THE UNIVERSITY OF ALABAMA

Campus Design Guide

Contents

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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.

The Lawn at the University of Virginia's Academical Village, by Thomas Jefferson, is an early American example of the campus quad.

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 Realms

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. Traditional Campus

The Traditional Campus Realm (shown in orange in Figure 1 on page 1.5) 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 Communities

The campus features several residential communities (shown in yellow in Figure 1), each with a unique identity and take on traditional campus residential design. Each community 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 Realm (shown in green in Figure 1) is organized around the campus open space network, where buildings are arranged in a picturesque pattern and overlook often large open spaces. Active recreation facilities are carefully blended with passive open spaces to create a unified, but informal, setting emphasizing the rolling, natural landscape. Buildings within this realm are often larger than other campus buildings, as they house large auditoriums and multi-purpose spaces. However, buildings are carefully designed to ensure compatibility with the traditional architecture of the campus.

Figure 1: Campus Design Realms

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 UA Facilities 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.

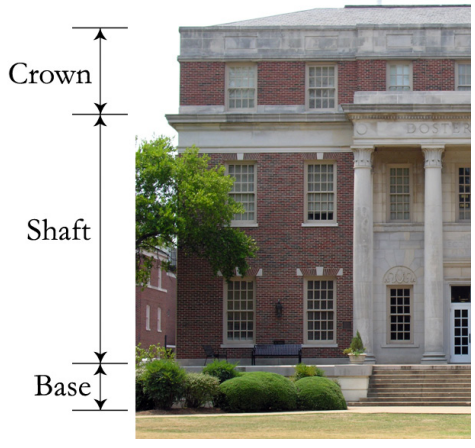
2. **Adjacent.** Abutting or separated only by a street, path, or open space.

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.

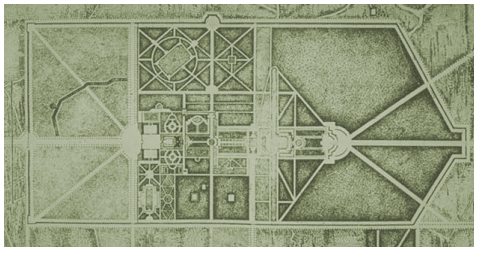


7. **Bio-retention.** An engineered process to manage stormwater runoff, using the chemical, biological and physical properties afforded by plants, microbes and soil. Bio-retention is used to control stormwater and improve water quality through removal of pollutants and nutrients associated with runoff.

8. **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.

9. **Canopy tree.** A large tree with a ten foot or greater understory at maturity, used to create enclosure and provide shade.

10. **Classical / Beaux Arts.** A design style which focuses on formal and generally symmetric, axial relationships between buildings and open spaces.



11. **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).

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

13. **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.

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

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

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

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

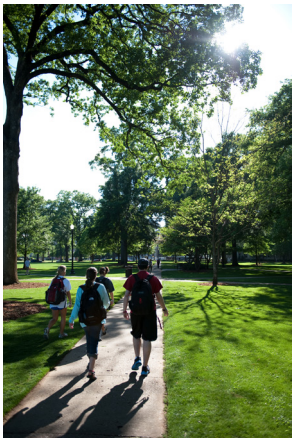
18. **Green Roof.** A roof partially or completely covered with plants to mitigate stormwater runoff and control temperature variations within the building.

19. **HVAC.** Heating Ventilation and Air Conditioning.

20. **Lawn.** A grassed area between the front of a building, or building group, and a street.

21. **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.

22. **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.

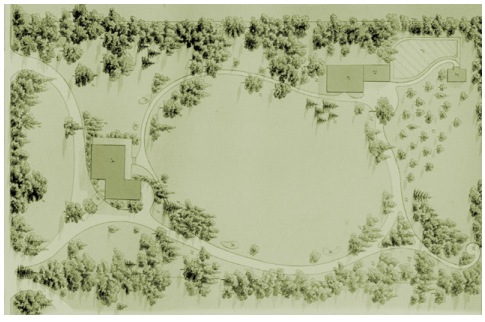


23. **Ornamental tree.** A tree, with a small understory at maturity, generally used to define edges or to articulate a space, but not necessarily to provide shade.

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

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

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



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

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

29. **R-Value.** The measure of resistance to conductive heat transfer of building materials.

30. **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.

Photo Credit: www.uwsp.edu

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

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

33. **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.

34. **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.

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

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

37. **US 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.

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

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

40. **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

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.

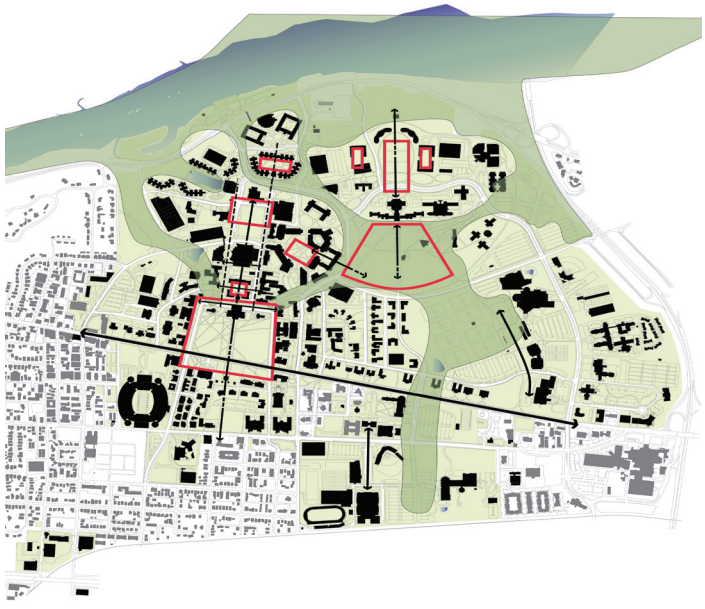


Figure 2: Campus Geometry

2.2. Open Space and Preservation

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.

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 community 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 below).

- 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).

