Design Principles

The Campus, The Buildings & The Space Between
University of Missouri-Columbia
Design Principles

The Campus, The Buildings & The Space Between

These Design Principles are philosophical in nature and capture and reflect the University of Missouri’s architecture and “sense of place.” These principles are intended to give the designer guidance with issues such as building massing and scale, relationships to existing buildings, and use of materials, textures and colors in creating building environments and shaping open spaces while maintaining the historical character and traditions of the campus. They are not intended to be so constraining as to stifle analysis and judgment and predicate design solutions. Their purpose is to achieve a balance between the rules set forth and the judgments that must be exercised at each phase of plan development, so that the campus is developed as a whole over an extended period of time. The desired result is a single integrated campus design in which the parts are all related to one another, regardless of when they are built.

The MU Design Principles are a complement to the MU Campus Master Plan and the UM Consultant Procedures and Design Guidelines. The Campus Master Plan reflects a continuous planning effort that evaluates proposed campus growth against a set of planning principles. The Consultant Procedures and Design Guidelines defines the process for designing a project for any campus in the University of Missouri System and outlines standards and preferences for the use of materials, equipment and building systems. Particular requirements are defined for the Columbia campus.

MU project managers serve as a resource for guiding architectural design. The project managers will facilitate the review and approval process by presenting the proposed design to the MU Architectural Review Committee. The Architectural Review Committee is charged with reviewing designs for compliance with these Design Principles. The committee is comprised of MU staff, architectural and administrative professionals, and the Campus Master Planning Consultant.

The Campus

MU’s architecture is varied, ranging from the historic Red Campus and White Campus Districts on the north end to the recently developed Sports Park District with traditional red brick on the south end. In all, the MU campus is comprised of eight districts that blend together to create a unified composite of building architecture and landscape design.

MU’s eight districts:

- Red Campus District: Historic Francis Quadrangle and the South Quadrangle
- White Campus District: Memorial Union, Ellis Library and neighboring limestone buildings
- East Campus District: Agriculture and Vet Med facilities east of College Avenue
- Health Sciences District: Facilities comprising MU Health Care
- Sports Park District: Athletic facilities south of Stadium Boulevard
- Research Park District: Reactor Field, MURR, Dalton and neighboring facilities
- Student Life District: Residential, dining and recreation facilities
- Southeast Campus District: Undeveloped future site of the Performing Arts Center
Harmony of Campus

The basic goal of new architecture should be to contribute to the visual harmony of the campus while expressing its own statement. Central to the idea of achieving a unified design for the Campus is the need to develop harmony yet individuality amongst districts. This applies to both new and existing buildings within a specific district and those that border and bridge districts. 

These ties should be visual and functional. Visual ties involve building form defined in fundamental aspects such as size, shape, color, and texture. Buildings that possess similar aspects of form will be perceived as a unified group. The more aspects that are similar, the greater sense of unity there will be. This does not suggest that all buildings need to look alike or utilize exactly the same physical features of their neighbors. Differences can evoke interest and improve the attractiveness of the visual environment.

No one aspect of form is responsible for visual harmony; rather, a combination of factors unique to each situation will result in a compatible expression. It should also be noted that, while this discussion pertains to buildings, the unifying influence of landscaping contributes significantly to the harmony and unification of MU’s districts. The Francis and South Quadrangles (pictured on cover) are examples where the aspects of shared building size, location, and alignment around the quadrangle space exert a unifying influence in spite of differences in era, texture, and building shape. A strong example of harmony on a smaller scale is the Stringer Addition that connects Eckles Hall (built in the 1940s) and Agricultural Engineering (built in the 1980s) with similar shape, color, texture, roofing material, and window definition resulting in a unified appearance that complements the architectural character of each building.

The Geology Building, Agriculture Building, and Fine Arts Building, however, are examples of disharmonious building designs because they departed from the architectural character of their respective districts.

Open Space and Edges

Unity and a strong sense of place are achieved by the preservation of open space and development of “collegial” edges. The edge created along University Avenue and the corner of University Avenue with College Avenue is a successful example of achieving both. The White Campus buildings that create this edge—Schweitzer, Stephens, Lefevre, Waters, and Mumford Halls—are placed in a manner that articulates open space, draws one into the campus, and establishes a highly identifiable campus edge.

The development of courtyards and plazas, like those located at Cornell Hall, Hulston Hall, Agricultural Engineering, Engineering Building East and the Virginia Avenue Residential and Dining Facilities, are as critical to the success of a project as the buildings themselves.
When a new building or building addition is sited, the Architectural Review Committee will establish setback lines and/or build-to lines that develop unity among neighboring buildings by means of common alignment. These setback and build-to lines will help to clearly define open spaces and pathways.

The Architectural Review Committee will review buildings for compliance with the Campus Master Plan by establishing and maintaining sightlines to the Jesse Hall Dome, Memorial Union Tower, and other present and future campus icons.

Scale and Massing

An issue of particular concern for the MU Campus is the scale and massing of buildings and additions. The Architectural Review Committee will evaluate how well the scale and massing of a proposed structure provides unity within districts and transition between districts. An excellent example of transition is the decrease in scale from University Hospital to the Sinclair School of Nursing to the Student Recreation Center and Brady Commons.

