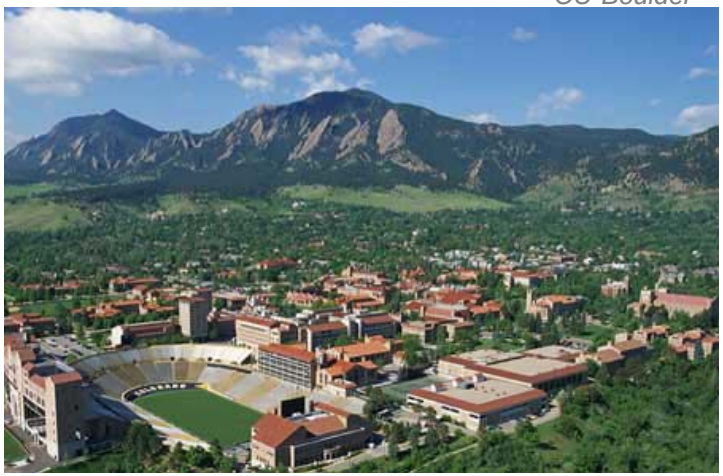
Design Guidelines

What are Design Guidelines?

- Institution Character
- Continuity of Fabric
- Accelerate Design Process, constrained options

CU-Boulder



MIT

"Buildings on the campus reflect many styles, and the essential quality of the campus is one of buildings that speak in their own voice about their purposes and the era in which they were built. It is the landscape and public spaces that integrate these buildings into a coherent whole."

- Penn

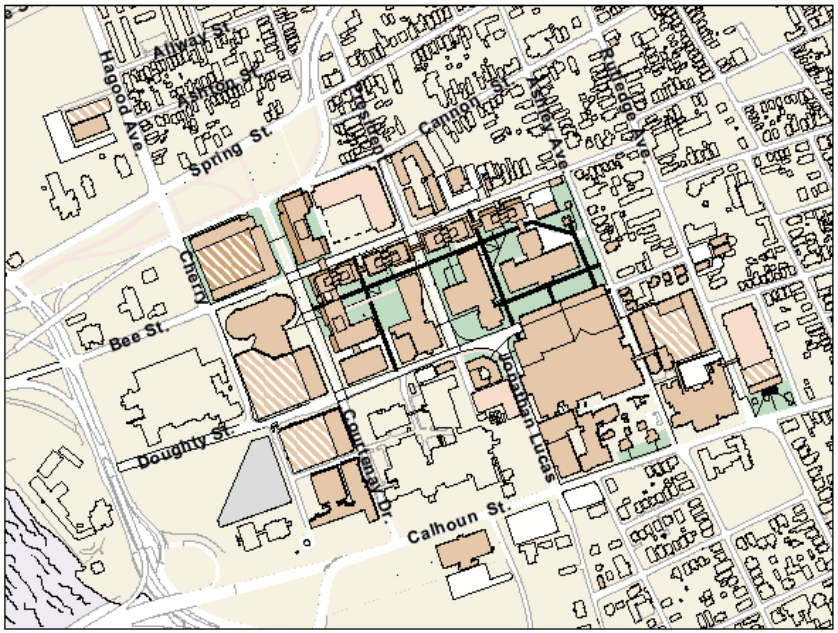
"The principle of unified campus architecture rather than single-building exhibitionism is most important. The CU-Boulder campus is cut from whole cloth, never from patchwork parts."

- CU-Boulder

Understanding the **language**

Landscape

- Existing campus plan
- Diagram of spaces
- Plant life and scale



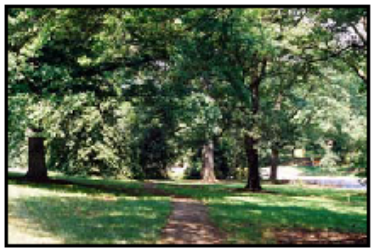
Open Spaces

Pedestrian Paths

Surface parking and cars have taken over the MUSC campus, creating an environment unfriendly to pedestrians. Additional parking decks at the perimeter of campus will replace central surface lots and remove many cars from through streets. A series of shaded, landscaped open spaces connected by a network of tree-lined paths will create a pedestrian-friendly environment, providing gathering spaces for the MUSC community. These defined garden spaces also present naming and funding opportunities for major donors.

1.3 Open Spaces - Existing & Proposed

MUSC



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.

Clemson

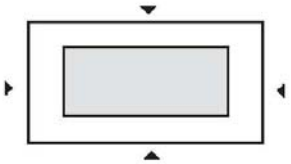
Building Types

- Data
- Diagram studies
- Imagery
- Historical documentation

ENCLOSED COURTYARD

NUMBER OF BUILDINGS IN THIS CATEGORY | 8
APPROXIMATE BUILDING FOOTPRINT SIZE |
Largest | 36,600sf Smallest | 3,300sf Average | 20,800sf

An apparently big and homogenous building that encloses a private yard as its central organizing space. The internal court is either open to the outside or glass enclosed. It can also be defined as a *"compact arrangements of linked structures forming enclosed or nearly enclosed courtyards, inward-turning and reclusive in nature."* —TURNER, P. 241

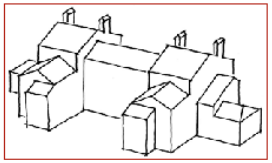


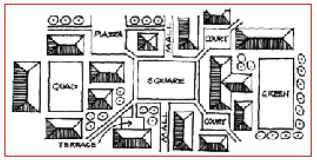
KIRKLAND HOUSE, XXXX

HILLES LIBRARY,

Harvard

Farrand Residence Hall appears as a complex building, but in fact it has only five repeating forms attached at each corner of a single central core building.





