2012 CAMPUS DESIGN GUIDELINES

EMORY
UNIVERSITY

1 INTRODUCTION

The Emory Campus is a distinctive community focused on academics and research, service and leadership, and collaboration and personal growth. The physical campus is memorable as a place of natural beauty, as a collection of buildings in harmonious conversation, and as a system of movement and exploration that intrigues and soothes the individual soul. An understanding of how these concepts intertwine and configure new patterns and design opportunities is the required discipline for the architect of any new Emory landscape and building.

Within the overriding context of Atlanta, a major urban center built in the Appalachian piedmont, Emory has evolved to become an internationally recognized center of learning and healing. In the last 15 years, the campus identity has solidified into a language easily recognized and shared, a visual dialogue that uplifts and celebrates the very foundation of the educational enterprise.

It is the responsibility of the designer to master the language of Emory in such a way as to be an interpreter, developing proven concepts into new and creative constructions. The Emory designer walks the multiple paths of discovery, invention, and assimilation.

The original Emory campus was planned by Henry Hornbostel. In 1914–19, his New York firm of Palmer, Hornbostel and Jones designed and built 13 structures on the Emory campus, all finished with local marbles from Tate, Georgia, establishing a distinctively Emory texture.

Hornbostel's architectural vision, coupled with his deep regard for the natural features of the landscape, gave birth to the Emory campus plan, which organized the central quad between two forested ravines, allowing for broad vistas of structures set comfortably within a woodland. The addition of buildings over the next 30 years maintained this idyllic setting. Through the end of World War II, the campus remained classically organized, with new buildings inspired by the original Renaissance architectural vocabulary.

This order began to break down after World War II as accommodating the automobile became a significant factor. Roadways were changed, added, and redirected for the purpose of easy access. Buildings were then sited on the roadways; Emory began to lose its sense of collegiate organization. Experiments with modern architectural forms in the 1970s ignored the original design etiquettes.

By the late 1980s, many sensed the need to return to the basics. In 1996 the university began a master planning effort that resulted in the 1998 Emory University Campus Plan: A Framework for Physical Development.

The 1998 campus plan was the result of a collective effort of the internal and external communities. Staff, faculty, students, and neighbors came together to identify challenges,

opportunities, and relationships. The plan has become the solid foundation for the discussion of physical growth and change on the Emory campus. This campus plan was a milestone in Emory's history. It stopped the random construction of increasingly eclectic architecture, brought together disparate groups of campus interests toward a common cause, and identified a rational growth process that involved community participation.

In 2005, the university reexamined the campus plan documents and released the 2005 Campus Master Plan Update. The revised document expanded on the fundamentals of the previous master plan to insure the coherence and quality of the university's grounds and buildings.

This document, along with the university's 2005 Campus Master Plan Update and the Campus Design and Construction Standards, outlines a course of action to guide the design of Emory's grounds and buildings. In so doing, these guidelines are not intended to prescribe solutions nor limit creativity, but rather establish a distinct language of design manners in a way that respects Emory's past and addresses its current challenges, while being inventive in establishing its future.

The following seven principles provide the overarching foundation for physical planning on the Emory University campus.

Intellectual Community
The physical manifestation of the campus must be created through a network of buildings and outdoor spaces that promote interdisciplinary opportunities, connecting disparate units of the university through a network of outdoor spaces.

A Walking Campus
The campus must be designed predominantly for pedestrians and bicyclists, with vehicular movement elegantly accommodated. Existing surface parking lots must be incrementally restored from car places to people places.

Symbolic Centers and Edges
Buildings and grounds will respond to an inward focus on learning and an outward focus on community.

An Emory-Based Language
Buildings and grounds will grow from an understanding and respect for Emory's history and community.

Environmental Stewardship
Mindful of the interrelationship of human and natural systems, Emory will create a sustainable campus that conserves natural resources, restores environmental quality, and protects biodiversity.

Enlightened Frugality
All solutions to physical planning will be comprehensive. Building placement, traffic and parking, engineering systems, natural systems, aesthetics—all must be woven together to form a tapestry of buildings and spaces that foster community.

Sustainable Implementation
Future decisions pertaining to the physical development of the campus must reflect these guiding principles.

The natural setting and planned landscape shape the context of the Emory built environment. Full of tall trees, native shrubbery, and beautiful seasonal plantings, the campus landscape is consistently identified as attractive and memorable.

Another more recent defining element of the campus is the wholehearted adoption of sustainable construction, culture, and lifestyle. Emory, as an early member of the US Green Building Council, has been a leader of building green for the last ten years. It is Emory's policy that all new capital projects be designed to receive LEED silver certification.

Emory has a very robust recycling program. Collection of recyclables occurs in special bins located throughout campus, both interior and exterior. The designer is responsible for the allocation and serviceability of collection points.

Sustainable food gardens are also prevalent on the campus; located in approved areas, these special gardens demonstrate and educate. Their care comes from students, staff, and faculty, bringing diverse people together with a common interest.

The unique campus character of Emory University is a direct result of Henry Hornbostel's classical training as an architect. Hornbostel felt that the rolling forested landscape of Druid Hills evoked qualities similar to the landscape of northern Italy. Using the precedent of the Italian Renaissance villa, Hornbostel designed the quadrangle and the first buildings of the university to nestle into the larger landscape. The existing landscape was not seen as an impediment to design but as features that would embellish the design. The ravines provided the opportunity to separate areas of the campus and clearly delineate academic, medical, religious, and residential uses from each other.

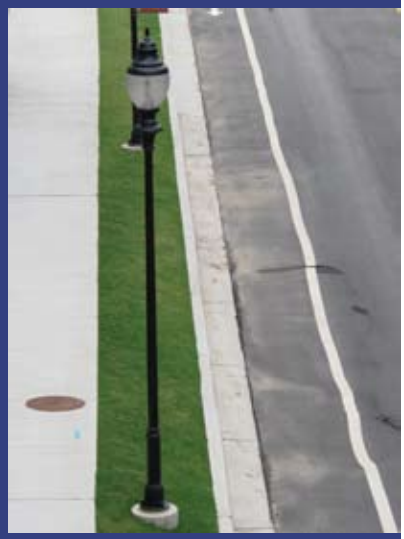
Though the ability to segregate uses is long past, the idea of nestling the architecture into the landscape is still of critical importance to the character of the campus. Using Hornbostel's principles, buildings should show a stewardship of the land, balance building and open spaces, and provide a consistent architectural language.

"Universal design is a methodology for creating spaces, products, and communication methods such that they can be used by the broadest possible range of users without adaptation or specialized design. It is not a specific style, but rather a reference to the design process that has as its aim a fundamental responsibility to the experience of the user."
—Excerpt from the Report of the Sustainability Committee, 2.2.2006

Emory promotes the design standard requiring accessible connections between university buildings, natural areas, businesses, and living and social spaces. Although challenged with differential terrain and various impediments of the hillside community, the Emory campus experience must allow for the broadest diversity and ease of accommodation of all groups of people. Designers must incorporate into their designs the ability for universal access to the front door, the main entry, of a building. And the movement between these front doors must be easily understood, traveled with ease, and mapped for public reference.

Likewise, outdoor areas should be accessible and offer opportunity for participation in events and spontaneous activities by the widest range of people. The ability to interact with the natural setting is as important as the welcome and gracious acceptance of people of all types to the Emory campus.

2 LANDSCAPE



As part of the 2005 Campus Master Plan Update, Emory University adopted the Land Classification Plan to guide the future development of the campus. The classification system categorizes university land holdings into one of four classifications: preserved land, conserved land, managed land, and developable land. In addition, bodies of water are listed separately and there is a restricted area overlay. The restricted areas include land that is within stream buffers, floodplains, or other areas that are restricted from development by law or ordinance.

This classification system serves to support the new Campus Plan Guiding Principle on environmental stewardship: "We are good stewards of our resources and the environment, mindful of the interrelationships of all human and natural systems on our campus. To that end, we must seek alternative practices and strategies to create a sustainable campus that conserves natural resources, restores environmental quality, and protects biodiversity."

Design teams should be mindful of the classification of their project site and adjacent areas to ensure that impact to sensitive areas is minimized.

The following are descriptions of each of the land classifications. The classifications have been categorized from the most restrictive (land least suitable for development) to the least restrictive (land recommended for development). Each classification includes a list of allowable land-disturbing activities.

Preserved Land: 306 acres (42% of campus area)
This classification includes areas that should not be developed due to unique ecological value. Land in this classification is located primarily on the northern edge of campus and includes the Lullwater Estate, Hahn Woods, Houston Mill Forest, Wesley Woods Forest, and Baker Woodlands. The value of these properties has been clearly stated in the introduction to the Murdy-Carter Report:

Some of the best-preserved, hardwood forests in the entire Piedmont Province of the southeastern U.S. occur on property belonging to Emory University. The very finest of Emory forests occur within the Lullwater Estate and on north-facing slopes and ravines bordered by the South Fork of Peachtree Creek.

Mature uncut forests are rare in Georgia south of the Appalachian Mountains. Most original forests of the Piedmont

region were removed and the land used for growth of cotton, corn and other crops. After the collapse of southern agriculture in the early part of this century because of soil depletion and the boll weevil, much of the land reverted to "second growth" forests whose species composition and ecological character are very different from the original Piedmont forests.

For a number of reasons, including perhaps its rolling topography, most of the land in and around Atlanta was never given over to cropland. Residential areas of metro-Atlanta are among the most attractive in the country because of an abundance of trees that were part of an extensive primal forest. Until recently, scattered remnants of the original Piedmont forest were common in metro-Atlanta. Most of these have been destroyed in the wake of explosive urban development that has characterized the past two decades.

