</td>
<td>28” – 32”</td>
</tr>
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<table>
<thead>
<tr>
<th>Container Material</th>
<th>Height</th>
<th>Spread</th>
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<tbody>
<tr>
<td>4” Pot</td>
<td>Full plant</td>
<td>Full plant</td>
</tr>
<tr>
<td>1 Gallon</td>
<td>9” – 12”</td>
<td>9” – 12”</td>
</tr>
<tr>
<td>2 Gallon</td>
<td>12” – 14”</td>
<td>12” – 14”</td>
</tr>
<tr>
<td>3 Gallon</td>
<td>16” – 18”</td>
<td>16” – 18”</td>
</tr>
<tr>
<td>7 Gallon</td>
<td>36” – 48”</td>
<td>24” – 30”</td>
</tr>
<tr>
<td>15 Gallon</td>
<td>48” – 54”</td>
<td>36” – 42”</td>
</tr>
<tr>
<td>20+ Gallon</td>
<td>60” +</td>
<td>48” – 54”</td>
</tr>
</tbody>
</table>

Plant Materials

Canopy Trees

- *Acer barbatum*
- *Acer rubrum*
- *Acer saccharum*
- *Betula nigra*
- *Cedrus deodara*
- *Cornus ×'Rutcan'*
- *Cryptomeria japonica*
- *Fagus grandifolia*
- *Fraxinus pennsylvanica*
- *Ginkgo biloba*
- *Liquidambar styraciflua 'Rotundaloba'*
- *Liriodendron tulipifera*
- *Magnolia grandiflora × 'Claudia Wannamaker'*
- *Magnolia grandiflora × 'Bracken’s Brown Beauty'*
- *Magnolia virginiana*
- *Metasequoia glyptostroboides*
- *Nyssa sylvatica*
- *Picea glauca*
- Southern Sugar Maple
- Red Maple
- Sugar Maple
- River Birch
- Deodar cedar
- Constellation Dogwood
- Cryptomeria
- American Beech
- Ash
- Ginkgo
- Fruitless sweetgum
- Tulip tree
- Southern magnolia
- Southern magnolia
- Australis Bay magnolia
- Dawn Redwood
- Black Gum
- White spruce
<table>
<thead>
<tr>
<th>Tree Name</th>
<th>Common Name</th>
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</thead>
<tbody>
<tr>
<td>Pinus glabra</td>
<td>Spruce pine</td>
</tr>
<tr>
<td>Pinus taeda</td>
<td>Loblolly pine</td>
</tr>
<tr>
<td>Pinus virginiana</td>
<td>Virginia pine</td>
</tr>
<tr>
<td>Pistacia chinense</td>
<td>Chinese Pistache</td>
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<tr>
<td>Populus alba</td>
<td>White Poplar</td>
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<tr>
<td>Quercus acutissima</td>
<td>Sawtooth oak</td>
</tr>
<tr>
<td>Quercus alba</td>
<td>White oak</td>
</tr>
<tr>
<td>Quercus bicolor</td>
<td>Swamp white oak</td>
</tr>
<tr>
<td>Quercus cocinea</td>
<td>Scarlet oak</td>
</tr>
<tr>
<td>Quercus falaxata</td>
<td>Southern red oak</td>
</tr>
<tr>
<td>Quercus fissa</td>
<td>Overcup oak</td>
</tr>
<tr>
<td>Quercus fyrata</td>
<td>Bur oak</td>
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<tr>
<td>Quercus macrocarpa</td>
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</tr>
<tr>
<td>Quercus marilandica</td>
<td>Water oak</td>
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<tr>
<td>Quercus nigra</td>
<td>Nuttall oak</td>
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<tr>
<td>Quercus nutallii</td>
<td>Chesnut oak</td>
</tr>
<tr>
<td>Quercus prinus</td>
<td>Live oak</td>
</tr>
<tr>
<td>Quercus virginiana</td>
<td>White willow</td>
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<td>Salix alba</td>
<td>Weeping Willow</td>
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<tr>
<td>Salix babylonica</td>
<td>Popcorn tree</td>
</tr>
<tr>
<td>Sapinum sebiferum</td>
<td>Redwood</td>
</tr>
<tr>
<td>Sequoia sempervirens</td>
<td>Bald cypress</td>
</tr>
<tr>
<td>Taxodium distichum</td>
<td>Hemlock</td>
</tr>
<tr>
<td>Tsuga canadensis</td>
<td>American elm</td>
</tr>
<tr>
<td>Ulmus amaricana</td>
<td>Japanese Zelkova</td>
</tr>
<tr>
<td>Zelkova serrata</td>
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**Understory Trees**