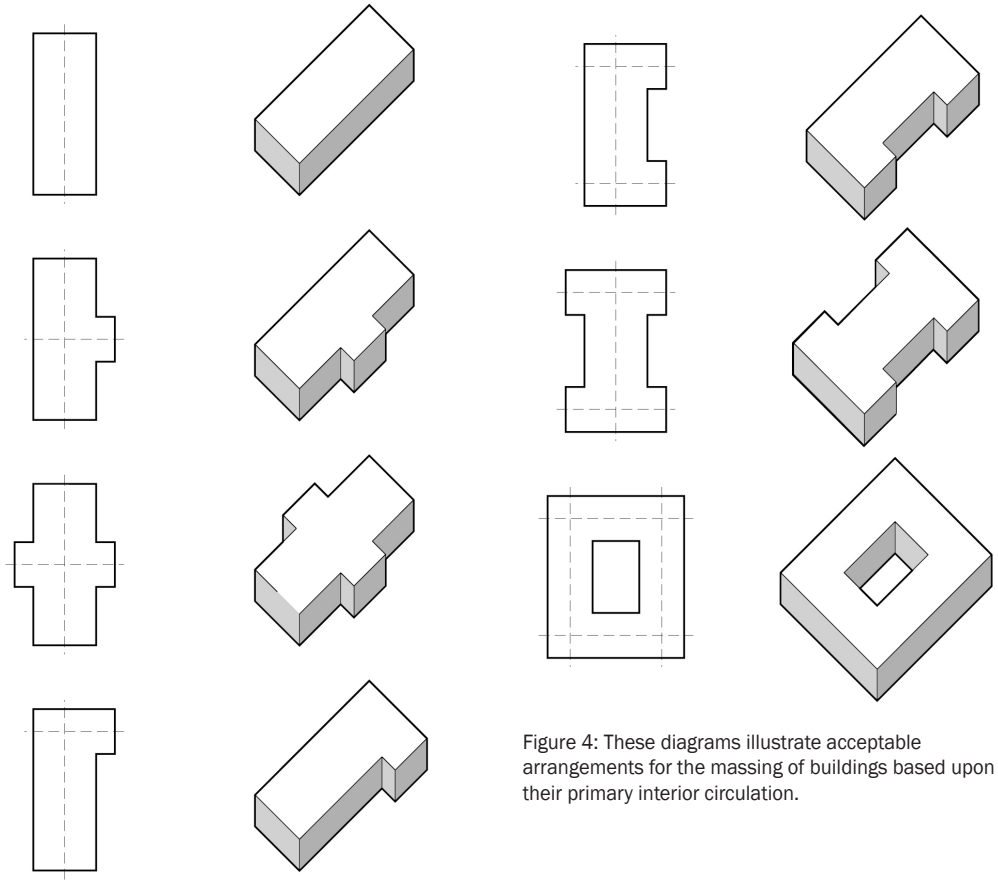


Figure 4: These diagrams illustrate acceptable arrangements for the massing of buildings based upon their primary interior circulation.

C. *Foreground and Background Buildings*. The following guidelines are to be applied carefully within the Traditional Campus Realm to reinforce classical geometry and hierarchy and within residential communitys 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.

Above Left: Smith Hall terminates vista along Capstone Drive.

Above Right: Gorgas Library is the foreground building on the Quad.

Left: Nott Hall acts as a background building along Sixh Avenue enfronting the Quad.

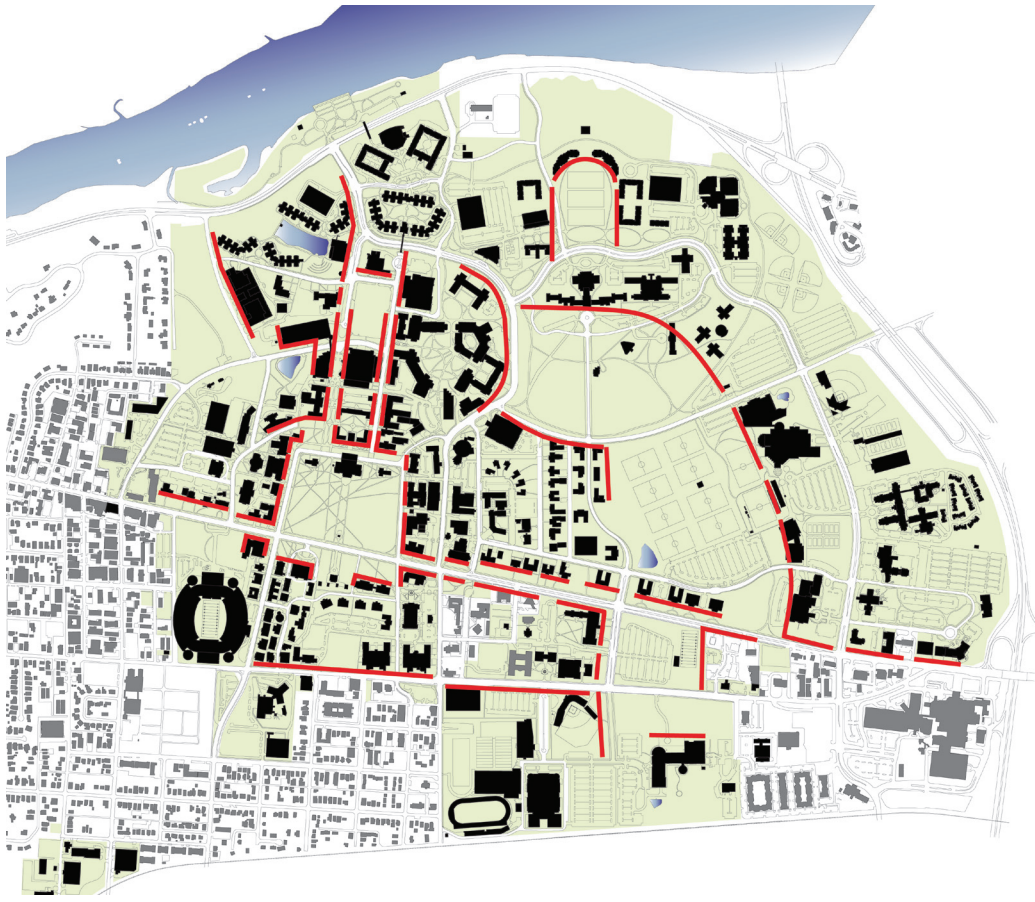
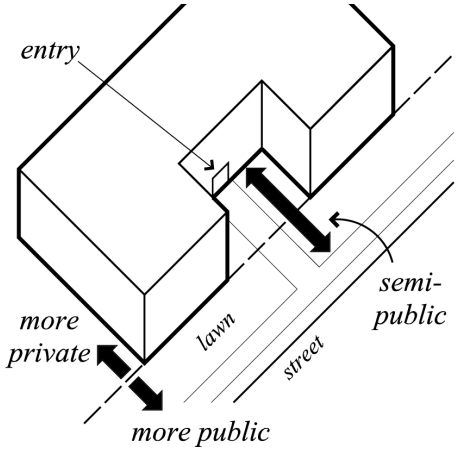


Figure 5: Build-to Lines

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).

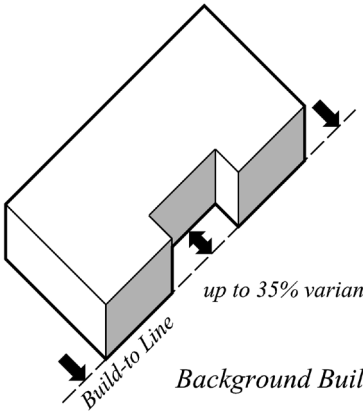


A. *Buildings to Enclose Space.* Each building in the Traditional Campus Realm and Residential Communities shall be positioned and its façade(s) designed to enclose adjacent open spaces and streetscapes and to frame views.

