



UNIVERSITY OF MARYLAND, BALTIMORE / URBAN DESIGN GUIDELINES

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2010





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University Suites  
at Fayette Square



500 & 518  
West Fayette Street

UNIVERSITY OF MARYLAND



## OVERVIEW

The design guidelines contained within the *1991 Facilities Master Plan* and the subsequent 1996 and 2002 *Facilities Master Plans* have been a design reference for the University of Maryland Baltimore for almost two decades. The sheer quantity of completed projects realized under these documents underscores their importance. As with any institution, however, circumstances within and around the University of Maryland Baltimore (UMB) have changed, necessitating the Guidelines to respond in turn.

This document, known as UMB's *Urban Design Guidelines* or "the Guidelines," revises previous recommendations, with expansion mainly in the area of sustainability. In addition, this document consolidates multiple reference guidelines into one volume to be the primary resource for future building and grounds development on the UMB campus.

### Purpose of Design Guidelines

The UMB campus, as it has evolved over the past 200 years, possesses a unique, urban quality, characterized by the density and scale of its schools and buildings, palette of materials, preservation of older structures, and relationship to non-University buildings and historic districts within the City of Baltimore. The Guidelines ensure that the quality and relationships within the built environment continue to support the mission of the University well into the future.

The Guidelines are not intended to prescribe solutions or limit creativity, but rather, to establish a flexible framework that respects UMB's past, addresses its present needs, and encourages innovation in the future. This document refines development opportunities for the University's buildings and grounds, providing a series of recommendations for the following topics:

- Sense of place
- Sustainability
- Site development
- Architectural guidelines
- Streetscapes
- Open space
- Urban horticulture
- Landscape standards

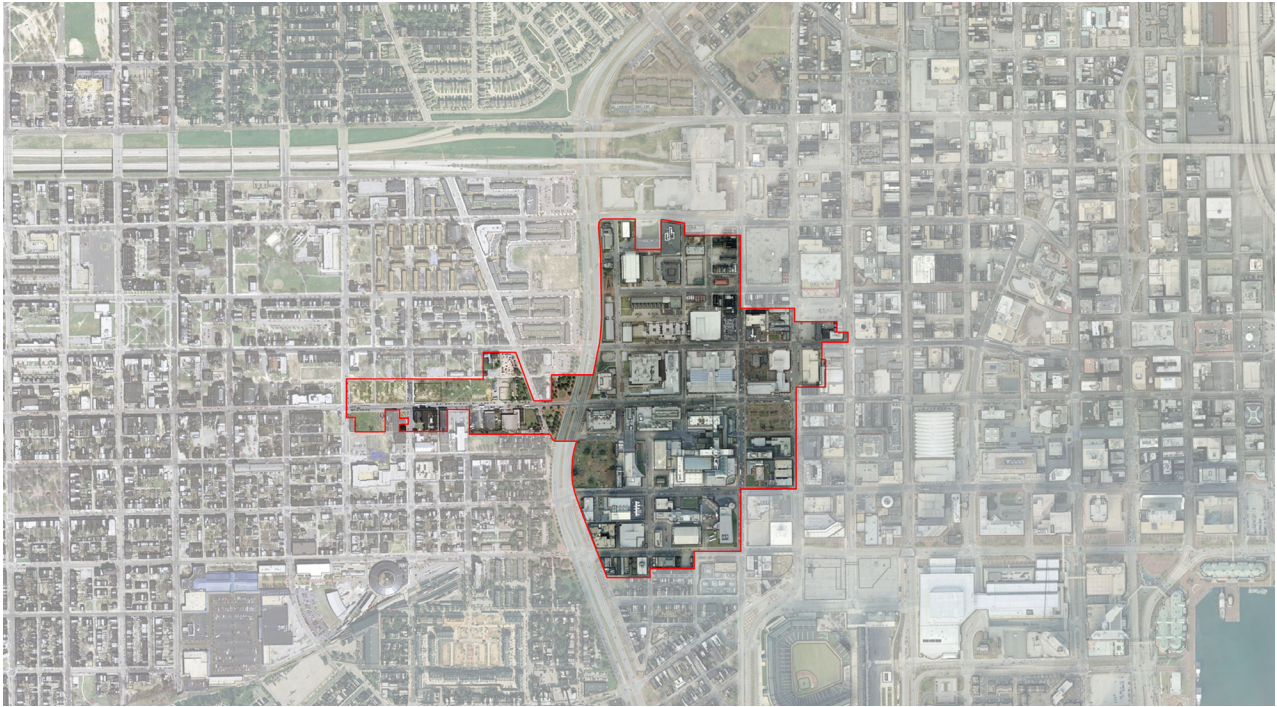
The Guidelines are an integral part of the 2010 *Facilities Master Plan Update*, and together they define the goals and principles that will guide the development of the University. As future projects are implemented, the identity of the campus environment will be reinforced with streetscape elements, a strong building presence, an enhanced network of open spaces, and recognizable gateways. These features will create a collegiate and memorable sense of place.







SECTION 2 / Contextual Identity



*The boundaries of UMB in red. The Inner Harbor can be seen in the far, bottom right corner*



*Historic Davidge Hall fronting Lombard Street*



*The Rieman Block (Lexington Street) is a historic collection of buildings listed on the National Register. Pascault Row can be seen in the background.*

## CONTEXTUAL IDENTITY

The University of Maryland Baltimore enjoys a historically rich and urban setting that lends the campus much of its physical identity. Building and open space projects on campus will respect and strengthen the contextual identity of the University's campus.

### Historic Fabric

The campus has matured over two centuries, with each new building added in a way that expresses the culture and influences of that particular time in history. There are thirty-two campus properties that have been surveyed and analyzed for historical significance; twenty-seven have been categorized as standing structures and three as below ground (archeological) sites. The University either falls within or abuts three different National Register Historic Districts, including Market Center, the Loft District (north and south), and Ridgley's Delight.

The history of these buildings and districts is rich. For example, Davidge Hall, named after the first dean of the College of Medicine of Maryland, is the oldest building in the United States in continuous use for medical education. Because public opinion at the time of its construction violently condemned human dissection, Davidge Hall's dissection labs were hidden within the building, below the sloping seats of the lecture hall and the rectangular outer walls. Secret spiral staircases led to these rooms. St. Paul's Cemetery, at Redwood and Martin Luther King Boulevard, is the second oldest cemetery in Baltimore, originally laid

out in 1799. The cemetery provides an invaluable link to the people responsible for the initial development of the City of Baltimore. Westminster Cemetery, adjacent to the University's Law School, is the burial site of Edgar Allen Poe. It is common to see roses, brandy, and pennies left at his grave stone. Pascault Row, on Lexington Street, is the last remaining example of early 19th century townhouses in Baltimore. The Rieman Block, at the southwest corner of West Lexington and Pearl Streets, records a post-Civil War Baltimore. The North and South Loft historic districts include nineteen manufacturing buildings dating to an era between 1870 and 1915. Architecturally, these buildings are stunning. Culturally, they capture the history of Baltimore's garment industry that grew to national renown. Another adjacent historic district, Market Center, is comprised of row houses, small commercial buildings, churches, schools, hotels, department stores, and chain stores that display the evolution of the City over a 100-year period. Spurred by the activity of Lexington Market in the 19th century, the area evolved from a small-scale urban residential neighborhood into the City's premier, early 20th century shopping district. The district also chronicles the decline of urban retail centers within post WWII, automobile-oriented development patterns.



Future campus projects shall retain, to the greatest extent possible, the historic features within campus. Keeping the historic fabric intact ensures a strong, recognizable identity for the campus and a link to history that enriches both University and City neighborhoods. UMB projects shall seek compatible uses for historic buildings either currently owned or acquired in the future. The University's Historic Preservation Plan complements this document and provides further guidance concerning new construction, renovation, and adaptive reuse of historic structures.



*The gate to St. Paul's Cemetery, the second oldest cemetery in Baltimore.*



*29 South Paca Street, the former Strouse & Brothers Building built in the late 1800s*



*The burial place of poet and author Edgar Allan Poe, adjacent to the Law School.*



## SECTION 3 / Sustainable Practices





UNIVERSITY OF MARYLAND  
SCHOOL OF MEDICINE  
1807  
2007  
*bicentennial*



## SUSTAINABLE PRACTICES

The University's leadership, by signing the American College and University Presidents Climate Commitment (ACUPCC) in 2007, has shown its intention to minimize the carbon footprint of the campus. As a signatory of this commitment, the University pledges to develop an institutional action plan that achieves climate neutrality, and future campus projects will adhere to the benchmarks and recommendations outlined by that plan. The recommendations set forth in these guidelines are part of the same concerted effort to support the climate action plan.

In the broadest sense, the University seeks to create a campus environment that actively improves the quality of life and the environment for its users. University operations will address sustainability as a continuous process affecting environmental, social, and fiscal concerns. Sustainable practices occur at all scales -- from the city and campus, to buildings and landscapes, to products used within those buildings. These Guidelines direct sustainable practices at the "campus scale" by addressing goals within four broad categories: the built environment, energy, ecology and hydrology, and sustainability education.

### Built Environment

Building design today is a more integrated process than ever before. The classic elements of form, function, materials, and site orientation will be applied in concert with the latest technologies and innovations to optimize a building's long-term performance. Each building must balance culture, history, function, material use, and technology in a setting that respects the capacity and parameters of the site.

The University prioritizes adaptive reuse of existing buildings as a means to minimize its carbon footprint and reduce the consumption of raw materials. In addition, new construction projects will study applicable opportunities for solar, wind, geothermal, and heat recovery systems as a means to reduce and/or generate energy on campus. LEED Guidelines shall be used for determining appropriate building performance levels.

Designers shall reduce impervious surfaces and encourage green landscapes with new projects. They should incorporate innovative stormwater management practices into the building design. Likewise, designers shall incorporate alternative means of access (i.e. bicycle, public transit, etc.) into the building's design to limit the impact to the existing road network and reduce the need for personal vehicles. Bicycle storage space and showers, and facilities to accommodate use of public transportation are all examples of elements that shall be explored in campus projects.

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Individual building projects shall be integrated into a sustainable campus network. This requires that the designer pay particular attention to existing site infrastructure such as utilities, roadways, and pedestrian paths. In addition, both the University and the designer must test appropriate capacity of the site to ensure that introducing a new infill project does not create a burden to the surrounding area.

### Energy

Renovations and new construction projects shall be design to reduce the energy consumption of buildings and their mechanical, electrical, and plumbing systems (HVAC, hot water, bathroom fixtures, and lighting) by using appropriate high efficiency and energy conserving equipment with digital monitoring systems. As well, designers shall integrate fresh air ventilation, natural daylighting, and passive solar design into building projects. The University will evaluate the use of new technologies as they become available and affordable.

Projects shall employ an integrated design approach with whole-systems life cycle evaluations. Equipment selection must be coupled to operational performance requirements to minimize building energy loads. Building projects should integrate innovative design and engineering solutions at project inception, so that the design supports energy conservation initiatives outlined in the University's energy master plan.

The aesthetics of sustainable buildings are different from traditional campus buildings. Likewise, the user's interaction with these buildings will also change. This new, evolving design language is one that the University embraces in support of its climate commitment.



*Light shelf on the School of Dentistry*



*Sunshade at the Sidwell Friends School in Washington, DC*



*Sunshade at Messiah College in Grantham, Pennsylvania*



*Solar panels at Emory University*



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## Ecology and Hydrology

Even in a dense urban area, a university campus functions as a dynamic natural space that plays host to smaller eco-systems while also connecting to the wider ecology of the region around it. As such, UMB will act within its power to honor and connect habitat and stream corridors within the Patapsco River basin, which drains into the Chesapeake Bay.

The streams that run through the campus are below ground; however, new projects shall be sensitive to the ways in which stormwater run-off affects those downstream. The University will strive to act responsibly to protect this shared resource. Building and landscape design must actively address stormwater management issues of both quantity and quality of runoff. As well, UMB will reduce potable water demand through conservation, reuse, and recycling. New building projects shall meet or exceed City requirements.

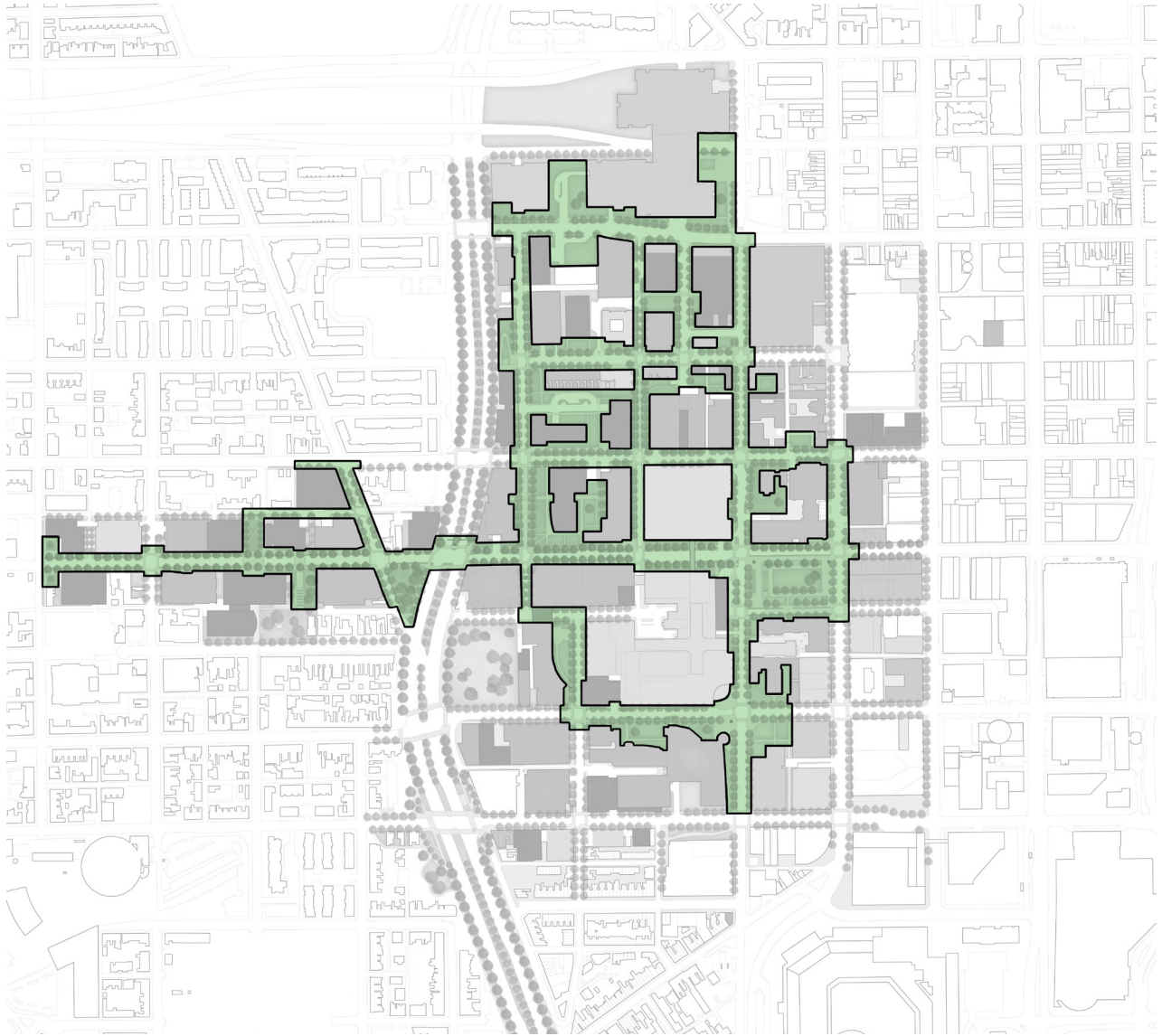
By connecting the campus's open spaces into a network of green around the campus ("rings of green"), the University will create small-scale wildlife refuges for songbirds and beneficial insects on its grounds. In a highly urbanized area, this becomes an important function. The University will encourage campus connections to the larger region through support of greenways, fitness walks, bicycling trails, building courtyards, and rooftop gardens.