Buildings and open space should align in ways that produce a variety of campus outdoor rooms.

Guidelines

- Begin each new building with symmetry in plan, although asymmetrical ideas can be introduced when necessary. Use an assemblage of repeating and overriding forms for interest and economy of costs.
- Site each building or complex as a complementary insert into the campus facilities master plan. Respect neighboring structures and surrounding open spaces, including view and circulation corridors. Minimize footprints to conserve scarce building sites.
- Plan roofs that are gabled and hipped cascading down from the higher building forms to the edges of buildings. Respect the human scale, particularly at ground levels.
- Ideally, plan for a floor plate width that could capture cross ventilation and sunlight. Spread out building forms from a central core, creating pleasant courtyards and forecourts. Limit size of wall openings reflecting less need for daylight in a high plains climate.
- Emulate previous themes, but avoid direct copying. Shed, pavilion, and flat roofs over more simple forms can be added effectively to the Tuscan Vernacular style, stretching the visual experience while reflecting a contemporary functionality.

CU-Boulder

Materials

- Imagery
- Precedents

CONCRETE

While little of the Harvard campus is concrete, the builings that are concrete are highly visible: the Carpenter Center, the Holyoke Center, the Science Center, Peabody Terrace, the Mather Tower, and Gund Hall. The oldest and largest example of concrete architecture on campus is Harvard Stadium.

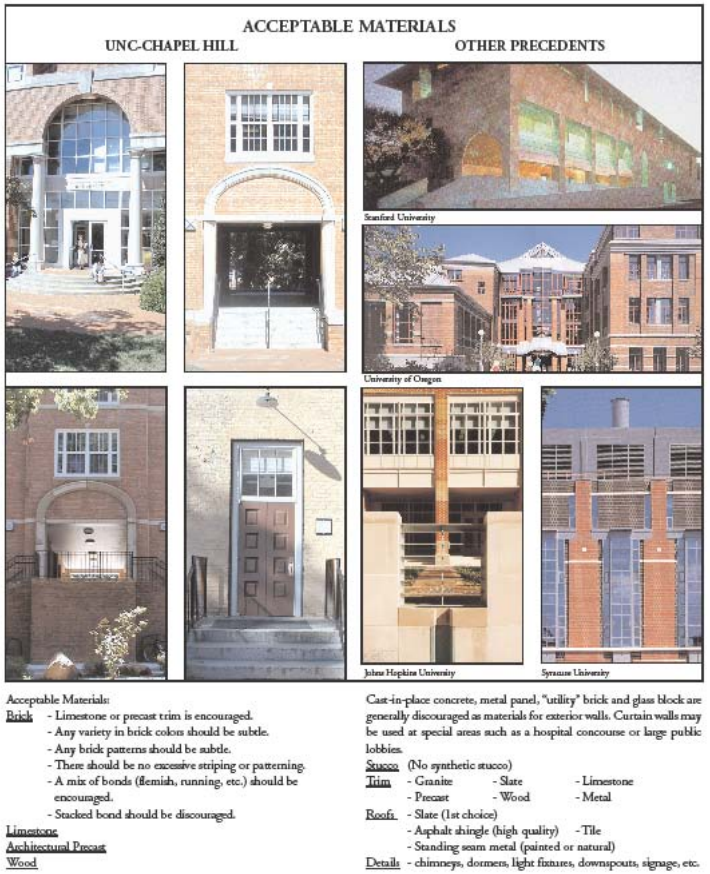

HILLES LIBRARY, 1966


GUND HALL, 1972

GLASS

Glass as a building material has not been used frequently on campus. The absence of glass, in fact, might be telling in terms of the character of the campus architecture, with its

Harvard



Acceptable Materials:

Brick
- Limestone or precast trim is encouraged.
- Any variety in brick colors should be subtle.
- Any brick patterns should be subtle.
- There should be no excessive striping or patterning.
- A mix of bonds (flemish, running, etc.) should be encouraged.
- Stacked bond should be discouraged.

Limestone

Architectural Precast

Wood

Cast-in-place concrete, metal panel, "utility" brick and glass block are generally discouraged as materials for exterior walls. Curtain walls may be used at special areas such as a hospital concourse or large public lobbies.

Stucco (No synthetic stucco)

Trim - Granite - Slate - Limestone - Precast - Wood - Metal

Roofs - Slate (1st choice) - Asphalt shingle (high quality) - Tile - Standing seam metal (painted or natural)