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*. Figure 5 represents 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 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.



Background Buildings

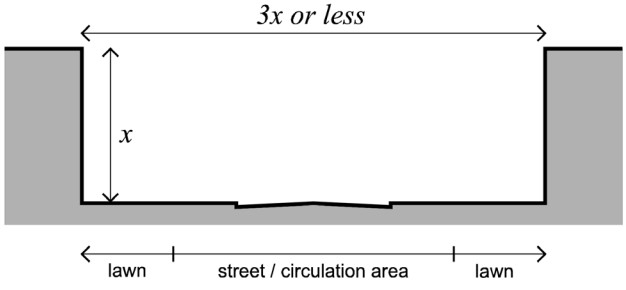
D. *Functional Relationship to Public Spaces*. To the degree possible, those uses within the ground level of buildings, located alongside an open space, streetscape or path, shall be more public in nature given the particular program for the building. This ensures a logical transition between the public/civic 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. Relationships to Open Space

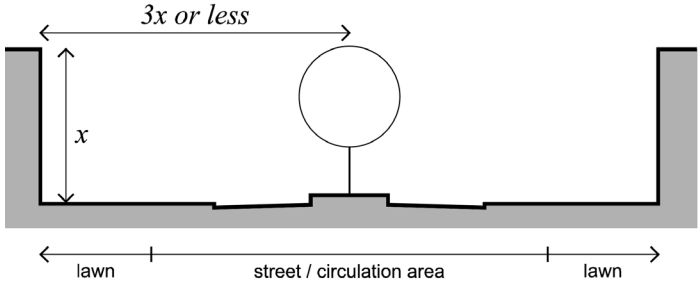
Within the Traditional Campus Realm and Residential Communities, building height shall be proportionate to the width of the adjacent streetscape or open space.

A. *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.



Building Height to Street Width Ratio



Building Height to Street Width Ratio with Median

B. *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 in wider spaces by providing a row of trees on either edge of the space.

2.4. Supplemental Conditions

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

1. Buildings 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.

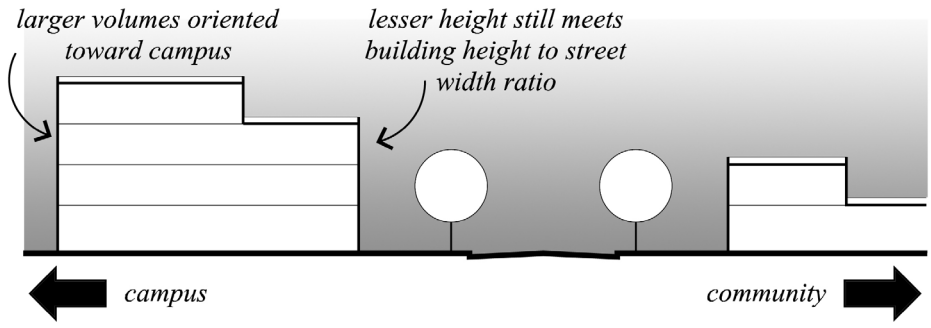
- Parking shall be screened in accordance with §4.3.4.
- Parking decks located along the community edge should be carefully designed to fit into the campus and community context. When a deck site fronts on a city street, liner buildings or façades should be incorporated into the design to minimize visual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

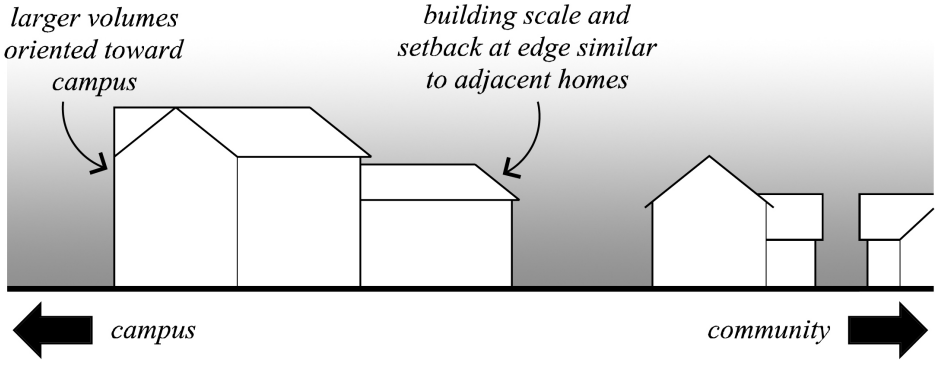
C. *Light and Noise*. Uses which generate light or noise that may be disruptive to adjoining community areas should be located away from the community and toward the interior of the campus. Light and noise shielding or buffering may also be appropriate in minimizing unwanted impacts (see §4.4).

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.

3. Riverfront

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.

Figure 6: Gateways and Image Corridors

4. Gateways and Image Corridors

Buildings, signage, and landscaping at gateways and along major corridors (see Figure 6 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 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 be used to enhance sense of arrival and physical transition.
- Buildings at gateway locations 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.

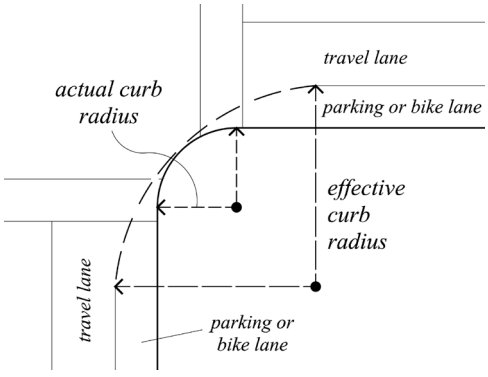
B. *Access*. Vehicular access to buildings and parking areas shall be limited in size and shall require adequate spacing from intersections and adjacent driveways to reduce traffic conflicts along streets.

- 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.

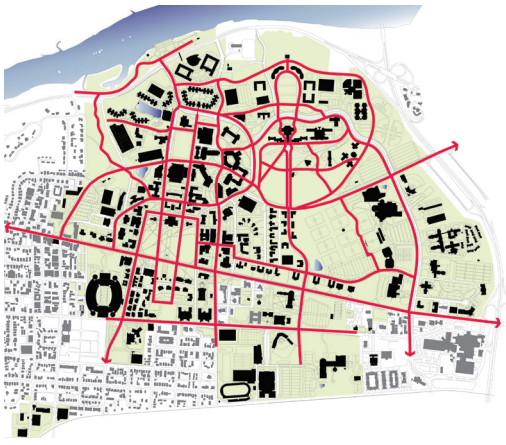
- Driveways shall be at least 100 feet from existing or planned intersections.

- 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.