*Stormwater inlet collects, filters, and detains run-off, Portland, OR*



*Native grasses at the School of Dentistry require less maintenance and improve stormwater collection on site.*



# OPEN SPACE PLAN

0 100 200 400



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As the University develops its physical grounds, it will ensure that the massing of new buildings allows daylight to reach active outdoor spaces. As well, new landscaping projects on campus shall utilize a palette of native species that reduce the need for irrigation, chemical treatments, and general maintenance. By planting streetscape trees, the University will support the City's commitment to reforestation. It is the University's intent to create healthy and ecologically appropriate open spaces, provide pleasant outdoor environments, and minimize stormwater runoff within its campus.



*The School of Dentistry walkway softens the building facade, provides color, and is beneficial to birds and insects*



## Sustainability Education

As a signatory of the ACUPUCC, the University will be a leader in thought and cutting edge technologies that address global climate change. New projects shall be designed to encourage campus users to engage in their surroundings. With proper design, features of the physical campus will influence public education and promote environmental sustainability. Featuring elements of green infrastructure such as rain gardens, cisterns, exposed stormwater runnels/channels, wind turbines, roof gardens, pervious pavers, and solar panels will stimulate curiosity and invite further exploration of the campus.



*"Green Streets" public education program in Portland, OR*



*Stormwater runnels in Vera Katz Park in Portland, OR*









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## SITE DEVELOPMENT

### Campus organization

Architectural guidelines set the requirements for new development and provide guidance on the shape and location of campus buildings on available sites, ensuring that a specific project will fit into the larger whole of campus. This is a general level of architectural control necessary to create a coherent campus precinct while accommodating the programmatic needs of the University.

Architectural styles range from Classical Revival (Davidge Hall, 1812) to late nineteenth century warehouse buildings, to contemporary high-rise structures. Sense of place is dependent on architectural character, which is derived from a broad set of interrelated visual and spatial properties including scale, rhythm, proportion, and texture that are both respectful and contextual. The Guidelines that follow provide basic principles in support of UMB's existing architectural character.



*The Southern Management Corporation Campus Center is of a more modern style*



*Classic Revival architecture of UMB's Davidge Hall*



*Example of historic loft warehouse near UMB*



### Buildings as Edge Definers

Campus buildings will front two types of spaces: streets and open areas. In both situations, buildings will form an edge that defines the space it abuts. On the UMB campus, buildings most frequently define the street edge. Each new building should contribute to the aesthetic of the site and improve adjacent streets and pedestrian walks. Use of the campus palette for building and landscape materials, walkways, lighting, signage, and street furniture will create an active streetscape adjacent to the new building. In addition, new buildings should reinforce connections within the campus and provide enhanced entries, courtyards, and landscaped open space when appropriate for the specific site.

### Build-to Lines

New construction will extend to eighty percent of the property line, with the exception of at-grade setbacks recommended within this document. A floor-to-area ratio of eight is appropriate for campus buildings. Build-to lines may be relaxed to allow for small courtyards, parks, and other open spaces that connect to a larger network of green spaces around campus. These spaces shall be anchored to building uses to ensure their care, maintenance, and security.

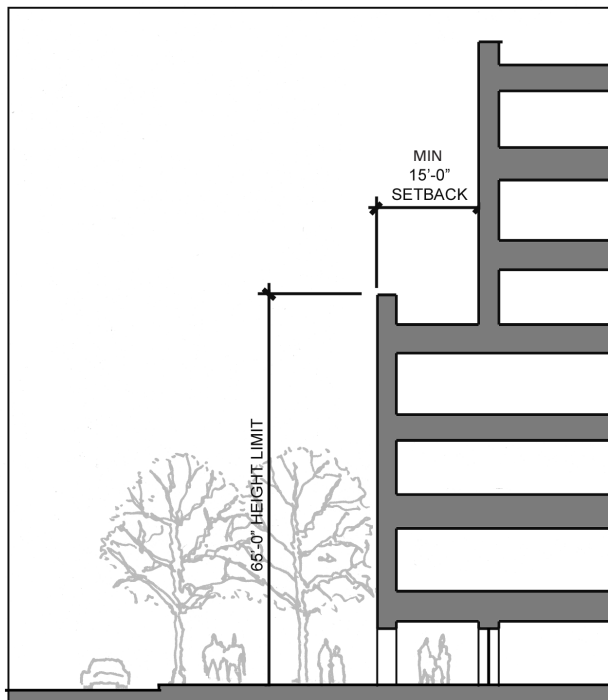


*The Lexington Street Administrative Building creates a strong edge along both Lexington and Pearl Streets; it is also an example of a well-designed vertical setback.*

## Setbacks

There are two recommended setback types: at-grade and elevated. At-grade setbacks balance a strong street edge with the need for enhanced campus identity and green space “relief” in an urban environment. The elevated setback requirement occurs in the central area of campus where building heights of 80 feet and higher are permitted. A minimum 15-foot setback above 65 feet in this zone is required. Elevated setbacks are also required when a building, regardless of its height, is adjacent to a residential neighborhood. Section 6.0 of these guidelines provides the recommended building setbacks on new construction projects.

The existing City of Baltimore zoning permits a Floor Area Ratio (FAR) of eight times the parcel area. Historically, the University’s buildings have either met this requirement, or been constructed smaller than allowed depending on the site and contextual conditions. New construction shall respect the scale of its context, assess the site parameters, and satisfy the requirements of the program. In addition, site density shall reinforce a collegiate, pedestrian-friendly, and welcoming environment.



*Acceptable vertical setback ranges*





*Example of at-grade setback in front of the Southern Management Corporation Campus Center*



*Example of at-grade setback in front of the School of Law*

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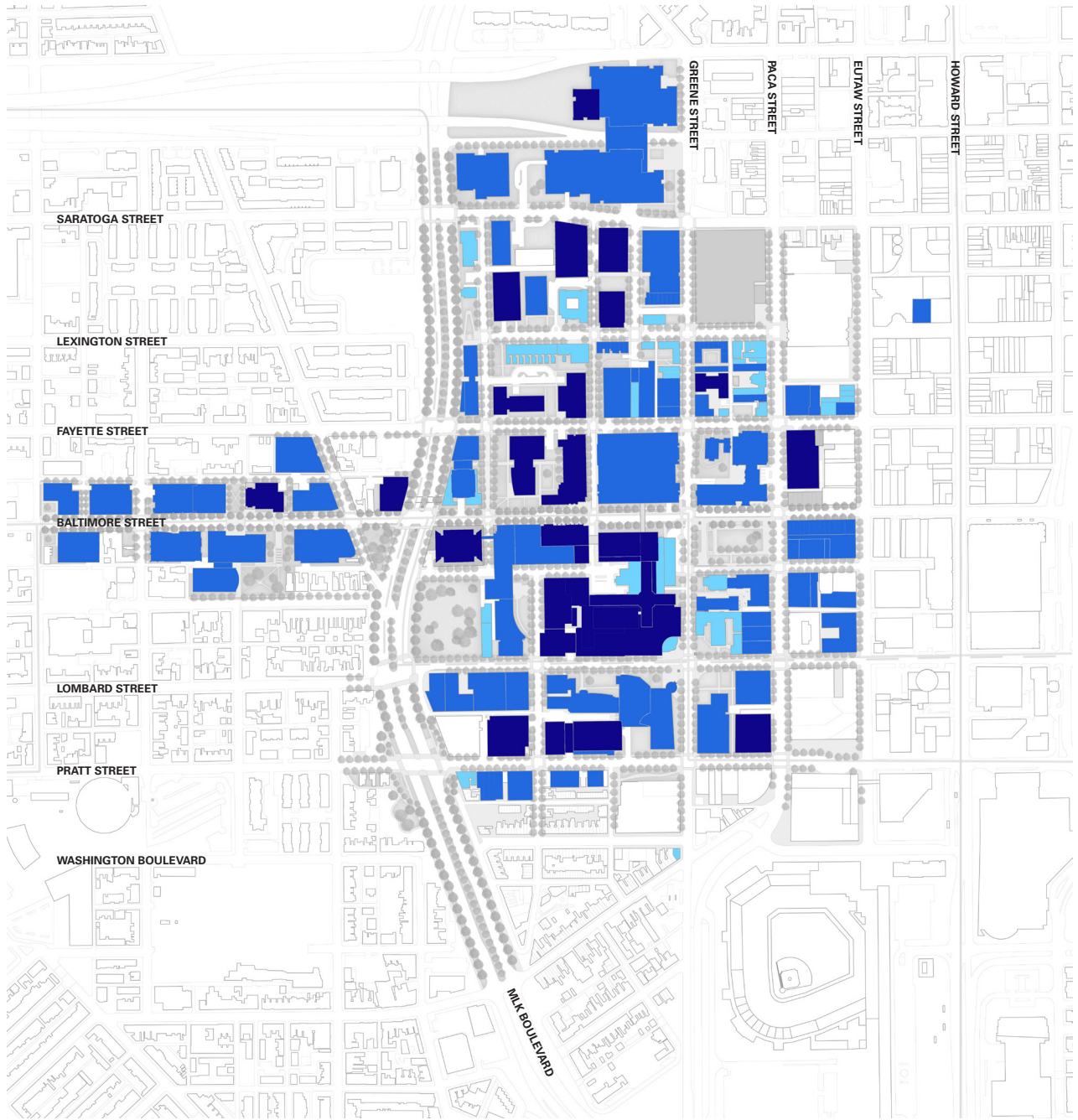
## Building Height

Proposed building heights (distance from grade to cornice line) will fall into three general ranges:

- 15 to 40 feet: This range is generally adjacent to existing residential neighborhoods, including Ridgely's Delight, Pascault Row, and residences west of MLK Boulevard. Building scale in these areas shall be smaller to fit appropriately within the context of the neighborhood.
- 40 to 80 feet: The predominant building height in this area ranges between 60 and 75 feet. New construction adjacent to buildings in this range shall be responsive to their scale.
- Above 80 feet: This is the most intensely developed area of the campus and will continue to be so in the future. A 15-foot setback shall be created above 65 feet to reduce the building's scale and allow natural light to reach adjacent open spaces.

Each new building project is required to have a solar study performed to assess and recognize the impact of height and mass (as cast by its shadows) on adjacent buildings and open space. New buildings shall be designed to allow as much daylight as possible to penetrate the campus and minimize casting shadows on open spaces, important walkways, and neighboring buildings.





## BUILDING HEIGHTS



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## Access and Service

Building access needs to accommodate pedestrians, vehicular drop-off, emergency vehicles, and service functions. In general, pedestrian and vehicular drop-off should have access through major building entrances located on primary streets or on campus open spaces. Service access should be separate from the other uses. To the extent feasible, service access shall be located on the system of alleys and minor roads serving the secondary facades of buildings so that their visibility from public areas is minimized. Emergency access should be well marked and obstacle free.

## Security

The University is concerned with the security of its students, faculty, staff, and visitors, and the security of its buildings and the research contained within. Building security shall be addressed at the inception of each project with Public Safety and Facilities Management. Specific opportunities and constraints shall be identified for each site to ensure that the building design is safe and secure. Street furnishings may be used as a form of security at building perimeters when appropriate.

The design of new projects must address the safety of individuals by providing appropriate lighting levels around buildings and on campus grounds. Excessive light levels create contrast and shadows that should be avoided. Buildings shall have windows facing the street. Plants and physical objects must be selected and designed to remain low to allow for clear visibility. Façade designs at the street level shall avoid niches or places of concealment.



*The area in front of the University's Campus Center feels safe due to an abundance of lighting, windows that provide views of street activity, well-maintained landscaping, and people using the space.*





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## ARCHITECTURAL GUIDELINES

### Building Typology

Campuses are collections of buildings with similar programs representing academic, research, medical, and support uses. These programs influence a building's size and location on campus. Groupings of similar uses occur because of a desire to maximize functional adjacencies and congregate similar typologies. Buildings shall be designed to portray the programs contained within through characteristics embodied in the building envelope, mass, and detailing. For example, laboratory buildings may be characterized as having a low surface to glass ratio, tall floor-to-floor heights to accommodate interstitial utility distribution, and roof treatments to conceal fume hood exhaust stacks. Conversely, residence halls might have higher surface to glass ratios, lower floor-to-floor heights, with simple and efficient façade and roof details. The incorporation of sustainable design practices, including the beneficial increased use of glazing for natural daylight, may affect those traditional characteristics.

### Building Forms

In cities, buildings tend to be tall, large in footprint, and large in scale. On the UMB campus, scale shall be controlled to minimize the potentially overwhelming appearance of buildings from the street or adjacent open spaces. Designers shall avoid extruding buildings that function as singular object buildings and do not relate to the urban fabric or characteristics of the campus. Designers shall also consider arranging a façade into three major vertical elements to create a tripartite that is comprehensible to the human scale.

#### *Base*

Selection of materials for the base of buildings depends on the following criteria: durability, maintenance, and graffiti-resistance. It is preferable that buildings fronting the principal streets and pedestrian spines have stone bases in order to distinguish it at street level. The stone shall be light in color and relate to the limestone used on other campus buildings. Brick is also an acceptable material for the base portion of buildings when detailed to differentiate it from the upper levels.

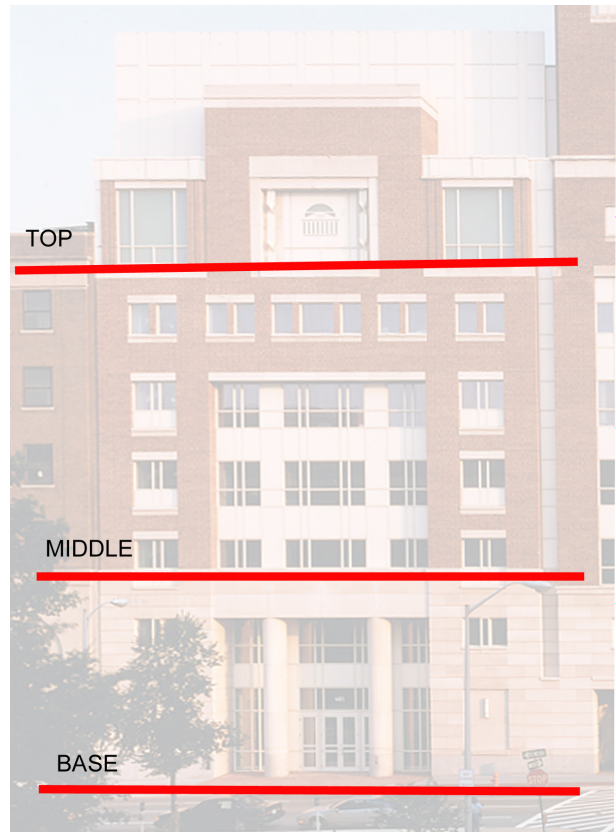


### *Middle*

The primary material of the walls above the base shall consist of standard-size indigenous red/pink brick, traditionally associated with the architecture on the UMB campus. Varying brick sizes may be used for decorative purposes and/or on secondary walls internal to the site. Stone is also an acceptable wall material if the significance of the building and the budget allow its use. Designers shall consider the compatibility of brick and stone colors of adjacent buildings during the design of the new facility. This should not, however, discourage visual richness on the campus. Window frames and mullions, sunscreens, reflectors, shading devices, metal panels, and railings may be used to introduce color into building facades when appropriate. Larger expanses of glass and variations in materials will be reviewed on a project-by-project basis, when alternative materials enhance the performance of a sustainable, energy efficient building.

### *Top*

Buildings in the *above 80 feet zone* shall employ material changes to produce a landmark silhouette and varied skyline at the center of the campus. Buildings outside the *above 80 feet zone* shall incorporate rooflines that are contextual to the identity of the campus. The top of the building shall be composed of materials and form as to be clearly discernible from the middle section.



*School of Medicine*



Roofs for low buildings function as a fifth façade. In these instances, rooftop terraces or other designed roofscape elements are desirable. Sustainable green roofs, where used, shall be integrated into the stormwater management systems of buildings. Materials and paint colors shall be specified which reflect the light and heat from the sun; however, materials should not produce a glare toward adjacent building occupants. Metal on roofs shall be painted, when appropriate. Unless aesthetically designed to be visible, mechanical equipment shall be screened.

As the University pursues campus-wide sustainability efforts such as LEED certification and enhanced building performance, both the function and look of its buildings will change. UMB is an urban campus that consists of a range of building styles. With proper design, many building functions – stormwater treatment, solar collection, etc. – will serve a dual purpose of enhancing a building’s performance and its visual appeal.



