

CLEMSON UNIVERSITY
CAMPUS MASTER PLAN 2002

design **PRINCIPLES**

design **GUIDELINES**

planning **STANDARDS**

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Preface



Clemson University's 2002 Campus Plan identifies goals and objectives for campus development that benefit both the community and the individual. The Design Guidelines provide a philosophy, which is the foundation, basis, or grounding for ensuring that the campus and its buildings will support overall University goals as well as the individual's purpose, good health, and well-being.

In preparing design guidelines for future development, the University has identified overarching Design Principles. The principles fall into three categories — to promote intellectual and social interaction, to respect cultural and historic resources, and to value sustainable design. From these principles, the Design Guidelines and Planning Standards follow.

All landscape and facility development on the Clemson campus should satisfy the design criteria that were originally stated by Marcus Vitruvius Pollio in his *De architectura* written in the first century BC. In Sir Henry Wotton's 1624 rendition of Vitruvius's maxim, the first of these criteria is commodity or utility, the second is firmness or durability, and the third is delight or beauty. The University's overarching Design Principles will be applied through the execution of projects that exhibit these qualities.

Design **PRINCIPLES**

PROMOTE INTELLECTUAL & SOCIAL INTERACTION

Purpose

The purpose of the Clemson campus, as the physical manifestation of the idea of a university, is to bring together a diverse group of people by providing settings that foster learning, creativity, collegiality, and intellectual growth — consistent with the charge of its founder, Thomas Green Clemson, that Clemson be “a high seminary of learning.” The principle of promoting interaction extends beyond the development of appropriate classrooms, courtyards, or quads, to the purposeful creation of many different types of spaces strategically planned, placed, and furnished to encourage informal dialogue in teacher-to-teacher, student-to-teacher, and student-to-student situations. There are three major campus components the principle applies to — outdoor space and indoor space woven together by a pedestrian campus — each of which has a distinct role.





Outdoor Space

Open space should support a sense of community, by providing many types and sizes of outdoor meeting and recreation areas. In addition, open space should be designed and maintained to unify the campus by connecting diverse site and building elements together as an attractive whole. The Campus Green is such a space as it connects the east and west sides of campus serving as the fabric that ties building and site elements together. Further, each outdoor space, large or small, should be seen as a garden to cultivate the minds of Clemson students.



Indoor Space

Where outdoor space is common to all campus constituents, individuals occupy indoor space. The building walls mitigate between the two environments. In buildings, opportunities for the exchange of ideas should also be maximized. As with outdoor space, many types and sizes of indoor meeting spaces should be provided for both planned and unplanned interaction. The amount of public space in buildings should be sufficiently generous to allow for this interaction to occur.

Pedestrian Campus

Fundamental to the idea of social interaction is the notion of a pedestrian campus. Only when people are outside of their cars do they have an opportunity to engage in the campus environment and community in a meaningful way. Through its design, the campus should encourage the individual to walk or use the transit system to move from place to place, experiencing things such as art and artifacts, and conversations with people along the way.





RESPECT CULTURAL & HISTORIC RESOURCES

History and Culture

In order to meet Thomas Green Clemson's charge to be a "high seminary of learning," Clemson University has been a science and service oriented institution. The culture that has evolved from this pragmatic worldview is one that cultivates talents in a wide range of disciplines. These traditional values and beliefs contribute to Clemson's sense of place.

Many of the existing spaces and structures on campus have local, regional or national historic significance; several are included on the National Register of Historic Places or are identified as National Landmarks. Clemson University treasures these historic resources by maintaining and preserving a campus historic district, and by acknowledging and respecting this past through a considered approach to the planned environment.

New and Old

Campus architecture and landscapes communicate something important about the issues and priorities of the present generation. New buildings, modifications to existing facilities, and even minor changes to the campus should respect the legacy that will be left to future generations. The quality of the built environment is key to the distinctiveness, long-term viability, and image of the University.



Rural and Urban

Significantly, another cultural resource is the campus, considered as a whole. The campus is a representation of the past and the future, the rural and the urban. Within seconds one can go from a highly developed urban zone to a peaceful, pastoral setting. These contrasting qualities should be maintained and used to contribute to the unity of the campus.

Intended Aesthetic

Some buildings and landscapes reflect the past; new ones will frequently point to the future. Despite this mix of past and future, rural and urban, the entire campus should maintain an intended aesthetic in an on-going effort to preserve continuity and enhance coherence and relevance. At Clemson University, these seemingly opposite characteristics bring life and excitement to the campus. Clemson should protect and enhance this unity while allowing for diversity between its various districts, developing a reasoned consistency within districts, and encouraging creativity for a single project.

VALUE SUSTAINABLE DESIGN

Life and Living

The responsible use of all forms of energy and the good health of the community are high priorities of Clemson University. Consistent with its mission of teaching, research, and public service, Clemson University intends to be a leader and champion of sustainable design as a tool to help educate the Clemson community. At the same time, energy consumption and the “ecological footprint” of the University will be reduced while the productivity and health of the community will be improved. Balanced with other University priorities, sustainable principles that promote these objectives shall be incorporated into all building and infrastructure projects to the fullest extent possible in an effort to create environmentally responsive facilities.



Past, Present, Future

Clemson University is an institution entrusted to the present generation. The natural and built environments of the campus and other properties should be cared for, developed, and administered in such a way that they are protected, utilized appropriately, and positively changed for future generations. Through all efforts, vigilance should be applied to ensure that planning, design, and construction are targeting efficient use of resources, and that careful and responsible actions are taken to ensure that University resources are utilized in the best possible way while achieving the other primary principles of design.