Future parking structures, given their predisposed scale and massing, must respect their impact on the unity within and between districts. Similarly, the future development of the Southeast Campus District must respect the scale and massing of the neighboring Student Life and Health Sciences Districts.

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 existing and proposed buildings. Building height, in most districts, should typically be three to five stories, or 40-60 feet. Only special architectural elements in key landmark locations as reviewed by the Architectural Review Committee should exceed this limit. Examples of these elements are the Memorial Union tower and recently completed Cornell Hall entry tower.

Building Shape, Color and Texture

The campus is a unique collection of many different types and styles of buildings. Harmony within the districts has been achieved through use of building shapes, color and texture particular to each district. The original Red Campus, developed in the late 19th century, consists of traditional red brick buildings with strong stone bases, stone cornices, pitched black slate roofs, regularly spaced double-sash windows, and strong entry tower elements. The White Campus, constructed in the early 20th century, is a collection of white limestone buildings of a collegiate Gothic style.
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Both the Red Campus District and White Campus District create an overall building texture and color pattern that is generally restrained, but lively in character. The walls are regular and continuous, not sculpted, and the degree of transparency is relatively high so walls do not appear blank and impassive. The Architectural Review Committee will not require that either of these styles be adopted, but will require that new buildings be designed to achieve the regularity, transparency, color pattern and lively character of these styles in the proper context.

The buff-colored buildings scattered among the Red Campus, White Campus and Student Life Districts are more difficult to describe and define. These include buildings primarily constructed in the second half of the 20th century that started out as part of the post-war era movement and more recently transitioned into combinations of buff-colored brick, precast concrete, and stone panels. These buildings also employ larger spans of glass window walls. Some of these buildings are more successful than others in compatibility within a given campus district or between new and old architecture.

The Buildings

The collegial fabric of the campus is reinforced in the way that buildings define and strengthen open spaces, and by the way that buildings speak to one another in composition of massing, materials and entrance locations. By thoughtful use of façade materials, proportions and window rhythms, the most contemporary and functional of designs pay homage to nearby historic buildings, without calling inordinate attention to individual structures. Architectural variety and richness is accomplished by clearly expressing the function and use of each building, by articulating the treatment of façades, and by creating transparent, welcoming environments at the principal building entrances.

Quality

Our goal is to design and construct buildings with sufficient quality of materials, durability and detailing to ensure minimal maintenance for the lifetime of the building. Buildings should be designed to be functional and useable for a life expectancy of 100 years. Effort should be focused on the building infrastructure to allow technological and functional changes over time.

Size

In order to preserve the build-out capacity of the campus, buildings should generally be no less than two stories above grade and provide a basement level. Higher buildings are permitted, but the height must demonstrate sensitivity to adjacent and nearby buildings. The appropriate ratio of the building floor area to the site area should be consistent within the related district.
Building Shell

Roof design should be consistent with and sympathetic to the district. Buildings should incorporate sections or portions with pitched roofs or elements, and consideration should be given to vantage points and sightlines. Roof projections for the purposes of mechanical, ventilation, and/or plumbing requirements must be minimized and treated as elements contributing to the architecture of the building. A roof-like parapet shall enclose flat roof areas used for placement of mechanical equipment. Acceptable materials are: slate, copper, zinc, and pre-finished metal standing seam. Stacks and vents must be ganged or “manifolded” into architectural projections.

Walls should be brick masonry, stone, precast concrete or concrete masonry units with stone/cast stone trim. Precast concrete may be used if it incorporates a level of architectural detail commensurate with the surrounding district. Prefabricated curtain walls may be acceptable in certain situations. Proposed exterior colors will require approval of the Architectural Review Committee.

Windows must be pre-finished metal frame with double-pane or insulating glass. Frame color should be harmonious with the campus district and may vary to complement the color of the roofs and walls. Reflective glass is not acceptable—"low-e", tinted or energy-efficient glass is encouraged.

Features

In circumstances where a building is located at the end of a visual axis such as a street, major walk, or gateway, differentiating features in the building façade should be introduced to visually anchor the axis. Differentiating features may include major building entrances, archways, vertical projections above the cornice or eaves line, recesses or projections in the façade plane, or higher levels of transparency in the fenestration pattern.

Measures to modify and enliven large façades are encouraged. Such measures may include recesses, projections and offsets to articulate the façade plane, horizontal coursing, variations from the predominant fenestration pattern, and modest variations in materials. Such measures will be judged as to their appropriateness to the building and the surrounding context.