Mature forests like those at Emory are self-perpetuating, complex associations of living species, the products of millions of years of evolution and are virtually impossible to replace or re-create if lost. The Emory forests represent a natural resource even more valuable than the much-acclaimed Fernbank Forest in terms of the diversity of species, the presence of rare and endangered species and the absence of human disturbance. In nearby Fernbank forest, the canopy is similar in species composition to what it was centuries ago, but the herb layer on the forest floor has been greatly disturbed. Several forests on Emory property, especially the one bordered by Wesley Woods and Peachtree Creek are near-original throughout. Such intact communities are exceedingly rare!

The future well-being of the human species will hinge on the depth of our understanding of the natural resources which provide our most basic needs, and on the depth of our commitment to responsible stewardship of these resources. Providing students with a sound ecological perspective on the world should be an essential part of any liberal arts curriculum. Emory, with its multidisciplinary program in Human and Natural Ecology and its well-funded research programs in forest ecology is in an excellent position to provide students with a solid grounding in the principles of ecology and population biology. Emory is unique among major universities and colleges by being endowed with a wealth of natural resources adjacent to the campus where students can acquire first-hand experience in the scientific study of the structure and function of ecosystems. This experience in understanding natural systems is essential

to the liberal education of those citizens who will make critical societal decisions in the future.

The following activities are acceptable in areas with this classification.

- Stream, streambank, or forest restoration/maintenance.
- Maintenance of existing utilities.
- Maintenance of existing hardscape.
- Renovations to existing facilities.
- Removal of existing structures, walks, paving, utilities, etc.

The preceding list needs to be further developed to fully cover all possible land disturbances. It is recommended that management plans similar to the Lullwater Comprehensive Management Plan (LCMP) be developed for each preserved area. In regards to activities within the Lullwater Estate, the LCMP shall prevail in all land-use decisions.

Conserved Land: 44 acres (6% of campus area)

This classification includes areas of land valued for their unique cultural history and/or their contribution to the visual identity of the campus landscape. Land in this classification is located primarily within the historic campus core. The quality of these landscapes enhances the aesthetic appeal of the campus and creates the archetypal university-in-a-forest atmosphere cherished by students, faculty, alumni, staff, and visitors. From a land-use perspective, this classification already has been developed to capacity (additional buildings would disrupt the existing aesthetic quality and may harm the Emory cultural history); only very limited additional development could be achieved in these areas and would be subject to extremely restrictive protocols.

The following activities are acceptable in areas with this classification.

- Stream, streambank, or forest restoration.
- Maintenance of existing and construction of new utilities.
- Maintenance of existing and construction of new hardscape.
- Building additions to existing facilities given the above stipulations.
- Renovations to existing facilities.
- Removal of existing structures, walks, paving, utilities, etc.

It is also recommended that management plans be developed for several areas of land classified as conserved, most notably the Quad and surrounding historic campus core.

Managed Land: 217 acres (29% of campus area)
This classification includes areas of land that already have some level of development on them, but are not significant contributors to the cultural history of the campus. Land classified as managed can accommodate limited redevelopment and should be considered for development only if additions are proposed to existing facilities, program adjacency is crucial to functionality, or redevelopment of the site uses the land more efficiently (increases density). Development of these sites will require restoration of landscape connectivity, preservation of the tree canopy, and reduction of storm water flows. Every effort shall be made to achieve these requirements on-site, but in some cases it may be necessary to complete them at an off-site location within the Emory Campus. Much of the land in this classification has existing low-density development. Redevelopment of these parcels to a higher density may be the prudent course to satisfy the intents of the Campus Plan Guiding Principles. In addition, projects that redevelop these areas shall meet Emory University LEED requirements, the intents of the Guiding Principles, and the Campus Design Guidelines and provide opportunities for enhancement of the campus landscape environment.

The following activities are acceptable in areas with this classification.

- Stream, streambank, or forest restoration.
- Maintenance of existing and construction of new utilities.
- Maintenance of existing and construction of new hardscape.
- Additions to existing facilities given the above stipulations.
- Construction of new facilities given the above stipulations.
- Renovations to existing facilities.
- Removal of existing structures, walks, paving, utilities, etc.

Developable Land: 142 acres (19% of campus area)
This classification includes portions of the Emory Campus that are preferred for redevelopment/development prior to the use of any other land classification. Development of these lands is preferred because it results in the least amount of impact to the existing campus environment and aesthetic. Land in this category is located throughout the campus and includes very low-density development and surface parking lots. Projects that redevelop these areas shall meet Emory University LEED requirements, the intents of the Guiding Principles, and the Campus Design Guidelines and provide opportunities for enhancement of the campus landscape environment.

The following activities are acceptable in areas with this classification.

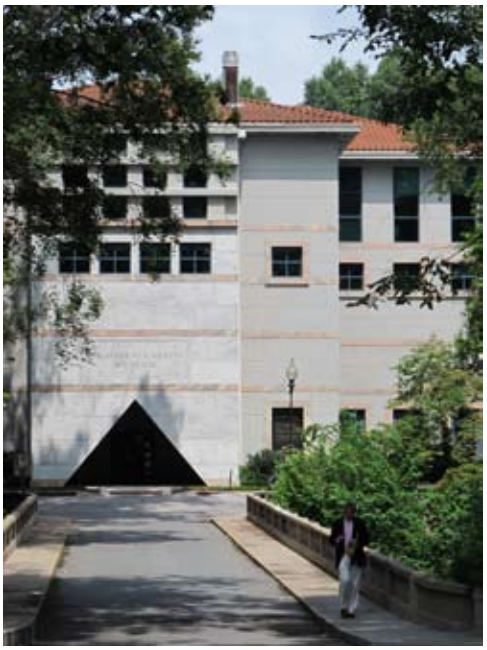
- Stream, streambank or forest restoration.
- Maintenance of existing and construction of new utilities.
- Maintenance of existing and construction of new hardscape.
- Additions to existing facilities given the above stipulations.
- Construction of new facilities given the above stipulations.
- Renovations to existing facilities.
- Removal of existing structures, walks, paving, utilities, etc.

Restricted Area Overlay: 183 Acres (25% of campus area)
This Restricted Area Overlay denotes areas such as stream buffers and floodplains that by law, ordinance, or covenant are precluded from development. Land affected by this overlay is located throughout the campus but is primarily along the South Fork of Peachtree Creek and Peavine Creek.

The following activities are permitted in this classification.

- Stream, streambank or forest restoration/maintenance.
- Maintenance of existing utilities.
- Maintenance of existing hardscape.
- Renovations to existing facilities.
- Removal of existing structures, walks, paving, utilities, etc.

Approval by DeKalb County, the State of Georgia, the United States Army Corps of Engineers, or others may be required to complete work in areas within the Restricted Overlay. In all cases, the means and methods of the work should take into account the sensitivity of the location and use the least invasive form of construction.



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The original buildings were classically placed around the main quad or within the forest creating open courtyards in-between the well-ordered facades. The geometry of parallel placement made a quad edge that strengthened the sense of an academic community. The courtyards provided the ordered landscape for visual repose with the backdrop of the unplanned forest.

As the campus grew, roadways were added that allowed for an overlay of yet another order of building placement. In 1998 it was recognized that reducing roadways, creating new pathways, and marrying the existing buildings and outdoor spaces through the design of new capital projects would describe the future of the campus. Like Hornbostel's early remarks of envisioning an Italian hill town, the future of the Emory campus seeks order in variety, community with individuality, and harmony as a natural relationship between built space and nature.

In the Druid Hills area, the piedmont region and its odd variance of underground granite provides the land forms of ridge, ravine, and hillside with an overgrowth of forest and woodlands. Although the main quad is more level than other large open areas of campus, it still has a change in elevation from one end to the other. Flanked by ravines, the buildings sited beyond the main quad all adjust to varying changes in ground topography requiring differential first-floor elevations. The passage between buildings is not only via a sidewalk; it could include a series of ramps, stairs, and terraced elements.

The three-dimensional ground characteristics are drivers of building design and site. Main entries, utility connections, drainage, service access, and lower-level daylighting opportunities must be considered early in the design phase. Rather than bulldoze a site flat, Emory's design preference is to utilize the land form, minimize the requirement for retaining walls, and creatively engage the surrounding buildings to produce unique open spaces.

Building sites are limited on the Emory campus, and as such, the placement of a building on its site is typically governed by the connectivity desired, especially with existing sidewalks and service access. For sustainablity reasons, the new building's best orientation is always east–west. When starting the design for a new building or building addition, a daylighting and sun-travel analysis should be computed. These graphic computations should become a part of the building's façade design studies. It is best to avoid harsh western sun, to protect and shade the southern sun, and to allow northern light to penetrate into study areas. Glare from sunlight or bounced from nearby surfaces should also be among the design considerations.

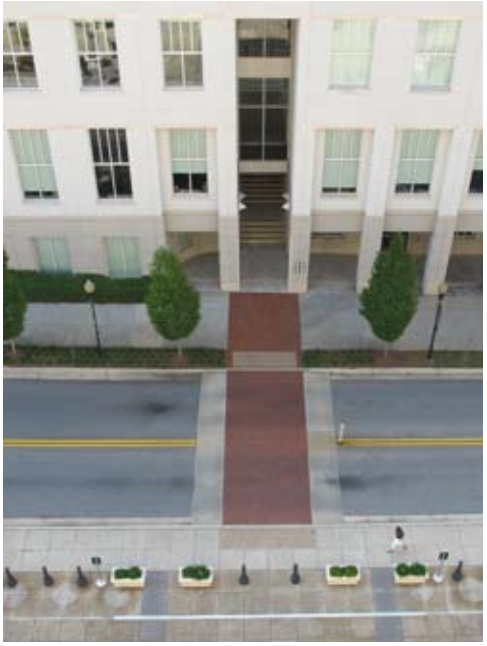
Major and minor circulation paths have been established on the Emory campus over the last 90 years. Although some paths have been reoriented, many major vistas and viewpoints remain. Most important is what is seen beyond the quadrangle from a station point within the quadrangle. Historically, the quadrangle is the soul of the campus; here the visual access should be focused to the academic buildings that form the core educational repository. Other visual axes are the view entering campus into the woodlands, looking down Dickie Drive from the Ellipse, the view of the Cox Hall tower up and down Asbury, and the framed image of the Schwartz Performing Arts building through the Goizueta Business School portal.