Stewardship

Stewardship is the concept of responsibly managing all resources for the benefit of present and future generations of people, plants, and animals. Objectives in the stewardship of resources should include such goals as:

Manage resources in a manner that is fiscally responsible.

Manage resources in a manner that is compliant with the rules and regulations established by society.

Manage resources in a manner that provides the facilities necessary for Clemson to perform its mission of education, research, and service in order to better society.

Design **GUIDELINES**

*"We should be thinking about the campus
as a garden."*

President James F. Barker, FAIA

*"...ultimately all culture is a convention, particularly if
we remember that culture means tilling the soil in
patterns and with purpose, making as Thoreau said, the
earth say beans instead of grass, that is, putting design
and shape into a common environment, beginning in the
mind whence all design flows."*

A. Bartlett Giamatti



INTRODUCTION

The Design Principles — based on interaction, culture and history, and sustainability — provide a working framework to guide any changes to the Clemson University campus that might be considered. The Design Guidelines are more specific, and provide planning and design direction for all landscape and building projects. The primary audiences are those involved in the planning and design of such projects that include university user groups and design consultants to Clemson University.

These guidelines apply a philosophy that does not intend to be so constraining as to inhibit creativity. Rather the opposite, their intention is to provide design parameters in which creativity can flourish and still maintain overall campus planning objectives that reflect both broad philosophic principles and specific standards.

The information presented herein is a supplement to “*Instructions and Information for Commissioned Engineers and Architects at Clemson University*” (the Green Book).

LANDSCAPE

Beauty

Although located in one of America's first college towns, Clemson University has traditionally been thought of as a rural campus, because of what was once a remote location in the state and because of the agricultural history of the college. However, in form and in culture, the campus is no longer rural, it is decidedly urban. Also, despite the hundreds of changes that have occurred over the years, Clemson's inherent beauty has been maintained, in all forms: landform, landscape, built form, and townscape. Many factors work in concert to create this beautiful setting.

Landform and Elements

The land itself, a rolling, hilly topography, plays a vital role in creating interest. The buildings themselves, in many cases, are individually very handsome structures. The buildings also perform the valuable function of creating meaningful open space by their form and siting. Some of the elements in the landscape such as plazas, fountains, and public art contribute to this beauty. Even the actual arrangement of elements on the land adds to the overall aesthetic quality by creating vistas, framing views, or providing visual termini.



Landscape Character & Trees

Policy: New trees will be planted on a regular basis and significant existing trees and quality woodland should be protected as important natural and cultural resources. Efforts will be made through planning, design, construction, and maintenance processes to ensure that these trees are protected and remain a viable, valuable part of the Clemson University Campus.

Trees and Space

The most important resource that contributes to the acknowledged beauty of the campus setting is the hundreds of large, grand trees. The landscapes of the campus are the series of spaces that connect buildings and knit together often-diverse functions. Some of these spaces are better defined than others. Some have more of the character of a garden than others. However, the common thread that runs through every landscape is the ubiquitous presence of trees. The tree canopy is the single defining element that makes the Clemson campus memorable and beautiful. The trees shape and reinforce the campus character.

Trees and Development

As development on campus becomes denser, compaction of the root zone and loss of structural roots will place more pressure on these existing trees. For this reason, all projects should carefully consider the impact on existing trees, and the enhancement of the project through the planting of new trees.

Trees and More Trees

As older trees become less viable and are lost to disease or other causes, there should be a very active tree maintenance and replacement program. A program exists at this time to manage this resource. The care and protection of these trees should be a very high priority for the University. The preservation, protection, and ongoing health of these existing trees should never be made a second priority. In addition, the replacement of trees that are either removed or near the end of their life span should be an ongoing program.



Landscape Character & Open Space

Policy: Although the center of campus will increase in density, the dedicated open space of the campus should be protected from campus development and will be preserved or enhanced as appropriate. Clemson is blessed with a remarkable “endowment of land.” However each acre is precious and should be as carefully planned as if it were Clemson's last one.

Space and Development

Open space preservation is a very important component of any responsible development or land use strategy. Depending on scale, open space provides several benefits, which may include enhanced water and air quality, improved habitat, decreased storm water run-off and the desirable aesthetics of natural surroundings.

Some open spaces are in a dedicated open space category – Bowman Field, President’s Park, the North Campus Green, the historic Core Campus Green, and Woodland Cemetery – and can be modified only by action of the Executive Administration. Other spaces shall be preserved and protected, but in a less rigorous way. These include the South Campus Green, the Bottoms, and the arboretum and Botanical Garden area. See Drawing 1, page 21, for open space locations.



Space and Associations

There are many areas of landscape that are not readily associated with a particular building or function. These are general open spaces that, in fact, may be the most important landscapes on the campus. These are the areas that weave the fabric of the campus together, making it a memorable place. These are the areas that are essential to setting the campus comfortably into its environs. These spaces have great value and should be carefully considered.

Space and Infill

Ironically, these are the areas that are under the most pressure of becoming future building sites. As the campus grows, it could either take up additional land by spreading out and expanding or by seeking areas within the core that can be filled in by new structures. If the campus continues to expand, by taking in new land, it will eventually exceed the limits of a pedestrian campus to the detriment of the University's social and intellectual responsibilities. Open space needs to be protected from haphazard infringement and degradation and a balance between expansion and in-fill should be achieved.

Space and Well-being

The open space corridors that exist on campus are vital to the health, function and beauty of the environment. As an example, the Hunnicut Creek corridor provides habitat for wildlife; provides for the stormwater management needs of the campus; and serves as an effective buffer. Also, the area known as the Campus Green, that area which links Bowman Field to the Madren Center is vitally important to the physical organization of the campus and is essential in maintaining the character of the campus landscape.



