



UNIVERSITY OF MISSOURI

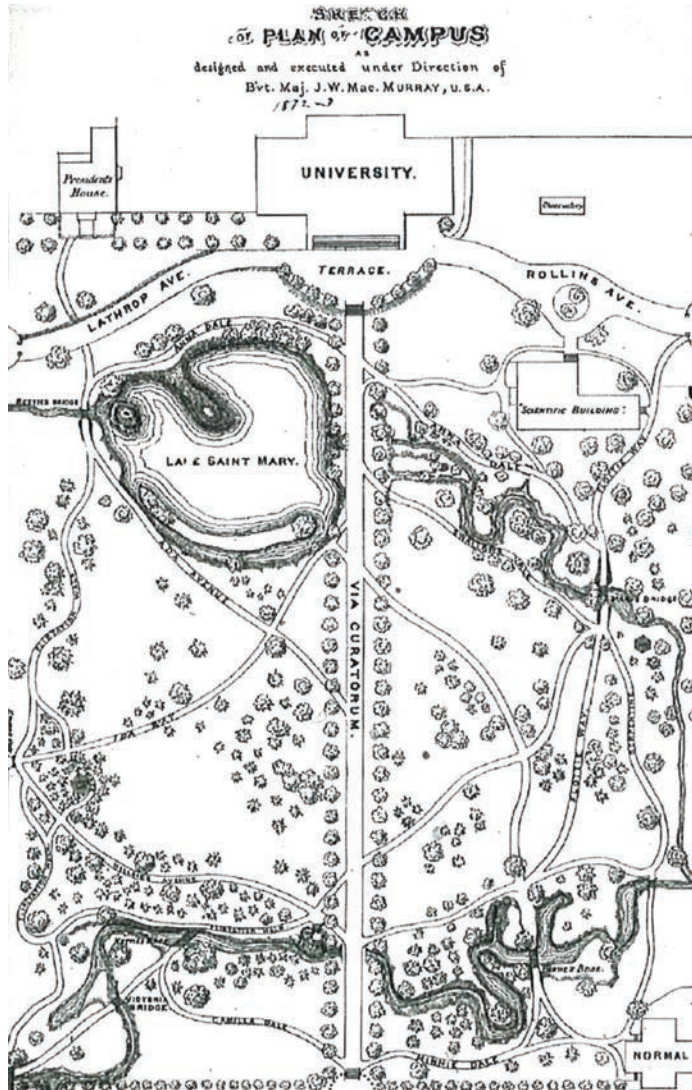
DESIGN PRINCIPLES

SEPTEMBER 2017

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1 PURPOSE & INTRODUCTION



The first campus plan from 1872 shows the original five buildings surrounding expansive open space. This pattern of open space framed by buildings organized at a human scale continues today. Used by permission, State Historical Society of Missouri, Columbia.

1. PREFACE

The MU Design Principles were initiated in 1999 and published in 2002. Many other colleges and universities were developing design guidelines during the late 1990s, and MU used that impetus to develop its own. The original Design Principles committee created a document that was intended to give the designer guidance without constraining or predicated design solutions. These original principles emphasized the importance of the 'space in between' buildings as an important way to unify the campus. An important recommendation was the establishment an Architectural Review Committee to apply the design principles and to create a forum for discussion and review.

The campus has gone through significant growth since 2002, producing new and emerging examples of design. Since the original adoption of the Design Guidelines, the University has adopted new initiatives around campus stewardship, sustainability, storm water management, energy management and landscape that have shaped the way the University constructs buildings, open space and infrastructure. This update provides an opportunity for the University to assess its built-work accomplishments, and to gauge whether the principles have been effective. A tool that helps look forward and also reflect on progress.

2. PURPOSE

The 2017 Design Principles are intended to support and sustain MU's mission of learning and promote MU's stewardship model.

The Design Principles also guide the project design teams on civic-design scale decisions with an eye to the larger campus composition and goals, focusing primarily on the interrelationships of buildings and landscape and their support systems.

The Design Principles also hope to foster a balance between guidelines and creativity.

The Architectural Review Committee (ARC) remains an important advisory group to MU's collaborative design process and shared governance.