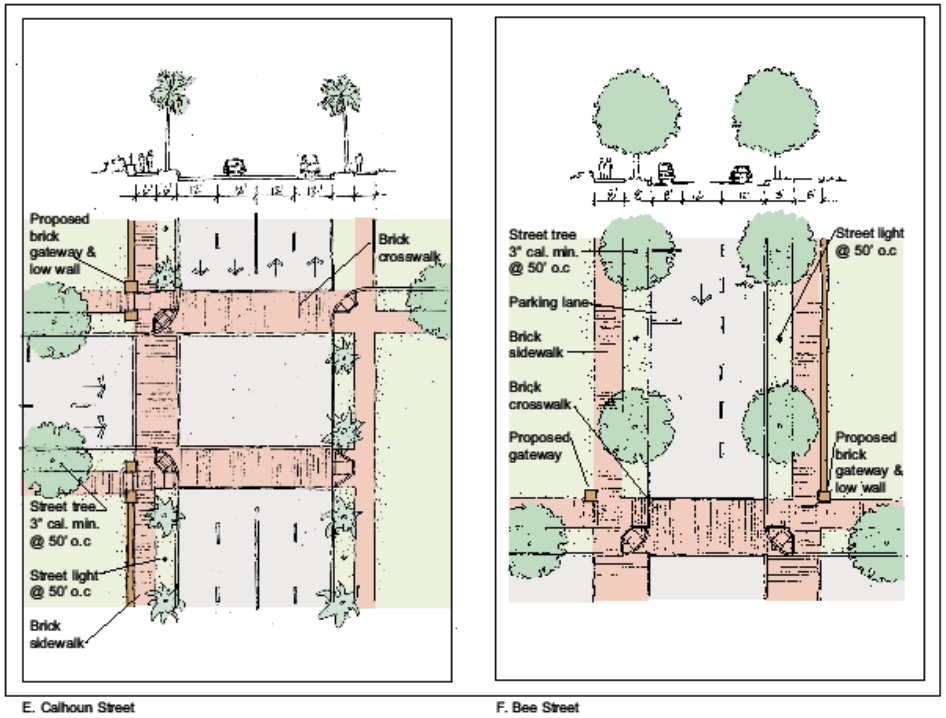
Details - chimneys, dormers, light fixtures, downspouts, signage, etc.

UNC-Chapel Hill

Building the **vocabulary**

Landscape

- Scale
- Plant Species
- Set Standard



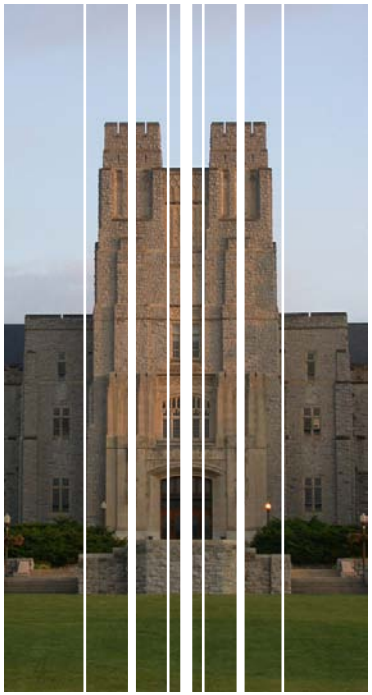
E. Calhoun Street F. Bee Street

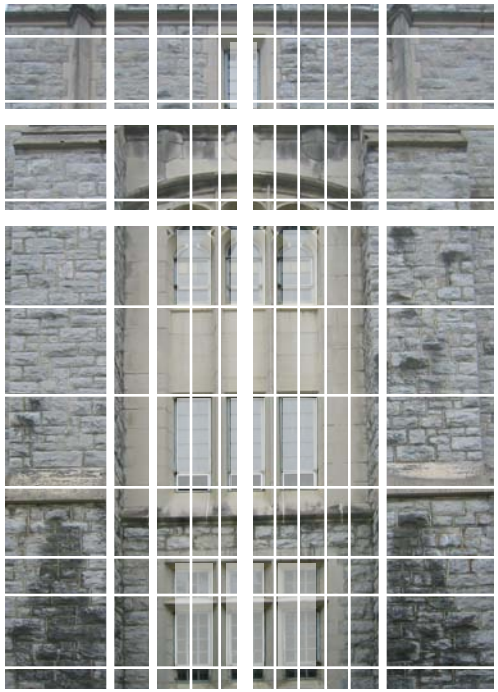
MUSC

UNC-Chapel Hill

Buildings

- Proportion
- Geometry
- Sustainability





VA Tech

Sustainability Criteria

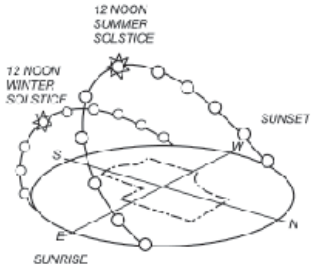
Issues regarding sustainability are addressed in detail in *Stanford University Guidelines for Sustainable Buildings* (2002) and should be integrated into the design of Stanford buildings in consort with these guidelines are followed.

Lyman Hall sunscreens, 1997
(Tanner Leddy Maytum Stacy)

Solar Orientation

Buildings should be sited and designed to take maximum advantage of sunlight and natural ventilation, in order to enhance user comfort and energy conservation. Whenever possible, the following criteria should be addressed in order to take advantage of a building's orientation on its site:

- A shade/shadow analysis must be submitted for review during the design review process; the impact of this analysis should be reflected in the design landscaping and surrounding activity areas, as well as the affect on adjacent facilities.
- Shading devices such as building sunscreens, louvers, or façade articulation must be regarded in the overall building design.
- Use of landscape screening such as deciduous trees or trellises to allow control of the sun at various times of the year should be considered.
- Outdoor activity areas should be located with southern or southwestern exposure to take maximum advantage of the sun.



Solar Orientation

Stanford

Materials

- Establish parameters
- Measurements

Roofs

Special attention should be paid to the arrangement and design of the roof and its various elements. Roofs should be organized and designed as carefully as the other primary exposures of the building. Equipment must be placed within enclosures well integrated with the roofscape.

The major roof form should be sloped at an angle of 27–30 degrees and should have an overhang (eave) proportional to its size and height (2'-6"–4'-0" generally).

Secondary portions of roofs may have a flat-roofed area to accommodate mechanical equipment or scientific instruments, in visually unobtrusive areas.

Roof slopes normally will continue around all corners (hipped rather than shed or gable roofs).