Landscape Character & Planting

Policy: Planting design should consist predominantly of mass plantings of shrubs and groundcovers, native to the region, in arrangements that are simple in geometry and form, do not require significant maintenance, and are appropriate in scale for their specific context.

Plant Life and Well-being

The appropriate use of vegetation in the built environment is a major influence on the quality of human life. Shrubs, herbaceous plant material, and trees filter pollutants in the air and water, mitigate wind and solar heat gain, stabilize soil to prevent or reduce erosion, and provide an aesthetic counterpoint to the built environment. These attributes are essential to balancing the effects of humans on the land. Furthermore, the native plants of a region provide some of the strongest cues to the unique identity of a place. In turn the creation of a healthy growing environment for the plants requires the collaboration of arborists, horticulturists, landscape architects, and native plant biologists.



Plant Life and Scale

The various landscapes are important in maintaining the human scale of the campus. Planting design should be within the concept of reasoned consistency and should reflect the nature of the place, the requirements of maintenance, and the intended aesthetic of the campus. Plantings should always be designed in the context of the greater campus. Continuity in plant selection and arrangement is integral to unifying the campus landscape.



“Circulation patterns should be regarded as major instruments for achieving better urban forms”

Paul Spreiregen



CIRCULATION

The image of the campus depends on legibility and clarity from multiple vantage points in motion, at various speeds. The range is from a walking pace of three miles per hour to a driving rate of forty-five miles per hour. The pedestrian and vehicular systems should be designed to reflect this.

Car Circulation and Entry

Policy: All planning and design for facilities near the periphery of campus should consider the impact of the project on the campus gateways. The campus road system should provide for the safe and efficient movement and parking of automobiles, and, at the same time, promote the pedestrian nature of the place.

Approach, Entry, and Threshold

The approaches to the campus are very important in that they set the tone for what is to be expected and indicate points of orientation for the visitor. They signal arrival and often stimulate a flood of memories in the returning alumni. The approaches and entrances should be gateways, not necessarily in the literal sense, but definitely in the figurative sense. There should be no ambiguity of when one enters the campus of Clemson University.

Car Parks and Structures

Parking reservoirs should be located near the campus perimeter, allowing convenient pedestrian access to the campus core while minimizing vehicular access into the center of campus. This concept depends on a strongly defined perimeter circulation system. Siting parking decks and large parking lots, and integrating them into a definable, landscaped edge that is consistent with order and continuity is as important as the equivalent goals in the campus core.

Pedestrian Circulation

Policy: Pedestrians' needs are of the highest priority and take precedence over the demands of the motorist. All planning, design, and development should support this priority while meeting the basic needs of emergency service, maintenance services, disabled individuals, and mass transit.

Walking and Beauty

Clemson University is a beautiful campus and is very enjoyable to walk. The topography of the campus provides interest and the many large trees provide shaded walks throughout much of the area. Adding further to the experience is the diversity of walkways, ranging from sidewalks on busy streets to garden paths. Walking also promotes physical well-being and, with adequate lighting and safety measures, can be pleasurable both day and night.



Walking, Campus Fabric, and Interaction

The pedestrian circulation system links the various facilities and open spaces together into a cohesive fabric for the campus community. It is also where meaningful interaction between members of the Clemson community often occurs. The essential components of the pedestrian circulation system are major walkways; minor walkways; and plazas, quads, or malls. The major walks within the pedestrian circulation system comprise the mainstream of campus pedestrian traffic. These walks should afford the most direct line to the major buildings and building groups. Secondary to the major walks is the system of minor walks, which serves each building on campus. Minor walks should be scaled to the function and character of the buildings they serve and to the open spaces they traverse.



Walkways and Courts

The plaza or court, as a defined space, is an opening or gathering place and a special feature in the circulation system. It is an essential element in providing focus and meeting opportunities on the longer walkways and a means for collecting and distributing pedestrians.



The types of outdoor open spaces suggest various aspects of Clemson's history. The field is a rural element, the quad is a feature of the military heritage, and the court is urban. By providing all types of gathering spaces the student can learn to be respectful of the rural and military heritage, and mindful of the civil, urbane way of living in years to come.

Walkways and Gardens

If we are to think of the campus as a garden, then these pedestrian sidewalks are the garden paths. They should be places of beauty, and elements of visual interest, such as specimen plantings or sculpture, should be found along the way. Also, there should be numerous opportunities to stop and sit along the paths. If Clemson University is to become a truly pedestrian campus, then the pedestrian areas should be comfortable, functional, and beautiful.

Walkways and Traffic

However, there are some areas where pedestrians must share their path with automobiles, walking in the street or through a service lane. This type of situation is highly undesirable and should be eliminated by the separation of pedestrians and automobiles wherever possible.

Walkways and Safety

Vehicular circulation should be clearly discernable, in terms of the hierarchy of various streets and drives, as well as being safe and attractive. Care should be taken to minimize possible conflicts between automobiles and pedestrians using well-marked crosswalks and curb ramps at all intersections. Also, transit stops should be safe and conveniently located.

Bicycles and Jogging

Dedicated, safe paths for joggers and cyclists should be provided, as indicated in the *Campus Master Plan*. In addition to bike lanes, racks and other means of secure storage should be available to encourage use of the bicycle.

“The terror of being lost comes from the necessity that a mobile organism be oriented in its surroundings.”

Kevin Lynch

“Unfamiliar environments make special demands upon us. Even the simplest of settings can involve a jumble of information that has to be sorted and processed before it becomes meaningful.”