<table>
<thead>
<tr>
<th>Tree Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ilex latifolia</td>
<td>Lusterleaf holly</td>
</tr>
<tr>
<td>Ilex x attenuata</td>
<td>Foster holly hybrids</td>
</tr>
<tr>
<td>Ilex x 'Nellie R Stevens'</td>
<td>Nellie R Stevens holly</td>
</tr>
<tr>
<td>Juniperus virginiana 'Idyllwild'</td>
<td>Idyllwild juniper</td>
</tr>
<tr>
<td>Osmanthus fortunei</td>
<td>Fortune's osmanthus</td>
</tr>
<tr>
<td>Tinja occidentalis</td>
<td>Arborvitae</td>
</tr>
<tr>
<td>Acer palmatum</td>
<td>Japanese maple</td>
</tr>
<tr>
<td>Amalanchier x 'Autumn brilliance'</td>
<td>Autumn Brilliance Serviceberry</td>
</tr>
<tr>
<td>Ilex x 'Emily Bruner'</td>
<td>Emily Bruner holly</td>
</tr>
<tr>
<td>Magnolia x soulangiana</td>
<td>Saucer magnolia</td>
</tr>
<tr>
<td>Myrica cerifera</td>
<td>Southern wax myrtle</td>
</tr>
<tr>
<td>Cornus florida</td>
<td>Flowering dogwood</td>
</tr>
<tr>
<td>Osmanthus fragrans</td>
<td>Fragrant tea olive</td>
</tr>
<tr>
<td>Prunus serrulata</td>
<td>Japanese Flowering cherry</td>
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<tr>
<td>Prunus subhirtella</td>
<td>Higan cherry</td>
</tr>
<tr>
<td>Prunus x yedoensis</td>
<td>Yoshino cherry</td>
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<tr>
<td>Ceris canadensis</td>
<td>Redbud</td>
</tr>
<tr>
<td>Cornus kousa</td>
<td>Kousa dogwood</td>
</tr>
<tr>
<td>Crataegus phaenopyrum</td>
<td>Washington hawthorn</td>
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<tr>
<td>Lagerstroemia indica</td>
<td>Crapemyrtle</td>
</tr>
<tr>
<td>Magnolia stellata</td>
<td>Star magnolia</td>
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<tr>
<td>Malus</td>
<td>Crabapple</td>
</tr>
<tr>
<td>Vitex agnus-castus</td>
<td>Lilac chaste tree</td>
</tr>
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</table>
### Shrubs