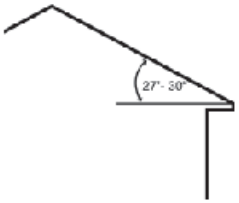
Stacks

Exhaust and plumbing stacks should be grouped and incorporated into the architectural composition of the building they serve. When large in circumference, stacks should be articulated to reduce their scale.

As the stacks will be visible from a distance, it is important that they be designed with a certain degree of uniformity, so that the overall image from a distance is composed.

Placement and configuration of buildings and exhaust stacks should recognize that while prevailing winds are from the northwest, open air flow paths should be created and stagnant air pockets eliminated. (Note: All stacks should extend above each building's boundary layer and will be subject to wind tunnel analysis.)

Kimball Hall roof overhang, 1991 (BAR)

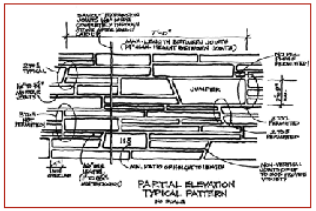


Roof Slope

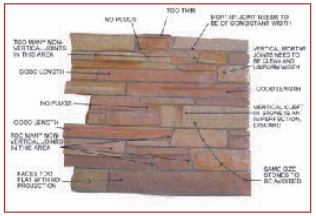
Moore Building roof stack, 2000 (Pei Cobb Freed and Partners)

Stanford

A closeup detail photo of a typical sandstone wall.



Masons perched on building scaffolds work from a graphic sketch serving as a recipe of how to lay a standard campus sandstone wall.



A typical critique of a sandstone wall.

Sandstone Wall Guidelines

- Obtain locally quarried sandstone through stone suppliers who stockpile custom order quantities and colors specific to each project.
- Specify colors and mix (pinks, reds, buffs, and others) that are responsive to surrounding campus buildings. Use a stain face stone wherever practical.
- Determine the pattern of laid-up walls in terms of scale and sizes of stone that reflect the magnitude of the project's walls. Follow the general pattern and accompanying notes, at left, and at www.colorado.edu/architect.
- Lay up stone with the fractured face extending various distances from the vertical mortar wall line. Clip back ends of stone that extend well out from the vertical mortar line.
- Strike corners of walls to a straight vertical line top to bottom.
- Generally, keep stone lengths generous, always more than a foot in length and as long as practical to fit the desired pattern. Avoid any stone less than a 1:3 height to length ratio. Usually, limit stone to a 7" to 8" maximum thickness.
- Insert windows in walls to be consistent in arrangement, form, and function to this climate. Specify black window frames with limestone or sandstone heads, jambs, and sills. Select window glazing that is overall colorless with minimum tinting, especially at ground level where pedestrians circulate. Refer to the Leadership in Energy and Environmental Design (LEED) standards for further information.

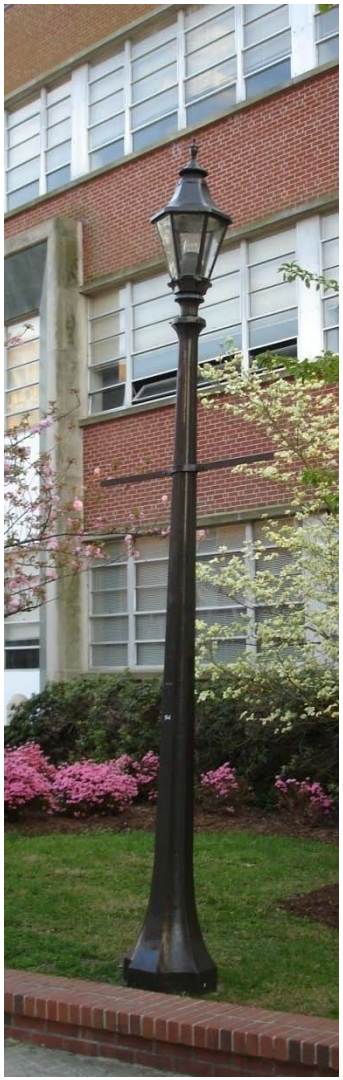
CU-Boulder

grounds

ECU Site Elements Design Guidelines Questions

1. On the spectrum of styles for site elements, where on one end is traditional/historic and on the other end is modern/contemporary:
   - Where do you want to see ECU campus site fixtures?
   - Are there any existing site elements (lights, benches, trash receptacles, bike racks, fences and gates, paving, walls, etc.) on campus that you particularly like or dislike?

2. What materials do you view as important to incorporate into the site elements (i.e. stone, brick, wood, metal, etc.)? Are there areas of the existing campus where the site elements are used well?

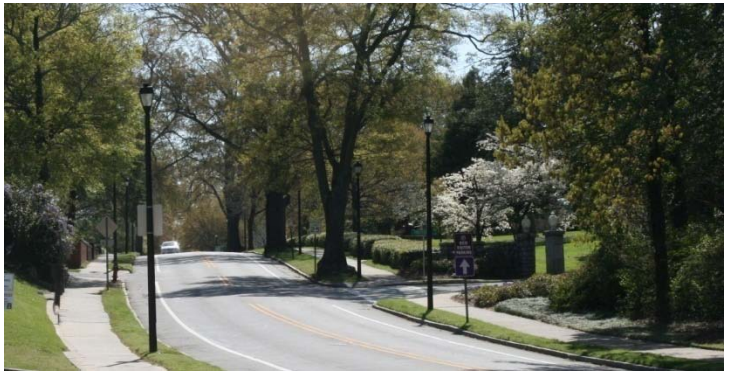


ECU Site Elements Design Guidelines Questions

3. When you hear the words “campus gateway,” what does that mean to you? Is there an example of a successful gateway at ECU?