*Across campus, roof styles span a century's worth of architectural styles.*

### Fenestration

The placement and size of the fenestration for a facade generates hierarchical patterns and rhythms that are visually stimulating and contribute to the overall building aesthetic. Openings (doors, windows, and loggia) reduce the perceived scale of a building by dividing continuous wall surfaces into smaller, more comprehensible parts. The Guidelines limit large expanses of solid wall surface or continuous glass curtain walls. When such a condition does occur,

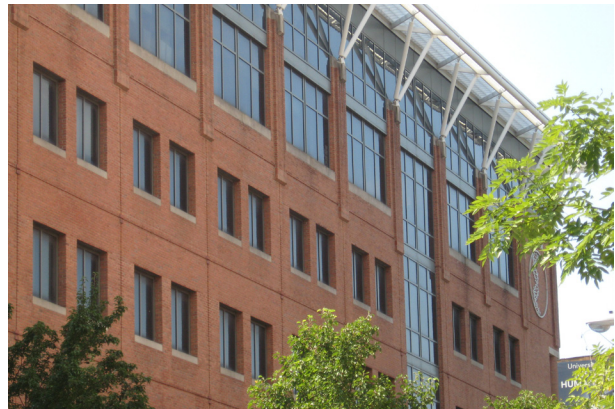


walls shall be carefully detailed and articulated. The use of tinted or reflective glass is not allowed; fretted glass for sun control is permissible.

### *Windows*

Window openings shall be vertically oriented (or articulated as such by use of frames and mullions), and generally consist of masonry or stone heads and sills where appropriate. Ample fenestration at the base of a building will maximize visual connections between the ground level of the building and the adjoining open space. Double-skin glazing and other innovative window wall systems shall be considered if they enhance the energy performance of the building.

Academic activities within the building shall be visible from the exterior whenever possible to enhance the streetscape of the campus and promote security.



*Examples of campus window fenestration; styles range from traditional to modern*



*Examples of building entries*



### *Entries*

Articulation of the main public entry of the building is crucial for promoting clear visual and intuitive access to campus buildings. Architectural elements that instill a sense of hierarchical importance will enhance the primary entry of buildings. Canopies, loggias, change in vertical plane, change in grade, change in material, and placement of signage highlight and distinguish a building's entry.

All building entries shall provide a transitional space between the public street and private building environments.

Entrances shall be visible to visitors and contribute to the life and activity of the streets and walks surrounding the building. These spaces shall be designed to encourage interaction as meeting and gathering places. Well lit and glass entries provide unobstructed site lines to the sidewalk and enhance campus security. Building vestibules, as weather breaks, prevent heat loss and gain and minimize drafts to the interior spaces of the building.





### Predominant Materials

The University has an established palette of materials, consisting of brick, stone, and glass. By respecting this palette, new building designs will foster a sense of architectural continuity with existing buildings. Other approved materials may be employed to highlight particular features of the façade, and the University encourages designers to use these accent materials in a way that explores and expands upon the basic vocabulary of the brick campus building. The interplay of materials and textures with the traditional building palette respects the campus' historic building styles while creating a modern aesthetic.



*Examples of the materials found in UMB's material palette*



UNIVERSITY  
of  
MARYLAND  
SCHOOL  
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LAW

DEDICATED  
2002

500  
W. BALTIM







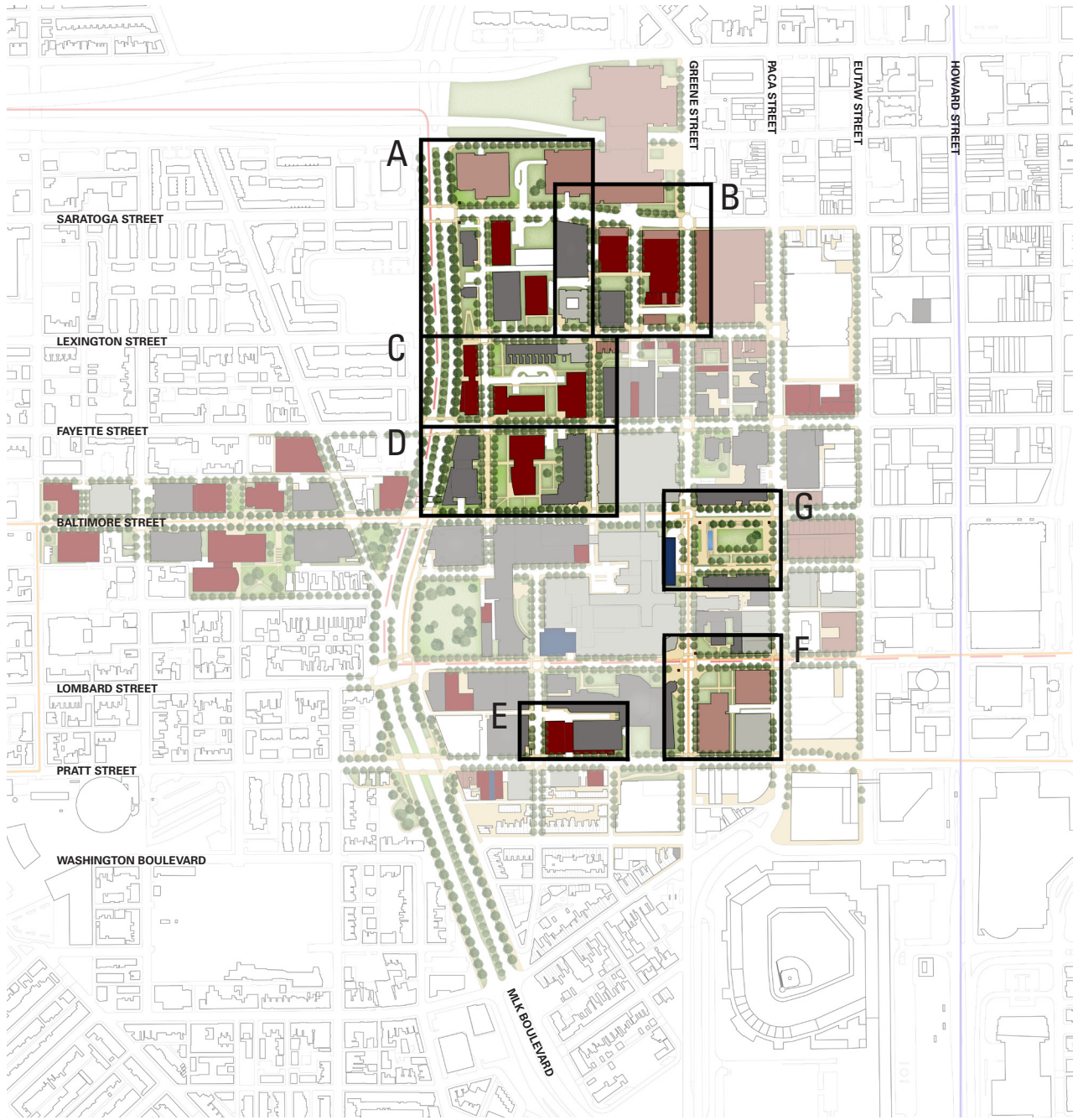
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## PRECINCT STUDIES

The Guidelines divide the campus into seven precinct areas of study based on locations where the University expects new construction in the next five to twenty years (as outlined by the 2010 Facilities Master Plan Update). The following section makes specific recommendations for building height and mass, setbacks and build-to lines, site open spaces, primary entrances and service access within each precinct.

The precinct areas include surrounding buildings, not just the parcel targeted for development, so that the area is seen in context.





# CAMPUS PRECINCTS



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## Precinct A

### *Height and Massing*

This precinct accommodates three new buildings on infill sites. Key to site development is recognition that two of these buildings will be on gateway sites and highly visible from adjacent arterial streets. Building footprints will be large to capitalize on the available area of each site. The building heights will respond to the northern edge location of the campus and be sized to complement adjoining structures and neighborhoods.

Building 1. This building is proposed to be six stories, with a 42,000 GSF footprint. It will provide 252,000 GSF of total space. Massing will provide strong frontage on both MLK Boulevard and Saratoga Street.

Building 2. While not as prominent and smaller in area, this location is still a very visible site adjacent to the northern gateway into the campus. The building is proposed to be four stories, with a 16,200 GSF footprint, providing 64,800 GSF of space. Massing will provide strong “edge defining” facades on Saratoga and Pine Streets.

Building 3. This infill site will play an important role in scaling down the adjacent large parking garages to the smaller residential buildings nearby. The building is proposed to be six stories, with a 17,000 GSF footprint providing 102,000 GSF of space.

### *Orientation*

Building 1 will have a strong southern orientation to respond to the existing north-south pedestrian corridor on Pine Street. This long view corridor and building façade will be visible from the School of Medicine four blocks to the south. Also, as a primary gateway building to the campus from the north and MLK Boulevard, the building will have a strong orientation to the northwest and southwest.

Construction of Building 2 will require demolition of the existing warehouse building. The primary orientation will be to the west to reinforce the strong pedestrian corridor on Pine Street. A secondary facade will face north and reinforce the development of the Saratoga Street corridor as a primary east – west arterial corridor.

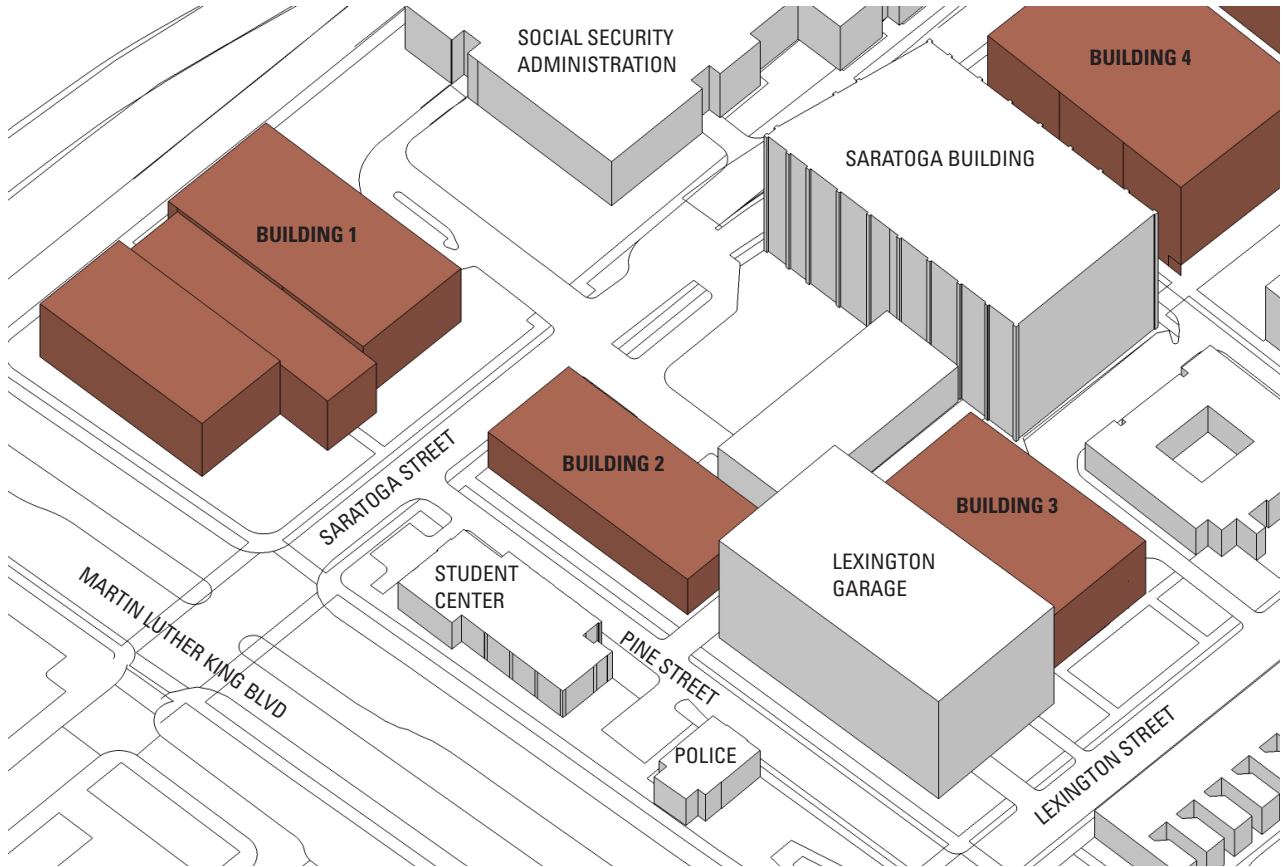
Building 3 will be oriented to the south with a strong façade composition that compliments the adjacent residential scale buildings comprised of Pascault Row, Hope Lodge, and the Ronald McDonald House.

### *Building Access and Transportation Network*

The primary entrance to Building 1 will face Saratoga Street, on axis with the Pine street corridor. Its service access will be from the north, off West Mulberry Street. Building 2 will have its main entry from Pine Street. Its service will be from Saratoga Street. Building 3 will have its main entry facing Lexington Street, with service access from the north alley.



# PRECINCT A



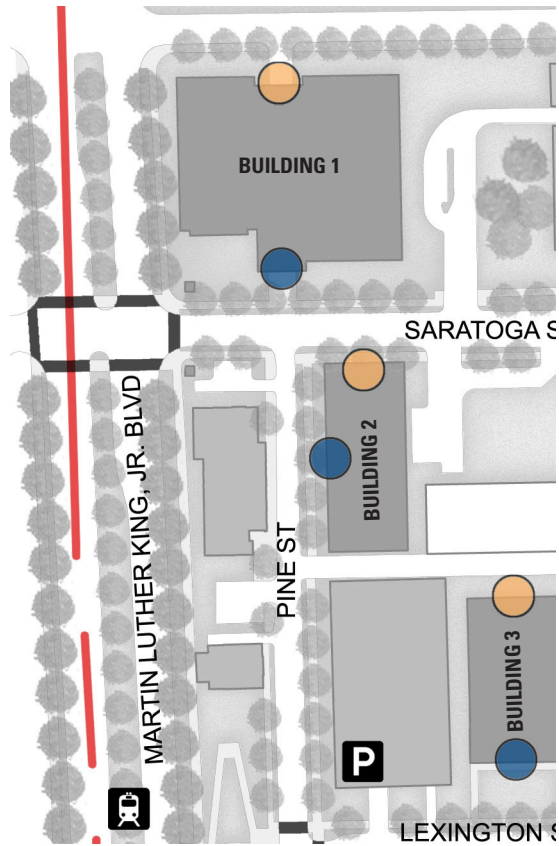
## MASSING

*Massing diagram of proposed construction within Precinct A (brick-colored buildings represent new construction).*



This area is served by existing parking in the adjacent Saratoga and Lexington Street Garages. Future parking will be available when the Social Security Administration building is acquired. The proposed Red Line under MLK Boulevard will provide convenient mass transit capabilities adjacent to these sites in the future.