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Common Name</th>
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<tbody>
<tr>
<td><em>Abelia x grandiflora</em></td>
<td>Glossy leaf abelia</td>
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<tr>
<td><em>Acuba japonica</em></td>
<td>Japanese acuba</td>
</tr>
<tr>
<td><em>Agarista populifolia</em></td>
<td>Florida Leucothoe</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Encore</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Girard</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Glenn Dale</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Indica</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Kurume</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Satsuki</td>
</tr>
<tr>
<td><em>Azalea hybrids</em></td>
<td>Gumpo</td>
</tr>
<tr>
<td><em>Buddleia davidii</em></td>
<td>Butterfly bush</td>
</tr>
<tr>
<td><em>Buxus microphylla</em></td>
<td>Boxwood</td>
</tr>
<tr>
<td><em>Buxus sempervirens</em></td>
<td>American Boxwood</td>
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<tr>
<td><em>Buxus sempervirens</em> 'Green Velvet'</td>
<td>Green Velvet boxwood</td>
</tr>
<tr>
<td><em>Calycanthus floridus</em></td>
<td>Sweetshrub</td>
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<tr>
<td><em>Camellia japonica</em></td>
<td>Camellia</td>
</tr>
<tr>
<td><em>Camellia sasanqua</em></td>
<td>Sasanqua camellia</td>
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<tr>
<td><em>Catunus coggygria</em></td>
<td>Smoke tree</td>
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<tr>
<td><em>Cotoneaster dammeri</em></td>
<td>Cotoneaster</td>
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<tr>
<td><em>Deutzia gracilis</em></td>
<td>Slender Deutzia</td>
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<tr>
<td><em>Deutzia scabra</em></td>
<td>Deutzia</td>
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<tr>
<td><em>Elaeagnus pungent</em></td>
<td>Elaeagnus</td>
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<tr>
<td><em>Euryonymus alata</em></td>
<td>Burning Bush</td>
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<tr>
<td><em>Euryonymus fortunei</em></td>
<td>Wintercreeper</td>
</tr>
<tr>
<td><em>Euryonymus japonicus</em></td>
<td>Euonymus</td>
</tr>
<tr>
<td><em>Euryonymus kiaischovicus</em></td>
<td>Spreading euonymus</td>
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<tr>
<td><em>Fatsia japonica</em></td>
<td>Fatsia</td>
</tr>
<tr>
<td><em>Forsythia × intermedia</em></td>
<td>Forsythia</td>
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<tr>
<td><em>Gardenia jasminoides</em></td>
<td>Gardenia</td>
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<tr>
<td><em>Hamamelis vernalis</em></td>
<td>Vernal witchhazel</td>
</tr>
<tr>
<td><em>Hydrangea arborescens</em> 'Annabelle'</td>
<td>Annabelle hydrangea</td>
</tr>
<tr>
<td><em>Hydrangea macrophylla</em></td>
<td>Bigleaf hydrangea</td>
</tr>
<tr>
<td><em>Hydrangea quercifolia</em></td>
<td>Oakleaf hydrangea</td>
</tr>
<tr>
<td><em>Hypericum prolificum</em></td>
<td>Shrubby St. John's Wort</td>
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<tr>
<td><em>Ilex cornuta</em></td>
<td>Chinese holly</td>
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<tr>
<td><em>Ilex crenata</em></td>
<td>Japanese holly</td>
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<tr>
<td><em>Ilex decidua</em></td>
<td>Deciduous holly</td>
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<tr>
<td><em>Ilex glabra</em></td>
<td>Inkberry holly</td>
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<td><em>Ilex latifolia</em></td>
<td>Lusterleaf holly</td>
</tr>
<tr>
<td><em>Ilex vomitoria</em></td>
<td>Youpon Holly</td>
</tr>
<tr>
<td><em>Ilex × meserveae</em></td>
<td>Hybrid hollies</td>
</tr>
<tr>
<td><em>Ilicium parviflorum</em></td>
<td>Small Anise Tree</td>
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<tr>
<td><em>Juniperus chinensis</em></td>
<td>Chinese juniper</td>
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<tr>
<td><em>Juniperus conferta</em></td>
<td>Shore juniper</td>
</tr>
<tr>
<td><em>Juniperus horizontalis</em></td>
<td>Creeping juniper</td>
</tr>
<tr>
<td><em>Juniperus procumbens</em></td>
<td>Japgarden juniper</td>
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<tr>
<td><em>Juniperus virginiana</em></td>
<td>Eastern Redcedar</td>
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<tr>
<td><em>Kerria japonica</em></td>
<td>Kerria</td>
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<tr>
<td><em>Ligustrum japonicum</em></td>
<td>Japanese privet</td>
</tr>
<tr>
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<tr>
<td><em>Lonicera fragrantissima</em></td>
<td>Winter honeysuckle</td>
</tr>
<tr>
<td><em>Loropetalum chinense</em></td>
<td>Loropetalum</td>
</tr>
<tr>
<td><em>Mahonia bealei</em></td>
<td>Leatherleaf mahonia</td>
</tr>
</tbody>
</table>
A.4 The University of Alabama