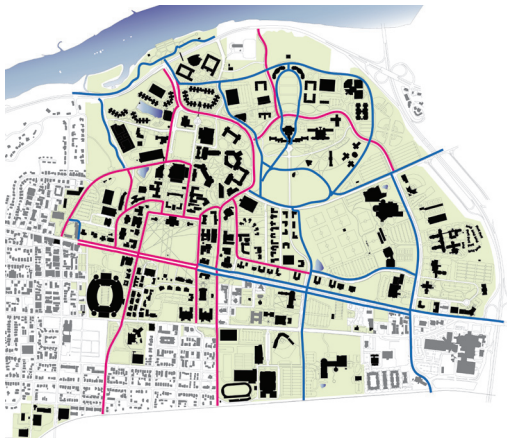


Figure 7 (left): Pedestrian Facilities

Figure 8 (right): Bicycle Circulation

2. Pedestrian Facilities

Pedestrian facilities shall be designed in accord with the University's Sidewalk Master Plan and the following:

A. *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.

B. *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 continuous lighting levels. Refer also to §4.4.

C. *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, where preacticable, 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 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. Parking Structures

Parking structures shall include liner buildings or facade designs along public frontages or open spaces to provide an attractive image, conceal the parking use, and foster an engaging street or open space environment.

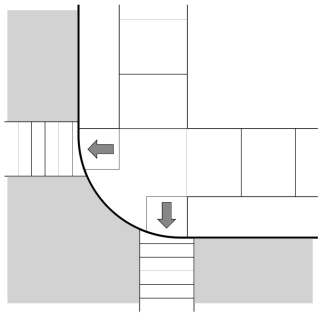
6. ADA Accessibility

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).

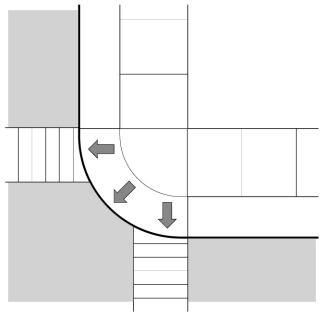
A. *Sidewalks and paths*. Sidewalks and paths intended for access by the handicapped shall have properly designed ramps wherever the path crosses a vehicular way.

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.

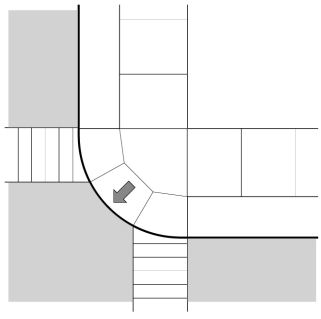
C. *Ramps at building entrances*. Ramps at building entrances shall be designed as integral components of the building design, not as afterthoughts.



individual ramps aligned to both directions



compound ramp aligned with both directions



ramp not aligned with direction of crosswalks

Liner facade on a campus parking structure.

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 or open fencing (iron) 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

Architecture

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 historic Core Campus 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, site context 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 Hall would be inappropriate. Certain contexts require a relaxation from classical detailing, though the form and geometry of traditional architecture should still be considered appropriate.

B. *Bridging Context.* Additions and 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.

Recent examples of "bridging context" include the addition of the curved pediment on Coleman Coliseum (far left) and the addition to the western side of Student Services Center (left). In each case, a 1960s or 1970s era building was modified to create greater harmony with its traditional context.

3. Architectural Realms

The three campus design realms reflect variations in architectural design that are necessary to achieve the intended relationships between the open spaces and buildings and therefore overall character in each realm. Similarly, the uses and scales of buildings differ generally in each realm. See Figure 1 on page 1.5.

A. *Traditional Campus Realm.* The character of this realm is based on the traditional classical and neoclassical styles of the Core Campus.

B. *Cultural Campus Realm.* This realm involves buildings housing specialized uses requiring specific design elements. In contrast to the Traditional Campus Realm, these buildings more often "sit in space" rather than "define space." While buildings in this realm are allowed more architectural freedom, they must nonetheless be in harmony with University buildings overall.

C. *Residential Communities.* Scale, geometry, placement, massing, and building form within the Residential realm will be different from the other realms though classical architectural detailing should be maintained.

Classical architecture (above left) exemplifies the character of the Traditional Campus Realm. More modern and post modern architectural styles (left) are seen in the Cultural Campus Realm. On-campus fraternity houses (above) and other residenital buildings feature classical and similarly historic architectural elements.

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 buildings in the Traditional Campus 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.

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.

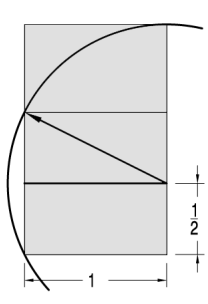
Campus buildings use classical architectural elements, such as columns that span two stories, vertical openings, and extruding building volumes to accentuate verticality in otherwise horizontal building masses.

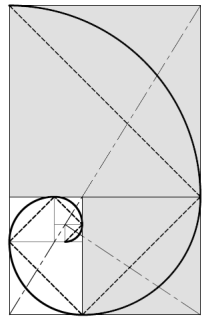
D. *Proportion.* Architectural features should accentuate verticality. Classical architectural features shall be proportioned in accordance with the classical orders. For instance, there is an established ratio of height to diameter (at base) for classical columns (Doric 7:1, Ionic 8:1, and Corinthian 9:1). The bulkier Doric column is used at the building base whereas narrower columns are used in upper levels.

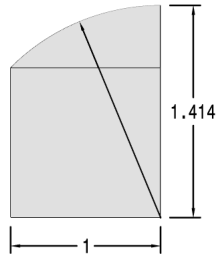
- The "golden rectangle", is the most recognized height-to-width (1.6103:1) proportioning system in classical architecture and its use in establishing architectural proportions is desirable in all realms. The diagon ratio (1.414:1) may also be used.

- When, due to programmatic, functional, or contextual reasons, the overall mass of a building is horizontal, verticality should be emphasized through façade articulation and extrusion of building volumes.

Towers, such as Denny Chimes, taper as they rise. The tower's "heavy" base withstands the weight of the shaft.







Above left and center: Two graphic depictions of the "golden rectangle".

Above right: Graphic depiction of the diagon ratio.

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.

The original east and west wings of Gorgas Library 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 Traditional Campus Realm.

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.

- Either wood mold or wire cut brick may be used in the Cultural Campus 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 Cultural Campus 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.

Campus buildings have used detailing to enhance the monumental nature of their bases through exaggerated joints and panel size.

2. Composition

A. *Three-part design.* In the Traditional Campus 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 Traditional Campus and Cultural Campus 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 Traditional Campus 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.

Brick bases, as shown in these images can lend the appearance of rustication, as with stone bases.

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

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

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 Traditional Campus Realm. In the Cultural Campus 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 Traditional Campus 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 Cultural Campus and Residential realms.

Above: Base projecting outward from the shaft.

Below: Stone base with its own "base, shaft, and crown".

Right: The use of stone as a wall cladding at an accent area, such as the entrance of Gordon Palmer Hall is appropriate.

Below: At Nott Hall, as with many other campus buildings, the columned entrance is the core element on which the remainder of the shaft is designed.