The Design Principles are organized as follows:

1. **Project Orientation**
 - 1a. Heritage
 - 1b. Plan building and landscape
 - 1c. Universal Design
 - 1d. Sustainability integration
2. **Project and Landscape Character**
 - 2a. Reinforce unity and harmony
 - 2b. Support intentional design of open space
 - 2c. Maintain a pedestrian focused campus
3. **Architectural Character**
 - 3a. Quality and stewardship
 - 3b. Character appropriate for campus context

3. RESOURCES

a. A designated MU project manager remains the point person for each project.

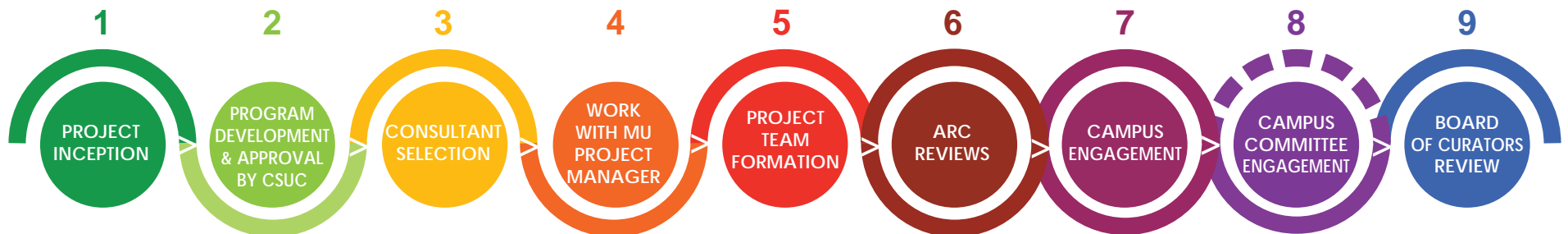
b. The Architectural Review Committee remains an active resource for discussion and review of the project as it matures from SDs to DDs to CDs. It is the starting point of evaluation before campus-wide committees.

c. The MU Campus Master Plan and Climate Action Plan are important companion documents to the Design Principles, and are themselves folded into the larger vision of the Stewardship Model.

d. Several other companion documents will be helpful to the design team throughout the process. These include the:

- [MU Sustainable Building Design Guidelines](#)
- [MU Landscape Master Plan](#)
- [MU Stormwater Master Plan](#)
- [MU Parking and Transportation Master Plan](#)

e. The University of Missouri, [Consultant Procedures and Design Guidelines](#), provides more detailed information regarding building design and specifications.

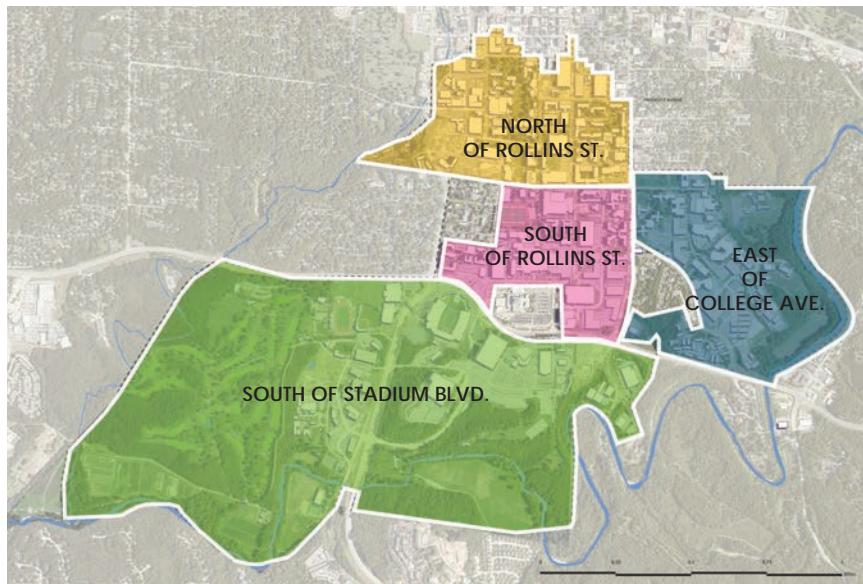


Project Process Flow Chart

2 CAMPUS CONTEXT



Campus Master Plan, Draft 2017



Campus District Plan

1. CAMPUS FRAMEWORK

a. Campus architecture and site improvements reflect MU's growth and development into an internationally visible research university. The campus began as a unified ensemble of buildings and open space that, with special concern for the natural environment, evolved over time into districts distinguished by unique architectural styles and building materials. The following period of campus development have been important in MU's history:

- The Original Campus: In 1875, five structures comprised the campus: the Neoclassic Academic Hall (the main classroom building), the Scientific Building, a president's residence, a small observatory, and a "Normal School" for women's vocational training.
- The 1893 red brick campus: Academic Hall's fiery destruction in 1892 resulted in the creation of an entirely new campus. Within a year, six red-brick Victorian structures had been erected at the edges of a rectangular lawn, later named Francis Quadrangle. In the quadrangle's center, the old Academic Hall's six Ionic columns were left standing as a memorial to the university's beginnings. A new academic hall (later renamed Jesse Hall) anchored the quadrangle's south end and serves today as the main administrative building. Known as the red brick campus, this area was listed on the National Register of Historic Places in 1974.

- The limestone campus: With the laying of the cornerstone of Waters Hall in 1900, both the College of Agriculture and the “limestone campus” began to take shape. Collegiate Gothic buildings of limestone, dedicated to agriculture programs, were erected over three decades in a pasture east of the red brick campus.
- An Expanding Campus: Increasing enrollment from the mid-1940s through the 1970s required the construction of academic, medical science, administrative and student-living facilities in residential areas adjacent to the campus and on open land to the east, south and west of the red brick and limestone campuses. These new structures were built in the International or Early Modern architectural style and faced with buff- or yellow-colored brick to link the older red-brick and limestone structures.
- Planning since 1980: MU’s Campus Master Plan was implemented in 1981 to unify the campus. Properties adjacent to the core campus were acquired, allowing open areas and pedestrian corridors to be created. This began the integration, unification and beautification of campus districts and the development of the university’s historic “sense of place.”

b. The following planning tenets have been an important part of MU’s planning legacy, and continue to bolster the University’s vision for good campus design:

- Buildings should be designed to frame open space.
- Views to important and historic campus landmarks should be preserved.
- A clear framework of pedestrian pathways should be maintained and improved, and building and landscape projects should seek connections to the established campus pedestrian network.
- Projects should use land wisely, offering creative solutions that support compact campus development.
- Projects should promote easy mobility and accessibility.
- Projects located at key campus gateways shall contribute to the first-impression character of the University.

c. Additional and more contemporary tenets also should guide the design team:

- Campus safety: especially with wayfinding and lighting.
- Value of investment: as part of the MU Stewardship Model, the project manager and ARC will review projects for their overall contribution to the betterment of the MU mission and campus, as well as each project’s durability, operations and life cycle costs.
- Energy modeling: to aid in building orientation and fenestration.

2. CAMPUS DISTRICTS

For planning purposes, the campus is categorized into four core-campus areas. These districts are outlined in the diagram to the left.

a. North of Rollins Street: This area highlights the historic red brick and limestone campuses, a transition area called Central Campus, and the important seam where the campus and city land comes together. Academic buildings are concentrated in this area.

b. South of Rollins Street: academic, health care, residential, student life and support buildings comprised this mixed-use area that extends from Rollins Street to Stadium Boulevard.

c. East of College Avenue: also a mixed-use district, this area contains residential along its western edge, with academic, research and support space in the balance of the site.

d. South of Stadium: the Research Commons, intercollegiate athletics, recreation uses, surface parking and support buildings are located in this area of campus, and Stadium Boulevard has an important function as one of the primary gateways to campus.