### Mahonia fortunei
Chinese mahonia

### Nandina domestica
Heavenly bamboo

### Nerium oleander
Oleander

### Philadelphus coronarius
Mock orange

### Pieris japonica
Pieris

### Pittosporum tobira
Japanese pittosporum

### Rhaphiolepis indica
Indian hawthorne

### Rhaphiolepis umbellata
Rhaphiolepis

### Rhododendron alabamense
Alabama azalea

### Rhododendron austrinum
Flame azalea

### Rhododendron canescens
Piedmont azalea

### Rosa hybrids
Carpet roses

### Rose hybrids
Knockout'

### Spirea cantoniensis 'Laneata'
Double Reeves spirea

### Spirea japonica
Japanese Spirea

### Spirea prunifolia
Bridal wreath spirea

### Spirea thunbergii
Thunberg Spirea

### Syringa vulgaris
Lilac

### Taxus baccata
Yew

### Ternstroemia gymnanthera
Cleyera

### Viburnum davidii
David viburnum

### Viburnum plicatum var. tomentosum
Doublefile viburnum

### Viburnum x pragense
Prague viburnum

### Weigelia florida
Weigelia

### Yucca filamentosa
Adam's Needle yucca

### Groundcovers and Vines

#### Gelsemium sempervirens
Carolina Jessamine

#### Hedera helix
English Ivy

#### Iberis sempervirens
Candytuft

#### Lonicera japonica
Japanese honeysuckle

#### Lonicera sempervirens
Coral honeysuckle

#### Ophiopogon japonicus
Mondo Grass

#### Pachysandra terminalis
Japanese pachysandra

#### Trachelospermum asiaticum
Asiatic jasmine

#### Trachelospermum jasminoides
Confederate jasmine

#### Vinca minor
Vineca\n
### Perennials

#### Astilbe arendsi
Astilbe

#### Cyrtomium falcatum
Japanese holly fern

#### Echinacea purpurea
Coneflower

#### Heuchera hybrids
Heuchera

#### Hosta hybrids
Hosta

#### Lavandula angustifolia
English lavender

#### Perovskia atriplicifolia
Russian Sage

#### Rosmarinus officinalis
Rosemary
### Ornaments Grasses

- *Acorus gramineus*  
  - Dwarf sweet flag
- *Liriope muscari*  
  - Liriope
- *Miscanthus sinensis*  
  - Maidengrass
- *Muhlenbergia capillaris*  
  - Muhly grass
- *Pennisetum setaceum*  
  - Purple fountain grass