## PRECINCT A



### BUILDING ENTRANCES

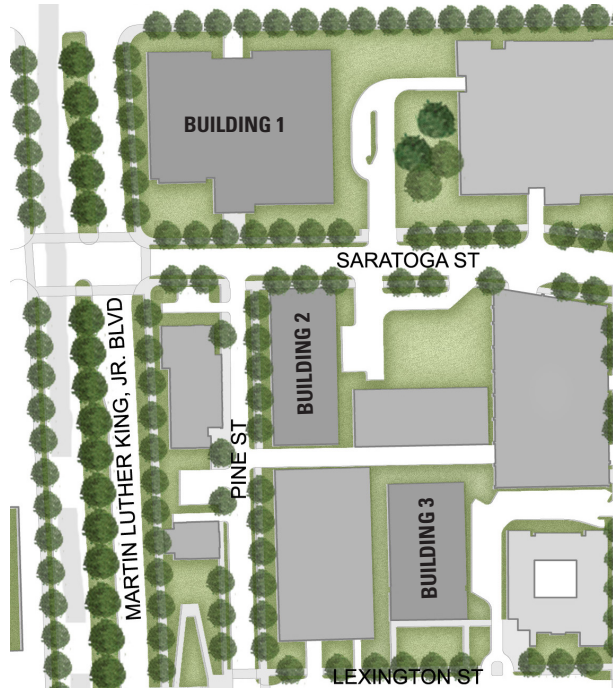
*Blue circles indicate primary entrances, and yellow circles indicate service access*

### *Open Space*

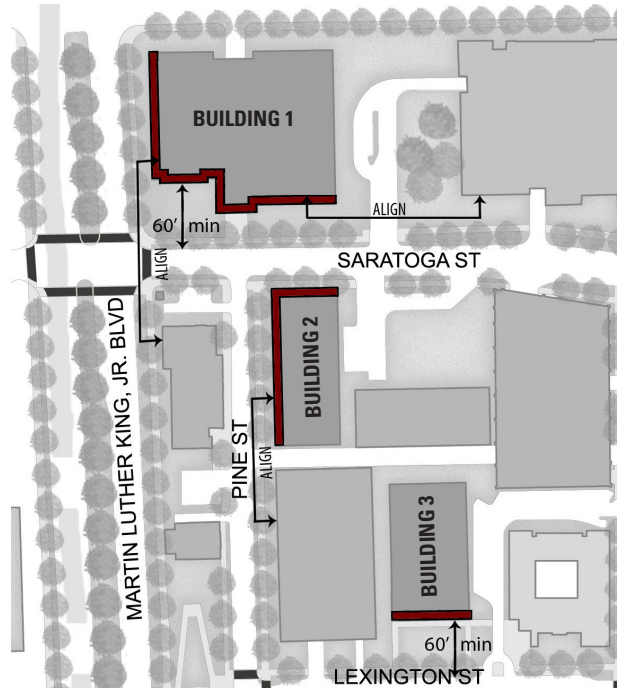
The open space in this area will serve a variety of important functions. The east side of the MLK Boulevard and Saratoga Street intersection will be an architectural gateway to campus. The siting of Building 1 will provide for an entry courtyard on the southwest corner of the building to signify the importance of both the campus gateway and main entrance to the building. A landscaped auto court will anchor the east side of the building and provide a welcoming vehicular arrival sequence. Building 2 will receive the standard University streetscape treatments on the north and west facades to support the existing pedestrian corridor on Pine Street. Building 3 will have a landscaped courtyard on the south façade to embrace the residential character of the site and provide a place for socialization, relaxation, and recreation.



# PRECINCT A



**LANDSCAPE**  
*Proposed open spaces*



**BUILDING FRONTAGE**  
*Frontage and setback recommendations*

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## Precinct B

### *Height and Massing*

This precinct will accommodate two large, new buildings. Existing structures on both sites will need to be demolished in preparation for construction. These infill sites are intended to house future administrative and support unit functions on campus.

Building 4 is ten stories, with a footprint of 25,500 GSF, providing 255,000 GSF of total space. Massing and height are intended to compliment the scale of the adjacent Saratoga Street Garage and Office Building and the Social Security Administration building.

Building 5 is six stories, with a 40,000 GSF footprint, providing 240,000 GSF of space, coupled to a smaller wing of three stories with a 2,200 GSF footprint providing 6,600 GSF. The total is 246,000 GSF. This very large building is intended to match the scale of the surrounding buildings, and will need to be carefully articulated to minimize its perceived size.

### *Orientation*

Building 4 will have four facades that address different conditions. The west façade will relate to Saratoga Towers, its parkers, and the pedestrians using the north-south Pearl Street corridor. The north façade will front Saratoga Street, and the south façade will face a landscaped courtyard. The east façade will support more service oriented functions.

Building 5 will have two facades with similar functional orientations to the adjacent public streets on the north and east sides. The west façade is intended to be more service oriented, while the south facade will compliment the adjacent park.

### *Building Access and Transportation Network*

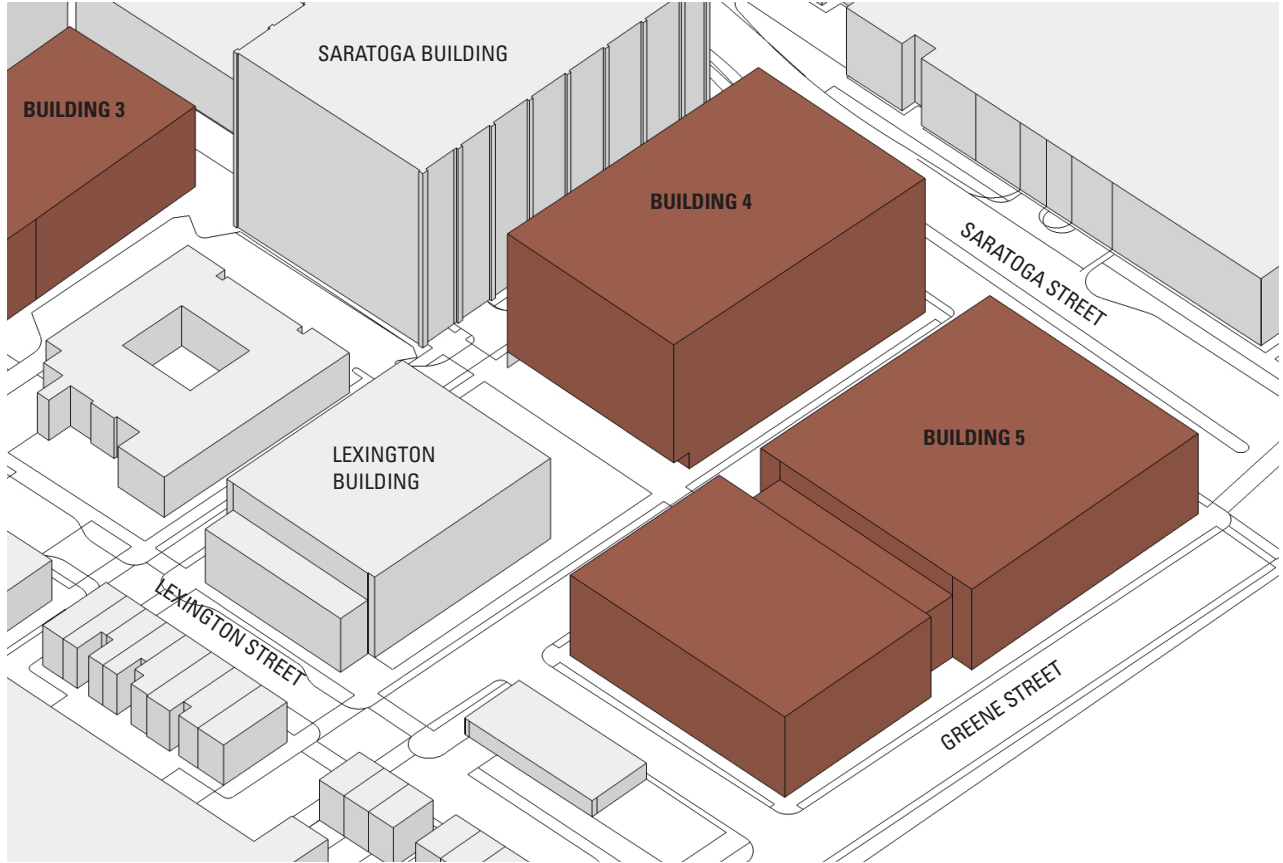
The primary entry to Building 4 will be on the west façade. Service access is intended to be from the north on Saratoga Street.

Building 5 will have its primary entrance on the south façade. Service access will be from Saratoga Street.

This area is served by existing parking in the University's adjacent Saratoga, Lexington, and Pearl Street Garages, and the privately operated Lexington Market West garage. In addition, convenient bus stops are located nearby on Green Street and Saratoga Street.



## PRECINCT B

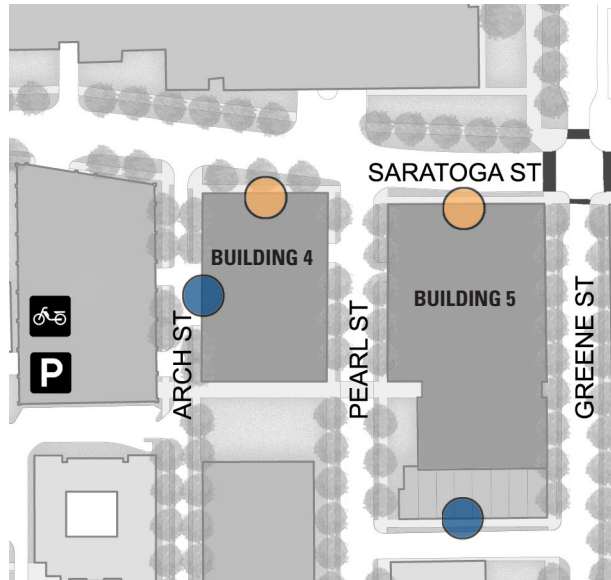


### MASSING

*Massing of proposed construction within Precinct B (brick-colored buildings represent new construction).*

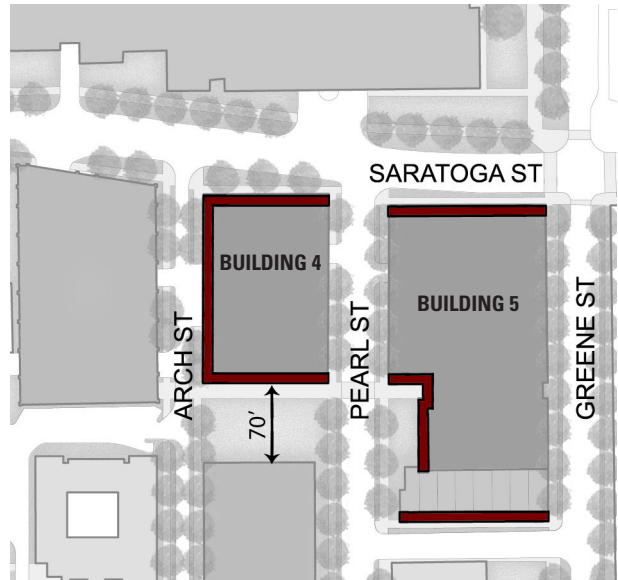


# PRECINCT B



**BUILDING ENTRANCES**

*Blue circles indicate primary entrances, and yellow circles indicate service access*



**BUILDING FRONTAGE**

*Frontage and setback recommendations*



### *Open Space*

The park north of the 620 Lexington Building and the setting that surrounds the existing Post Office to the south provide open space in this precinct. The standard University streetscape treatments will be installed on the perimeters of the new buildings. Additional landscape and plaza treatments will highlight building entries.

## PRECINCT B



### LANDSCAPE

*Proposed open spaces*

---

## Precinct C

This precinct is dominated today by the existing Walter P. Carter Center building and the adjacent School of Pharmacy Learning Center. These buildings will be demolished when they reach the end of their useful lives, creating three additional building sites.

### *Height and Massing*

Building 6 will be an “edge definer” that facilitates the transition in scale between the large buildings on campus and the residential scale neighborhood on the west side of MLK Boulevard. This building will be four stories, with a 17,700 GSF footprint, and provide 70,800 GSF of total space.

Building 7 will be eight stories, with a 18,800 GSF footprint, providing 150,400 GSF of space. The scale of this building is intended to step down the taller buildings to the south, as one moves from a south to north direction into the Lexington Street residential neighborhood.

Building 8 will ten stories, with a 21,200 GSF footprint, providing 212,000 GSF of space. This building is sized by its proximity to the center of campus and the relative size of the adjacent buildings.

### *Orientation*

Building 6 provides an excellent opportunity as a campus edge building to enliven MLK Boulevard with a long façade of windows facing west, balanced with a pedestrian friendly façade on the east that activate the Pine Street corridor.

Building 7 will be primarily oriented to the south as an edge defining building on Fayette Street. The east and west facades will have strong relationships with the facing buildings as they create urban courtyards within the spaces between the buildings. This building will be setback on the north to provide visual and physical relief from the adjacent historic residential buildings.

Building 8 will also be oriented to face Fayette Street, with a complimentary façade addressing Arch Street as an important north-south pedestrian corridor. Its west face will help define a landscaped courtyard framed by Building 7.

### *Building Access and Transportation Network*

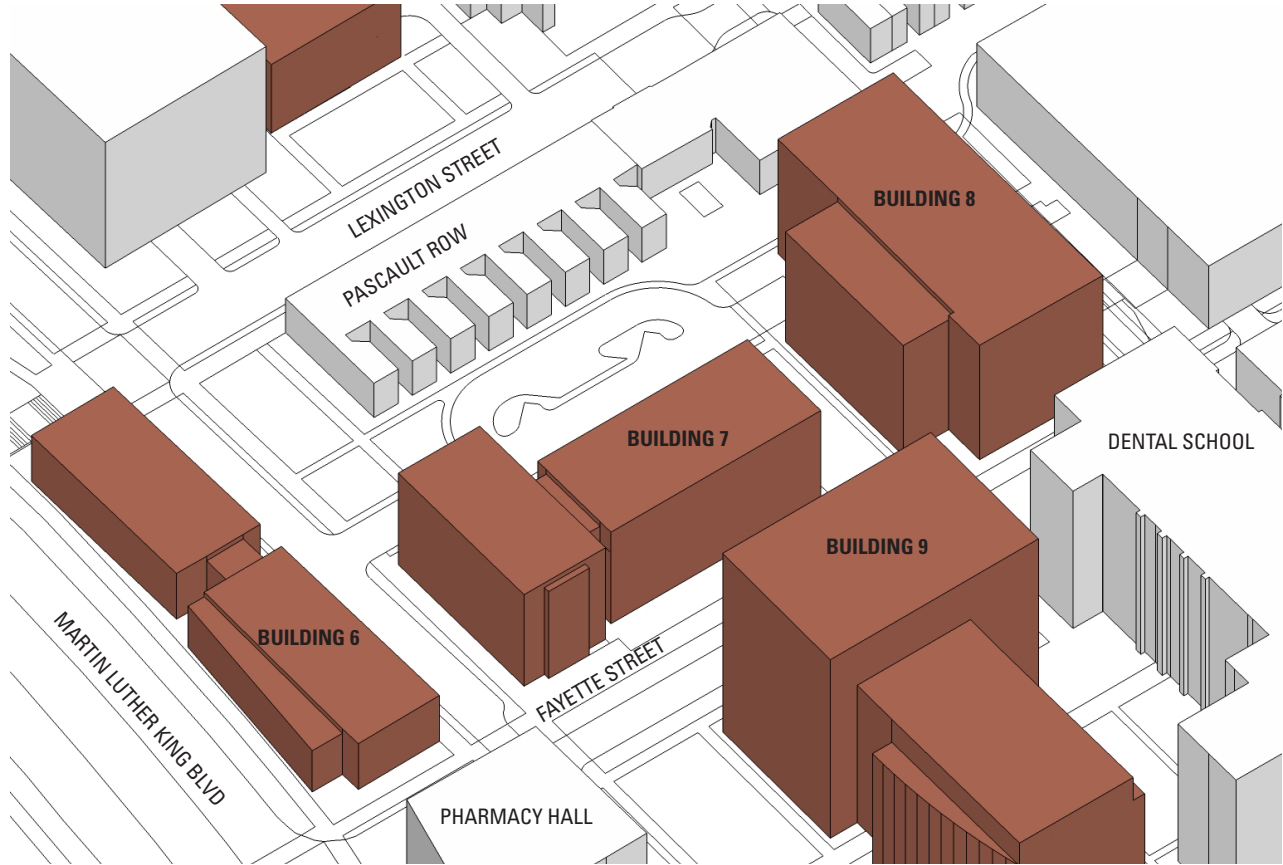
The primary entry to Building 6 will be from Pine Street near the intersection with Fayette Street. Because of the building’s length, service entrances would be located further north on Pine Street.

The main entrance to Building 7 will be located on axis to the landscaped courtyard to the south, and face Fayette Street. Service access will be from the north, from an interior vehicular court.

Building 8 will have its main entrance on Fayette Street. Service access will be from the northwest, from an interior vehicular court.