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 Cultural Campus 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 Traditional Campus and Cultural Campus 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 Cultural Campus Realm. Panel color shall match that of stone or of windows/storefront; shall be flat (not corrugated); and shall be fabricated with stone-like reveal joints and profiles where appropriate.

- 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.

Example of a flat or jack arch used on campus.

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.

Examples of stone ornament on campus.

- In the Traditional Campus and Residential realms, ornament shall be used to enhance the principal features of the façade.

- 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 joints.

Examples of brick ornament on campus.

Appropriate uses of stone and brick belt courses in the Traditional Campus realm.

- 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.

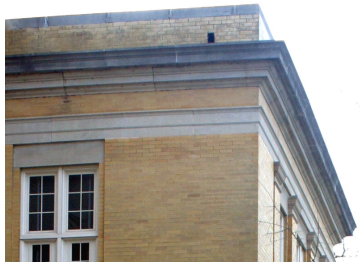
1. Materials

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 Traditional Campus Realm.

- Architectural precast concrete may be used in crowns in the Cultural Campus and Residential realms. In the Traditional Campus Realm, it may only be used when the crown is no closer than 25 feet to grade.



Crowns of pitched and flat roofs on campus

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.

- In the Traditional Campus 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.

- 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.

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.

- 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 Cultural Campus 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 Traditional Campus Realm, metal copings are allowed to substitute for stone if the color and finish are indistinguishable from stone from a distance of 25 feet.

A cornice constructed of limestone may have vertical joints offset from course to course.

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 Traditional Campus 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 Cultural Campus 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 Traditional Campus 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 Traditional Campus Realm, the vertical joints in a crown shall be staggered or concealed.

A product of the pitched roof design is the tympanum or triangular pediment at the gable end. Where it occurs, this element is part of the crown. The tympanum is surrounded by projections of the cornice profiles.

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 Traditional Campus Realm, main entrances should be recessed and project a monumental appearance.

B. *Door Style.*

- In the Traditional Campus Realm, doors shall be custom architectural stile and rail with raised panels.

Appropriate doors and entryways in the Traditional Campus Realm.

- Aluminum stile and glass "storefront" doors shall not be permitted in the Traditional Campus or Residential realms but may be permitted in the Cultural Campus Realm if consistent with building use and style.

- In the Cultural Campus 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.*

- Subdivide windows into panes, which shall generally be vertical in proportion (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 Cultural Campus 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.

Above: Historic example of the stacked window design

Below: 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.

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.

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.

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 Traditional Campus 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.

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 Traditional Campus 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.
- When arches are used in combination with columns and entablatures, follow the classical orders.

3. Porticos and Colonnades

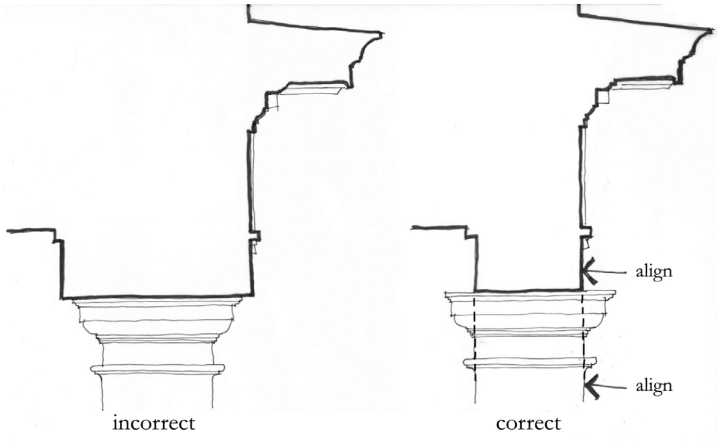
Colonnades and porticos shall only be used to serve a specific purpose such as to embellish a main building entrance and provide cover.

A. *Proportions and Details*.

- Base proportions on the classical orders of architecture.
- In the Traditional Campus Realm, follow details of the classical orders of architecture.
- In the Cultural Campus Realm, detail may be removed from colonnades as long as the proportions remain consistent with the classical orders.

B. *Materials*.

- In the Cultural Campus and Residential realms, cast stone and architectural precast concrete may be use throughout a colonnade.



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

- In the Residential realm, wood and wood-like materials may be used throughout a colonnade.

- Non-stone like materials may be used in the Cultural Campus Realm.

4. Porches

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

A. *Proportions and Details*.

- In the Traditional Campus Realm on non-residential construction, porches shall be based on the classical orders.

- In the Cultural Campus Realm, proportions 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 Cultural Campus Realm, porches may be constructed of non-stone like materials. Color shall match trim or window.

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.

Steeper pitches are appropriate, like that of Tuomey Hall, in Gothic Revival buildings including those around the Woods Hall Quad.

- Simulated Slate: Three-dimensional, synthetic slate shingle that matches the gray to black color of natural slate 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 be not be permitted in the Traditional Campus 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 Traditional Campus 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

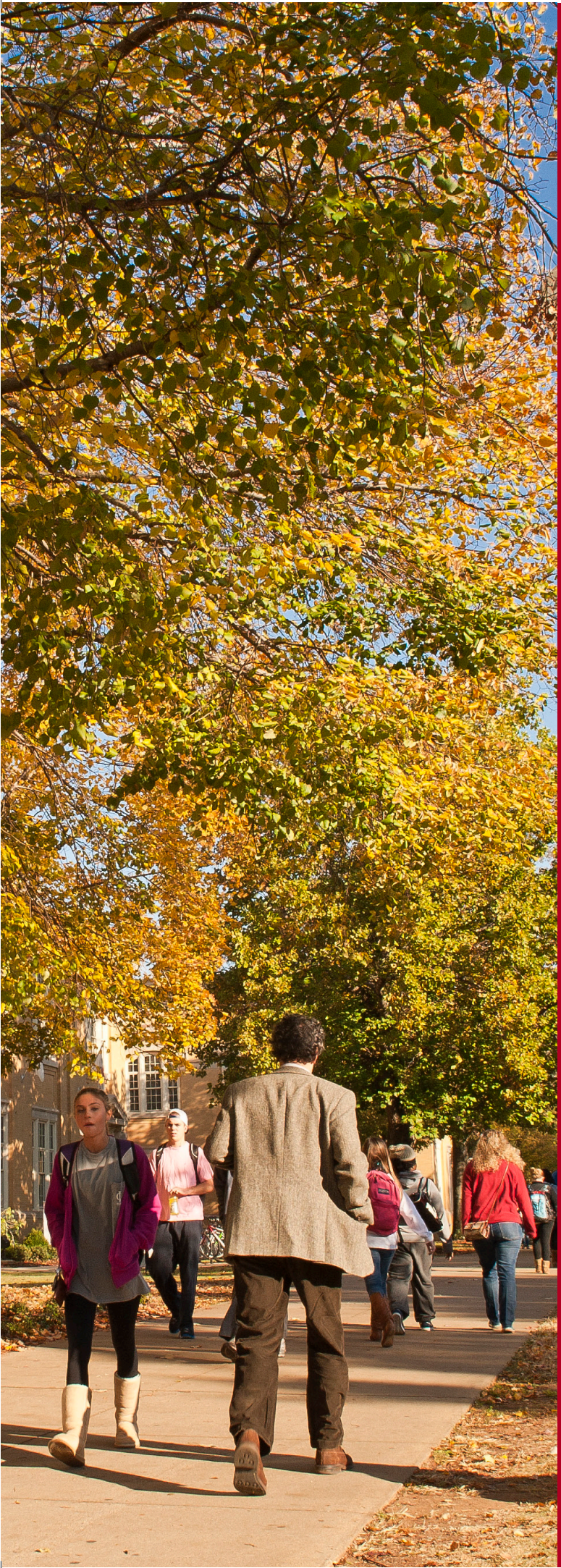
A. *Chimneys and chimney-like structures*. The size and shape of non-functional, decorative chimneys shall match that of a functioning one. Visible portions of chimneys should respond to gravity, narrowing upwards. Visible chimneys should be of masonry construction with brick or stone articulation at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