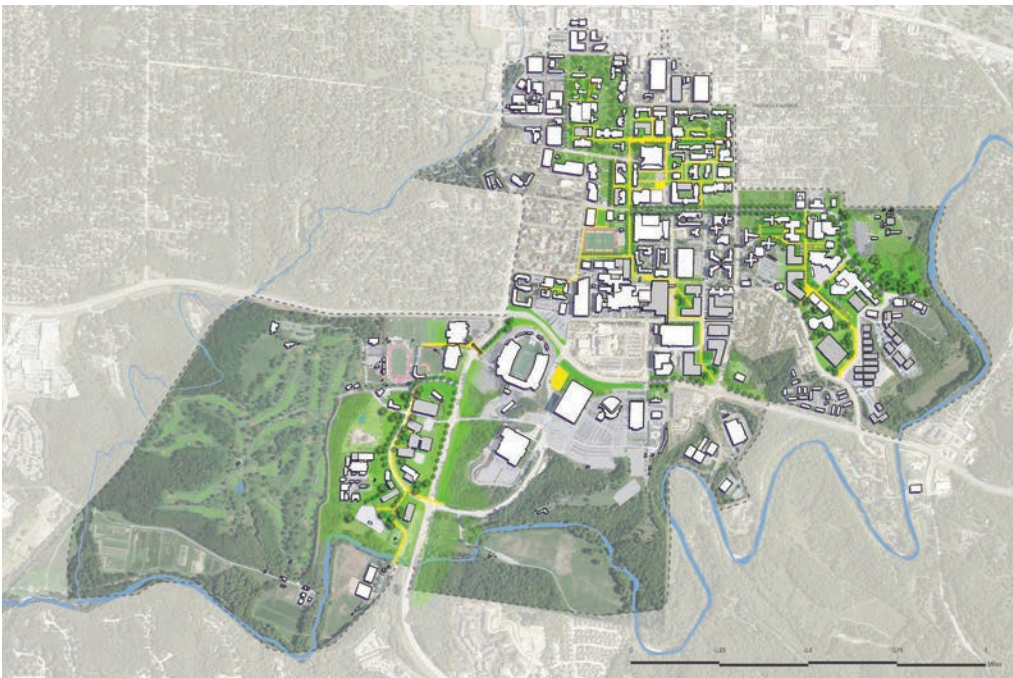
3 PROJECT GUIDELINES



Red brick campus: Swallow Hall



Limestone campus: Lefevre Hall and Schweitzer Hall



2017 Landscape Master Plan

New campus buildings and open space should contribute to the visual harmony of the campus while expressing their own identity and function. Visual harmony is a combination of size, shape, color and texture of the buildings and the open space that they sponsor. While a number of architectural styles are showcased on campus, the intent is to have a variety of architectural expressions that pay homage to their context.

The campus is composed of buildings and open space from a variety of eras and styles. These Design Principles help teams improve future projects by incorporating the heritage of the past, reinforcing functional relationships with program and neighbors, and identifying successful locations on campus where a unique building or landscape features has helped add visual interest

The images to the upper left show how original heritage materials are reinterpreted in buildings across the decades, and how these materials, massing and details respond to changes in building technology, use and activities within. The image of the Landscape Master Plan is intended to show that buildings are part of a large context.

1. PROJECT ORIENTATION

1A. DEMONSTRATE THE HERITAGE OF THE PAST AND PROVIDE CREATIVE OPPORTUNITIES FOR THE FUTURE



Townsend Hall and Reynolds Journalism Institute



A red brick façade is an important unifying element of the red brick campus. Here, Cornell Hall exhibits a more modern brick and limestone banding to be complementary to more historic red brick campus buildings such as Jesse Hall.



The Bond Life Sciences building was intentionally designed to reflect a transition from the Collegiate Gothic of the limestone campus district to a more modern expression appropriate for a contemporary science facility.

When completed in 2006, the University made a conscious shift from the buff brick of the original Dobbs Group towers and constructed the three Southwest Campus Housing buildings with red brick. The deeper, more bold color is more legible in its gateway location on the corner of Stadium Boulevard and Providence Road.

The change in design direction further reinforced the campus edge at a major public intersection of Stadium Drive and Providence Road.

1. PROJECT ORIENTATION

1B. PLAN BUILDING AND LANDSCAPE TOGETHER AND INTENTIONALLY INTEGRATE



The entry vestibule to the Anheuser Busch Natural Resources building intentionally connects the indoor learning space with the outdoor Woodland Garden.



The linear community courtyard that is the heart of Virginia Avenue Housing joins with another more public open courtyard in front of the Plaza 900 dining building.

MU's commitment to open space stems from traditional campus design practiced in early American history. These designs model colleges after small communities and ensure that campuses are spacious and open to the world. The design of Francis Quadrangle, the University's most historic and well-known open space on campus, is similar to a plan first implemented by Thomas Jefferson at the University of Virginia. It epitomizes his ideal of the American college as an "Academical Village."

Because the MU campus is so large, open spaces should be distributed throughout to help foster this sense of community and reinforce MU's sense of unity and identity. These landscape spaces, and the campus districts they serve, should be further reinforced by pedestrian and visual axes, portals, and other landscape features that connect the large campus together and emphasize the importance of pedestrian scale and movement.

1C. MEET/EXCEED UNIVERSAL DESIGN AND ACCESS REQUIREMENTS

Universal design allows for diverse students to access the areas of campus together and have similar experiences with the landscape and building design.



Pedestrian entry to Hawthorn and Galena residence halls.