## PRECINCT C



### MASSING

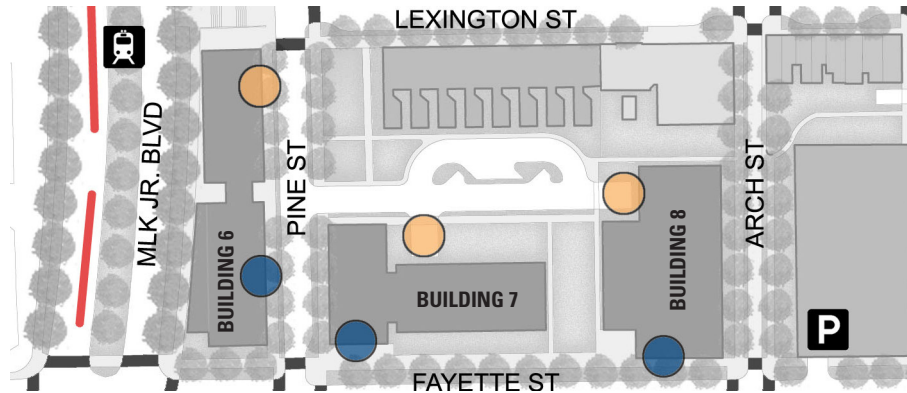
*Massing of proposed construction within Precinct C (brick-colored buildings represent new construction).*



This area is served by the existing parking in the Pearl Street Garage and convenient bus stops on Fayette Street. The proposed Red Line under MLK Boulevard will provide mass transit access to these sites in the future.

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## PRECINCT C



### BUILDING ENTRANCES

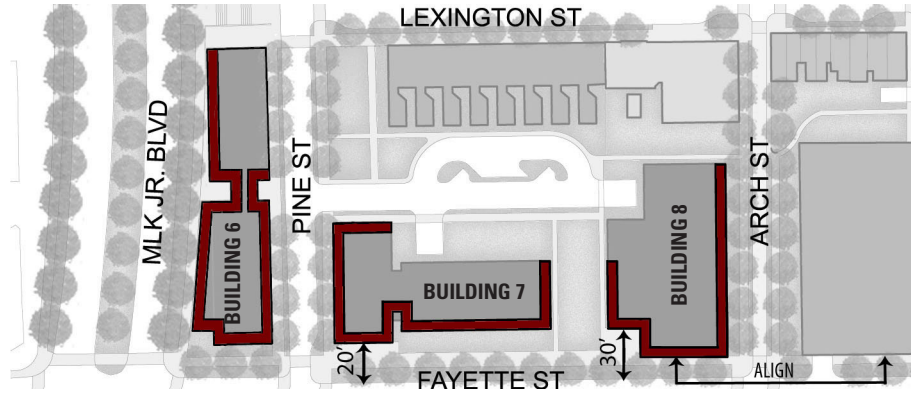
*Dark blue circles indicate primary entrances; light blue indicate secondary entrances, and yellow circles indicate service access*

#### *Open Space*

The open space in this area will be an integral element in supporting the “ring of green” concept established in the 2002 Master Plan. In addition, the University’s standards for streetscape will be implemented around each of the proposed new buildings. The site for Building 7 presents an opportunity to create larger courtyards to the south, east, and north. A portion of the building will be setback from Fayette

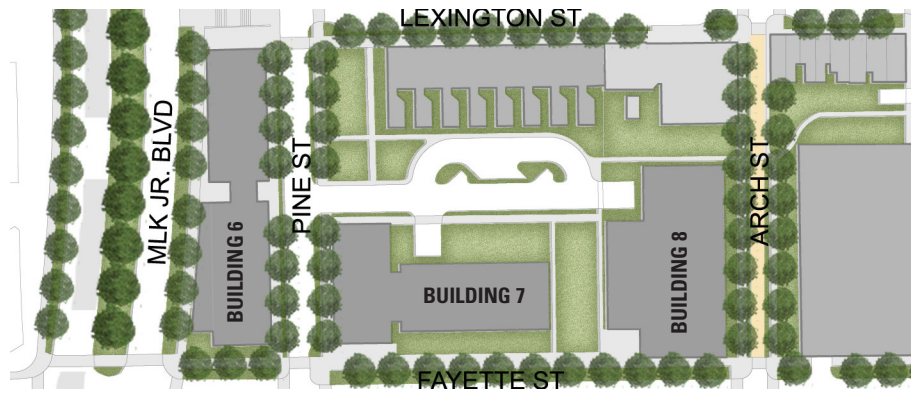
Street to create more lawns and landscaping, and provide much needed massing relief in this dense area of the campus. A new courtyard will be created between Building 7 and 8 to provide a passive area for socialization and to provide a location for sustainable initiatives. Landscaped areas to the north will provide buffers with tall tree canopies between these academic buildings and the adjacent residential buildings.

## PRECINCT C



### BUILDING FRONTAGE

*Frontage and setback recommendations*



### LANDSCAPE

*Proposed open spaces*



---

## Precinct D

This precinct today is the site of the former Hayden Harris Hall, and its central location ranks it as one of the greatest opportunities for the University to institute a number of important urban planning paradigms. At the forefront is the ability to capitalize on a central location situated prominently between the Schools of Pharmacy, Dentistry, and Medicine. This site is strategic in reinforcing the relationships between these Schools, the pedestrian corridors that knit the campus together, the open spaces that support the ring of green, and the opportunities to showcase sustainable practices on campus.

### *Height and Massing*

Building 9 will be ten stories, with a 31,500-GSF footprint, that provides 315,000 GSF of space. The scale of this building compliments the height of the adjacent buildings and figures prominently as an iconic symbol for this area of campus. Because of its size, the height and mass will need to be responsive to the site and surrounding buildings. Building form, façade articulation, and horizontal and vertical setbacks will all play a significant role in establishing the right contextual fit within this campus setting.

### *Orientation*

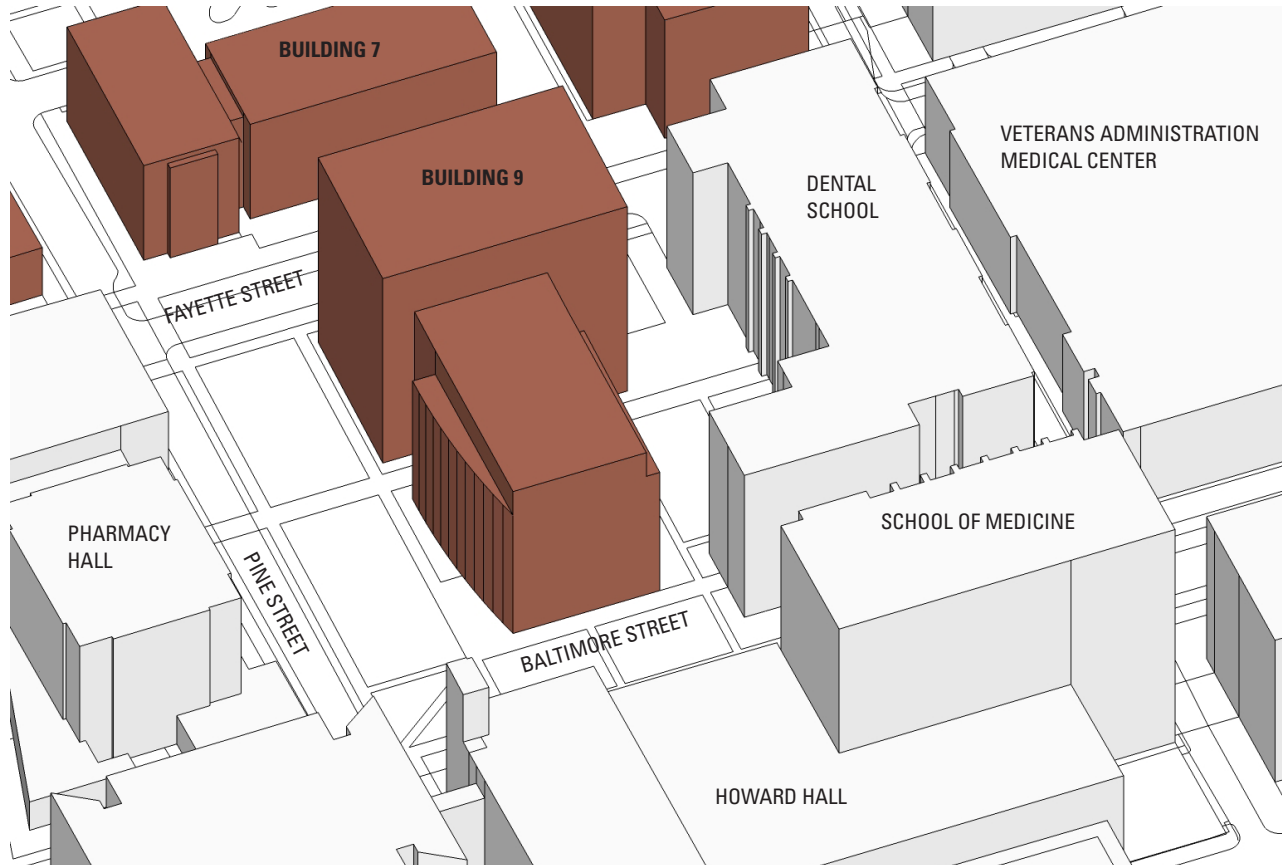
The prominence and size of the site allows Building 9 to be viewed from all four sides; however, its primary orientation will be to the south and west. Significant setbacks will be created by landscaped courtyards on the south and west facades to reinforce the contextual setting and to strengthen the relationship with the adjacent Schools.

### *Building Access and Transportation Network*

The primary building entrance will face West Baltimore Street. Service access will be on the northeast corner of the building.

The building will be served by existing parking in the Pearl Street Garage and convenient bus stops on Fayette and West Baltimore Streets. The proposed Red Line below MLK Boulevard will provide mass transit access near the site in the future.

## PRECINCT D



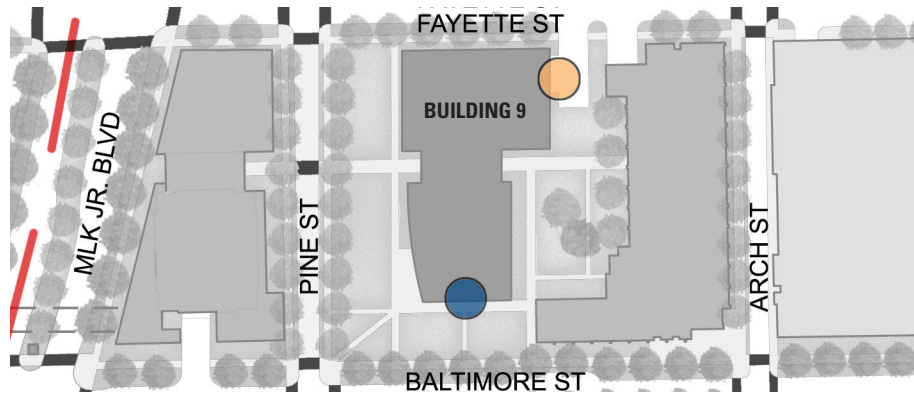
### MASSING

Massing diagram of proposed construction within Precinct D (brick-colored buildings represent new construction).



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## PRECINCT D



### BUILDING ENTRANCES

*Dark blue circles indicate primary entrances; light blue indicate secondary entrances, and yellow circles indicate service access*

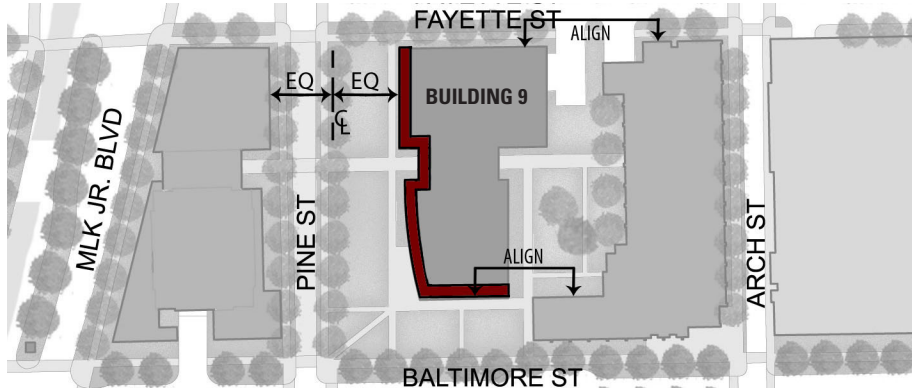
#### *Open Space*

Large landscaped courtyards will signify the importance of this building and contextual setting. While the courtyards will be important amenities to the new building, they will also benefit the adjacent Schools of Pharmacy, Dentistry, and Medicine. The site holds the potential for a significant proportion of trees, lawns, seat walls, formal and informal walks, and a water feature. The building orientation will also create a courtyard between Building 9 and the School of Dentistry. This space by design will be quieter for contemplation, reading, and socialization.

The open spaces are of the size and prominence that they can also support honorific features to commemorate people or events. In addition, the University's sustainable practices could be evident in this area as well.

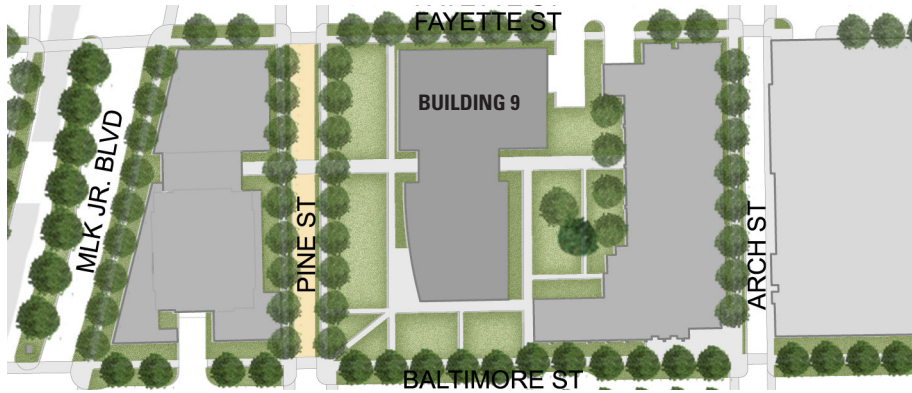


## PRECINCT D



### BUILDING FRONTAGE

*Frontage and setback recommendations*



### LANDSCAPE

*Proposed open spaces*

## Precinct E

This precinct represents an important infill site on the south edge of the campus since it abuts Pratt Street, one of the major access routes to downtown Baltimore. Site preparation will require the State of Maryland Forensic Medicine building to be demolished. Conceptually, this area is intended to act as a catalyst for continued economic development along the Pratt Street Corridor.

### Height and Massing

Building 10 will be eight stories, with a footprint of 17,400 GSF, and provides 139,200 GSF of total space. The tower will have a two story ancillary wing that connects to and wraps the south face of the Pratt Street Garage. The building tower will be separated from the Pratt Street Garage to allow more daylight to penetrate the site and to produce programmable floor plates with greater flexibility. This approach will eliminate vehicular access to the Pratt Street Garage from the west side.

### Orientation

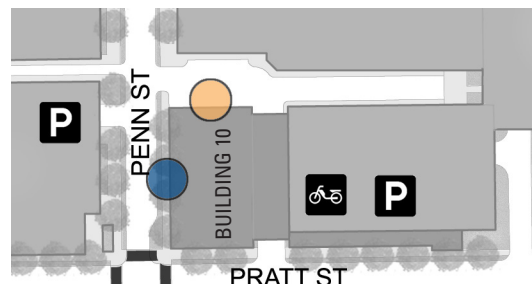
Building 10 will face Pratt Street. The two-story “wrapper” on the existing Pratt Street Garage will be a mixed-use development that produces and enlivens street activity and supports the businesses on the south side of Pratt Street.

### Building Access and Transportation Network

The main building entrance will be on Penn Street. Service access will be from the north, off Lemmon Street.

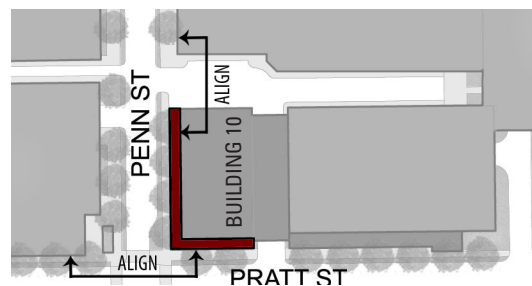
### Open Space

Building 10 will have the University’s streetscape standards applied to the south and west facades.