A long axis has been set up since the 2005 Campus Plan Update that leads west from Clifton Road between the Medical School and the Medical Administration building, crosses Means Drive, and continues on parallel to the DUC. Ultimately, this linear path will end at the entrance gate to McDonough Field (with the future demolition of Trimble Hall).

There are many minor axes found on campus. The architect and landscape architect should be aware of these stairway locations, transitional elements, and focus points. The desire is to frame or focus on major building elements, large beautiful trees, and unique symbols of the Emory community.

Paving serves as the primary unifying element in the campus landscape and also distinguishes the campus from adjacent uses. The use of consistent materials, patterns, and design elements establishes a distinct campus identity, provides a visual hierarchy of campus circulation, differentiates vehicular circulation from pedestrian circulation, and creates social gathering spaces.

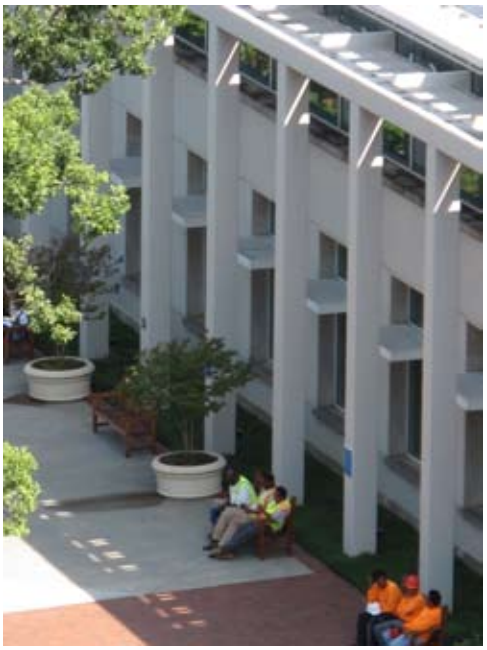
All new paving shall comply with the requirements on the following pages.



Streets and roads throughout the campus are typically asphalt with concrete curbs and gutters. However, significant entrances to the campus may be paved with the Emory standard brick pavers and utilize granite header curbs.

In order to adequately and safely allow for vehicular circulation, the minimum road widths shall be 12 feet between the face of the curbs on either side. Where appropriate, all roads should incorporate bike lanes and appropriate cycling infrastructure.

The majority of roads on the Emory campus are privately owned. However there are several public streets: Ridgewood Road, Haygood Drive, Clifton Road, Uppergate Drive, Houston Mill, Michael Street, Oxford Road, North Decatur Road, and North Gatewood Road. These roadways shall be paved with asphalt and comply with all applicable county regulations.



Three types of walkways for pedestrian circulation are recommended for use throughout the campus: brick, concrete, and compacted granite fines. Ranging from primary campus pedestrian walkways to minor walkways and garden paths, the walkways will vary in size according to use and location.

Primary walkways shall be constructed of Whitacre Greer brick pavers on a concrete sub-slab. Primary walkways shall be a minimum of 15 feet in width in order to accommodate major pedestrian traffic.

Secondary walkways shall be 10 to 12 feet in width and utilize the Whitacre Greer brick paver.

Tertiary (6 to 10 feet in width) and minor (4 to 6 feet in width) walkways shall be constructed of either Whitacre Greer brick pavers or concrete.

Minor garden paths shall be between 4 to 5 feet in width and may be constructed of concrete or compacted granite fines with a wood or metal edging. Brick paver walkways shall generally be a running bond pattern that is parallel to the path of travel. Other patterns such as basketweave or herringbone should be used at path intersections, transitions, and building entrances. Stone such as marble and granite may be incorporated into brick walkways to a limited degree.

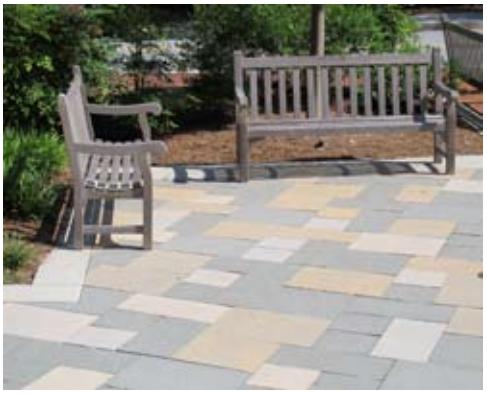
Emory Standard Brick Pavers

Manufacturer:	Whitacre Greer 1400 S. Mahoning Ave. Alliance OH 44601 www.wgpaver.com
Dealer:	Boral Brick 5472 Oakdale Road P.O. Box 813280 Smyrna, GA 30082 404-792-1500
Finish/Color:	Emory Blend (35% #32, 35% #36, 20% #33, and 10% #34)
Pedestrian paver:	4” x 8” x 2 ¼” straight edge smooth
Vehicular paver:	4” x 8” x 2 ¾” beveled edge with lug 2 ¼” x 9” x 2 ¼” Boardwalk with lug Tactile warning paver shall be either #34 or #50 as needed to provide the required contrast.

Plazas and terraces adjacent to buildings provide the transition from the campus landscape to the building interior and allow for large outdoor gatherings. Paving for plazas and terraces shall be either stone (bluestone, granite, or marble) or concrete pavers. The choice of the material is dependent upon the subsurface conditions. For uses that are on grade, an appropriate stone shall be utilized. For uses that are over occupied space concrete pavers with a suitable plaza deck waterproofing system shall be used.

Emory Standard Concrete Paver

Manufacturer:	Hanover Architectural Products 5000 Hanover Road Hanover, PA 17331 www.hanoverpavers.com
Finish/Color:	SlateFace Pavers (60% M2374, 15% M2660, 15% M2442, and 10% M2544) Size depends upon laying pattern



All stairs on campus shall be constructed of cast-in-place concrete or full-depth granite treads and include appropriate cheekwalls or retaining walls. Stairs at primary building entrances and at formal walkways shall have granite treads. Granite shall be either Elberton or Lithonia granite depending on the stone predominately used for adjacent buildings and hardscapes. Ramps should be constructed of concrete or brick pavers on a concrete sub-slab. Campus stairs and ramps shall comply with all applicable codes and the following details and specifications.

Site walls are often necessary when site development occurs. Walls can be a strong design feature, but they must be compatible with the surrounding landscape. Whether for seating, retaining grade, or as a design feature, site walls shall be constructed of natural stone.

On the Emory campus we have primarily used either Lithonia or Elberton granite. The stone is typically a 4-inch veneer over a structural cast-in-place concrete or CMU wall. Lower walls may be constructed entirely of granite rubble. All site walls shall have stone cap that extends coverage over the entire thickness of the wall.

The location and size of site walls should be thoughtfully considered. Where retaining walls are necessary, they should also function as seat walls in order to encourage the alternative use of spaces. Freestanding walls should incorporate columns and pillars. Decorative cast-stone elements and architectural stone may be incorporated into walls that need a finer level of finish due to location or use.

Plantings and landscapes play a significant role in providing the Druid Hills Campus with a distinct identity from the surrounding suburban context. Developed planting schemes soften the urban quality of spaces and transform undesirable spaces into active garden-like campus amenities.

The Emory campus can be categorized into four landscape types: native forest landscapes, naturalized landscapes, building and quadrangle landscapes, and streetscapes. Within the Emory design vocabulary, each of these landscape types has its own particular scheme and style that should complement the existing campus grounds. Throughout all of the landscape types, the consistent use of the Emory plant material palette will ensure a unified visual aesthetic across the campus.

Native Forest Landscape

Approximately half of the 740 acres that constitute the Atlanta campus is home to a piedmont forest ecosystem. Within these 370 acres, a number of mature uncut forested areas are historically and ecologically significant. Emory University has made considerable effort to preserve these areas and where possible to improve and expand them.

Capital improvements to the campus should respect these forested areas. For projects located adjacent to these forested areas, protective measures should be included in the design and, where possible, the forest edge should be designed to mimic a native forest.

Naturalized Landscapes

Naturalized landscapes are areas that are predominately composed of informally arranged plant material. These landscapes serve as the transition from the natural site (forest, streams, etc.) to the more formal building and quadrangle landscape.

Plant material within this landscape type should be primarily native material with limited use of adapted species. These spaces should be viewed as extensions of the native landscape and act to reconnect forest fragments. Seasonal color beds maybe used in a limited fashion.

Building and Quadrangle Landscapes
The landscape designs for areas immediately adjacent to buildings should be simple and dignified in keeping with the collegiate archetype of expanses of lawn with stately canopy trees. The character of these spaces should be park-like in appearance, similar to the main quad. Foundation plantings at the buildings should be limited to evergreen shrubs and groundcovers that accentuate the building entrances and architectural focal points. Use of seasonal color beds should be avoided.

Streetscapes

Streetscapes should be designed in a manner that is both aesthetic and functional. The plantings should be open enough to allow for adequate sightlines, and hardscapes should be laid out in such a way as to provide a safe separation for all types of circulation.

Generally, streets within the campus should be planted with large canopy trees that will eventually overarch the street and contribute on the park-like atmosphere. Designers should avoid lining campus roadways with evenly spaced allées of trees. The trees should be grouped informally and further the desire to reconnect forest fragments.

Public roads, such as Clifton Road and Haygood, should follow the design intent of the Clifton Corridor Plan.

The utilization of a consistent plant palette supports the creation of a distinct campus identity. In keeping with Emory University's commitment to sustainability, the palette of landscape material includes primarily native species. Non-natives are included, but designers should practice restraint and use non-native plant materials sparingly. Plants considered invasive should not be specified.