Dorothy Pollet



SIGNAGE

The clarity of Clemson's image should be enhanced by both the outdoor and indoor signage systems. The public's impression of the University is a reflection of the quality of design, coherency, and consistency of these important systems. Policy: *A well-designed and consistent signage plan will aid the public in identifying and locating facilities. The system should focus on providing information to the predominant user of the Clemson campus — the pedestrian.*

Outdoor Signs

The information system on a campus reflects the image of the institution. The design, readability, and consistent placement of signage on the Clemson campus are necessary factors that help people find where they need to go in an efficient and pleasant way and thus create a positive image of the University. All signage should conform to Clemson's Sign Program. The signage information system includes campus identification at major entry points, information maps, vehicular directional signs, information kiosks, area identification, building names, building directories, temporary signs and notices, signs for special events, and banners.



Indoor Signs

The signage inside a building is equally important. All elements, such as directories, and room names and numbers, should be consistent across the campus, yet appropriate to and in scale with the interior spaces and their functions.

“In architecture, as in all operative arts, the end must direct the operation. The end is to build well. Well building hath three conditions: Commodity, Firmness, and Delight.”

Sir Henry Wotton, from “Elements of Architecture”, 1624;
Paraphrased from Marcus Vitruvius Pollio

Commodity: “That which affords ease, convenience or advantage; anything that is useful ...”

*Firmness: “... solidity, ... stability, strength ...” Delight:
“A high degree of pleasure, satisfaction of mind, joy”*

Noah Webster, 1828

“My purpose is to establish ... a high seminary of learning in which the graduate of the common schools can ... pursue ... thorough theoretic and practical instruction which bear directly upon agriculture ...”

“I trust that I do not exaggerate the importance of such an institution for developing the material resources of the State by affording to its youth the advantages of scientific culture ...”

Thomas Green Clemson



ARCHITECTURE

Architecture is the background to purposeful and beautiful outdoor space as well as the background to the surrounding landform and landscape. As the container of space, architecture must be useful and flexible and appropriately accommodate the assigned learning, living, and teaching activities that occur within. At the same time, architecture must instill in its users a high sense of pleasure.

A Pragmatic Architecture

Policy: *Campus architecture will reflect the pragmatic culture of the University.*

Clemson University was established as a scientific institution for the purpose of serving the region with the development of useful solutions to its most critical needs. This scientific, service-oriented purpose has given rise to a pragmatic Clemson culture; and consequently to the expectation of architecture that is both practical and sincere, demonstrating commodity, firmness, and delight.

“Strengthen our sense of community and increase our diversity.”

“Increase our focus on collaboration.”

Clemson University 2010 Goals

“The job of buildings is to improve human relations: architecture must ease them, not make them worse.”

Ralph Erskine

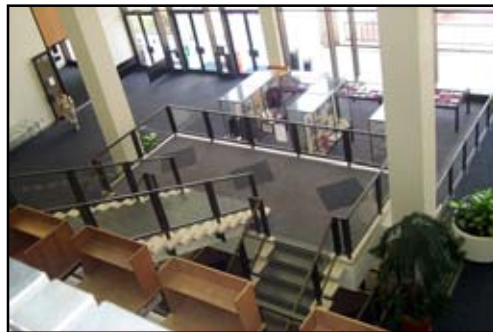
“Excel in teaching, at both the graduate and undergraduate levels.”

“Foster Clemson's academic reputation through strong academic programs, mission-oriented research and academic centers of excellence, relevant public service and highly regarded faculty and staff.”

Clemson University 2010 Goals

“Maintain an environment that is healthy, safe and attractive.”

Clemson University 2010 Goals



Commodity — Utility

Policy: *Campus architecture will be designed and maintained to advance the design principle promoting social and intellectual interaction.*

Campus Architecture and Interaction

At Clemson, part of a building's purpose is to create an environment that promotes intellectual and social interaction. Buildings should provide informal learning spaces that encourage interaction among users. If possible, these spaces should be located near high traffic areas such as lobbies; toilets; stairs; elevators; copying and vending areas. If feasible, provide corridors wide enough for people to stand and talk comfortably without interrupting normal pedestrian circulation. Provide stairs spacious enough to encourage conversation, kitchenettes adjacent to assembly areas, and furnishings designed and arranged to promote discussion.



Campus Architecture and User Needs

Another of the purposes of architecture at Clemson is to accomplish specific practical objectives. Buildings should be composed of spaces that are sized and arranged from a thoughtfully considered space plan, in turn based on a thorough analysis of user requirements. Each building should provide for the physical and psychological needs of its users so that the fundamental purposes for occupying the building are maximized. This includes such provisions as appropriate for thermal comfort, indoor air quality, and access to daylight and views that support the productivity, health and performance of building occupants. In addition, because programs change over time, buildings must be flexible.

Campus Architecture and Sustainability

Campus architecture should support the University's commitment to optimize energy usage, protect air and water resources of the general environment, and conserve materials and resources associated with the construction of buildings. The LEED system is but one example of the type of standards that the University will consider for sustainable design.



“All architecture is shelter, all great architecture is the design of space that contains, cuddles, exalts, or stimulates the persons in that space.”

Phillip Johnson



“Architecture, in general, is frozen music.”

Friedrich Wilhelm Joseph Von Schelling



“Architecture is inhabited sculpture.”

Constantin Brancusi

Firmness — Durability

Policy: Buildings will be solid, stable and strong — both physically and visually — yet allow for flexibility and change.

Architecture at a Scientific Institution

In every aspect, architecture is held in check by the laws of physical science. All architectural components are subject to the laws of statics and dynamics. In a scientific institution these components must have successfully passed the tests of scientific experimentation. The architecture of a scientific campus should include materials that are the logical expression of material properties and laws. The systems and materials should be durable — having demonstrated longevity and permanence — and consequently capable of creating a secure sense of place for campus inhabitants. To be successful, the architecture must be logical; it must accomplish certain mechanical purposes; and, it must be constructed well. Contemporary thought in architecture values “light construction” along with weighty construction; a “dynamic, disordered form” along with a stable, logical form.