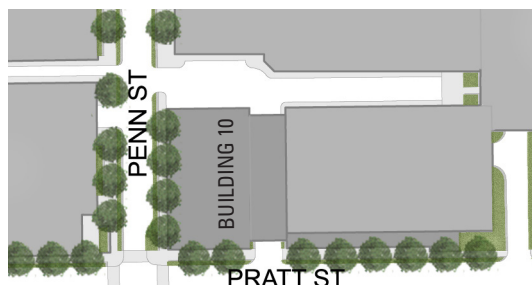
**BUILDING ENTRANCES**

*Dark blue circles indicate primary entrances; light blue indicate secondary entrances, and yellow circles indicate service access*



**BUILDING FRONTAGE**

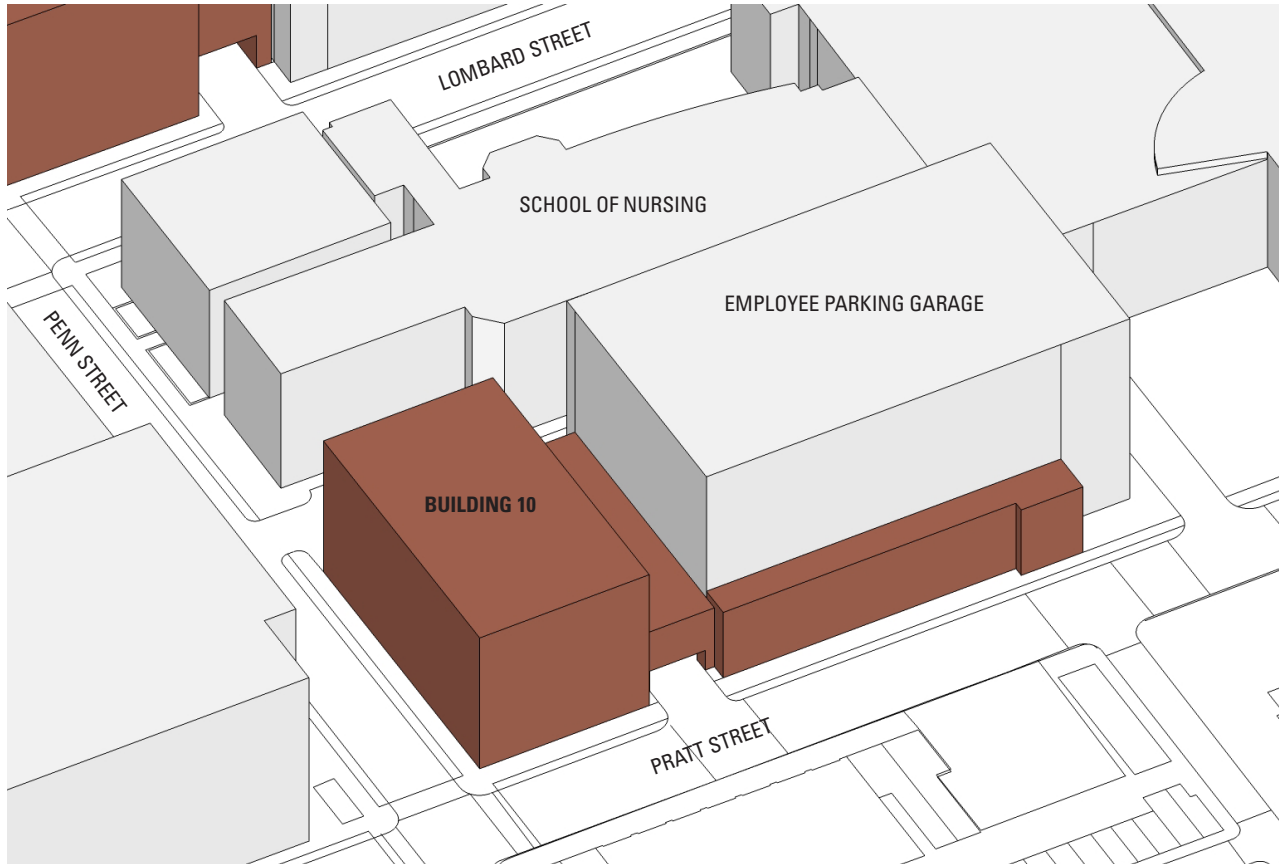
*Frontage and setback recommendations*



**LANDSCAPE**

*Proposed open spaces*

# PRECINCT E



## MASSING

*Massing diagram of proposed construction within Precinct E (brick-colored buildings represent new construction).*





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## Precinct F

This precinct anchors the southeast corner of the campus, and fills in the fourth corner of the Lombard and Green Street intersection. This architectural gateway is bounded by several of the most significant and frequently visited buildings on campus – Davidge Hall and the Health Sciences Library; along with the University of Maryland Medical Center.

### Height and Massing

Building 11 will be six stories, with a 33,600 GSF footprint that provides 201,600 GSF of total space. The mass will need to respond to contextual drivers that dictate that this important corner “open up” to the surrounding buildings and the proposed courtyard on the site. Building 12 will be seven stories, with a 22,800 GSF footprint that provides 159,600 GSF of total space.

### Orientation

Building 11 will perform multiple functions. The north façade will face Davidge Hall and be set back from the street. The east face will step back to allow for more open space and to accommodate the entry/exit from the garage below. As an “edge definer,” this building will play an important role with a façade that faces Pratt Street to the south and Green Street to the West.

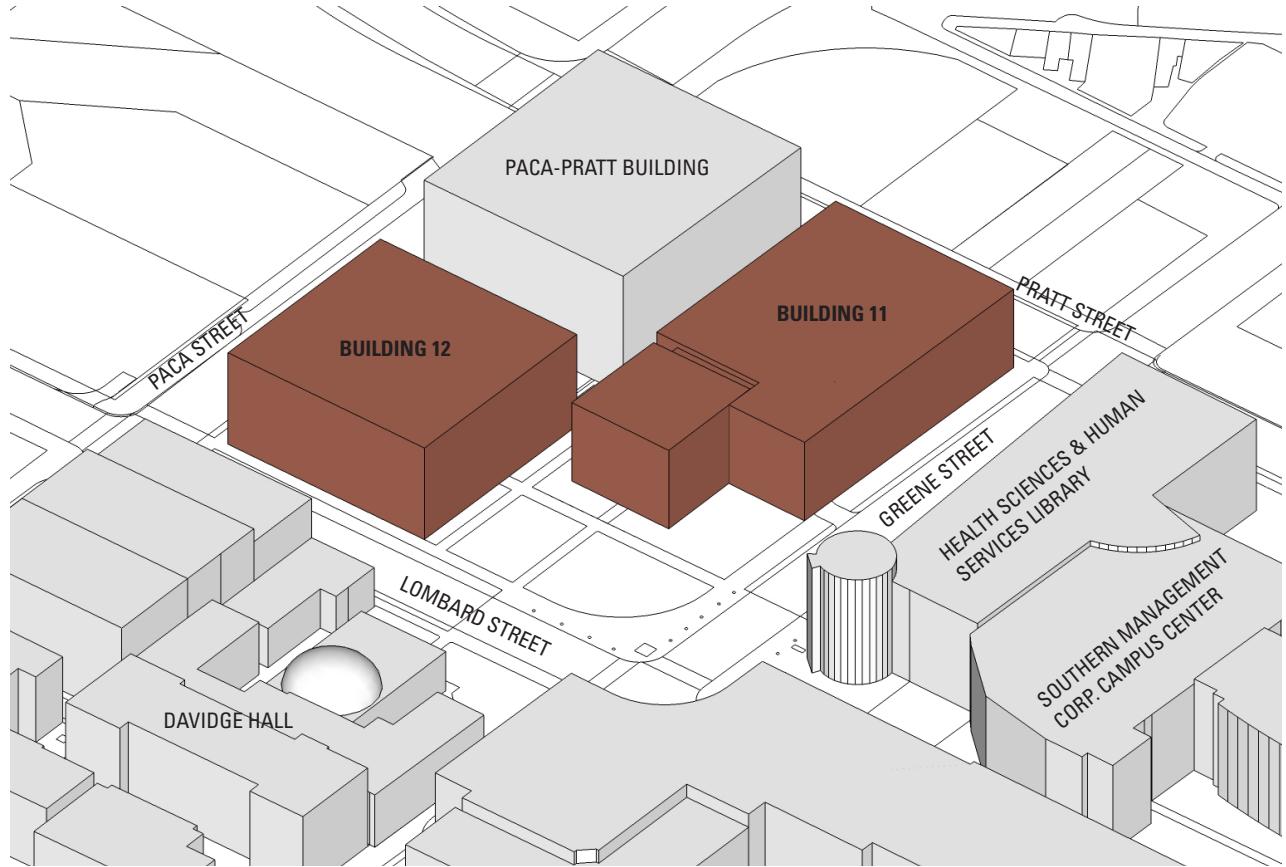
Building 12 will also be an “edge definer” with important facades on both Lombard Street and Paca Street. Its west façade should complement the large landscaped courtyard it faces.

### Building Access and Transportation Network

Building 11 will have its main entrance on Lombard Street facing Davidge Hall. Service access will be from Paca Street through a service alley. Building 12 will have its main entrance on Greene Street. Service access will be from the service alley to the south that adjoins Paca Street.

The buildings will be served from the existing parking garage beneath each building. In addition, convenient bus stops are located nearby on both Lombard Street and Pratt Street. The proposed Red Line will provide mass transit access in the future, including a below grade station stop under the Lombard and Green Street intersection.

# PRECINCT F

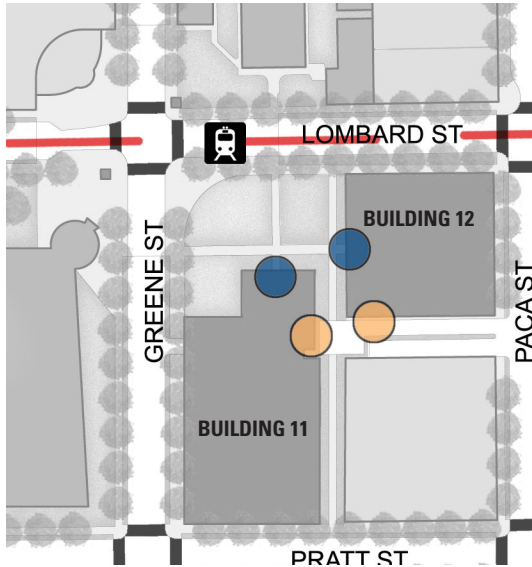


## MASSING

*Massing of proposed construction within Precinct F (brick-colored buildings represent new construction).*

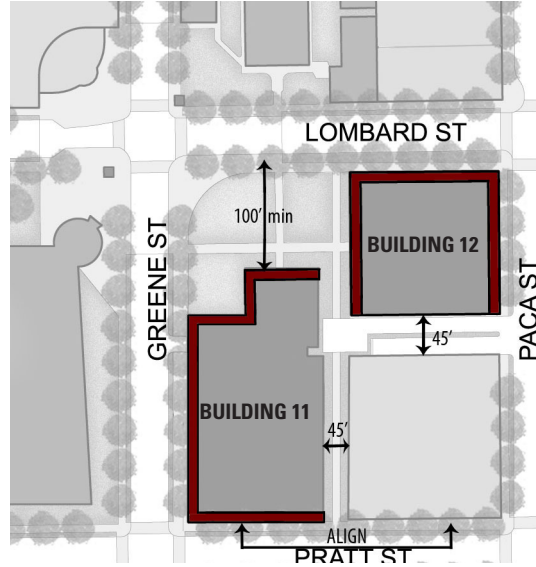


# PRECINCT F



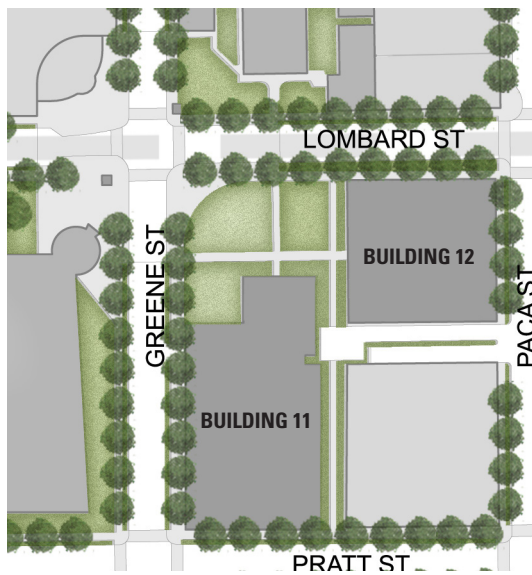
**BUILDING ENTRANCES**

*Dark blue circles indicate primary entrances and yellow circles indicate service access*



**BUILDING FRONTAGE**

*Frontage and setback recommendations*



**LANDSCAPE**

*Proposed open spaces*

## Open Space

This precinct area has the existing landscaping surrounding Davidge Hall and the Health Sciences Library, with pedestrian plazas and landscaped planters marking the entries to the Medical Center and the Library. A combination of formal and informal landscaped spaces are intended to reinforce the significance of the setting between the new buildings and compliment the heritage and importance of the existing campus. In addition, the size of the open space will allow for special features to honor people, events, and the University and also support of the architectural gateway elements.



## Precinct G

This precinct will be the symbolic quad of campus. UMB's School of Law, School of Social Work, and UMMC currently face University Plaza. The Master Plan preserves and improves this open space, with only limited development allowed that would support the functions programmed for the park.

### Height and Massing

Architectural gateway elements will mark the northeast and northwest corners of the park to reinforce the identity of the University. At the discretion of the University, small, one-story pavilions may be constructed to provide functional access to the below-grade University Plaza Garage or support programmed functions that would be appropriate for the park.

### Orientation

Unlike a building that presents multiple facades outward, the park is the space "in between" that is framed by a grid of existing building edges. The University Plaza has four sides, each serving a slightly different purpose. The north edge faces Baltimore Street and the School of Law and needs to support and address this busy pedestrian corridor. The east edge faces commercial, mixed uses, and this edge will respond to that context. The south edge supports a constant stream of people and activity as it connects many adjacent destinations. The west edge will have a water feature that generates ambient noise to mask the sounds of the city with more soothing sounds.

The center of the park is challenged with providing a large area for gatherings such as commencement ceremonies and other special and seasonal events. In addition, the balance of lawns and trees will be supported with benches, pedestrian lighting, and other furnishings to encourage active and passive uses within the space.

### Building Access and Transportation Network

Vehicular egress and ingress and primary pedestrian access to the below-grade University Plaza Garage will be from the west, off Green Street. Emergency egress stair towers from the garage will be integrated into the landscape and plaza features. The edges of the park will serve as paths to facilitate pedestrian movement within the campus and surrounding neighborhoods. Bus stops will be located nearby, but not on the edges of the park. The University Plaza Garage and the Grand Garage will accommodate parking for events.

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## PRECINCT G



*Below ground parking access*



*Proposed open spaces*

### Open Space

The nature of this precinct is open space, framed by buildings. The University's standard streetscape will be installed around the perimeter of the park and on both sides of each street where permitted. The interior of the park will be a combination of lawns, trees, walks, plazas, and a major water feature. These elements will be embellished with a variety of site furnishings to support the programmed uses within the park. Sculpture and other intriguing features will be encouraged to enliven the space and make it a popular destination within the University and the City.





## LANDSCAPE GUIDELINES

### Campus Portals

The boundaries of UMB’s campus are dynamic and will expand and adjust over time. However, certain locations noted in the 2010 Facilities Master Plan Update currently function as portals, or entry points, to the campus, and the University will distinguish these places as formalized gateways. Three categories establish a hierarchy for these portals, signifying their relative importance.