ECU Site Elements Design Guidelines Questions

4. What qualities would you like to see incorporated into the campus edges (landscape, walls, fences, trees, etc)? Are there examples of existing campus edges at ECU you like? Why?



ECU Site Elements Design Guidelines Questions

5. Thinking of site elements and landscape character only, should the different campus areas (East Campus, West Campus, others) be unique, be unified, or be somewhere in between?

6. What is the appropriate balance between “collegiate-style” manicured open spaces/landscape and more native/sustainable landscaping areas?

ECU Site Elements Design Guidelines Questions

7. What role should maintenance play in the selection of site elements?

8. What role should sustainability play in the selection of site elements?

ECU Site Elements Design Guidelines Questions

9. Should campus circulation routes be dedicated to a single mode, or should they be multi-modal with mixed traffic (i.e. bikes mixed with pedestrians, service/emergency vehicles mixed with pedestrians, cars mixed with bikes, etc)?

Next Steps for Site Design Guidelines:

1. Your responses to the questions
2. Visual listening exercise
3. Development of draft Site Elements guidelines for review and comment
4. Physical Master planning
5. Development of full site and landscape guidelines for review and comment
6. Final Design Guidelines

ORIGINS

ORIGINS

The Earliest Buildings on the East Carolina Teacher's Training School campus were products of Charlotte-based architects Hook & Rodgers. The designs are attributed to the region's leading architect of the era, Charles Christian Hook. Born in Wheeling, West Virginia, C.C. Hook graduated from Washington University, St. Louis, in 1890. Recruited to teach "mechanical drawing" in North Carolina's public schools, Hook relocated to Charlotte. He taught for two years before becoming the city's first full-time, professional architect.

Hook's early commissions were residential, and located predominantly in the street-car community of Dilworth. His early work reflected his clients' tastes and included late-Victorian, Queen Anne homes. As Hook matured he revealed a preference for Neo-Classicism, acknowledging the influence of the "White City" assembled for Chicago's 1893 Columbian Exposition, and the work of New York architects McKim, Mead, and White.

Rejecting Victorian complexity, ornament, and romanticism, proponents of Neo-Classicism advocated simple massing, symmetry, and restrained use of classical decorative motifs. The resulting "purity" of expression was perceived as sufficiently sober for civic and institutional structures, as well as for the homes of business and community leaders. At the turn of the twentieth-century, Southern Cities emerged from the extended period of poverty following the civil war, and embraced both Neo-Classical and Neo-Colonial styles. Hook himself wrote:

"Out of all this chaos we again have a revival of the colonial. Its symmetry, restfulness, and good proportions generally caused it to be superior to all other schools of design. Beyond doubt the colonial style in its purity expresses more real refined sentiment and is more intimately associated with our history than [other] styles … it is not only an association of English history with our own, but expresses authentic memoirs of the American people themselves."

Despite his ideological stance, Hook's work exhibits surprising variety, and a nearly post-modern affection for allusion and borrowing. Of particular relevance, he demonstrates an affinity for the Mediterranean: rusticated or encrusted stone bases, hipped-roofs with mission-style tile in terra cotta or green glaze, and syncopation of arched openings and fenestration.

In 1908 when Hook and Rogers received the commission for Jarvis Dormitory, Hook's vision had become unique: he was operating within a cultural sensibility that valued stability and order, yet accented his work with components both distinct and idiosyncratic. The result has been described as "Spanish Mission," but is significantly more: it is a regional style with significant manifestations at East Carolina University and Queens University, Charlotte.

GENERAL ATTRIBUTES

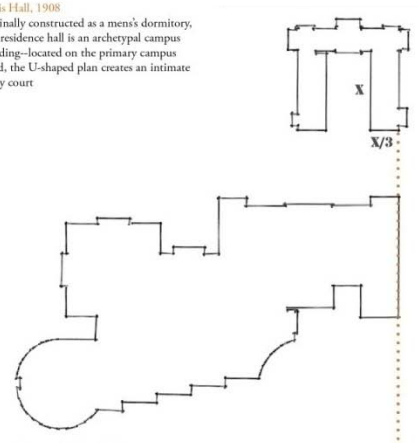
- Massing & Proportion
- Height
- Scale
- Symmetry
- Hierarchy

MASSING

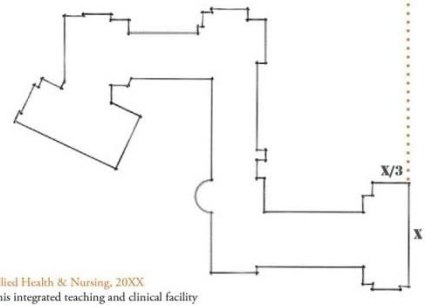
Traditionally, campus buildings were planned to shape and define outdoor space; these buildings are generally viewed through a landscape foreground, and perceived as long and narrow. As the examples from ECU's campus illustrate, these proportional relationships are intuitively recognized, and are applicable to the full range of campus typologies.

Where large, deep floor plates are a programmatic requirement, the plan should be articulated to create the perception of "campus-scale" volumes. These proportional relationships are illustrated three-dimensionally.