Trees

Scientific name	*Common Name*
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Betula nigra	River Birch
Carya glabra	Pignut Hickory
Carya tomentosa	Mockernut Hickory
Celtis lavaegata	Hackberry
Cercis Canadensis	Redbud
Cladrastis lutea	Yellowwood
Fagus grandifolia	American Beech
Fraxinus americana	Ash
Fraxinus lanceolata 'Marshall Seedless'	Marshall Seedless Ash
Fraxinus pennsylvanica	Green Ash
Ginkgo biloba	Ginkgo
Gymnocladus dioicus	Kentucky Coffeetree
Ilex opaca	American Holly
Juniperus virginiana	Eastern Red Cedar
Liquidambar styraciflua	Sweet Gum
Liriodendron tulipifera	Tulip Poplar
Magnolia acuminate	Cucumber Tree
Magnolia grandiflora	Southern Magnolia
Magnolia macrophylal	Bigleaf Magnolia
Magnolia virginiana	Sweetbay Magnolia
Nyssa sylvatica	Black Gum
Ostrya virginiana	Eastern Hop Hornbeam
Oxydendrum arboreum	Sourwood
Parrotia persica	Persian Perrotia
Pinus echinata	Short Leaf Pine
Pinus teada	Loblolly Pine
Platanus occidentalis	Sycamore
Prunus serotina	Black Cherry
Quercus acutissima	Sawtooth Oak
Quercus alba	White Oak

Quercus coccinea	Scarlet Oak
Quercus falcate	Southern Red
Quercus hemisphaerica	Laurel Oak
Quercus lyrata	Overcup Oak
Quercus michauxii	Swamp Chestnut Oak
Quercus nigra	Water Oak
Quercus nuttallii	Nuttall Oak
Quercus phellos	Willow Oak
Quercus prinus	Chestnut Oak
Quercus stellate	Post Oak
Quercus velutina	Black Oak
Quercus virginina	Live Oak
Robinia pseudoacacia	Black Locust
Salix nigra	Black Willow
Sassafras albidum	Sassafra
Taxodium distichum	Bald Cypress
Tilia americana	Basswood
Tilia tomentosa	Silver Linden
Tsuga Canadensis	Canadian Hemlock
Ulmus alata	Winged Elm
Ulmus Americana	American Elm
Zelkova serrata	Zelkova

Understory Trees

Scientific name	*Common Name*
Acer griseum	Paperbark Maple
Acer palmatum	Japanese Maple
Alnus serrulata	Tag Elder
Amelanchier arborea	Shadbush
Amelanchier grandiflora	Serviceberry
Asimina triloba	Common Pawpaw
Carpinus betulus	Hornbeam
Carpinus caroliniana	Ironwood
Cercis Canadensis	Eastern Redbud
Chionanthus virginicus	White Fringetree
Cornus amomum	Swamp Dogwood
Cornus florida	Flowering Dogwood
Cornus kousa	Kousa Dogwood
Crataegus viridis 'Winter King'	WinterKing Hawthorn
Dirca palustris	Leatherwood
Halesia Carolina	Carolina Silverbell
Ilex x attenuata 'Fosteri'	Foster's Holly

Ilex latifolia	Lusterleaf Holly
Ilex x 'Nellie R. Stevens'	Nellie Stevens Hybrid Holly
Lagerstroemia indica	Crape Myrtle
Magnolia x loebneri	Loebner Magnolia
Magnolia soulangeana	Saucer Magnolia
Magnolia stellate	Star Magnolia
Magnolia virginiana	Sweet Bay Magnolia
Malus floribunda	Flowering Crabapple
Myrica cerifera	Wax Myrtle
Prunus subhirtella pendula	Weeping Cherry
Prunus yedoensis	Yoshino Cherry
Styrax japonicas	Japanese Snowbell

Shrubs

Scientific name	*Common Name*
Aesulus species	Buckeye
Azalea indica	Indian Azalea
Buxus sempervirens	English Boxwood
Buxus sempervirens suffruticosa	Dwarf Boxwood
Callicarpa Americana	Beautyberry
Calycanthus floridus	Sweetshrub
Camellia japonica	Camellia
Camellia sasanqua	Sasanqua Camellia
Cephalotaxus harringtonia	Plum Yew
Clethra alnifolia	Summersweet
Cornus sericea	Red Twig Dogwood
Forsythia x intermedia	Forsythia
Fothergilla major	Witch Alder
Gardenia jasminoides	Gardenia
Hydrangea arborescens	Smooth Hydrangea
Hydrangea macrophylla	Bigleaf Hydrangea
Hydrangea paniculata	Panicle Hydrangea
Hydrangea quercifolia	Oak-leaved Hydrangea
Illicium floridanum	Florida Anise
Illicium parviflorum	Ocala Anise
Ilex cornuta	Chinese Holly
Ilex crenata	Japanese Holly
Ilex decidua	Deciduous Holly
Ilex glabra	Dwarf Inkberry
Ilex verticillata	Winterberry
Ilex vomitoria	Yaupon Holly
Itea virginica	Virginia Sweetspire

Leucothoe axillaris	Coast Leucothoe
Lindera benzoin	Spicebrush
Nandina domestica 'Harbor Dwarf'	Dwarf Heavenly Bamboo
Osmanthus fortune	Fortune's Osmanthus
Osmanthus fragrans	Tea Olive
Prunus laurocerasus	Laurel
Raphiolepis indica	India Hawthorn
Rhododendron species	Native Azalea and Rhododendron
Rhus aromatica	Fragrant Sumac
Rosa species	Rose
Sassafras albidum	Sassafras
Spiraea x bumalda	Bumald Spirea
Spirea nipponica 'Snowmound'	Snowmound Spirea
Vaccinium species	Blueberry/Huckleberry
Vaccinium arboreum	Sparkelberry
Viburnum species	Viburnum

Grasses

Scientific name	*Common Name*
Calamagrostis x acutiflora	Feather Reed Grass
Eragrostis curvula	Weeping Lovegrass
Miscanthus sinensis	Maiden Grass
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem

Vines

Scientific name	*Common Name*
Bignonia capreolata	Crossvine
Campsis radicans	Trumpet Vine
Clematis species	Clematis
Gelsemium sempervirens	Carolina Jessamine
Lonicera sempervirens	Trumpet Honeysuckle
Parthenocissus quinquefolia	Virginia Creeper
Trachelospermum jasminoides	Confederate Jasmine

Groundcovers

Scientific name	*Common Name*
Ajuga reptans	Bugle Flower
Aspidistra elatior	Cast Iron Plant
Athyrium filix-femina	Lady Fern
Dennstaedtia punctilobula	Hay Scented Fern
Helleborus orientalis	Oriental Christmas Rose
Hemerocallis varieties	Daylillies
Hosta varieties	Hosta
Hypericum calycinum	Aaronsbeard
Iris cristata	Dwarf Crested Iris
Lillium varieties	Lilies
Liriope muscari 'Big Blue'	Big Blue Lily Turf
Liriope spicata	Creeping Lily Turf
Onoclea sensibilis	Sensitive Fern
Ophiopogon japonicus	Mondo Grass
Ophiopogon japonicas 'Nana'	Dwarf Mondo Grass
Osmunda cinnamomea	Cinnamon Fern
Pachysandra procumbens	Alleghany Spurge
Pachysandra terminalis 'Green Carpet'	Green Carpet Pachysandra
Phlox subulata	Moss Phlox
Polystichum acrostichoides	Christmas Fern
Sedum species	Sedum
Thelypteris kunthii	Maiden Fern
Thelypteris noveboracensis	New York Fern
Vinca minor	Periwinkle

University Tree Canopy Policy

In an effort to compensate for the trees lost due to construction, Emory University developed a No Net Loss of Forest Canopy Policy (http://www.campserv.emory.edu/facilities_management/Documents/forest_canopy.pdf). The intent of the policy is to ensure that the campus maintains its existing tree canopy to the greatest extent possible and, overtime, improves the quantity and quality of its forested areas.

In addition to the policy, a No Net Loss Calculator is available for use by consultants to determine the necessary replacement trees.

Compliance with the Emory policy is in addition to the DeKalb County Tree Preservation Ordinance. Designers are required to provide both calculations within the design documentation.

Site furniture is an integral part of the campus landscape. The use of consistent furnishings across the campus provides continuity and a unifying element that helps reinforce the unique Emory identity.

Benches, tables, and chairs improve the collegial atmosphere of the campus. They invite members of the Emory community to utilize the campus grounds for dining, informal study, outdoor teaching, and quiet reflection. The incorporation of a mix of seating types along pedestrian circulation routes and at plazas and terraces contribute to the campus aesthetic.

Emory has selected a standard teak bench and picnic table. Other furnishings should be reviewed with the University Architects office prior to use.

Emory Standard Bench

Manufacturer: Kinsley-Bate
200 Gateway Court
Manassas, Virginia 20109
www.kingsleybate.com

Model: Hyde Park HP60

Emory Standard Picnic Table and Bench

Manufacturer: Kinsley-Bate
7200 Gateway Court
Manassas, Virginia 20109
www.kingsleybate.com

Models: Evanston Table TR66
Evanston Backless Bench ET50

The inclusion of waste and recycling receptacles is critical to providing a sanitary and sustainable campus. Exterior receptacles shall comply with the following standards.

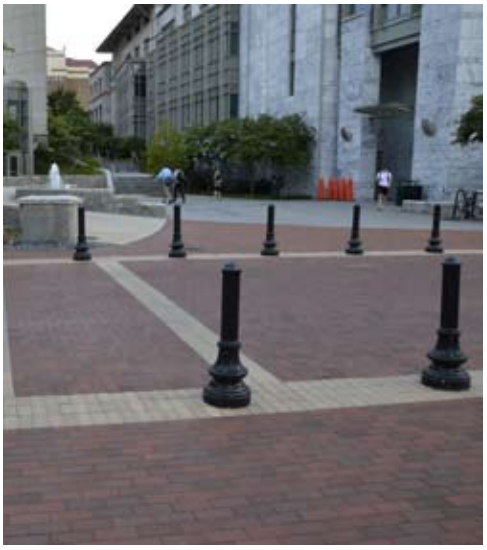
Emory Standard Waste and Recycle Receptacle

Manufacturer:	Victor Stanley, Inc. Po Drawer 330 Dunkirk, Maryland 20754 www.victorstanley.com
Model:	Ironsites Bethesda Series S-424
Finish:	Black or Tavern Square Green Polyester Powder Coat

Bollards are used across the campus as a traffic control device and for pedestrian safety in areas where the walkway and drive surfaces are at the same elevation.