B. *Dormers 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 Traditional Campus Realm, and metal-covered. Copper is common in the Traditional Campus 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

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.

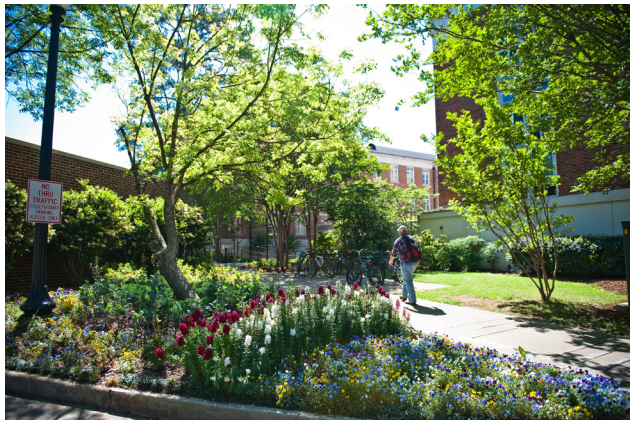
2. Designer Qualifications

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

3. General Guidelines

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. Refer also to the Sidewalk Master Plan for additional guidelines associated with hardscape.

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 should include a combination of materials and colors that may be servied from those in adjacent buildings.

- 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.

The hardscape patterns in plazas often reflect design elements of associated buildings.

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. Relationship to Context

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.

4. Parking Lot Landscaping

Landscaping shall be provided along the perimeter and within the interior of surface parking lots. Landscape areas shall be protected from vehicle encroachment.

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.

D. *Drainage*. Stormwater drainage should be integrated with the landscape design to include opportunities for on-site retention, such as through rain gardens and swales.

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.

Adhere to campus design standards for pole lights. In no case shall fixtures taller than 35 feet be permitted. This shall not apply to lighting for sports and recreational fields.

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.

It is important that buildings and spaces not be over-lighted. Adhere to illumination criteria indicated in §4.4.5.

Lamping shall typically be metal halide or LED of equivalent color. High-pressure sodium lighting is prohibited.

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. Architectural Lighting

A. *Highlight a building's most prominent features.* Evenly light the building façade with slight emphasis on edifice. "Close-in" lighting can be used to accent the textures of building finishes such as stone and brick. Illumination shall be consistent with §4.4.5.

B. *Integrate lighting equipment into the building design.* Fixtures and wiring should be concealed by architectural elements to ensure 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. Daylighting and off-peak lighting controls shall be implemented to reduce energy consumption.

E. *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. Site Lighting

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. 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 60 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. Landscaping shall have precedence in islands; poles shall generally be located in grassed areas and within the parking lots. Concrete foundations with extended height shall be installed for poles that are subject to vehicle damage.

- Building-mounted lights should be avoided for general site lighting.

D. *Fixtures within open spaces*. Lighting in open spaces shall be provided through pedestrian-scale, pole-mounted lighting, lighted bollards and, where unavoidable, building-mounted lighting. Excessive grouping of pole mounted fixtures shall be avoided to minimize glare.

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.

F. *Connect lighting to a control system*. Lighting should be connected to a photocell for dusk to dawn operation.

4. Accent Lighting

For accent lighting of landscaping, signage and gateway features, the following guidelines shall apply:

A. *Fixture selection should strike a balance*. Balancing between minimizing the number of units required to accomplish the desired effect and the ability to conceal light sources from view as much as possible.

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.

D. *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.

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 between 0.5 and 1.0 footcandles average maintained. The ratio of average to minimum illumination shall not exceed 4:1*.

C. *Sidewalks, paths, and open spaces*. Horizontal illumination at grade level shall be no less than 0.5 footcandles, average maintained. Vertical illumination at six feet above grade level shall be no less than 1.0 footcandles, average maintained. The ratio of average to minimum illumination shall not exceed 5:1*.

D. *Parking lots*. Illumination at pavement level shall be between 2.0 and 3.0 footcandles average maintained. The ratio of average to minimum illumination shall not exceed 5:1*.

E. *Architectural façade lighting*. Illumination shall be between 2.0 and 3.0 footcandles average maintained. Building edifices shall be between 3.0 and 4.0 footcandles average maintained. The ratio of average to minimum illumination shall not exceed 5:1*.

F. *Building entrance ways*. Illumination shall be between 2.0 and 3.0 footcandles average mantained. The ratio of average to minimum illumination shall not exceed 5:1*.

G. *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.*

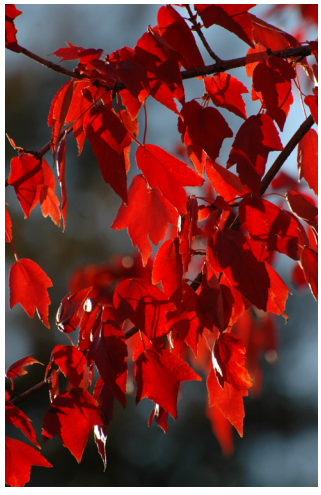
- Evergreen plants shall be a primary selection in open space designs.
- Place emphasis on the selection of native trees and trees with spring and/or fall color.
- All trees shall be hand-selected by the University's representative at the growing source to ensure consistent quality.

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 25 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 for shade and to 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 University specifications, 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.

5. Drinking Fountains

See University specifications.

6. Bollards

See Uinversity specifications. 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 match University of Alabama standards.

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. See University specifications.

8. Bicycle Racks

See University specifications.

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*. See University specifications.

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.

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 when a liner facade is not used.

- 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 UA Facilities 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 UA Facilities Department. Where location is not sufficient to minimize public views, screening shall be provided consistent with screening concepts of §4.7.6.