Jarvis Hall, 1908
Orginally constructed as a mens's dormitory, this residence hall is an archetypal campus building--located on the primary campus quad, the U-shaped plan creates an intimate entry court



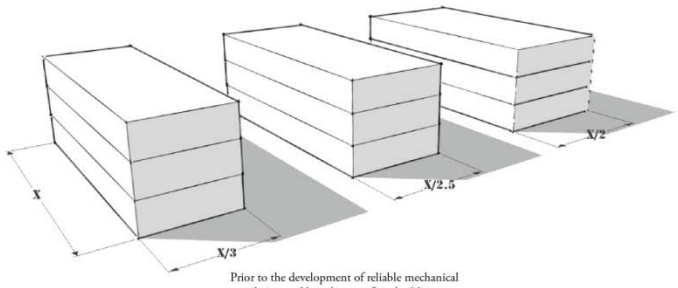
Joyner Library, 19XX - 19XX
Housing a variety of media and functions, including the University Archives



Allied Health & Nursing, 20XX
This integrated teaching and clinical facility

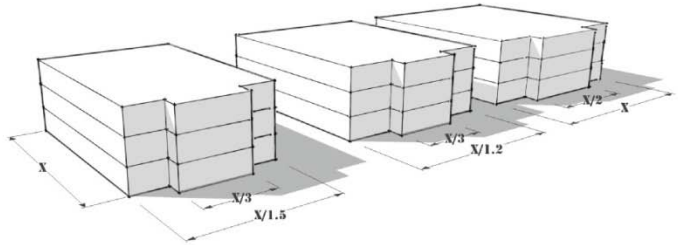
- X : X/3 - X/2 is an optimal range of length to width for plan components and plan articulation

As building technology and functional requirements became increasingly complex, mechanical ventilation systems served deepe floorplates with "layered" program spaces



Prior to the development of reliable mechanical ventilation and low slope roofing, buildings generally has narrower footprints to permit natural ventilation and simple roof framing

- Where deeper floorplates or floor plan components are a program requirement, as in laboratories, clinical facilities, and professional schools, consider articulations to reduce apparent width



Deeper floorplates are typical in clincal and laboratory buildings; floorplate area in these typologies is also increasing to accomodate multi-disciplinary approaches to reserach and patient care

GENERAL ATTRIBUTES

- Massing & Proportion
- Height
- Scale
- Symmetry
- Hierarchy

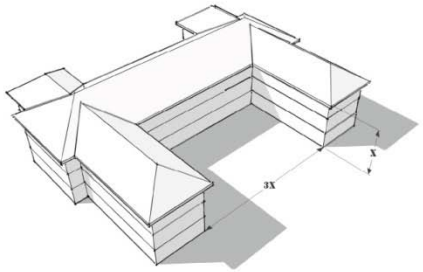
HEIGHT

The early buildings comprising the identity portion of campus are predominantly 2-3 stories, exclusive of roof.

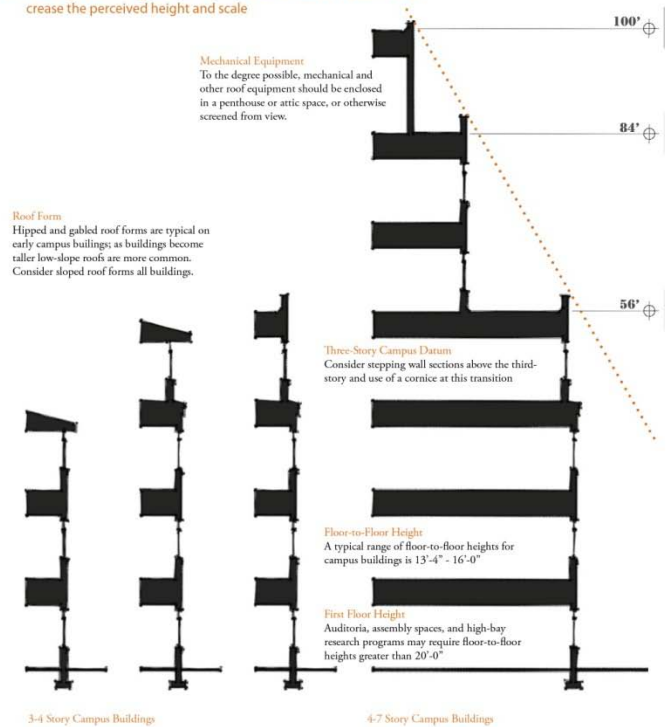
Maintaining human scale.

Consider eccomending taller buildings to increase campus density and preserve campus real estate

- The majority of early buildings comprising the campus identity are two to four stories in height
- In these early buildings, length of facade generally does not exceed three times height, excluding roof, before the introduction of elements that interrupt the length



- As campus becomes increasingly dense, new construction may be substantially taller than early campus buildings
- Buildings exceeding four stories should be set-back in section to decrease the perceived height and scale



GENERAL ATTRIBUTES

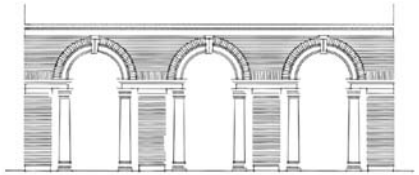
- Massing & Proportion
- Height
- Scale
- Symmetry
- Hierarchy

SCALE

Scale is a function of the propotional relationships bewteen building mass, height, and articulation.

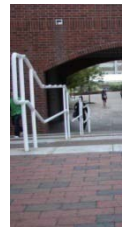
It is important to maintain "Human-Scale" along pedestrian routes and campus green-spaces; this constrains the perceived height, requires buildings that "accomdating" edges and a fairly high-level of detail

- Reptition of smaller scale elements can aggregate into a larger "Human-Scale" facade.