Stankowski Field framed by the School of Nursing and Patient-Centered Care Learning Center (PCCLC).

1D. APPLY SUSTAINABILITY PRINCIPLES INTO THE DESIGN

The University of Missouri is dedicated to environmentally sustainable policies and practices that promote responsible **stewardship of existing resources and the environment**. Future projects should evaluate the following:

- Utilize “simple box” energy models early in the design process to evaluate orientation and materials.
- Avoid unnecessary environmental impact to such as heritage or other mature trees and/or riparian corridors.
- Reduce stormwater runoff and improving runoff quality.
- Integrate site topography within the design.
- Consider options for on-site renewable energy implementation (infrequent).



Gateway Hall purposely integrates stormwater management into its landscape design.



Brooks Hall solar panels for residence hall domestic water heating.



The south and west facades of PCCLC minimize solar gain and employ vertical shading fins, while glazing is maximized on the north and south facades. The south facade is additionally served by tuned horizontal louvers to harvest daylighting.



Switzler Hall's renovation and addition allowed a more efficient reuse of a historic building and also supports campus walkability and compactness.

2. PROJECT AND LANDSCAPE CHARACTER

2A. REINFORCE UNITY AND HARMONY OF THE CAMPUS THROUGH LANDSCAPE DESIGN

i. PROVIDE FOR HUMAN COMFORT



Pedestrian focus on Arts and Sciences Mall

ii. INTEGRATE SITE DESIGN WITH THE BOTANIC GARDEN



Butterfly Garden near Eckles Hall

The spaces created by and between campus buildings contribute as much to MU's "sense of place" as the buildings themselves. Open space hosts ceremonial, social and education functions, creates areas of respite, and promote serendipitous encounters that add to campus vitality and comprise a fundamental part of the learning process. Improving human comfort and safety is a goal of each open space, whether by shade, lighting, or benches and seat walls.

The Mizzou Botanic Garden embraces these "sense of place" principles and is an important landscape framework for campus. The siting and design of new buildings, as well as building renovation and addition projects, can provide opportunities for future Botanic Garden development.

2B. SUPPORT INTENTIONAL DESIGN OF OPEN SPACE

i. CREATE OPEN SPACE THAT IS PART OF THE OVERALL BUILDING/SITE DESIGN SOLUTION WHEN POSSIBLE



Student Center and Kuhlman Court come together as student gathering area.



Ellis Library Speakers Circle entry

2C. MAINTAIN A PEDESTRIAN FOCUS ON CAMPUS

i. PROVIDE ADEQUATE SITE LIGHTING



Lighting for the red brick campus as seen at McAlester Park



Lighting on Carnahan Quad

Appropriate and effective site lighting can strengthen and define open space both as daytime physical elements as well as nighttime functional lanterns. Site lighting reinforces the character of a district while unifying the campus fabric.

ii. INTEGRATE UTILITY NEEDS WITH LANDSCAPE DESIGN



The Student Recreation Complex screens its cooling towers behind a brick landscape wall.

Because campus buildings often have pedestrians entering all four sides, screening building service becomes an important and creative building element. Landscape walls, architectural doors and landscape buffers have been effective screening solutions on campus.

iii. SUPPORT SITE SERVICE NEEDS (TRASH, RECYCLING, SERVICE BAYS, SNOW REMOVAL AND STORAGE)



The MU Student Center masks its loading dock area behind service doors.



East Campus Chilled Water Plant

3. ARCHITECTURAL CHARACTER

3A. PROVIDE BUILDINGS THAT EMULATE MU'S VISION FOR QUALITY AND STEWARDSHIP

i. STEWARDSHIP (INVESTMENT VALUE OVERALL, WHERE TO SPEND MONEY ON THE BUILDING)

In 2009, MU created the Mizzou Stewardship Model. This model, which has been adapted over time, seeks to right-size the campus by solving deficiencies by renovating, replacing, or removing ineffective buildings instead of spending funding on small repairs that do little to further the University's academic mission. Stewardship projects improve academic performance, bring buildings into current ADA and life safety code compliance and eliminate deferred maintenance, liabilities.

The Design Principles follow the Mizzou Stewardship Model by thinking proactively and strategically about the future. The Principles support the idea that all campus spaces, whether interior or exterior, should support the scholarly work of the university, improve the experience of learning on campus, and meet the needs of today's campus community in the most fiscally responsible way.