### Annuals

- *Alternanthera ficoidia*  
  - Joseph’s coat
- *Angelonia angustifolia*  
  - Summer snapdragon
- *Antirrhinum majus*  
  - Snapdragon
- *Asparagus densiflorus*  
  - Asparagus fern
- *Begonia semperflorens-cultorum*  
  - Wax begonia hybrids
- *Begonia × hybrida 'Dragon Wing'*  
  - Dragon wing begonias
- *Brassica oleracea*  
  - Kale and Cabbage
- *Caladium bicolor*  
  - Caladiums
- *Calibrachoa hybridi*  
  - Million Bells
- *Capsicum annuum*  
  - Ornamental Pepper
- *Catharanthus roseus*  
  - Periwinkle, Vince
- *Celosia argentea*  
  - Celosia
- *Chrysanthemum hybridi*  
  - Belgian Mums
- *Cleome hassleriana*  
  - Cleome
- *Coreyline indivisa*  
  - Dracaena spike
- *Cuphea hyssopifolia*  
  - Mexican Heather
- *Cuphea llavea*  
  - Bat-faced cuphea
- *Dianthus chinensis × barbatus*  
  - Dianthus
- *Dichondra argentea*  
  - Dichondra
- *Evolvulus pilosus*  
  - Blue Daze
- *Gaura lindheimeri*  
  - Gaura
- *Gomphrena globosa*  
  - Globe amaranth
- *Impatiens walleriana*  
  - Impatiens
- *Ipomoea batatas*  
  - Ornamental Sweet Potato
- *Iresine hybridi*  
  - Iresine
- *Lantana camara*  
  - Lantana
- *Lycoris radiata*  
  - Spider Lilies
- *Pelargonium x hortorum*  
  - Geraniums
- *Pentas lanceolata*  
  - Pentas
- *Petunia × hybrida*  
  - Petunias
- *Redbeckia hirta*  
  - Black-eyed Susan
- *Salvia gregii*  
  - Red salvia
- *Salvia guaranitica*  
  - Black and Blue salvia
- *Salvia splendens*  
  - Scarlet sage
- *Salvia × 'Indigo Spires'*  
  - Indigo Spires salvia
- *Senecio cineraria*  
  - Fanflower
- *Seneio cineraria*  
  - Dusty Miller
- *Senecio suertlariodes*  
  - Coleus
- *Tagetes patula*  
  - Marigolds
- *Torenia fournieri*  
  - Torenia
- *Tradescantia pallida*  
  - Purple Heart
- *Verbena hybridi*  
  - Verbena
- *Viola cornuta*  
  - Violas
- *Viola × wittrockiana*  
  - Pansy
- *Zinnia elegans*  
  - Zinnia
Appendix B: Design Phase Deliverables

NOTE: All drawings shall include a graphic scale and all plan drawings shall include a north arrow.

I. Project Submittal Phases.
   A. Conceptual Design-5%
   B. Schematic Design-15%
   C. Design Development-30%
   D. Construction Documents Phase 1-60%. Each requested document shall contain, at a minimum, 60% of the information required for each document.
   E. Construction Documents Phase 2-90% and 100%
      1. For 90% phase review, each requested document shall contain, at a minimum, 90% of the information required for each document.
      2. 100% (Final Review) shall incorporate all revisions of the 90% phase review.

II. Conceptual Design Submittals.
   A. Project Description.
      1. Narrative description of the project scope of work, including a description of how the project complies with the Campus Master Plan and major components of the Campus Design Guide
      2. Total cost estimate
      3. Project Program document
      4. Site analysis map. Provide information (as applicable) regarding immediate context (within 200 ft of site boundary, includes off-campus context) including:
         a) building footprints and entrances
         b) driveways and parking areas
         c) streets and paths
         d) existing vegetation
         e) topography
         f) natural constraints (floodplains, wetlands, wildlife habitats, etc.)
         g) campus geometries (axes and symmetries)
         h) vistas and viewsheds
      5. Contextual plan. Provide information regarding on and off-campus context (within 1,000 ft of project boundary) including:
         a) building footprints
         b) conceptual landscaping plan
         c) existing vegetation
         d) topography
         e) streets and paths (existing and planned)
         f) transit facilities
         g) designated open spaces (i.e. quads, plazas, and lawns) and natural areas
6. Written description and diagram of how the project is to be oriented on site to take advantage of sunlight, shade, and other site factors

7. 3-D rendering(s) illustrating how the project is to be sited and scaled in its context, including relation to topography, natural features, open spaces, landscaping, and adjacent buildings

III. Schematic Design Submittals.

A. Project Description.

1. Narrative description of the project scope, including a description of how the project complies with the Campus Master Plan and major components of the Campus Design Guide