Measuring Firmness

Firmness necessitates that buildings and their components, when put in use, will endure without significant failure over the long term. The primary tool for measuring firmness is life cycle costing — an economic assessment of competing design alternatives, considering all significant costs of ownership over the economic life of each alternative. To be most effective, the structural frame should be designed to allow for changes in space configurations and adaptations of systems over time.

Delight — Beauty

Policy: Campus architecture will be beautiful and provide delight.

The Means to Delight in Architecture

The buildings of the University should be beautiful and provide delight. This delight may be derived from successfully achieving “utility.” A pragmatic worldview associates beauty with utility. If a building successfully fulfills the principles and other design guidelines of the University, in a certain sense, it will be beautiful. In addition, a building may provide delight because it successfully embodies “firmness.” Or, the means of providing delight may be independent of both “utility” and “firmness.” Nevertheless, architecture must provide intellectual and spiritual satisfaction; it must provide pleasure; it must provide delight.

Architecture and the Individual

University buildings should be concerned with the welfare and dignity of each individual in the Clemson community. The buildings should be pleasant for both their users and for those on campus that experience them only from the outside. Buildings should be welcoming, with clearly defined entrances, and achieve a symbiotic relationship between the indoors and the natural environment outdoors. Building exteriors should be pedestrian-friendly and scaled to relate to the size of the human form.

“Architecture is the triumph of Human Imagination over materials, methods, and men, to put man into possession of his own Earth. It is at least the geometric pattern of things, of life, of the human and social world. It is at best that magic framework of reality that we sometimes touch upon when we use the word order.”

Frank Lloyd Wright

“Always design a thing by considering it in its next larger context — a chair in a room, a room in a house, a house in an environment, an environment in a city plan.”

Eliel Saarinen



Honest Architecture

The architecture should be reflective of the building's use, integrating the interior and exterior for a unified building design.

Relationship of Architecture to the Natural Environment

Buildings should engage with the adjacent natural environment; capturing outdoor views for building occupants from regularly occupied areas such as classrooms, laboratories and offices. As much as practical, plan buildings to bring the natural environment into the building interior.

Policy: A building will be visually compatible with other buildings in its immediate context and with the campus as a whole.

Relationship of Architecture to Historic Resources

Repetition of historic colors, materials, proportions, and roof forms should be the primary method for creating and maintaining an architecturally unified campus. Exterior materials of the historic campus — red and brown brick, stone, concrete, and clay tile and metal roofs — should be used as the primary source of a color and material palette for buildings both inside and outside the historic district.

Architecture Inside the Historic District

Without creating a false history, new buildings or additions in the historic district should either be designed with similar attributes of the original building, or designed to be compatible in a manner that enhances the original work.

Architecture Outside the Historic District

New buildings and additions outside the historic district may be designed with less constraint regarding form, material, or detailing. Nevertheless, they should be sensitive and respectful of their immediate contexts and should contribute to the unity of campus architecture as a whole.

Building Height

The height of a new building should be respectful of the other buildings in that context and to the outside space that it contains. In most instances, intellectual and social interaction is encouraged among people when they work or live on one floor. For that reason, buildings with fewer levels are preferred. In general, building heights should be limited to four stories. When necessary, exceptions will be considered subject to special review.

In the past, "...architects created buildings for ... universities that were designed to meet the needs of specific programs or individual faculty. It was assumed that these programs would remain constant, and buildings were constructed accordingly. They were solid and often inflexible. Today buildings must be designed to accommodate change."

Arthur J. Lidsky, AICP

"The arts provide a more comprehensive and insightful education because they invite students to explore the emotional, intuitive, and irrational aspects of life that science is hard-pressed to explain."

Charles Fowler

"The arts are acts of intelligence no less than other subjects. They are forms of thought every bit as potent as mathematical and scientific symbols in what they convey."

Charles Fowler

"The arts are so close to our psychological and biological core that rather than think of these courses as a sort of whipped cream or luxury, they must become basic experiences in education."

Abraham Maslow



FLEXIBILITY / EXPANSION

Policy: *New facilities will be designed and constructed for first uses as well as possible next uses.*

Continuity and Change

The assumption in higher education today is that programs, teaching, research, and technology will change over time. The rate of change is increasing in all fields and services, but it is especially rapid in the sciences and engineering. New facilities on the Clemson campus should be designed so that interior space can be adapted to new use patterns. To achieve this degree of flexibility, building components such as walls, wiring, information technology services, and other systems should be designed and configured so that changes can occur. A broader issue is the possible need for more space in the future. A new building should be designed and sited so that space can be added. As part of new building design, the architects' charge will be to present future expansion possibilities to the University.



PUBLIC ART

The presence of art, in all forms, on the campus is an extension of the University's values. Beauty is found not only in the creation of practical knowledge and tools for the betterment of humanity, it is also found in art which stimulates and provokes an intellectual or emotive response in the viewer.

Art on the Campus:

Policy: *All capital development projects that are anticipated to exceed two million dollars will consider the benefits of public art and will apply 1/2 of 1 percent of the construction budget for such work. In addition, extreme care will be exercised in the location and subject matter for memorials and other forms of commemoration.*

Landscape/Art/Buildings

Public art is a very important ingredient in the campus landscape of Clemson University. It is, indeed, essential to creating a campus that contributes to the educational process and to the intellectual and emotional enlightenment and development of its constituents. Exposure to art and appreciation of art is essential to the development of well-rounded, educated individuals.