#### *Architectural Portals*

By marking campus entry points with a physical structure, the University reinforces its identity. This place-making strategy elevates the importance of the University within the City, enhances the memorable aspects of the campus, and facilitates wayfinding for visitors. If the campus expands in the future, these

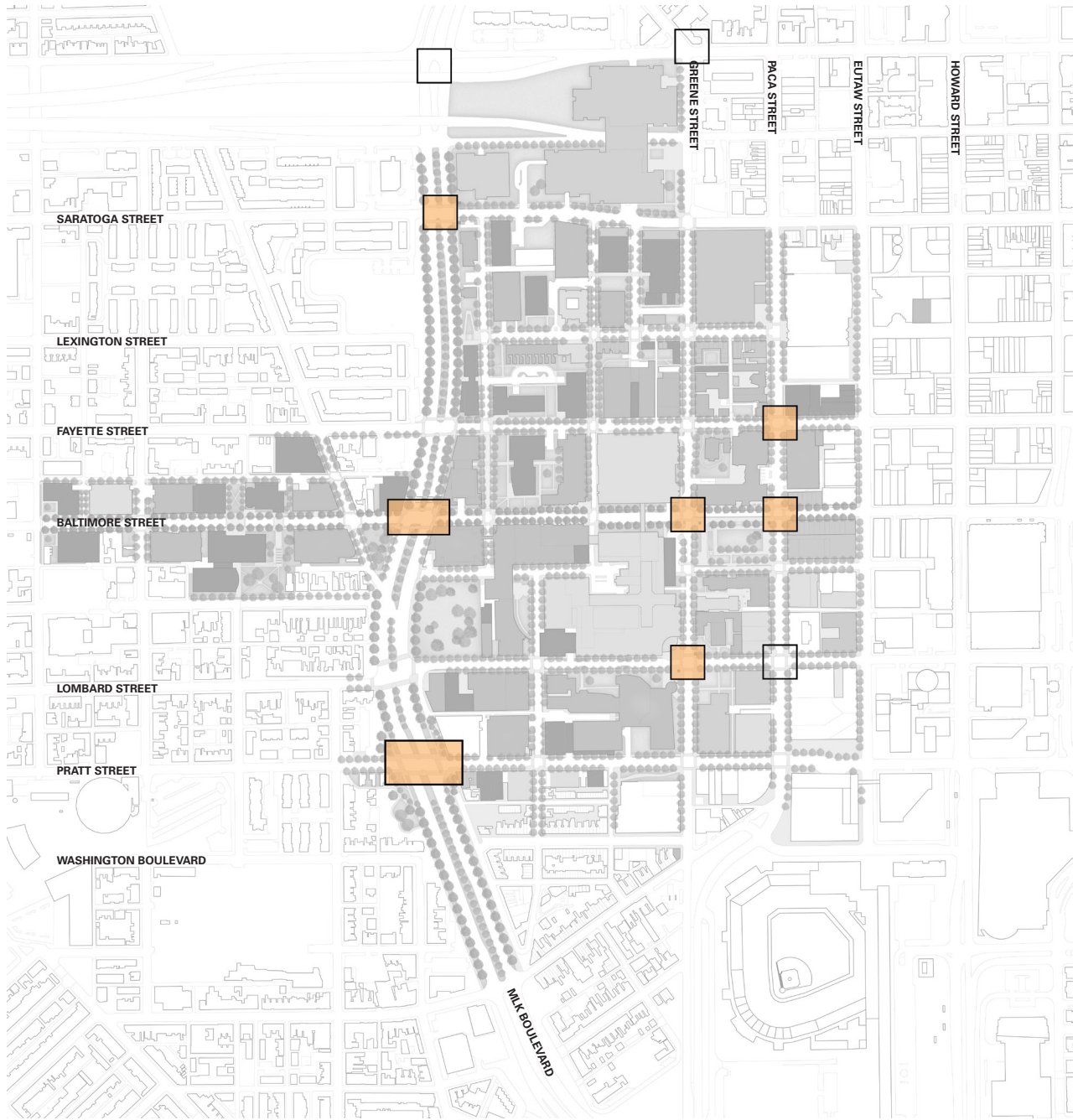
structures will remain as valuable place-makers, marking history. Additional portals may be identified in the future, requiring similar enhancements.

Opportunities for architecturally significant portals have been identified at the following intersections:

- West Baltimore Street and MLK Boulevard
- Greene and Lombard Street
- Paca and West Baltimore Street
- Greene and West Baltimore Street
- Saratoga and MLK Boulevard

*(See diagram on opposite page)*

<b>Architectural</b>	A physical, monumental architectural structure, such as a wall, arch, pylon, or a combination that will serve to identify a significant entry point or place on campus. The height and mass of these elements will be larger or more ornate than similar elements placed at secondary portals and other locations on campus.
<b>Secondary</b>	Piers, seat walls, fencing, wayfinding signage, maps, and kiosks placed at intersections and locations where there are moderate pedestrian and vehicular traffic volumes.
<b>Minor</b>	Upgrades in landscaping, inclusion of banners, or other changes in streetscaping to mark informal, minor portals to campus.



# CAMPUS PORTALS





*Examples of architectural portal elements from the UMB campus*

Architectural portals shall consist primarily of natural stone, brick, and precast stone. Accent materials should echo materials used elsewhere on campus. Black metalwork used in existing campus walls and fencing is one example of an appropriate material to incorporate into the design. Portals across campus will not be identical in design but will reflect variations upon a theme to provide continuity and visual interest.

The character of the street will dictate qualities of the portal's design, including scale, street presence, and materials. In all cases, the scale of the portal shall reinforce the pedestrian experience of place. Portal design may include special lighting features as a way to identify the campus and provide improved safety and security to edge conditions of the campus. Entry and arrival to campus will be a layered experience, between the University, the Biopark, and the University of Maryland Medical Center. Coordination between these entities is encouraged.





Examples show appropriate scale for secondary portals; all new signage shall conform current University signage plan

**Secondary Portals**

Secondary portals will combine a number of elements such as seat walls, piers, fencing and signage but at a scale that is less monumental than architectural gateways. In 2002, the University adopted a comprehensive Signage Plan for campus that provided standards for signage, lighting, banners, and wayfinding tools. Standards specified by this document shall be used in the design of all campus portals. Should the University update this document, it is expected that the new standards will be employed at portal sites.



Example of existing secondary portal elements

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### *Minor Portals*

The Designer shall create additional informal gateways to campus through the use of unified sidewalk pavers, clear building signage and landscaping, and standard streetlights and benches.. By creating a visually unified edge to the campus through consistent use of landscaping and streetscaping, visitors will know when they have entered the University's precinct. At these minor portals, literal gateways are less important than perceived ones.



*Minor portal achieved through landscaping, banners, and consistent streetscape elements*

### **Campus Streets**

"Sidewalk contacts are the small change from which a city's wealth of public life may grow."

Jane Jacobs

### *Existing Conditions*

University campuses are special places, often shaped by the spaces between buildings. The spaces between the buildings on the UMB campus primarily consist of public rights-of-way (i.e. streets). Therefore, the condition and quality of the street is tantamount to the condition and quality of the campus itself. The attention and care that might ordinarily go into the maintenance of a quad on another campus is, on the UMB campus, best directed at its streetscapes. Future designs shall continue with the University's established brick paving system, streetlight fixtures, and amenities package (bollards, trash cans, seating, etc.). However, certain streetscape conditions shall be improved.

The UMB campus is dominated by public streets. With so much of the campus precinct devoted to spaces for vehicles, it is difficult for the University to establish its presence as a campus intended for people. For this reason the University re-assessed its current transportation and roadway conditions as part of the Master Plan Update.

*Proposed improvements*

The University has long considered a plan that would convert one-way streets through campus into two-way streets to slow traffic and make pedestrian crossings easier. To this end, transportation engineers studied this concept during the 2010 Facilities Master Plan Update. The study concluded that simply improving the one-way street system would provide greater advantage and safety to pedestrians.

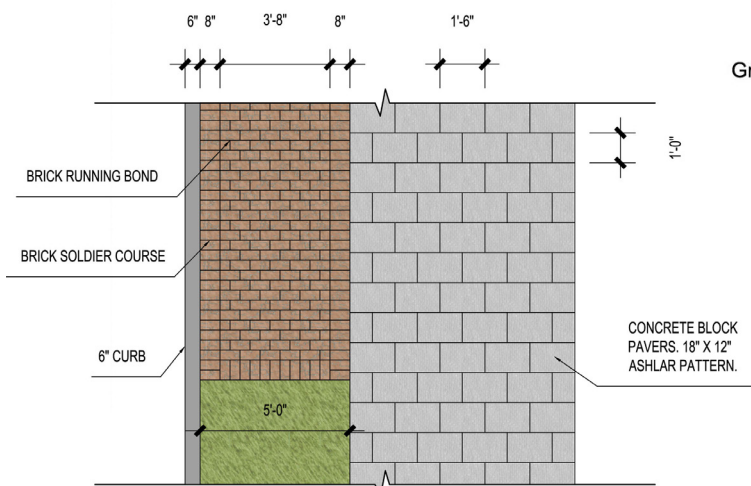
The transportation engineers recommended that the University construct curb bump-outs at intersections and building entrances. Doing so narrows traffic from four lanes to two through most of the campus and creates additional “real estate” reclaimed by eliminating the outer two lanes of the road. This space may be used as planting areas for trees and flowers, stormwater collection areas, or on-street parking that will buffer pedestrians from traffic. These changes, if approved by the City, will drastically change the look and feel of the campus. The UMB identity will be better displayed, and the bump-outs will allow for a better-connected network of pedestrian circulation and green spaces.

*Proposed streetscape typologies and street sections*

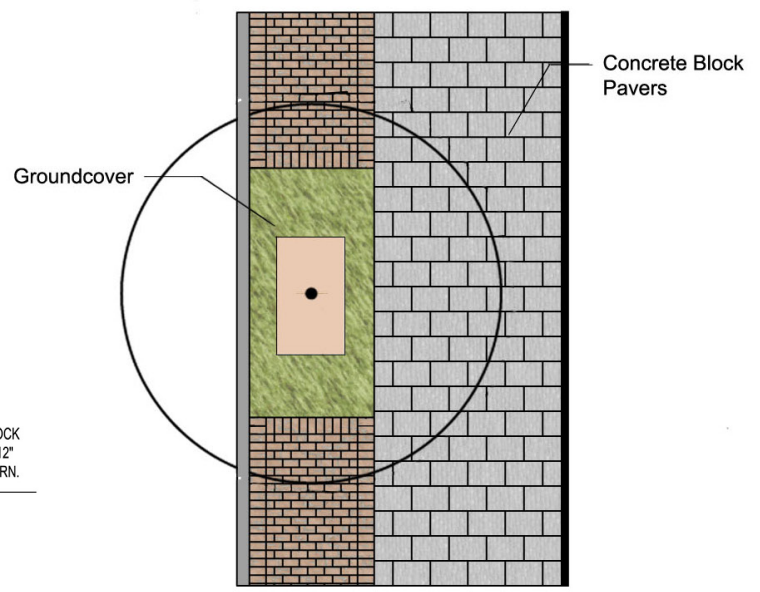
Both the 1991 and 2002 Facilities Master Plans include guidelines pertaining to the treatment of streetscapes on the campus. They focus primarily on mid-block conditions and include recommended paving types and patterns, street furniture (including lighting), and street tree plantings. These Guidelines elaborate on these urban design recommendations, with additional attention paid to the conditions that exist at street intersections.

Campus street intersections are places of heightened activity and interest, where the UMB community and Baltimore residents most frequently interact. Intersections are also areas of pedestrian-vehicular conflict, and they represent a special design challenge. These guidelines recommend that designers develop greater consistency between the campus’ intersections. Projects should also extend the well-established consistency of mid-block conditions into the intersections.



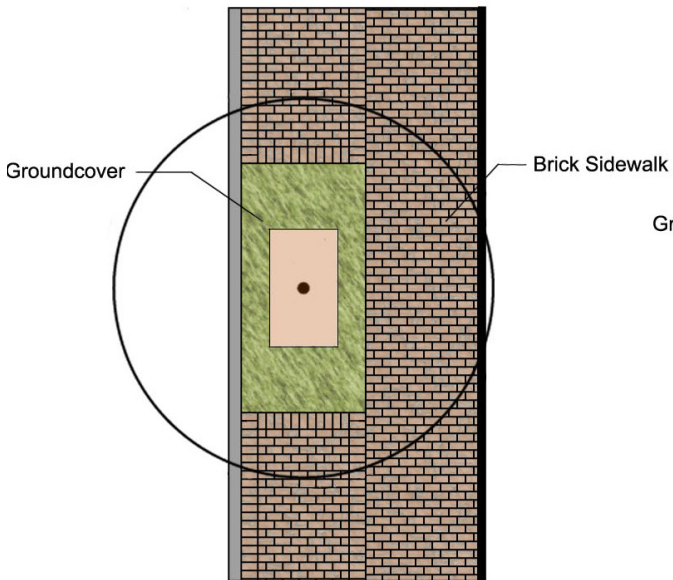
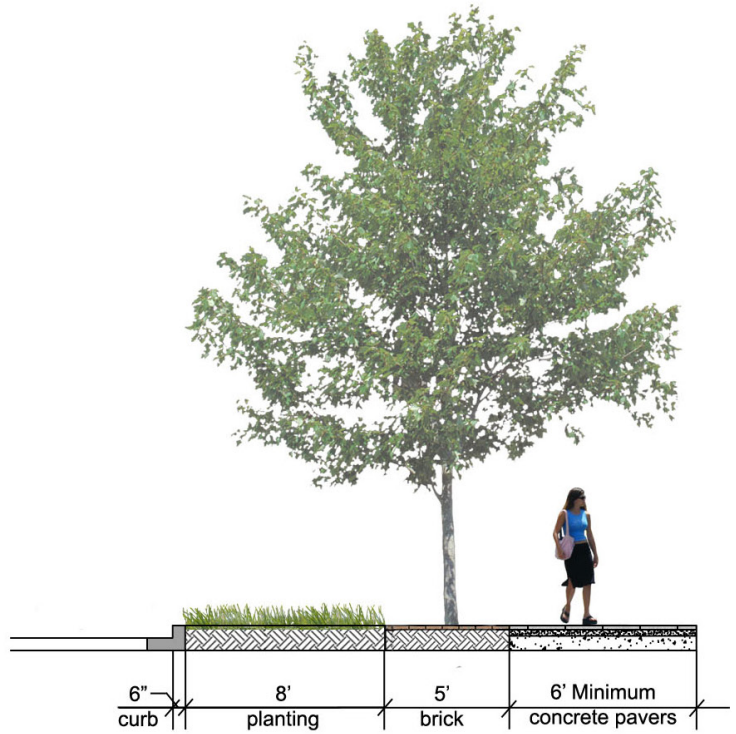


Typical sidewalk paving types and patterns

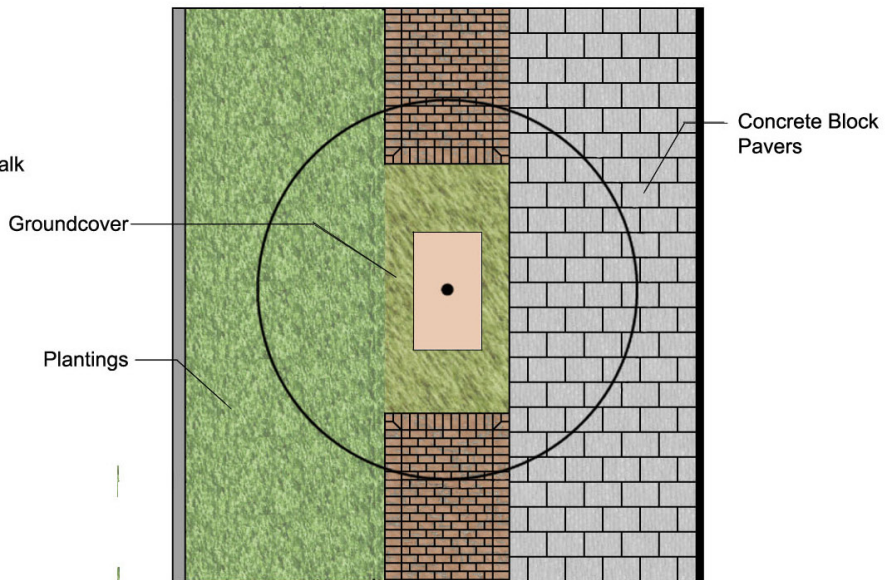


Standard Campus Sidewalks

# SIDEWALK DETAILS

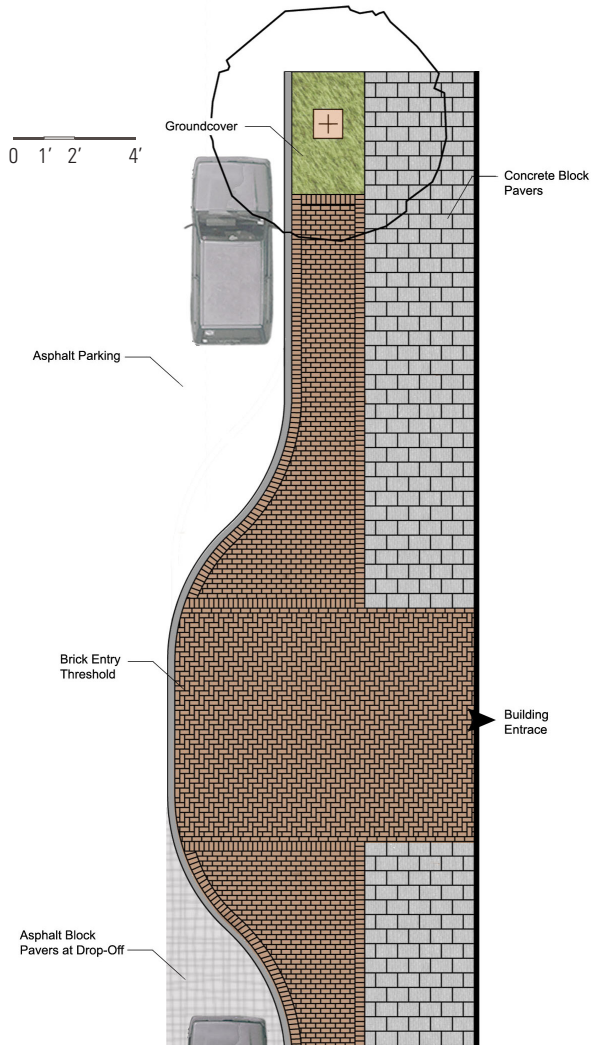


Narrower sidewalks



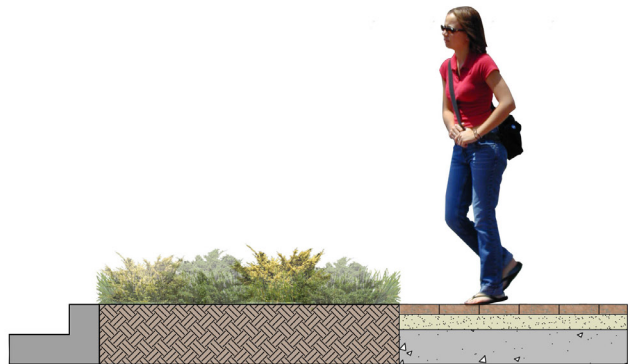
Sidewalks w/ curb moved outward for planting buffer