2. Cost estimate, including system-by-system costs

3. Project schedule

4. List of applicable building codes on drawing title sheet

5. Updated Project Program document

6. Environmental analysis map. Site survey and soil tests will be provided by Owner. Provide information (as applicable) regarding immediate context (within 200 ft of site boundary, includes off-campus context) including the following:
   a) existing vegetation
   b) topography (two ft contours)
   c) floodplain boundaries and wetlands
   d) wildlife habitats
   e) soils conditions

7. Contextual plan. Provide information regarding on and off-campus context (within 1,000 ft of project boundary) including the following:
   a) building footprints
   b) driveways and parking areas
   c) streets
   d) existing and planned/proposed paths
   e) transit lines and facilities
   f) designated open spaces (i.e. quads, plazas, and lawns)
   g) campus geometries (axes and symmetries)
   h) vistas and viewsheds

8. Proposed site plan. Provide information (as applicable) regarding immediate context (within 200 ft of site boundary, includes off-campus context) including the following:
   a) building footprints
   b) building entrances, including stairs and ramps
   c) driveways and parking areas
   d) utility connections
   e) streets
   f) existing and planned/proposed paths
Design Phase Deliverables

- g) existing vegetation
- h) proposed topography (two ft contours)
- i) loading and service areas
- j) vertical circulation elements
- k) bicycle storage

9. Proposed general site/landscape plan including lighting, signage, trees, planting areas, site walls, seating, and other major site furnishings

10. primary elevations (those that front on open spaces, major paths, and streets)

11. Engineering systems description

12. Energy use and conservation analysis, including how the project is to be oriented on site to take advantage of sunlight and shade

13. 3-D renderings illustrating topography, massing, and building elevation options. Renderings shall include massing of adjacent buildings, natural areas, open spaces, and landscaping

14. Meeting minutes

B. Demolition proposal

C. Floor plans at min. scale 1”=16’ with legend

1. Typical floor plans

2. Location of stairways, elevators, and elevator equipment room(s)

3. Identification of program spaces and square footages

4. Mechanical, electrical, and other service closets and rooms

5. Area tabulations compared to program requirements

6. Opportunities for expansion and alteration

7. Preliminary layout of major spaces w/ fixed equipment

D. Building Envelope

1. Primary elevations at min. scale 1”=8’

2. Fenestration layout, including response to §5.5 and §5.6

3. Material designations

4. Energy code requirements

E. Structure. Structural scheme with written description

F. Systems and Specifications

1. Narrative description of systems and materials

2. HVAC, including preliminary response to §5.5-6
   - a) Identification of systems
   - b) Exterior equipment locations
   - c) Special occupancy zones
   - d) Energy code requirements

3. Plumbing and piping
4. Fire protection
   a) Report documenting adequacy of utility
   b) Connection to utility
   c) Optional fire protection systems
   d) Fire alarm connection to Department of Public Safety

5. Electric power distribution, including location of exterior equipment and electrical closets

6. Elevator/equipment room locations

G. Other graphics as needed to clearly present concept including diagrams, renderings, and models

IV. Design Development Submittals.

A. Project Description.
   1. Description of building code review and means of compliance for major issues
   2. Response to major components of Chapters 3, 4, and 5 of the Design Guide
   3. Updated cost estimate
   4. Updated project schedule
   5. Preliminary drawings including:
      a) Outline specifications
      b) Fire protection/life safety plan
      c) Site plan
      d) Floor plans
      e) Elevations
      f) Typical wall sections
      g) Building sections
   6. Equipment lists
   7. Engineering systems analysis
   8. Preliminary energy use and conservation analysis
   9. Meeting minutes
   10. Annotated comments from Schematic Design review
   11. 3-D renderings illustrating building elevations, massing, and entrances; site and landscape design; screening and buffers; and connectivity and relationship to adjacent buildings, open spaces, natural areas, streets, and paths

B. Construction Management Plan.
   1. Staging areas and construction access
   2. Demolition plan
   3. Preliminary construction waste management plan, including plans to address hazardous materials, where applicable, in accord with §5.4.2.
4. Erosion and sedimentation controls and soil retention work, where applicable, in accord with §5.3.1.