Art and Interaction

Public art and monuments promote social gathering and interaction and significantly contribute to place making. The piece of art itself automatically becomes an identifiable point, a landmark, in the campus environment and often becomes a place of gathering, identification, and orientation. Public art can reflect the history or culture of the place and serve as an intellectual and emotional stimulus. Art in the university setting exists mainly for the sake of the campus community, providing another level of meaning in the landscape.



The Place of Art

Because of its importance in the life of the community, art should be thoughtfully executed and placed. Placement of each artwork or memorial should relate the work to its immediate surroundings, its context within the campus. Public art should not be placed where it impedes pedestrian movement. Public art should be vandal-resistant and not require on-going, significant maintenance needs.

Art and Memorials

The greatest care should be taken in the design of public memorials — sculptures, buildings, fountains, or other forms of commemoration. Unlike most of our built environment, commemorative works are kept in the public trust in perpetuity. Thus, their siting, design, and quality of materials should be given extremely careful consideration.



Planning **STANDARDS**

INTRODUCTION

The purpose of the Planning Standards is to provide information that will inform and guide the planning of facilities on the Clemson University campus. This information will be used predominantly in the pre-design phase of a potential project. Typical users of this information will be Clemson's administration, faculty, and staff. It will be used in evaluating potential sites for buildings, massing constraints, access, and impacts on parking. Consultants to the University, involved in these planning efforts, will use this information in the early planning stages. The Green Book will continue to be a primary reference source.

The information provided in the Planning Standards is a supplement to the Campus Master Plan, the Space Utilization Study, and the Design Standards/Green Book. This information does not supersede any of those documents and discrepancies between documents should be brought to the attention of the Campus Master Planner.

SITE DEVELOPMENT GOALS

The planning goals set forth in the 2002 Campus Master Plan are to become part of these standards. Planning factors are highlighted below.

The Campus Green will be enhanced and extended south from Bowman Field to the Madren Center and west along Highway 93. President's Park will also be preserved and strengthened, and will complete the green buffer along Highway 93. Other open areas to be preserved and enhanced are the historic Core Campus Green, Woodland Cemetery, the Calhoun field laboratory or the Bottoms, and the arboretum and Botanical Garden area.

The pedestrian nature of the Main Campus will be reinforced. This will be accomplished by enhancing open green space and pathways, and by replacing parking on Core Campus roads with parking reservoirs on the campus periphery.

Outreach to the community will be reinforced. This will be realized by making the campus inviting and visitor access easy. Perimeter Road will be a zone to engage the public. This road — the *avenue of engagement* — will provide access to community facilities, which will be served by adequate parking facilities. Attractive landscaping and signage will further enhance this area.

Sites for new buildings on the Main Campus must be carefully planned. When a new facility is designed, the building site must be selected to fit within the broad campus design parameters. Designating open space and other space that should not be built upon is essential to preserving the integrity of the Clemson campus.

OPEN SPACE

Dedicated Open Space, as defined by the Campus Master Plan, shall be protected from all types of campus development. These areas include Bowman Field, President's Park, the North Campus Green, the historic Core Campus Green, and Woodland Cemetery. Landscapes to preserve are spaces that shall only be altered with just cause and any change shall be carefully considered. Spaces in this category include the South Campus Green, the Bottoms, and the arboretum and Botanical Garden area.

Additionally, those areas identified as “*Landscapes to Protect*” and “*Landscapes to Maintain*” in the *Landscape Assessment* (June 2001) shall be afforded a high level of protection and may not be impacted by development without the express permission of the Campus Master Planner.

Open Space areas that are environmentally sensitive, such as major drainage-ways, shall also be protected from impact of development by vegetative buffers. Buffers along streams or creeks shall be a minimum of 35 feet from the top of the bank. These buffers shall be left natural where significant vegetation exists or planted with indigenous plant material to help prevent erosion.

Generally, sites with slopes of 3:1 or greater will be protected from development. Steeply sloped areas may be developed only with the express permission of the Campus Master Planner and site solutions must address the issues of erosion and drainage.

FACILITY PLANNING

The general development pattern on the Main Campus is rational and workable in that the various uses are clustered together. In any space reallocation plans as a general principle, departments should be kept together and Budget Centers should be consolidated.

The process for initiating new construction or renovation of an existing facility should begin with a thorough investigation of need. To help in substantiating need, an outline facility program should be developed that reflects the requirements of the users involved and defines and quantifies the individual spaces projected. To assist the facility planner, space allocation standards and a method for modeling space is included in the Space Utilization Study. The facility program can be expanded to include the necessary design detail, once the project is viable.

The budget for construction cost will be based on the facility program. The outline facility program will define an amount of assignable square footage. This number can be translated into gross square footage by using multipliers appropriate for the building type. The resulting gross square footage will be the target size of a new building and the basis for a construction cost budget. If the project is a renovation, the outline facility programs will be the basis for testing whether the existing building is appropriate for the desired use, and if additional space will be required.

BUILDING MASSING

Generally, buildings on the main campus should be limited to four floors. The Campus Master Planner must approve exceptions to this rule.

FLOOR AREA RATIOS

The impervious area of a building “site” shall not exceed 60%. Impervious areas include the building footprint, paving, courtyards, service areas, and sidewalks. For the purpose of this document, the “site” shall be measured as:

- Half of the distance to the next building or 1.5 times the overall, above grade height of the subject building on the facing side, whichever is less;
- Back of curb for adjacent drives or parking areas;
- Half of the average distance from the building to prominent landscape features; or
- The edge of property lines, rights-of-way, vegetative buffers or other setbacks.

PEDESTRIAN WALKWAYS

The minimum width of campus walks shall be six feet (6'-0") for walkways in general. The vast majority of campus walks will be wider than six feet in order to handle pedestrian loads during class change.