MATERIALS

- Brick
- Grout
- Stone Panels & Accents
- Roof
- Window & Opening Systems
- Ornamentation & Trim
- Glazing
- Inscriptions



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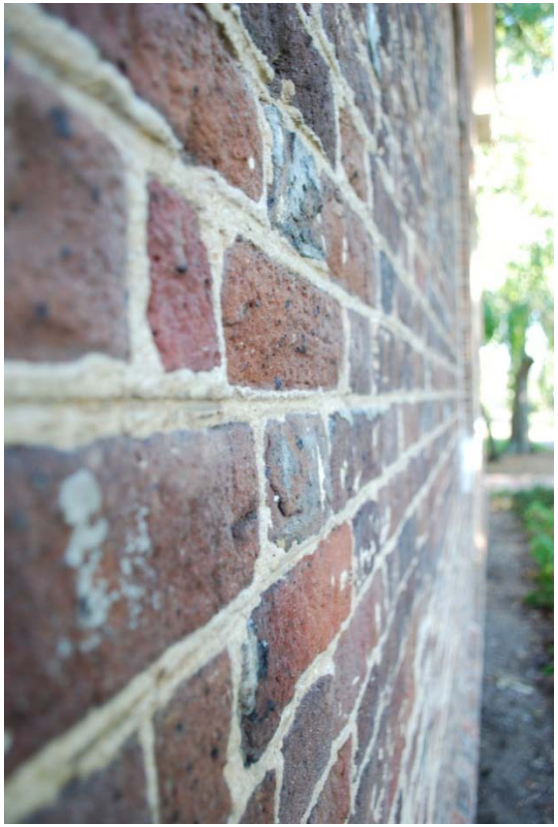

UNC-Chapel Hill

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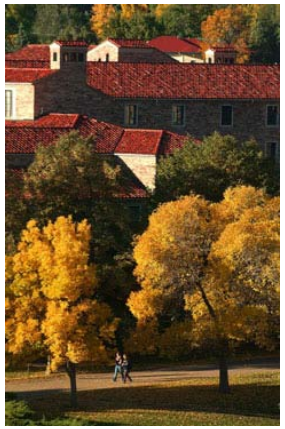
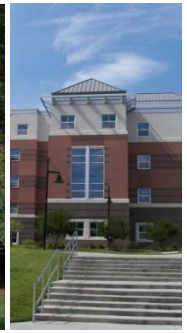


CU-Boulder

VA Tech

Duke

University of Alabama



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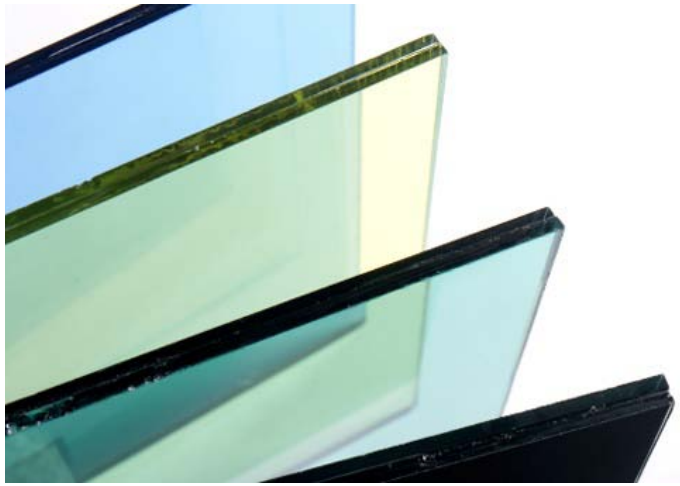
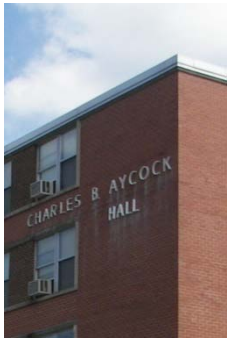
- Stone Panels & Accents
- Roof
- Window & Opening Systems
- Ornamentation & Trim
- Glazing
- Inscriptions



MATERIALS

- Brick
- Grout
- Stone Panels & Accents
- Roof
- Window & Opening Systems
- Ornamentation & Trim
- Glazing
- Inscriptions

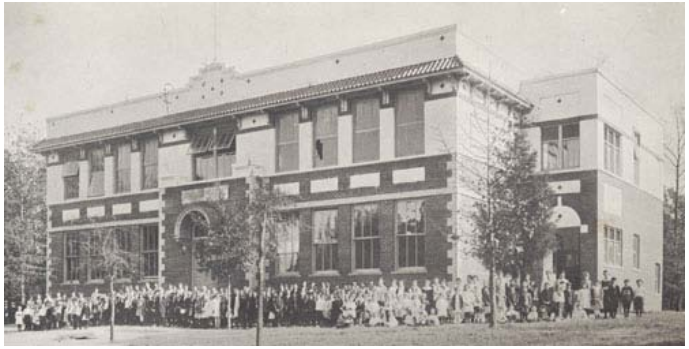


COMPONENTS

- Roof Form
- Columns
- Fenestration
- Entrance
- Ornamentation & Pattern
- Service Areas

Hip Roof

Gable Roof



Flat roof with false front

Flat roof with parapet

COMPONENTS

- Roof Form
- Columns
- Fenestration
- Entrance
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- Service Areas

Hip Roof

Gable Roof

Flat roof with false front

Flat roof with parapet

COMPONENTS

- Roof Form
- Columns
- Fenestration
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- Service Areas