C. Floor plans at min. scale 1”=16’ with legend
   1. Wall types, fire ratings, smoke control zones
   2. Removal/treatment of existing hazardous materials, where applicable
   3. Fixed seating
   4. Defined seating, serving, and kitchen facilities
   5. Important interior elevations
   6. Preliminary finish schedule
   7. Preliminary door and window schedules
   8. Equipment and furniture layouts

D. Building Envelope
   1. All elevations at min. scale 1”=8’ with height dimensions
   2. Fenestration layout
   3. Typical wall sections
   4. Building cross sections at min. scale 1”=8’
   5. Roof plan at min. scale 1”=8’

E. Structure
   1. Foundation plan
   2. Typical floor framing plan
   3. Framing plan(s) for unique features
   4. Main member sizing
   5. Structural sections

F. Site and Landscape Plan (including contextual information within 200 ft of site boundary)
   1. response to §2.6.
   2. building footprints, including entrances, stairs, and ramps
   3. driveways, parking areas, and parking area landscaping
   4. loading and service areas and screening and buffers where applicable
   5. utility connections and appurtenances, screening where applicable
   6. streets
   7. existing and planned/proposed paths
   8. existing vegetation
   9. planting plan
   10. existing and planned irrigation, including legend
   11. proposed topography (two ft contours) and site drainage
12. detention or retention basins and other stormwater controls
13. site walls
14. outdoor seating
15. bicycle storage
16. site lighting and building lighting (if not attached to building)
17. other site furnishings as applicable

G. Interior Design. Written response to §5.4.3. and §5.6.

H. Signage Plan

I. Systems and Specifications. All construction testing to be provided by Owner.
   1. Outline specification w/ same numbering as final.
   2. Building commissioning process, where applicable, in accord with §5.5.2.
   3. HVAC, including updated response to §5.5-6
      a) Updated design criteria for each mechanical system
      b) One-line diagrams and other materials as required to describe the fundamental design concept for all systems
      c) Indication of amount of redundancy for all major pieces of mechanical equipment (e.g. “two pumps 100% capacity each”)
      d) Overall building air handlers, exhaust fans, duct risers and mains
      e) Plans indicating shaft, chase, and recess requirements
      f) Duct layout for typical chases
      g) Air intake and discharge locations
      h) Major equipment schedules
      i) Equipment locations with enlarged plan(s)
      j) Preliminary control diagrams for all mechanical systems
      k) Description of major sequences of operation
      l) Central automation operation
      m) M/E smoke control scheme
      n) Mechanical legend
      o) Preliminary calculations
      p) Efficiency of HVAC systems
      q) Description of compliance with ASHRAE 62-1999 ventilation requirement and ASHRAE 90.1-2001 energy standard

4. Plumbing and Piping, including response to §5.3.2-3.
   a) Updated design criteria for each plumbing system, including set (continued) points, water quality levels, etc.
   b) One-line diagrams, describing the fundamental design concept for all plumbing systems
   c) Piping plans (domestic and process) with indication of required service access areas
   d) Water header diagrams
   e) Central cooling water header diagram
   f) Steam header diagram
g) Steam metering concept

5. Fire Protection and Security Systems, including response to §5.4.3
   a) Riser diagram
   b) one-line layout
   c) fire pump sizing calculations
   d) fire alarm zones
   e) smoke zones
   f) general description of security/CCTV system
   g) general description of card access system

6. Lighting, including response to §5.5.1 and §5.6.2
   a) Typical lighting plans
   b) fixture/switching layout
   c) fixture schedule
   d) general description of lighting fixtures
   e) light level calculations
   f) energy code requirements

7. Electric power distribution, including response to §5.5.1
   a) List of equipment on emergency power
   b) Emergency generator layout
   c) Equipment layout and sizes with receptacles
   d) Panel locations and schedules
   e) Load estimates
   f) Plan for temporary power during construction
   g) Elevator equipment description.