BICYCLE PATHS

Where dedicated bicycle paths are provided they should consider safety issues of design speed, sight lines, stopping distances, curve radii, intersection design, surfacing, and protection from hazards.

In general arterial roads should have a bike path that roughly parallels the road but does not share the right of way. All collector roads should have a dedicated bike lane within the right of way and bikes should share distributor roads with vehicular traffic.

Bicycle paths should have a minimum width of eight feet (8'-0") or ten feet (10'-0") where shared with pedestrians. There should be a minimum of eight feet (8'-0") above the path, measured from the edge, that is clear of all side and overhead obstructions. Where possible, paths should be widened slightly in a curve and super-elevated at a maximum rate of six inches (6") per foot. This is especially important for short-radius curves.

RUNNING PATHS

Running paths may be shared with either bicycle paths or pedestrian paths as long as paths are of adequate width to accommodate both.

The design criteria for running paths are the same as bicycle paths in terms of sight lines and intersections. The materials, however, should be more forgiving, using asphalt instead of concrete wherever possible, or even softer surfaces depending on conditions.

Dedicated running paths should have a minimum width of four feet (4'-0") in areas where wider paths are not possible. All other areas should have a minimum width of six feet (6'-0").

ROADWAY STANDARDS

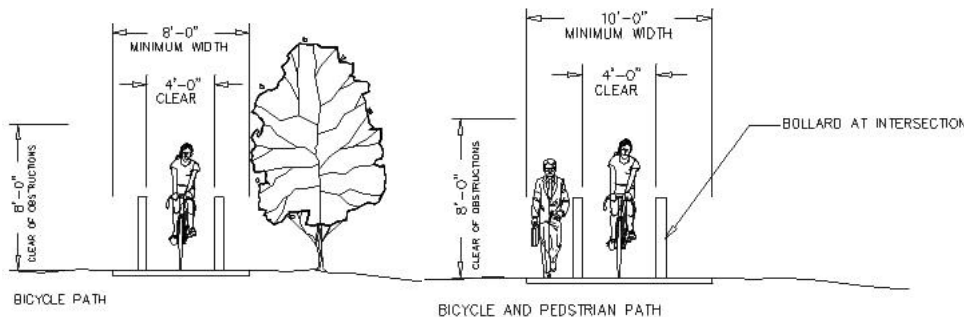
Roads on the Clemson Campus shall accommodate vehicular traffic while ensuring pedestrian safety, and shall retain the aesthetic qualities of the campus. For the purposes of this document, all Roads on the Clemson campus will be described as the following:

- Arterial Roads
- Collector Roads
- Distributor Roads

Arterial Roads

Arterial Roads are for moderate-speed traffic looping around the periphery of the campus. These roads will bring traffic to and from the campus and provide linkages to collector roads and parking areas. These roads serve as the primary entrance into the campus and consequently provide the initial impression of the campus. These roads include:

- Highway 76
- S.C. Highway 93 (Walter Cox Boulevard)
- Perimeter Road (Silas M. Pierman Road)



Highway 76 serves as the entrance from the north and south and, as such, shall be landscaped to emphasize its “gateway” character and shall receive proper maintenance.

- No buildings or parking areas shall be permitted within the corridor.
- Pedestrian crossings shall be permitted only at the signal-controlled intersection with Perimeter Road.
- Funds permitting, bikeways shall be developed with appropriate signage.

S.C. Highway 93 from the overpass at Highway 76 to the Hartwell Bridge serves as the entry leading to Tillman Hall and Bowman Field.

- Protecting the dedicated open space areas of President's Park and Bowman Field will preserve the existing character of the approach along Highway 93 from the east.
- No buildings or parking areas shall be constructed in these open spaces or within 150' of the southern edge of the highway and west campus, (with the exception of Riggs Field and Sloan Tennis Center), or along the lake dike.
- Pedestrian crossings shall occur where signals control vehicular traffic.

Perimeter Road and Newman Road connect U.S. Highway 76 and S.C. Highway 93, and Highway 93 and Perimeter Road, respectively. This forms a loop on the southern edge of the campus core. They will serve as the major transportation corridor for visitors, staff, and commuters.

- Provide a 20' utility easement, free of trees and shrubs, along both sides of the pavement to accommodate future utilities.
- Provide a 75' parking setback and a 100' building setback.
- All intersecting roads shall have a 45' visibility triangle, measured from the edges of the roads.
- Pedestrian crossings shall occur at traffic signals and shall be well delineated.
- Provide a bicycle path along Perimeter Road from U.S. Highway 76 to S.C. Highway 93, and on the western side of Newman Road between U.S. Highway 93 and Perimeter Road.

Landscaping Requirements on Arterial Roads

- Informal, naturalistic clusters of large, native, deciduous and evergreen trees
- Masses of large shrubs
- Create a sense of arrival by bringing material close to the road and then opening these plantings up at entry points.

- Median plantings can be utilized to supplement this effect and create emphasis and hierarchy. Groundcover versus grass on the ground plane in these medians is preferred because of mowing issues.
- The use of fine-textured grasses and overseeding in winter will enhance the lawn effect.

Collector Roads

Collector Roads provide access to the campus core from the Arterial Roads. These roads will also collect traffic from parking areas and from Distributor Roads. They will be more pedestrian in scale and have more uniformity. These roads include:

- Cherry Street Road
- McMillan Road
- Newman Road (Consider as a collector road.)
- S. Palmetto Boulevard
- Williamson Boulevard Road

General Requirements

- Parking Setback to be 40' from edge of road.
- Building setback shall be 75' from edge of road.
- Maintain 150' separation between roads and parking access.