Emory Standard Bollard

Manufacturer:	Holophane 214 Oakwood Avenue Newark, Ohio 43055 www.acuitybrandslighting.com
Model:	Wadsworth Series Aluminum Bollard BOL/W39/14/DT-CA/BK
Finish:	Black Polyester Powder Coat



Post and chains are often utilized on campus as a method of controlling pedestrian traffic flow.

Emory Standard Post and Chain

Manufacturer:	Monumental Ironworks 6500 Eastern Avenue Baltimore, Maryland 21224
Model:	Ball Style Post Top with 2” x 2” Steel Post
Finish:	Black Polyester Powder Coat

Adequate parking for cyclists is an important component of the campus and Emory's sustainability goals. The location and number of bike racks need to be evaluated with each capital project.

There are several types or styles of racks currently in use on campus. Capital projects shall use the following Emory standard bike rack. Non-standard racks shall be replaced as needed.

Emory Standard Bicycle Rack

Manufacturer:	Dobra Design 5139 Somerville Street Vancouver, BC, Canada V5W 3H3 www.dobradesign.com
Model:	Boa
Finish:	Black Polyester Powder Coat

Lighting of the campus is a critical aspect of campus safety and aesthetics. The Emory campus is an active community that attracts a wide range of visitors to facilities that operate 24 hours a day and events that occur in the evening hours. Therefore, it is very important to have a well maintained, efficient, and developed lighting scheme.

Light fixtures have multiple roles. During daylight hours, a light fixture is a static piece of street furniture that must complement the campus. In the evening, the same fixtures activate spaces and provide a sense of security.

The Mainstreet light fixture shall be used as the primary method of providing light on the campus. Lighted bollards do not provide an adequate amount of light, and their use on campus is strongly discouraged.

Emory Standard Light Fixture

Manufacturer: Mainstreet Lighting Inc.
1080 Industrial Parkway
Medina, Ohio 44256
www.mainstreetlighting.com

Post Model: Lancaster II Series AA112 12‘ height
Finial Model: LG50 Finial
Luminaire Model: SL100
Finish/Color: Black

In an effort to serendipitously limit postings attached to buildings and other exterior elements, a standard kiosk design is placed at key locations on campus. This urban-looking unit allows for the ever-changing attachment of papers and printouts that inform campus life and culture. The panels can be removed for end-of-year cleaning and painting, or, if in bad condition, can be individually replaced.

At Lullwater Preserve another standard kiosk design is in use that reflects the natural environment and protects the posted information from the elements. This kiosk is timber construction with a shed roof and timber brackets.

Emory places "blue lights" around the exterior campus environment for security and safety. The blue pole is actually a place where people can directly communicate with the Emory Police and where a security camera can be mounted. The poles are easily identified by the blue light at the top. Their placement requires a service connection and linkage to the main data and communications system. The poles are placed along walkways and gathering areas where the camera has free vision and the ability to monitor the public passage.

The number and locations of Bluelights shall be coordinated with the Emory Police Department.

Emory Standard Emergency Phone

Manufacturer: Talk a Phone
7530 North Natchez Ave.
Niles, IL 60714
www.talkaphone.com/products

Model: ETP-MT/R –OP4 with the camera arm

The experience of an exterior space as "place" can be established through the visual focus of either sculpture or a fountain. These elements draw human interest and provide cognitive recognition of a landmark, a memorable place on campus. When placed along axial vistas, these constructs guide pedestrians though a series of transitional spaces as they walk through campus, making for an interesting passageway.

The Emory community recognizes the Emory University Public Art Committee as the first step for new artwork. The committee then leads the way in selecting and permanently placing the work of internationally renowned sculptors at unique locations throughout the campus.

Temporary artwork (lasting less than one academic year), including sculpture, emerge as part of the Emory Visual Arts program and add tremendous community interaction and excitement. These works are located in main public spaces for the largest impact, such as the John Grade "chandelier" erected in the Quad in the fall of 2011.

The use of fountains as gathering spots works well for choice locations. Maintenance is a large and necessary consideration when determining the placement of additional fountains on the Emory campus.

Emory University has developed a comprehensive signage and wayfinding plan. Design teams shall be responsible for coordinating signage locations with Campus Services Graphic Design (http://www.campserv.emory.edu/pdc/graphic_design/index.html).

3 BUILDINGS

The trend of individually applied architectural styles waned in 1998 with the completion and acceptance of the Campus Master Plan and its accompanying writings, including the 1998 Campus Design Guidelines. A significant number of capital building projects have been constructed in the years following, which allowed the basic premise of the 1998 guidelines to be interpreted and led to the recognition of a distinctive Emory style of architecture. This style is collegiate, simply elegant, and community based. This updated 2012 Campus Design Guidelines takes the original 1998 rules and recommendations and solidifies them into visual images that collectively establish the Emory architectural vocabulary.

While encouraging creativity, the original rules read:

- Buildings should follow a typology that will allow for flexibility of simple plan forms while ensuring the creation of outdoor spaces.
- The scale of buildings should be modulated by facades that follow the horizontal and vertical rhythms of pre-1965 buildings.
- The component elements of Emory's buildings should be made from a kit of parts that grows from the traditions of its most beloved buildings.

Recommended building typologies should have simplicity of form and inventiveness while maintaining clarity in the elevations of the facades. This visual order then must establish clear and simple outdoor spaces such that the transition from place to place occurs from one well-defined area through a public passageway to yet another area of special dimension and recognition. These multiple areas (quads, courtyards, plazas) then combine and become one coherent set of campus spaces.

The Emory building style derives from the architectural typology, a form of country Italian classicism, established in the early 20th century when the Atlanta campus was founded. More Tuscan than Roman, the elements are elegantly simple, diminutively decorative, and planar, and recognize the base-middle-top vertical building façade organization. Study of these early campus buildings allows for the understanding of the subtle differences and the variety of classical interpretation present.

Used as reference material and for design reflection, these wonderful buildings secure the basis of the Emory architectural vocabulary. Provided is an overview of some of the core elements and geometries of this vocabulary.

Front Façade and Entrances
Often identified with arched openings, a symmetrical arrangement of sidelights and windows, fan windows, and stone detailing, the entrances to historic buildings are heroic and welcoming.

Window Openings and Arrangement

All glazed openings are vertical windows with divided lights. The façade arrangement of windows is often symmetrical, but also utilizes windows of differing size to compose non-symmetrical arrangements within a flat solid surface. The mullions are delicate and thin. The once-operable windows provided cross ventilation and are double hung. The use of transoms, sidelights, and fan lights complete the main façade.

Trim, Banding, Watertables, Panels, and Quoins
Typically made of Georgia marble from Tate, Georgia, the tailored detailing mixes colors, style, and dimensions.

Entry Stairs, and Terraces

Marble steps and side tables with a gentle rise and run provides transition from the main walking paths to the entry doors. This transition hints at the solidity and academic importance of the spaces within.

Motifs and Decorative Reliefs

The older buildings at Emory incorporates various specialty decorations, made of carved marble or cast terracotta, that hints to the buildings' use and mentorship.

Soffits and Cornice Bands

Colorful marble and terracotta soffits combined with brackets, panels, and relief trim add a gem-like quality to the total building system. With broad overhangs and deep shadow lines, the roof soffit adds distinction to each building.

Exterior Light Fixtures
The classical variety of lighting pairs used at main entrances add to the sense of arrival and the civic character of the use within.

The ordering sequence of base, middle, top creates a language that dictates the proportions and geometries of Emory's building facades. Scaled down to three stories or less, the ordering is straightforward, simply rendered, and intimate. These buildings front onto smaller open areas and create the language of a smaller collective—a community unit—or maintain the respectful presence of the older historic buildings.

Due to local building code restrictions and the efficiencies of building cost proportionally balanced with the program area, most of the newer buildings are five stories high with or without an additional basement or penthouse level. Many of the science research and healthcare structures are even taller, with buildings as high as nine stories. Creative ordering and proportioning allow the main building mass to read as a solid volume with punched openings, the basic Emory structure. Secondary additions of solid glazing, curves, loggias, differential materials, and outset volumes create the individual architectural identifiers. These parts are further defined in the hierarchy of building elements by their limited ornamentation and visual interest.

Maintaining a collegiate scale of building mass is best done through breaking down a large mass into smaller connective parts. This was successfully done at the Math and Science Building where three smaller Emory "pavilions" were built connected by a modern open multistory atrium. The idea has been repeated again on a different scale at the Health Sciences Research Building where a wet lab building is separated from a dry lab building by a transparent multistory linking corridor.

The memorable attributes of an Emory experience have developed through traditions, repetitive visuals, and spirit activities. Recognition of how these icons can fit literally or figuratively into an architectural or landscape project is desired, but not absolutely necessary. Creativity is encouraged to bring new ideas and designs into the familiar places and spaces of campus.

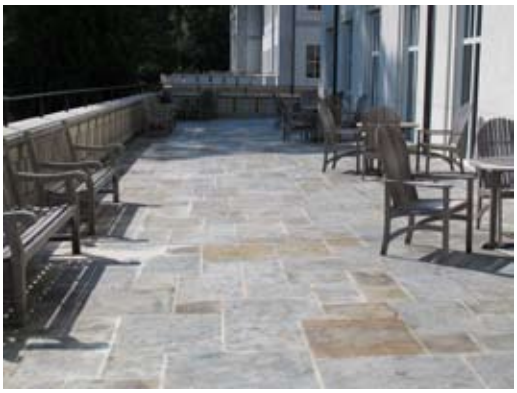
Some of the best-known Emory icons:

- Calico marble pattern
- Cox Hall tower bells
- Dooley
- Arches
- Emory shield
- Emory colors: blue and gold
- Trees
- Emory eagle (sports)
- Entry ironwork arch

Cognitive landmarks bring memories of place and provide for location and transition. The placement of portals and towers on the Emory campus marks areas of different campus activities as well as identifies entry and edge points to the outside community. Architectural use of these icons should be limited and always be used to represent passage or identification.