5

Sustainability

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.

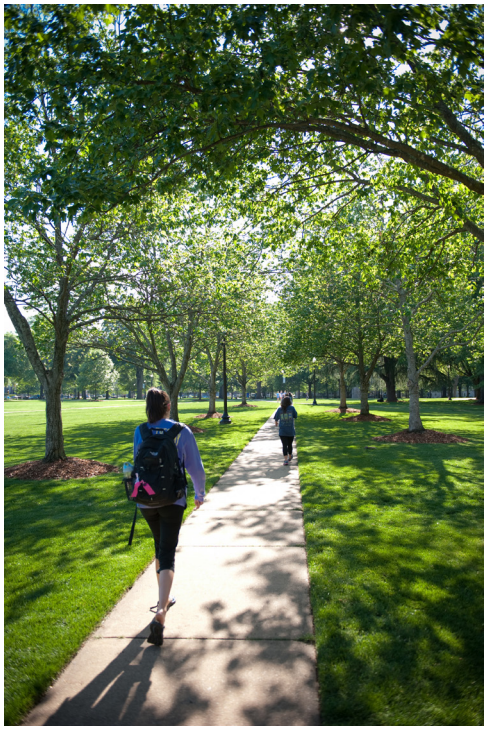
- Avoid disruption to land within 100 feet of designated wetlands. Install or retain vegetated buffers in proximity to wetlands. Strive to exceed mitigation requirements.
- Avoid development on lands less than five feet above designated 100-year floodplains. Strive to exceed mitigation requirements.
- 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, or consider a green roof.

B. *Use a white or light-colored roof.* Lighter colored roofs reduce the amount of heat absorbed into the interior of buildings from the sun and reduces cooling loads.

C. *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.

Green roof. Photo credit: American Society of Landscape Architects.

- Consider use of permeable paving materials for drives and surface parking.

Permeable or porous pavers, Photo credit: Portland

Bureau of Environmental Sciences

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.

Bio-retention basin. Photo credit: Triangle J Council of

Governments.

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.*

- Require projects comply with minimum energy efficiency prescribed in ASHRAE Standard 90.1-2001.
- 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.

2. Monitoring

Monitor performance of building systems for energy efficiency.

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, shutdown, unoccupied 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.*

- Design interiors to comply with ASHRAE 55-2004: Thermal Environmental Conditions for Human Occupancy.

- 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 UA Facilities 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

This includes the initial documentation and analysis of project needs, justification, site selection, and feasibility. The project sponsor initiates this phase through consultation with the UA 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 UA 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

This phase 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

This phase 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

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. Final approval of the landscape component will be conducted by the UA Landscape and Grounds Advisory Group.

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 UA Facilities 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.

THE UNIVERSITY OF
ALABAMA

Campus Design Guide
Appendix

Appendix A: Approved Plant List

I. Minimum acceptable plant sizes:

MATERIAL GRADED BY CALIPER	Height	Spread	Rootball
4” – 5” Caliper	18’ – 20’	10’ – 11’	42” – 54”

MATERIAL GRADED BY HEIGHT	Spread	Rootball
5’- 6’ Height	2.5’ – 3’	16” – 18”
6’ – 8’ Height	3’ – 4’	20” – 22”
8’ – 10’ Height	4’ – 5’	22” – 24”
10’ – 12’ Height	5’ – 6’	28” – 32”

CONTAINER MATERIAL	Height	Spread
4” Pot	Full plant	Full plant
1 Gallon	9” – 12”	9” – 12”
3 Gallon	16” – 18”	16” – 18”
7 Gallon	36” – 48”	24” – 30”
15 Gallon	48” – 54”	36” – 42”
20+ Gallon	60” +	48” – 54”

II. Plant Materials

A. Canopy Trees

1.	Acer rubrum	Red Maple
2.	Betula nigra	River Birch
3.	Cedrus deodara	Deodar cedar
4.	Cornus x ‘Rutcan’	Constellation Dogwood
5.	Cryptomeria japonica	Cryptomeria
6.	Fagus grandifolia	American Beech
7.	Fraxinus pennsylvanica	Ash
8.	Ginkgo biloba	Ginkgo
9.	Liquidambar styraciflua ‘Rotundaloba’	Fruitless sweetgum
10.	Liriodendron tulipifera	Tulip tree
11.	Magnolia grandiflora x ‘Claudia Wannamaker’	Southern magnolia
12.	Magnolia grandiflora x ‘Bracken’s Brown Beauty’’	Southern magnolia
13.	Magnolia virginiana	Australis Bay magnolia
14.	Metasequoia glyptostroboides	Dawn Redwood

15.	Nyssa sylvatica	Black Gum
16.	Pinus glabra	Spruce pine
17.	Pinus taeda	Loblolly pine
18.	Pinus virginiana	Virginia pine
19.	Pistacia chinense	Chinese Pistache
20.	Quercus acutissima	Sawtooth oak
21.	Quercus alba	White oak
22.	Quercus bicolor	Swamp white oak
23.	Quercus coccinea	Scarlet oak
24.	Quercus falcata	Southern red oak
25.	Quercus lyrata	Overcup oak
26.	Quercus macrocarpa	Bur oak
27.	Quercus marilandica	Blackjack oak
28.	Quercus nigra	Water oak
29.	Quercus nuttallii	Nuttall oak
30.	Quercus shumardii	Shumard oak
31.	Quercus prinus	Chestnut oak
32.	Quercus virginiana	Live oak
33.	Taxodium distichum	Bald cypress
34.	Ulmus amaricana	American elm
35.	Zelkova serrata	Japanese Zelkova

B. Understory Trees

1.	Ilex latifolia	Lusterleaf holly
2.	Ilex x attenuata	Foster holly hybrids
3.	Ilex x ‘Nellie R Stevens’	Nellie R Stevens holly
4.	Juniperus virginiana ‘Idyllwild’	Idyllwild juniper
5.	Osmanthus fortunei	Fortune’s osmanthus
6.	Acer palmatum	Japanese maple
7.	Ilex x ‘Mary Nell’	Mary Nell holly
8.	Ilex x ‘Emily Bruner’	Emily Bruner holly
9.	Magnolia x soulangiana	Saucer magnolia
10.	Myrica cerifera	Southern wax myrtle
11.	Cornus florida	Flowering dogwood
12.	Osmanthus fragrans	Fragrant tea olive

13.	Prunus x yedoensis	Yoshino cherry
14.	Cercis canadensis	Redbud
15.	Cornus kousa	Kousa dogwood
16.	Crataegus phaenopyrum	Washington hawthorn
17.	Lagerstroemia indica	Crapemyrtle
18.	Magnolia stellata	Star magnolia
19.	Vitex agnus-castus	Lilac chaste tree