- All intersecting roads shall have a 45' visibility triangle, measured from the edge of the road.
- Pedestrian crossings shall be provided at all Collector Road intersections, and be well delineated. Provide similar signage, lighting, and landscaping treatments to establish uniformity and pedestrian scale.
- Provide similar treatment to the entrances of parking areas on Collector Roads to differentiate them from Arterial Roads.
- Maintain a 25' visibility triangle, measured from the edges of the roads, at parking lot entrances.

Landscaping Requirements on Collector Roads

- Informal groupings of deciduous and evergreen trees under planted with flowering trees can be brought up to the roadside edges, no closer than 15' to accommodate utilities.
- Planting on these roads can also double as a screen from parking areas.
- A streetscape effect can be achieved with similar trees planted in sequence with a common distance “on center.” This will also establish uniformity and identity.

Distributor Roads

Distributor Roads are low speed access roads within the campus core building, parking, and service areas. They incorporate on-street parking for visitors, staff, and students and are shared by vehicles and bicycles. Their character is extremely different from Arterial and Collector Roads. They are classified as two types:

- Distributor/Collector
- Distributor/Cul-de-sac

Distributor/Collector Roads connect parking and service areas with Collector Roads and are generally vehicular in nature. These roads include:

Avenue of Champions
Bryan Street
Calhoun Drive
Centennial Boulevard
Fernow Street
Fort Hill Street
Heisman Street
Klugh Avenue
Old Stadium Road
Press Road
Ravenel Road
Sherman Street

Primary characteristics:

- Road widths shall be 20' where no parallel parking is present.
- Horizontal alignment of these roads shall incorporate turning radii and clearances that are in accordance with fire department regulations.
- They shall be designed to accommodate vehicles having special requirements such as service vehicles or buses, and shall be evaluated individually.
- Intersections of all Distributor and Collector Roads shall have a 25' visibility triangle, and intersections with Arterial Roads shall have a 45' visibility triangle, measured from the edges of the roads.
- Building setback shall be a minimum of 45'. In every case, the setback shall accommodate future pedestrian walks and utility requirements in the area.

Distributor/Cul-de-sac Roads shall be of pedestrian scale throughout the entire road and intersection.

These roads include:

Alumni Circle
Barre Street
Baton Circle
Bradley Street
Collings Street
Daniel Drive
Dunavan Road
Hunter Street
Jersey Lane
Martin Street
Mills Road
Morrison Street
North Palmetto Boulevard
Parkway Drive

Primary characteristics:

- Bicycles share the road with vehicles; signage shall designate Distributor/Cul-de-sacs as “Bike Routes” and require bikes to yield for pedestrians at pedestrian crossings.
- Roadway/Parking aisles shall be 24'-0" wide.
- 90-degree parking spaces measuring 9'-0" x 18'-0" (face of curb to aisle) shall occur only on one side of the road, with the exception of Morrison Road.
- Cul-de-sacs on these roads shall be designed with the minimum turning radii determined by fire department regulations and the required turning radii for service vehicles. Bus drop-off/pick-up needs shall also be addressed.

- Cul-de-sacs that must be shared by vehicles, pedestrians, and bicycles shall be designed with pedestrian paving materials, furnishings, plantings, lighting, and other devices to identify the cul-de-sacs as a pedestrian zone. Bollards can also provide security when used to delineate the end of vehicular traffic at locations where walks join cul-de-sacs, and where service vehicles must share walkways.
- Building setback shall be a minimum of 25'. In every case, the setback shall accommodate future pedestrian walks and utility requirements in the area.

Landscape Requirements on Distributor Roads

- Keep plant groupings close to road so that ultimately, the tree limbs will overhang and cause an enclosed effect. Keep a minimum 12'-0" vertical clear space for the passage of cars beneath limbs.

- Because of the pedestrian scale of these roads, the material will be viewed at close range. Pruning and maintenance is essential for aesthetics and safety. Always use accessible material.
- Delineate pedestrian crossings with feature material.
- Plant the centers of cul-de-sacs, when space permits, with trees, shrubs, and groundcovers.

PARKING AREAS

No new parking lots over 100 spaces in size shall be constructed on the Clemson campus.

The Board has approved the construction of carefully planned, designed, and landscaped parking decks to increase or replace parking, rather than expanded on grade parking lots.

Existing Parking Lots shall be renovated, as possible according to the following criteria:

- Parking lots shall be redesigned as a series of smaller areas providing space for no more than 300 cars, with a 20' minimum planted buffer between areas.
- Handicapped spaces shall be provided per the requirements of the American's With Disabilities Act.
- Parking space dimensions shall be a minimum of 9'-0" x 18'-0" and shall have an aisle width of 24'-0".
- Motorcycle/scooter parking spaces shall be provided in all lots located close to dormitories and walks that connect the main lot to the buildings they serve. They shall be located such that maneuvering cycles in and out of spaces does not interfere with automobile traffic. They shall measure 5'-0" wide by 11'-0" long.

- All lots shall incorporate visual screen plantings to enhance the aesthetics of the campus environment and to reduce the impact the lot will have on adjacent roads, buildings, and open spaces.
- The screen, however, shall not be so dense as to preclude the opportunity for surveillance of the lot by campus security and passersby from surrounding roads.
- A maximum of 12 parking stalls will be allowed between tree islands.
- Tree Islands must have a minimum width of 9'-0".
- Deciduous Shade trees must have a minimum setback of 4'-0" from back of curb and under planted with groundcover and/or mulch.

TRANSIT STOPS

Each CAT stop shall be designed with:

- Ample space for pedestrians to gather with seating, trash receptacles, lighting, and shelter from inclement weather.
- Directive signage indicating the location of the stop and its relationship with the transit system on campus.
- Safe routing for bicycles through the bus stop.