As the density of campus buildings increases, new projects may allow for enclosed connections and bridges to provide protected pedestrian access between new buildings and adjacent facilities. The architecture of these connectors is typically transparent and lightweight in its visual appearance. The spans should be maximized between supports to provide less ground clutter when free passage at grade is maintained. Their architecture should repeat the exterior materials and geometric composition of the newer building project. Their roofs are typically flat. A connection may also be derived from taking away space from a building's floor plan and devoting it to a public passageway through the building, such as that from Patterson Green down to Fishburne Road through the body of the Goizueta Business School.

Atlanta's climate is mild, even through the winter, and supports the opportunity for outdoor seating and assembly. Often having such a place to retreat brings forth individual contemplation or group discussion that becomes the seed of a larger idea. Green roofs promote a sustainable environment while regulating storm run-off and heat gain. Outdoor space design, when a part of the main building volume, must comply with all appropriate codes. Railings, lighting, and finishes must be considered for their weathering properties and act as a part of the building's overall palette of materials. See the Landscape and Hardscape sections for more discussion of materials



The design of a building's front façade should allow planned opportunities for locating its name and address number. The building name should be located prominently and must be legible from at least 100 feet away. The naming of a building and the design of the naming location are approved by the Trustees after a thorough review by the Trustee's Naming and Inscriptions Committee.

The name of a building is either engraved into stone or on applied bronze units using the appropriate font and size. Often a special stone panel containing the name is recessed in the stone or stucco skin surface..

The local fire department now requires the address number for each building be visible at or near the front door. Typically the address number is composed of vinyl letters applied to glass in a transom or sidelight or raised numerals secured to the metal framework of the entry opening. If the address number is not placed on the building, the standard identifying Emory sign must be placed nearby.

Specialty lighting fixtures mounted on buildings are encouraged to complement the architectural motif, provide safety, and mark entry locations. The most common type of lighting are wall sconce fixtures mounted on either side of the main entrance. Hanging pendent fixtures are used in areas under canopies and loggias. Ground-mounted lighting and bollard type lighting are not desired for maintenance reasons. The use of LED lighting is encouraged.

Fixtures should have a vertical orientation with a finish color to blend with the building's stucco color or as a contrasting metal to simulate copper or zinc. Dark bronze finishes are also acceptable.

The many different roofs on the Emory Campus

Roofs are major character definers for the Emory campus and its landscape. Much like an Italian hill town, the assemblage of multiple clay tile roofs following circulation paths and the topography creates a distinctive patterning and unique impression of the academic community. The view across campus from any height should be intriguing and allow buildings to be identified from a distance by their roof design.

All roofs over the campus's main buildings the capital project's main (large) building mass are either hipped or gabled. These roofs are typically composed of red clay tile, with the exception of slate roofs on buildings along North Decatur Road and architectural shingles on Greek Housing on Eagle Row. The minor roof areas on additions (volumes attached to the main building massing) and connectors can be flat.

Once a building mass becomes super scaled, such as a hospital or buildings over 10 stories, the roof design can be more flexible: what architecturally fits best with the project style. The building width and placement of rooftop equipment make research buildings a challenge to roof; these projects have maintained the Emory roof vocabulary in unique ways.

Roofs on small outbuildings should also be hipped or gabled, and covered with architectural shingles or standing-seam metal.

The gabled and hipped roofs of the Freshman Residence Halls

Hipped Roofs

The most typical roof form on the Emory campus, the hipped roof, provides a continuous soffit design around the building perimeter. When using a hipped roof, the soffit tends to be patterned with the use of architectural brackets and/or modular dimensional panels. The hipped roof design is also used on larger, wider buildings where the roof does not rise to a center peak or ridge line; instead the slopped roof surrounds a mechanical recess or well giving the impression of being hipped.

Gabled Roofs

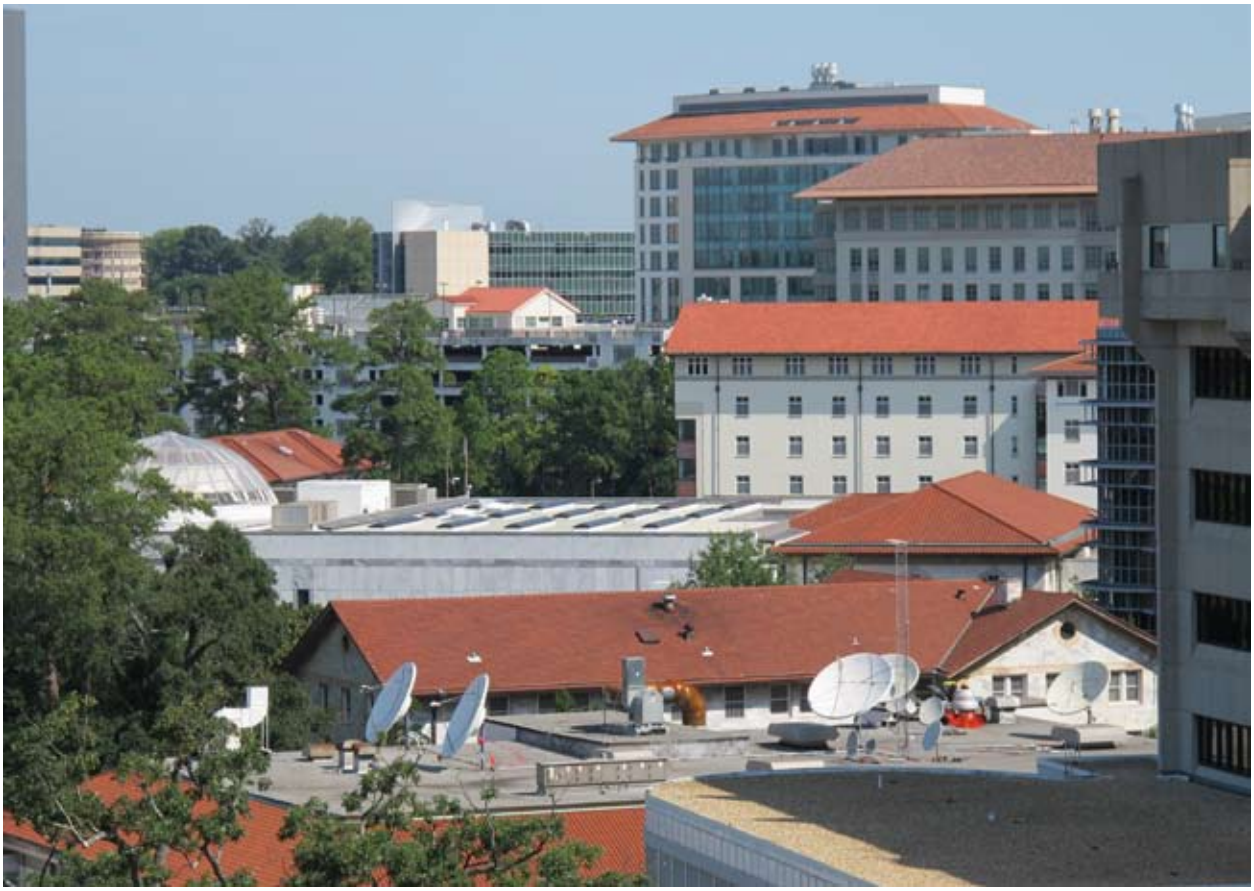
Used on a building mass with less width, the gabled roof is unique for the design of the walls at either end of the building where the eave board slopes parallel to the roof line and provides a triangular area (gable) of building skin. The composition of these bookend gable facades should be simple, tailored and more formal in aspect.

Flat Roofs

The flat roof is used over smaller masses attached to larger buildings. They can also be used on penthouses or finished as green roofs. The coping and drainage aspects of these roofs are integral design elements and require special attention. Overflow scuppers must be placed sensitively within the overall façade composition. The preferred drainage from these roofs type is at the edge rather than through an internal roof drain. Larger buildings can be the exception. Copings should be copper or zinc, or shop-painted metal.

The glue holding together the overall effect of the campus roof scape is derived not only from the use of red clay tile but also from the use of similar roof slopes. The slopes are typically shallow and start at 3.5 on 12, but are never more than 5 on 12. When shingles are used on Greek Housing and small out-buildings, the slope is typically between 5 on 12 and 6 on 12.

When a mechanical roof recess is used in the middle of larger width buildings, the roof slope surrounding the recess should be well considered so as to imitate the visual aesthetic of an Emory standard roof and be at the same slope as any other portion of the sloped roof on that building. A concern on these applications is the design of the resulting parapet wall around the mechanical recess that rises above the ridge line of the clay tile roof. This parapet wall should never be more than 4 feet above the top of the roof. Studies adjusting the roof slope, within the given tolerance, along with setting the soffit height and soffit depth are required in order to achieve the right balance of roof massing and façade composition.