C. Shrubs

1.	Acuba japonica	Japanese acuba
2.	Agarista populifolia	Florida Leucothoe
3.	Azalea hybrids	Encore
4.	Azalea hybrids	Girard
5.	Azalea hybrids	Glenn Dale
6.	Azalea hybrids	Indica
7.	Azalea hybrids	Kurume
8.	Azalea hybrids	Satsuki
9.	Azalea hybrids	Gumpo
10.	Buxus microphylla	Boxwood
11.	Buxus sempervirens	American Boxwood
12.	Buxus sempervirens ‘Green Velvet’	Green Velvet boxwood
13.	Calycanthus floridus	Sweetshrub
14.	Camellia japonica	Camellia
15.	Camellia sasanqua	Sasanqua camellia
16.	Cotoneaster franchetti	Cotoneaster
17.	Elaeagnus pungens	Elaeagnus
18.	Euonymus alata	Burning Bush
19.	Euonymus japonicus	Euonymus
20.	Fatsia japonica	Fatsia
21.	Gardenia jasminoides	Gardenia
22.	Hydrangea ardorescens ‘Annabelle’	Annabelle hydrangea
23.	Hydrangea macrophylla	Bigleaf hydrangea
24.	Hydrangea quercifolia	Oakleaf hydrange
25.	Ilex cornuta	Chinese holly
26.	Ilex crenata	Japanese holly

27.	Ilex decidua	Diciduous holly
28.	Ilex glabra	Inkberry holly
29.	Ilex latifolia	Lusterleaf holly
30.	Ilex vomitoria	Youpon Holly
31.	Ilex x meserveae	Hybrid hollies
32.	Illicium parviflorum	Small Anise Tree
33.	Juniperus chinensis	Chinese juniper
34.	Juniperus virginiana	Eastern Redcedar
35.	Kerria japonica	Kerria
36.	Ligustrum japonicum	Japanese privet
37.	Lonicera fragrantissima	Winter honeysuckle
38.	Loropetalum chinense	Loropetalum
39.	Mahonia bealei	Leatherleaf mahonia
40.	Mahonia fortunei	Chinese mahonia
41.	Nandina domestica	Heavenly bamboo
42.	Nerium oleander	Oleander
43.	Philidelphus coronarius	Mockorange
44.	Pieris japonica	Pieris
45.	Pittosporum tobira	Japanese pittosporum
46.	Rhaphiolepis indica	Indian hawthorne
47.	Rhaphiolepis umbellata	Rhaphiolepis
48.	Rhododendron alabamense	Alabama azalea
49.	Rhododendron austrinum	Flame azalea
50.	Rhododendron canescens	Piedmont azalea
51.	Rosa hybrids	Carpet roses
52.	Rosa hybrids	Knockout’
53.	Rosa hybrids	Homerun’
54.	Spirea cantoniensis’Laneata’	Double Reeves spirea
55.	Spirea japonica	Japanese Spirea
56.	Spirea prunifolia	Bridalwreath spirea
57.	Taxus baccata	Yew
58.	Ternstroemia gymanthera	Cleyera
59.	Viburnum davidii	David viburnum

D. Groundcovers and Vines

1.	Gelsemium sempervirens	Carolina Jessamine
2.	Hedera helix	English ivy
3.	Liriope muscari	Liriope
4.	Ophiopogon japonicus	Mondo Grass
5.	Trachelospermum asiaticum	Asiatic jasmine
6.	Trachelospermum jasminoides	Confederate jasmine
7.	Vinca minor	Vinca vine

E. Annuals and Perennials

All Annuals and Perennials to be coordinated and approved through campus Landscape and Grounds Dept.

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:

- building footprints and entrances
- driveways and parking areas
- streets and paths
- existing vegetation
- topography
- natural constraints (floodplains, wetlands, wildlife habitats, etc.)

- campus geometries (axes and symmetries)
- vistas and viewsheds

5. Contextual plan. Provide information regarding on and off-campus context (within 1,000 ft of project boundary) including:

- building footprints
- conceptual landscaping plan
- existing vegetation
- topography
- streets and paths (existing and planned)
- transit facilities
- designated open spaces (i.e. quads, plazas, and lawns) and natural areas
- response to campus geometries (axes and symmetries)
- response to vistas and viewsheds

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:

- existing vegetation
- topography (two ft contours)
- floodplain boundaries and wetlands
- wildlife habitats
- soils conditions

7. Contextual plan. Provide information regarding on and off-campus context (within 1,000 ft of project boundary) including the following:

- building footprints
- driveways and parking areas
- streets
- existing and planned/proposed paths
- transit lines and facilities
- designated open spaces (i.e. quads, plazas, and lawns)
- campus geometries (axes and symmetries)
- 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:

- building footprints
- building entrances, including stairs and ramps
- driveways and parking areas
- utility connections

- streets
- existing and planned/proposed paths
- existing vegetation
- proposed topography (two ft contours)
- loading and service areas
- vertical circulation elements
- 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

- Identification of systems
- Exterior equipment locations
- Special occupancy zones
- Energy code requirements

3. Plumbing and piping

- Main water supply
- Location of spaces requiring plumbing connections

4. Fire protection

- Report documenting adequacy of utility
- Connection to utility
- Optional fire protection systems
- 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:

- Outline specifications
- Fire protection/life safety plan
- Site plan
- Floor plans
- Elevations
- Typical wall sections
- 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

- Updated design criteria for each mechanical system
- One-line diagrams and other materials as required to describe the fundamental design concept for all systems
- Indication of amount of redundancy for all major pieces of mechanical equipment (e.g. "two pumps 100% capacity each")
- Overall building air handlers, exhaust fans, duct risers and mains
- Plans indicating shaft, chase, and recess requirements
- Duct layout for typical chases
- Air intake and discharge locations
- Major equipment schedules
- Equipment locations with enlarged plan(s)
- Preliminary control diagrams for all mechanical systems
- Description of major sequences of operation
- Central automation operation
- M/E smoke control scheme
- Mechanical legend
- Preliminary calculations
- Efficiency of HVAC systems
- 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.

- Updated design criteria for each plumbing system, including set (continued) points, water quality levels, etc.)
- One-line diagrams, describing the fundamental design concept for all plumbing systems
- Piping plans (domestic and process) with indication of required service access areas
- Water header diagrams
- Central cooling water header diagram
- Steam header diagram
- Steam metering concept

5. Fire Protection and Security Systems, including response to §5.4.3

- Riser diagram
- one-line layout
- fire pump sizing calculations
- fire alarm zones
- smoke zones
- general description of security/CCTV system
- general description of card access system

6. Lighting, including response to §5.5.1 and §5.6.2

- Typical lighting plans
- fixture/switching layout
- fixture schedule
- general description of lighting fixtures
- light level calculations
- energy code requirements

7. Electric power distribution, including response to §5.5.1

- List of equipment on emergency power
- Emergency generator layout
- Equipment layout and sizes with receptacles
- Panel locations and schedules
- Load estimates
- Plan for temporary power during construction

8. Elevator equipment description.