The 2015 Connector between Gwynn and Stanley Hall



The Clinical Support and Education Building uses basic but handsome materials and details.



Lafferre Hall north side

3A. PROVIDE BUILDINGS THAT EMULATE MU'S VISION FOR QUALITY AND STEWARDSHIP

ii. ICONIC BUILDING

THIS TYPE OF BUILDING CAN BE MODERN OR HERITAGE (HISTORIC) WITH A HIGHER TYPE OF EXTERIOR ELEMENT SUCH AS A "TOWER" OR SPECIAL EXTERIOR MATERIAL. THIS BUILDING WILL BE RARE ON CAMPUS.



Jesse Hall



Cornell Hall

iii. CONTEXT BUILDINGS

THESE ARE BUILDINGS THAT ARE NOT OVERT STATEMENTS OF ARCHITECTURAL INDIVIDUALISM, THESE BUILDINGS ARE THE FABRIC OF THE CAMPUS AND HELP CREATE THE EDGES OF OPEN SPACE. THIS IS THE PRIMARY TYPE OF BUILDING ON THE MAIN CAMPUS.



Reynolds Alumni Center and Traditions Plaza

iv. SUPPORT BUILDINGS

GENERALLY AT THE EDGE OF CAMPUS IN LOW DENSITY AREAS AND SERVE SPECIFIC PURPOSES. THEY ARE NOT INTENDED FOR THE GENERAL PUBLIC AND SHOULD NOT ATTRACT ATTENTION. THIS TYPE OF BUILDING IS RARE.



Swine Research Center



Swallow Hall



Student Recreation Complex building west entry



Vet Med Ambulatory building

3. ARCHITECTURAL CHARACTER

3B. CREATE AN AESTHETIC CHARACTER APPROPRIATE FOR THE CAMPUS CONTEXT



College Avenue Hall Housing



Patient Care Tower

i. SCALE/MASSING

An issue of particular concern for the MU campus is the scale and massing of buildings and additions. Recognizing that some diversity enriches the visual environment and humanizes the scale of the surroundings, building size should be controlled to maintain a common scale relationship between adjacent or context buildings and the proposed buildings. The appropriate ratio of the building floor area to the site area should be consistent within the related district, and new building projects should make particularly efficient use of land within the core-campus area. The infill study developed as a subset to the MP provides guidance on density and campus development.



Lafferre Hall

ii. BUILDING SHELL

Walls should be brick masonry, precast concrete (if it incorporates detail at the same level as its district), or concrete masonry units coupled with stone/cast stone trim. Metal panel and curtain wall fenestration may be introduced and preferred in certain instances and in conjunction with balancing the stewardship model and integration of the campus past with campus future. Roof design should take form and materials cues from the district. Other materials can be evaluated in keeping with the evolution of campus and development of new building systems.



Plaza 900

iii. TRANSPARENCY

Buildings in the campus core should be designed with a high level of transparency that encourages visual connections between indoor and outdoor spaces. First-floor space, particularly areas that feature lounges, lobbies, or other public space, could incorporate larger areas of glass to showcase activity within the building. These interior areas, as well as building entries, should be integrally designed with the landscape to integrate views from inside to outside and vice-versa.



MU Chemistry Building and addition

iv. BUILDING FEATURES AND ENTRIES

Differentiating features in the building façade should be introduced when a building is located at the end of a visual axis or where large facades would benefit from scale elements. These features may include building entrances, vertical projections or recesses in the façade plane, or higher level of transparency in the fenestration. Canopies, accents, or recessed doorways and air-lock foyers must be used at all major entrances to protect against inclement weather, and the primary entries should be easily identifiable in the building and landscape design. These entries should incorporate best practices for safety, including access control appropriate to the building's use.



Eckles Hall and Stringer Wing

v. AMENITIES AND PUBLIC ART

Site furnishings should be located to form an uncluttered ensemble that does not impede important visual corridors or impede pedestrian circulation. Site furnishings should be integrated into the overall building and landscape design. Public art, historic monuments and memorials are important campus elements enrich the experience on campus. However, new public art is installed infrequently.

vi. INTEGRATION AND AESTHETIC EXPRESSION OF MECHANICAL SYSTEMS / STACKS

The type of building gradation will inform the way in which mechanical systems are expressed. Iconic and Context buildings will need to integrate the systems to be grouped and hidden behind screen walls or in penthouses. For Support buildings, shielding these systems from view may be less needed if the building is not visible from a major public way.