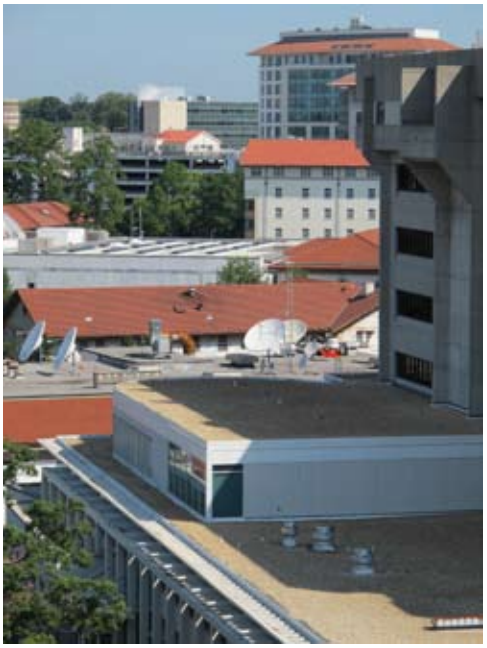
A word about Emory's approach to roof drainage: Roof drainage collection should occur outside of the building façade through the use of overhangs and gutters. Internal roof drains are not desired and are only accepted on large buildings, such as those five stories or greater.

The placement of downspouts must be considered as part of the early schematic façade design. Downspouts give rhythm and definition to the façade elevation and can be used as form givers. In order to have a differential fascia appearance, the collecting gutter can be incorporated internally in the eave design allowing for a crisp- or knife-edge appearance of the roof edge.

Gutter shapes can be rounded or boxed depending on the fit with the building architecture.

Downspouts will use a system of leader boxes for buildings three stories or greater. The placement and style of the leader box and the slope of the downspout from the roof edge back to the building should be a design consideration. How a downspout traces down the building façade is also an important design detail. Preferably, the cutout of horizontal trims accommodate the downspout without having to piece it around the trim. Downspouts should end into buried collection pipes with a transition piece painted to be unobtrusive. Downspouts should be attached to the building with an architectural hardware bracket specially designed for the purpose.

Gutter and downspout materials are copper, zinc or shop-painted aluminum.



Many of the larger capital projects, particularly those for healthcare and research, require the placement of large mechanical equipment on the roof. Preferably, this equipment is housed in a fully enclosed penthouse. The penthouse footprint should either be integrated into the main building mass or, if set back from the parapet edge, a minimum distance of 12 feet should be maintained between the penthouse enclosure and the main building perimeter. The penthouse design should be complementary to the building's architecture, and should not be used as an attention-drawing element.

The materials used to skin a penthouse range from metal panels to vertical applications of clay tile. Often the penthouse enclosure is a continuation of the building stucco. Required louvers should be carefully designed into the overall penthouse enclosure as regular openings in patterning that are representative of the main building architecture. Preferably, the louvers should be placed in locations where they will not be seen in the main building view. Penthouse exteriors are typically full flat planes of unobstructed solid material. A patterning or scoring of joints should be used to bring the larger planes down in scale.

All large capital projects require certain appendages to the roof design whether for elevator over-rides, exhaust fans, louvers and grills, or other devices. These should all be considered as part of the schematic design effort in terms of placement and size. Every effort should be made to incorporate these elements into the roof design so that none requires unusual waterproofing construction details. These elements should be visually recessive and blend with the coloration and style of the building architecture and roof design.

Likewise, the use of screening devices on the roof to visually hide equipment should be a part of the schematic design effort as well. Again, screens should blend with the building architecture, be unobtrusive and be easily maintained.

From a distance, Emory roofs are visual distinguishers, and the deep shadow of the soffit is a part of the overall distinctiveness of the architecture. The depth of the soffit is important to the seating of the roof on the main building mass. Typically, soffit depth is 5 feet or greater depending on the building height; the taller the building, the greater the soffit depth. The overall architectural construct is that of the low sloped roof as a horizontal counterpoint to the rise of the vertical building mass. The elegance of the roof seating comes from the detailing of the soffit, fascia, and cornice.

Soffits can be plain or patterned, which is more typical of the hipped roof design. Patterning can be achieved through the combination or individual use of brackets, panels and textures. Soffit material is usually metal or built-up EIFS system, giving the impression of a historic painted wood or terracotta soffit design. Soffits are horizontal or sloping parallel to the roof.

The fascia board normally handles the backing of the roof gutter and should be painted to match the gutter color. On gabled roofs, the fascia board should track the roof edge and should be detailed to provide a tailored look rather than a built-up multidimensional style.

Every roof should have a cornice band design at the juncture of the roof and the building body. The cornice band should be of sufficient depth and width to achieve a strong bottom shadow line. The cornice band can be built up and plastered, or can be constructed from dimensional stone, preferably marble.

The Emory architectural vocabulary is expressed in the main building volume through the patterning and composition of vertical punched windows. The façade treatment follows the sensibility of bottom-middle-top in which the windows that correlate to each horizontal segment of the building may change in dimension and/or mullion pattern, yet they always have a vertical orientation.

Patterning of the window mullions can be used as an individual architectural statement for the building as long as the configuration is simple, emphasis remains on the vertical orientation, and the pattern is regular to the façade. Mullion caps, either repetitive in size or in varying widths and depths, should be shop finished in lighter colors ranging from champagne gray to white. Preferably the window-frame face is set back at least 4 inches from the main finished skin surface. Sometimes the window is set into an architectural panel that increases the impression of size or relationship. Window jambs have no specific requirements other than care in the detailing of the intersection with the sill to stop water penetration. Variations in articulation and character are encouraged within the guidelines.

Glass

Vision glass in windows should always be clear, double pane, and low E. A simple ceramic frit pattern using dots or bars can be used on individual window panes to provide screening or sun control. Reflectivity should be minimal for all glass types used.

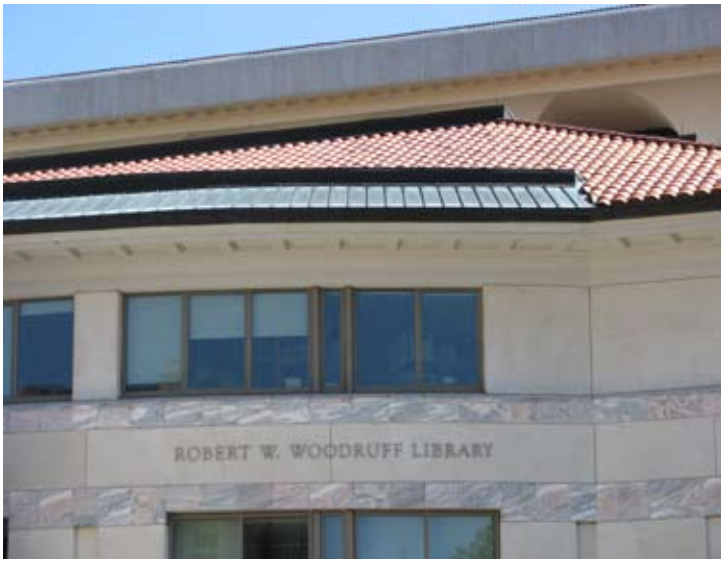
Headers and Sills
Although not required, it is preferred that all windows have headers and sills fabricated from dimensional stone or cast stone. One-piece sills are preferred; they should provide a strong shadow line and have an integral drip. The thickness of the sill should be proportional to the height of the window opening; the taller the opening, the thicker the sill.
Stone banding used on a building can be integral with the window header or sill. When part of the window header, the banding can run flush across the width of the opening. When used in a sill situation, a stone extension must be used to form a shadow line and drip if the banding trim does not have such dimension.

Screens
Where an operable window sash is used, a screen must be part of the assembly covering the operable area. In student housing projects, security-type screens are required and should be silver colored.

Curtain wall and storefront systems became part of the architectural vocabulary of the Emory campus in the second half of the 1900s and continue to advance in construction methodology and material technology. Not seen on older campus structures, large wall glazing systems have been successful when limited to certain architectural expressions, but not when used as complete building skin systems. Typically curtain-wall (multistory) and storefront (single-story) systems are used as filler in the juncture between main building masses, at building ends and for stairwells, and as a way to enclose atria or multistory lobbies or meeting rooms. Such uses of these systems evokes a sense of transparency, which encourages the community relationship between people inside and outside.

The system components include metal mullion caps of varying depth and design, as well as additive custom metal pieces that complement the architectural aesthetic of the individual project. The aluminum metal should be shop finished (Kynar) in colors similar to window frames in the lighter tones ranging from champagne gray to white. The vision glass should always be clear, with or without a ceramic frit. The spandrel glass panels can either use a shadow-box technique with painted drywall seen from the exterior and attached to the interior stud system or have the second glazing side opaque by coating it with a colored paint. The best solutions have used a dark brown or dark gray color on the spandrel glass to imitate the view looking into to a room without lighting on a sunny day.

All banding, trim, and quoins used on buildings must be from stone, specifically marble, granite, or limestone in appropriate colors. (Refer to the Materials section for details.) Precast is used on residence halls only. Examples of the proper use of these architectural elements are represented in the photos.



The main entrances to all academic buildings should be vertical, hierarchical, clear, and expressive of passage/threshold. Entrances to residence halls should reflect the sensibility of home and be warm and inviting. Entrances to other administrative, research, and campus life buildings should reflect and interpret the Emory architectural vocabulary allowing for creative compositions.

The aesthetic strength of an entrance design is derived from the materials and geometries assembled utilizing stone detailing, specialty lighting, and custom fabricated doors. The use of transom panels and sidelights is encouraged. Single-leaf doors are preferred for security reasons.

All building front doors must be accessible to all people of differential needs and must utilize door opening assist mechanisms. Should the main entry be elevated above grade, stairs and ramps must be a part of the exterior hardscape design leading to the building.

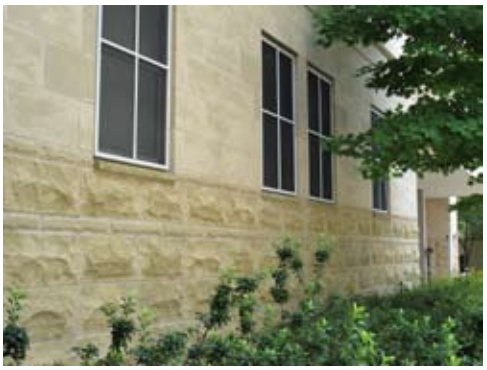
Protection from the weather is also integral to the entrance sequence design. Doorways can be recessed, open to a loggia, or placed under a suspended canopy. The canopy design should be either fabricated from glass or a wood/rolled roof composite and hung from the building façade by triangulated brackets placed above the canopy.