Gable Dormer

Standing Seam

Shed Dormer

Overhang with Bracket Trim

COMPONENTS

- Roof Form
- Columns
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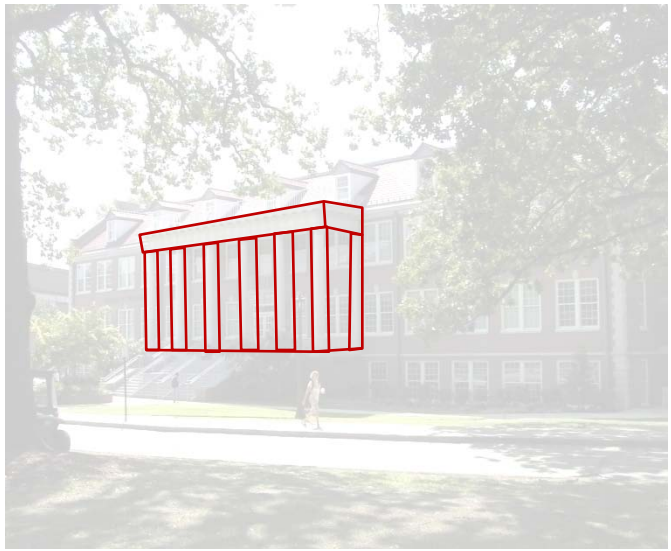
- Ornamentation & Pattern
- Service Areas

Columns

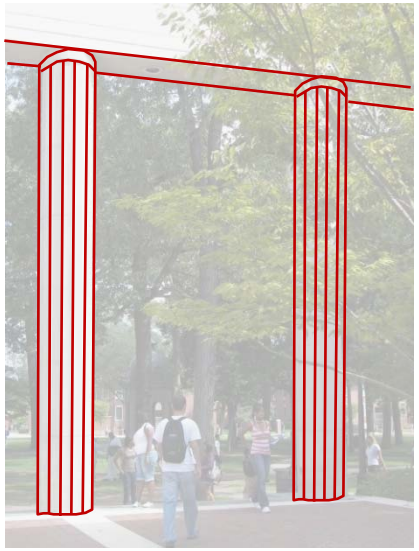
Fluted Columns

COMPONENTS

- Roof Form
- Columns
- Fenestration
- Entrance
- Ornamentation & Pattern
- Service Areas



Columns



Fluted Columns

COMPONENTS

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Arcade

Loggia

?????

Covered Passage

COMPONENTS

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- Service Areas

COMPONENTS

- Roof Form
- Columns
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- Service Areas






COMPONENTS

- Roof Form
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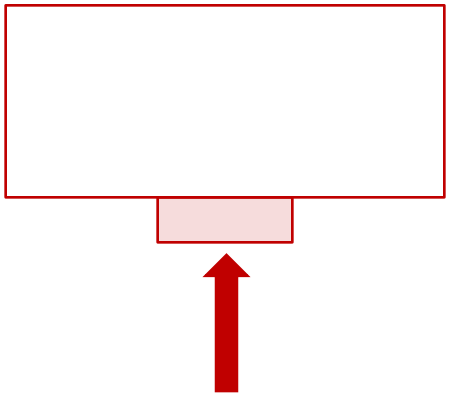
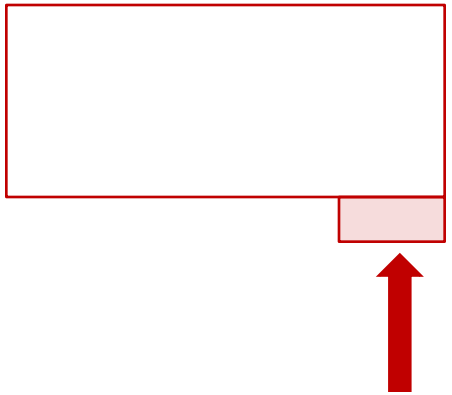
Centered



On Corner



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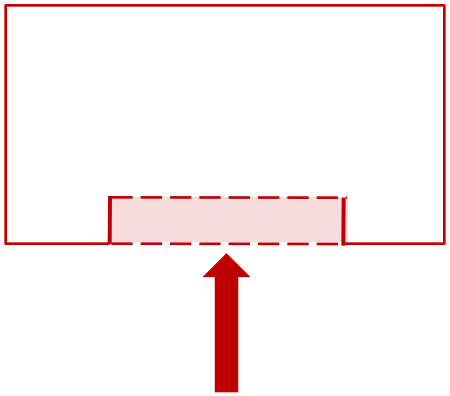
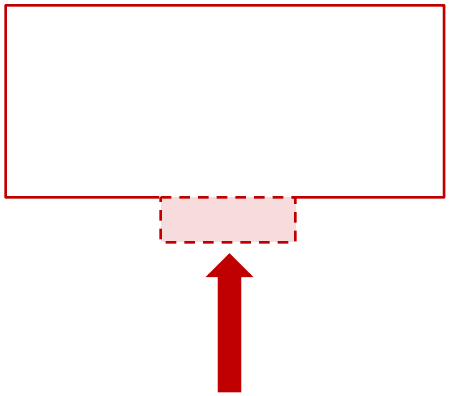
Exterior Vestibule



Porch



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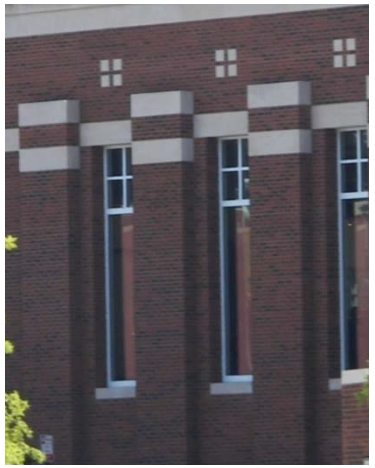

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