Canopies, accents, or recessed doorways at major entrances must be used to protect occupants and visitors from inclement weather. The design and material of canopies and projections must be compatible with the design of the building. Air-lock foyers must also be used at major entrances. The main building entrance should be easily identifiable and part of a larger “entrance element.” This element should be in scale with the building plane.
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Transparency

Exterior building walls should be thought of as both a specific means of containing and defining interior space, and as an element centrally involved in the broader goal of defining the campus. New buildings in the core of the campus should be designed as public buildings, with a level of transparency that encourages a visual fusion of indoor and outdoor spaces. Hulston Hall, Cornell Hall, and the Life Sciences Center have successfully achieved a level of transparency by designing passageways that allow a visual connection of open spaces on either side of the building, thereby encouraging pedestrian traffic through the building as part of the natural campus traffic flow. The glass-wrapped stair tower of the Chemistry Addition facing College Avenue, the transparency of the Lee Hills Hall open lobby and rotunda, the South Quadrangle side of Reynolds Alumni Center, and Adams Conference Center at the Veterinary Medicine Building are good examples of how the larger campus as a public place can be experienced from within the buildings. Solid walls, particularly at ground level, tend to emphasize boundaries and separation, undermining the notion of the campus as a public place.

The Space Between

MU’s commitment to open space stems from traditional campus designs 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 a community or “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.

Spaces

The spaces created by and between campus buildings contribute as much to MU’s “sense of place” as the buildings themselves. Open spaces can serve multiple purposes, often as stages for ceremonial, social, and educational functions. In addition, they promote chance encounters that not only enrich campus life, but also comprise a fundamental part of the learning process. These open spaces provide a quiet, relaxing retreat from the hectic pace of campus life.

There is a wide spectrum of open spaces on the MU campus. There are large formal quadrangles such as the Francis Quadrangle and the South Quadrangle, which are axial, iconic spaces framed by an ensemble of buildings that are generally consistent in scale and façade material. Kuhlman Court and Memorial Tower Mall are examples of smaller quads, while the Arts & Sciences Mall and Lowry Mall represent linear
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open corridors that link areas of the campus together. Smaller, more intimate spaces interspersed throughout the central campus include the courtyards at Hulston Hall, Neff Hall and Natural Resources. Open spaces at campus edges such as McAlester Park, Stankowski Field, the oval west of Eckles Hall, and the University Avenue forelawn fronting Mumford, Waters and LeFevre Halls, provide further spatial variety and identity to the campus. The significant characteristic of the open space system is that it comprises a network of spaces and places that unify the campus. It also provides a coherent framework for building development and spatial relief in the built environment. Those characteristics are to be scrupulously maintained in the design of future buildings and spaces.

Since the early 1980s, MU has taken bold steps in developing its open spaces and creating more green space on the campus. The South Quadrangle, Kuhlman Court, Speakers Circle, and Lowry Mall are dramatic examples of both effective planning and taking advantage of opportunities. As new buildings are designed and sited, and when existing buildings are considered for demolition, an ever-increasing amount of attention must be devoted toward creating new exterior public spaces that add to the campus environment.

Botanic Garden

The University of Missouri Botanic Garden is a public resource that offers the opportunity to learn how plants can better our lives through the collection, display, interpretation and conservation of plants suited to central Missouri. The Botanic Garden is charged with ensuring that the landscape of the campus promotes its unity and identity, and, wherever possible, enhances the University’s educational goals.

The Botanic Garden has a master plan to identify those places where garden development enhances the open spaces on campus. The Gardens on Francis Quadrangle, The Ellis Perennial Garden, and the South Quadrangle Gardens are examples where intense landscape development adds an aesthetic and educational component to the space while creating a richer environment for interaction.

The siting and design of new buildings can provide opportunities for future Botanic Garden development. Forelawns and entry plazas in building set-back areas can become potential settings for Botanic Garden enhancement, as can courtyards shaped by new buildings. Similar opportunities should be considered as part of building renovation and addition projects.
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Circulation

An MU planning principle is to maintain a pedestrian-dominant campus, yet balance the need for vehicular traffic and service access. Several streets are designated as a “closed campus” during the day for this reason. Whenever possible, the emphasis should be on pedestrian pathways and circulation, and on eliminating large open expanses of parking lots. Parking structures have been utilized to help reinforce this notion and to preserve green space.

Edges, Gateways and Connections

In order to maintain a unity of campus, the individual districts must relate to and complement one another. These connections can occur in both direct and abstract ways. The introduction of portals, gates, fencing, and landscape walls in strategic locations should define the edge of the campus yet provide a visual attraction as an entrance to it. Building gateways and connections give a visual stimulus to a walkway and imply a sense of special places beyond. Established pedestrian and visual axes should be preserved and integrated in the design and placement of buildings. If the placement of a building requires the realignment of an established pedestrian movement, such realignment must maintain the visual clarity and natural flow of the movement.

Amenities and Public Art

Benches and seating walls, lighting fixtures, bicycle racks, trash receptacles, bulletin kiosks, and other site furnishings should be placed so as to form a unified and uncluttered ensemble integral with the courtyards, plazas, building entrances and other appropriate locations. Opportunities for such furnishings should be planned to take advantage of design features such as courtyards, plazas, and visual sightlines to campus icons.

Public art, historical monuments, and memorials enrich the human experience on campus. The specific design review and approval of public art and memorials will lie with the Campus Public Arts Committee. The Architectural Review Committee will identify opportunities and recommend locations for these amenities.
To learn more about the *MU Design Principles*, please contact:

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