Secondary doors and entryways should recall and interpretively repeat the door design of the main entrance in a modest way.

Emory buildings are known for their monolithically smooth building skin. Typically this interprets to either a stucco finish or a honed-stone (marble, limestone, or granite) finish for the main building skin surrounding punched windows, openings, and trim. With either stucco or stone, a rhythm of construction and control joints must be identified in a pattern that scales the wall to the size of the building and to the context of the surroundings. Joints are caulked with colors similar to the adjacent materials and should be visually recessive.

Zinc and copper panels are used in distinct areas for scale and to define architectural elements. Metal-clad panels, such as alucobond or equivalent laminations, can also be utilized as filler materials, but never as the main skin material.

Buildings must always have a base that continuously encircles the perimeter at grade. The height of the base band is determined by the location of the main floor elevation and fit into the site typography. Base materials of either granite or coated concrete are preferred for their longevity and minimal maintenance. Note that the red Georgia dirt in landscaped areas can discolor the lower walls over time from rain and splashing.



Engineered mechanical and plumbing systems along with energy-reduction techniques require building skins to provide a sustainable response to the environment and to function as more than just waterproof enclosures. Metal louvers for air transfer and metal sun-shading devices for glazed openings are both part of the architect's dialogue for façade design.

Louvers shall be recessed into the building skin and be sized to fit within the overall façade to maintain the geometry and patterning of the composition. Additional louvers beyond engineering requirements may be placed in panels to complete the visual dialogue.

Intricate metal sun-shading frameworks and constructions are not recommended due to long-term maintenance and upkeep for cleanliness in our urban environment. Rather, windows should be recessed and glazing should be specified as high performance, both viable energy-reduction techniques.

Due to the limited ground sites for new construction on the Emory campus, it is challenging to orient new buildings to preferred exposures of sunlight, wind patterns, and viewing opportunities. Each façade must be carefully designed to respond to all three criteria using a range of tools and materials for maximizing shared views while minimizing energy impact.

Transparency is a significant factor in establishing the visual connections that build community identity. Emory buildings rely on windows and large glazed openings to provide this communal viewing of people in motion, studying, and enjoying conversation. Social spaces, classrooms, and stairwells should all have windows to provide visual connection as well as natural daylight.

Openings should all start with clear non-reflective glass. All glazing units should be double paned. Triple-paned windows should be used for acoustic control where necessary.

Other glazing qualities, such as low E, solar control, and applied films, should be considered where the window orientation requires additional treatment. For areas of extreme solar exposure, for additional privacy, or to hide the adjacent interior element, a ceramic frit or sandblasting can be used. The frit pattern should be simple and continuous on the same pane of glass. Examples of acceptable frit patterns can be seen on the bridge connecting the Public Health buildings, the lower pane of the PAIS Building east façade, and the lower panes in the Candler School of Theology building.

Spandrel glass should be used only in curtain-wall or storefront systems and should appear dark.

Stucco is the material of choice to cover the main body of an Emory building. Historically, stucco was used on larger buildings, while marble covered smaller buildings. Due to cost and material availability, stucco has evolved as the primary skin material. The preference is for a smooth finish material applied in the traditional method. Although various EIFS systems have been applied on a few projects, they are not encouraged.

Stucco should have an elastomeric finish coating applied in a color similar to off-white, cream, or beige. The typical Emory building appears as a soft light mass, the skin providing a backdrop to reinforce the geometry of the window patterning and trim applications. Due to the light colors, the shadows of trees and adjacent structures create interesting patterns on the building skin that change throughout the day with the movement of the sun.

The visual richness of Emory's buildings is enhanced by the use of natural stone, which is encouraged on the exteriors of all building projects. Marble, limestone, and granite are the preferred materials. If limited by budget or other concerns, the placement of natural stone at the main building entrance is the minimum option.

The recommended stone guidelines are the Marble Institute of America's Technical Module – Stone Selection and Testing, 2003. http://www.marble-institute.com/designprofessionals/technical_bulletins.cfm

Marble

All exterior marble used on the Emory Clifton Campus buildings shall match or be equivalent to the original marble used on the Quad's historic buildings. (Pitts Theology, Candler Library, Carlos Hall, and Tarbutton buildings are representative examples.) This marble originated from the Tate, Georgia, marble quarries and are named White Cherokee, White Georgia, Etowah Pink, and Pearl Gray. The quarries in Tate have had several lease operators in the last 20 years with intermittent ability to mine some of the colors and to provide fabrication.

Due to occasional quarry closings and the differential material costs, marble from Portugal has been used on the exteriors of several newer Emory buildings, including the Nursing School, Goizueta Business School, Candler School of Theology, and the PAIS (psychology) building. This marbles comes from the southeastern Borba region of Portugal and is typically named Rosa Borba. Care must be taken in the selection of this marble because a broad range of color and material quality is found under the name of Rosa Borba. The lighter salmon-colored Rosa stones that lean to a pink-orange tone are preferred over the dark-rose to rose-red colorations.

Marble from Vermont has also been used, such as Danby marble, an equivalent to White Cherokee, for the banding and trim on the Turman Residence Hall (2007).
Exterior marble is used in two typical product lines: panels and dimensional stone. When using panel material, the thickness of the slab should be a minimum of 1 ¼ inches (3 cm). The stone finish for exterior use is either honed or brushed.

Limestone

All limestone used on the Emory campus shall be light beige in color leaning toward brown rather than gray tones. Any selected limestone for exterior use shall be very dense and have the least amount of porosity. Exterior limestone finish shall be brushed, never polished. The most recent buildings (Schwartz Center, Public Health and PAIS) have used a limestone named Mocha Crema from Portugal.

Granite

Granite is used on the Emory Druid Hills campus in two general formats: as panel installation on the building base as a skin material, especially where the exterior wall touches grade, and as blocks in variable sizes as the wall skin material typically at the lowest levels of a multistory building. The same granite block material and patterning is used for landscape forms, including seat walls, pillars, and fence bases.

Panel material should be used at 1 ¼ inch (3 cm) thickness.

Block materials should be used at a minimum 6-inch thickness and follow these guidelines:

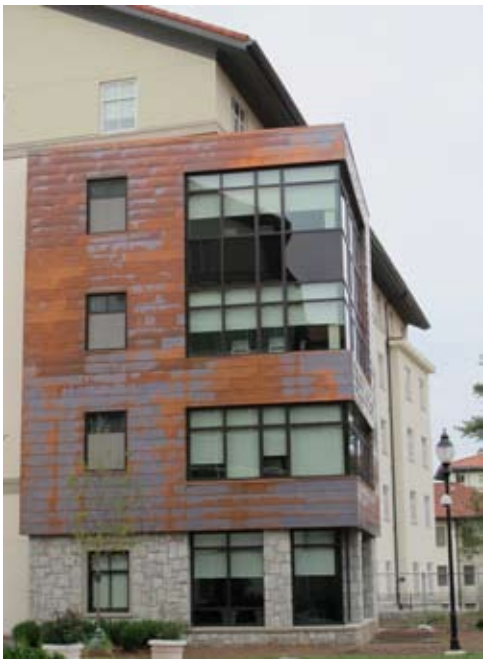
- Use Lithonia or Elberton granite, both local Georgia materials from within a 500-mile range.
- Roughly squared blocks are sawn cut and constructed in a random ashlar pattern, ashlar set with stones of varying length and height so that neither vertical or horizontal joints are continuous.
- Joint width is a minimum of ¼ inches and a maximum of 5/8 inches,
- The finish for the exterior building skin is sawn or rough cut. An exception is the use of honed flat Georgia granite in larger blocks at main building entrances.

Individual block sizes are limited to the following:

- 6 to 14 inches high
- 6 to 24 inches long
- 4 to 6 inches thick
- Coverage: 30–35 square feet/ton

Standard-sized brick may be used as a main exterior skin material only on Greek Life Housing. In these instances, the bricks are used to create solid color walls with no mixing brick color for patterning or banding. Differential brick colors can be used to create the image of base, middle, and top or to break down the scale of a large wall, as seen in the Sorority Townhouses with vertical panels. Brick window surrounds and sills are of a standard design. There is no specific limiting brick color or mortar mix.

Concrete block with an exterior finish is used on field athletic facilities. Here the coloration is basically sandy beige, and the blocks can have a rusticated or smooth finish. On larger structures, a rusticated block is used to visualize the building base, and a cast stone banding marks the transition from the top of the base to the smooth-stone-finish wall.



The use of natural metals as building skin provides a contrast and aesthetic balance to the use of stone on a building's exterior. On Emory buildings, the metals used should be either zinc or copper in overlapping flat panels. Copper is installed without any pre-patina treatment because the Atlanta climate changes the shiny finish to brown in just a few months.

Laminated metal panels can be used in curtain-wall systems and for covering penthouse areas. The color and texture of the panels should imitate the look of copper or zinc.

The roofing material that loudly speaks "Emory" is red clay tile. Typically used on all quad buildings, it is also the material of choice for all other sloped Emory roofs. The tile can be vaulted or flat-shaped units. Although there is no single color in use across campus, the preferred color is a deep rose burgundy that is warm in tone. On the very large roofs, such as Whitehead, a variegated mix of reds is proportionally blended to provide a stronger sense of texture.

A few buildings on campus have slate roofing. These buildings typically are adjacent to or near the Glen Church and Glen School Buildings. Examples include the Rich Building and the Schwartz Center for the Performing Arts.

On Eagle Row, most of the Greek Housing buildings have shingle roofing. Here the preferred shingle is an architectural type in the gray tones.

Other very large roofs, such as on the Woodruff Physical Education Center, are metal standing seam.

Refer to the Design and Construction Standards for roofing material specifications, especially to comply with Emory's environmental guidelines.