## SIDEWALK DETAILS

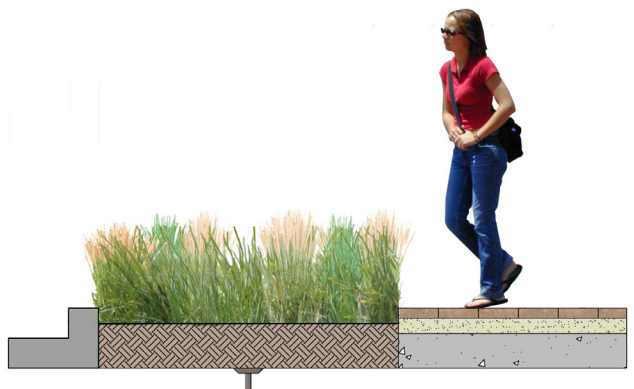


*"Carpet" at building entrance with bump-out*

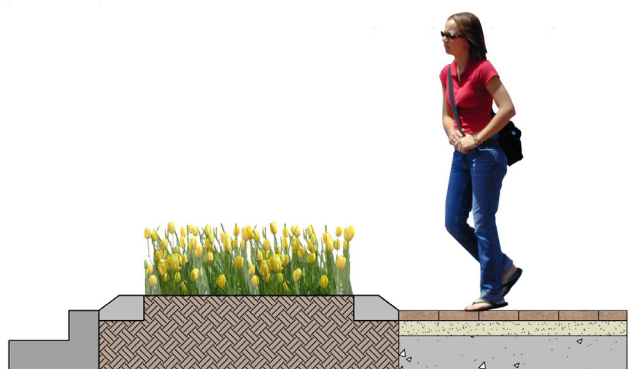
# PAVING PLAN



Standard



Swale

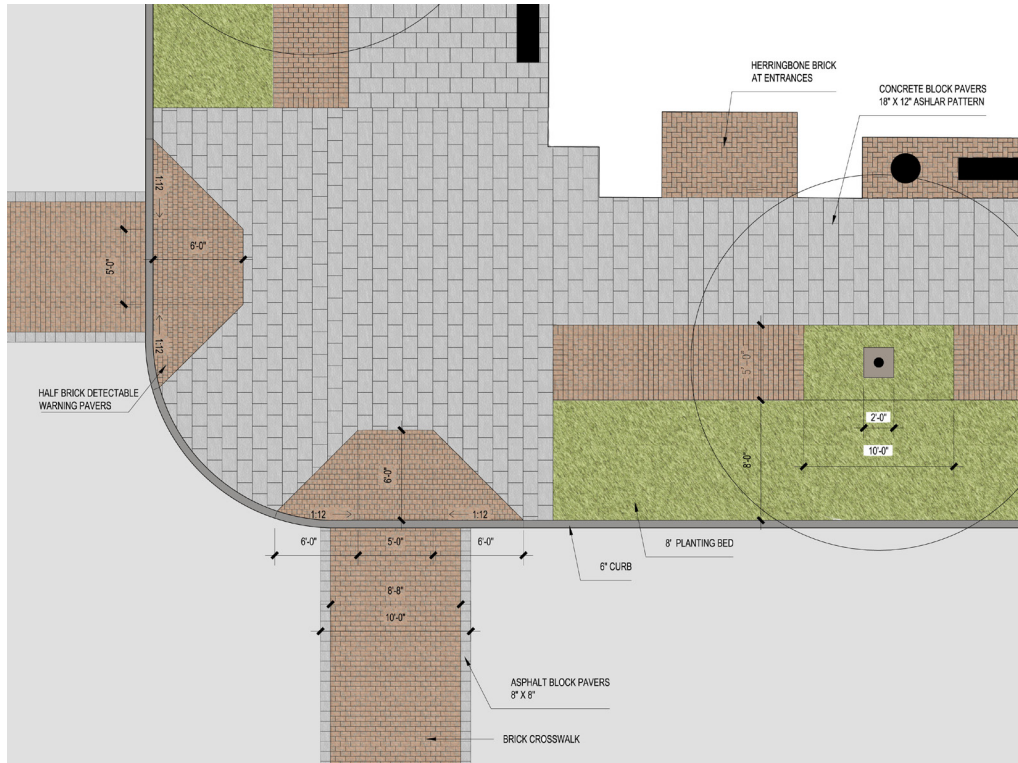


Raised

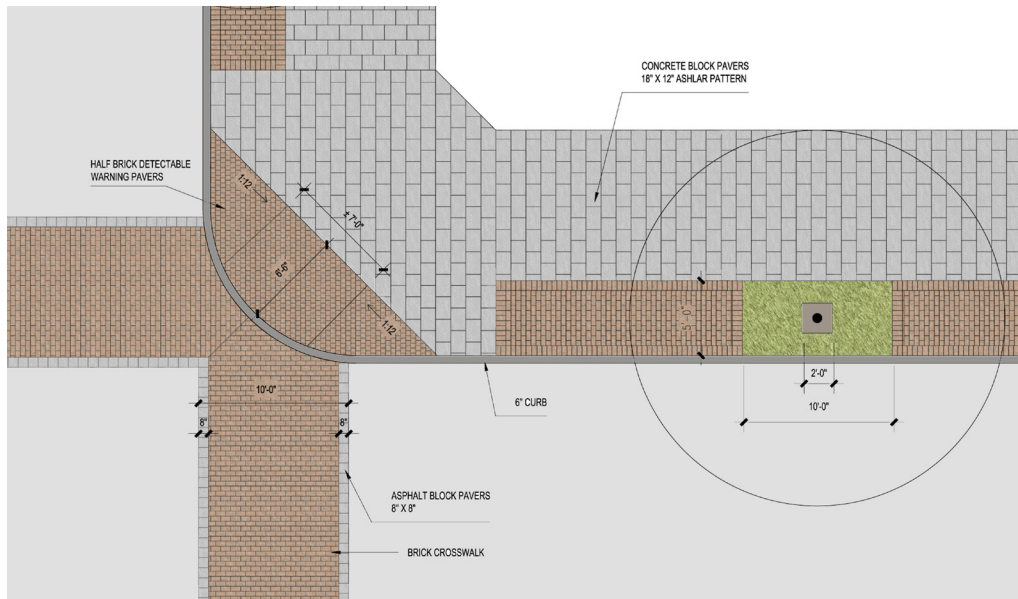
*Sections showing options for planted buffer*

# PLANTER DETAIL



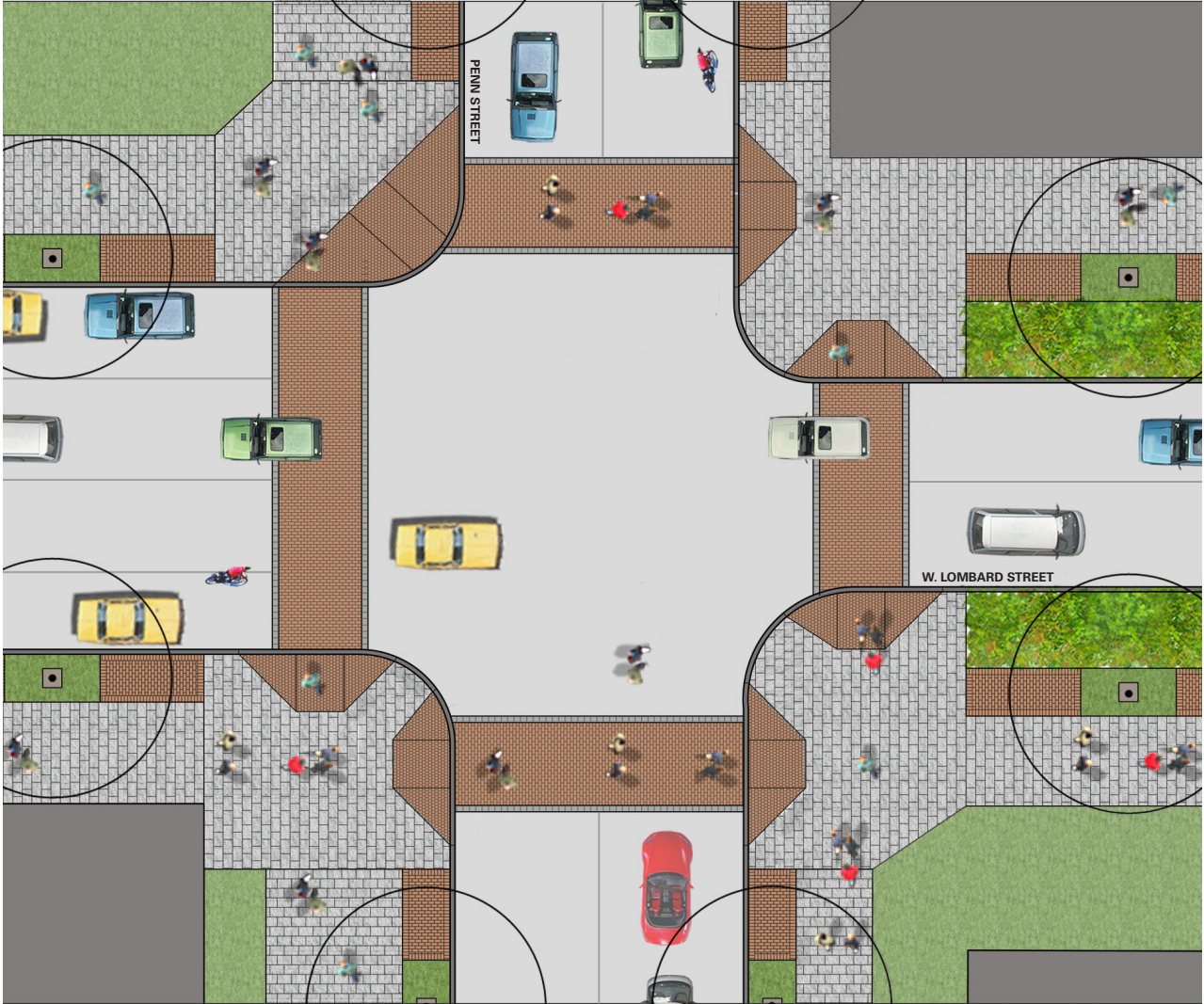


Typical corner at minor intersection



Typical corner at larger intersection with bumpouts

# PAVING PLAN



*Intersection at Lombard and Penn*

# PAVING PLAN





*Intersection at Pine and Lexington*

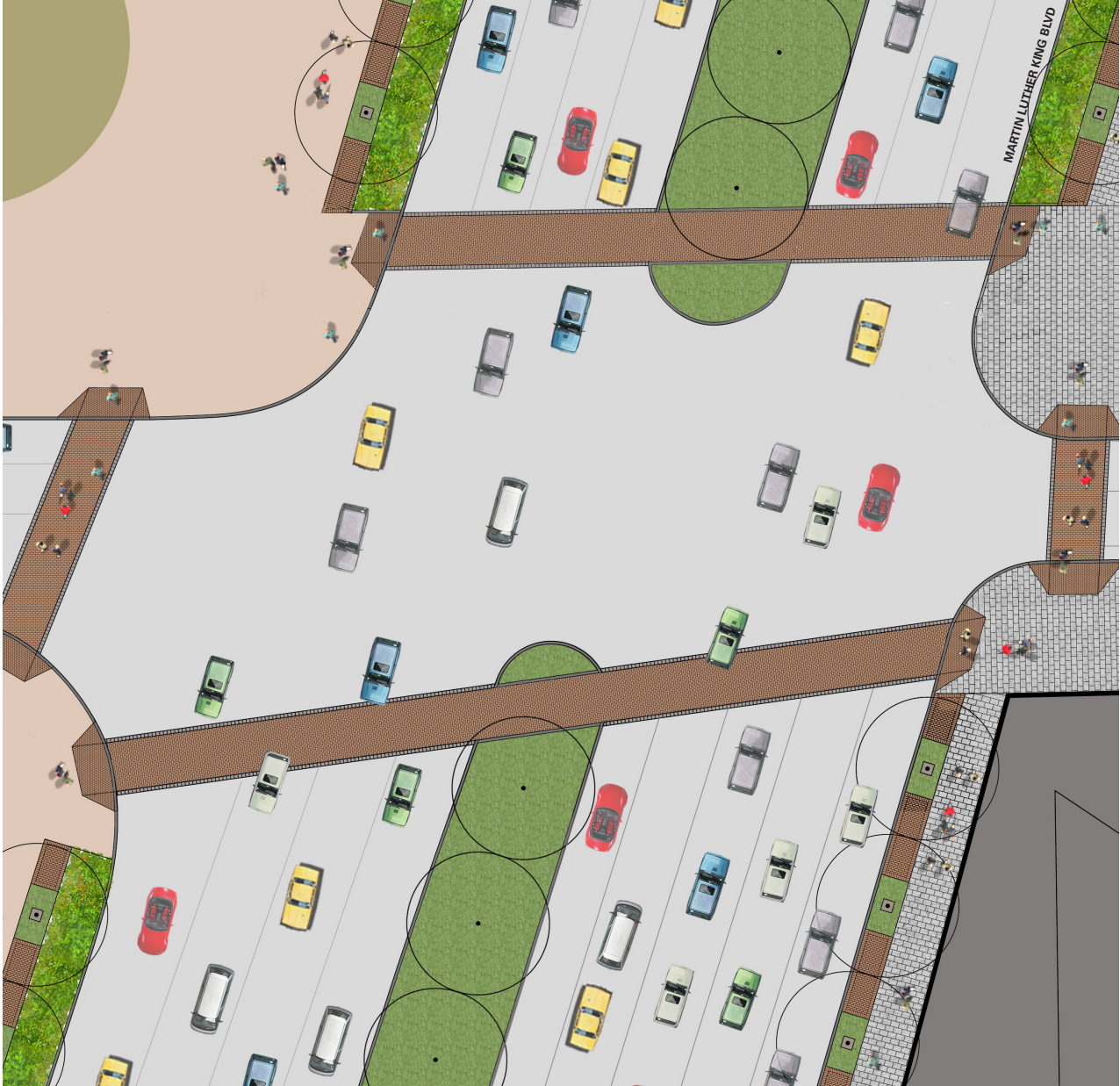
# PAVING PLAN





*Intersection at Baltimore and Greene*

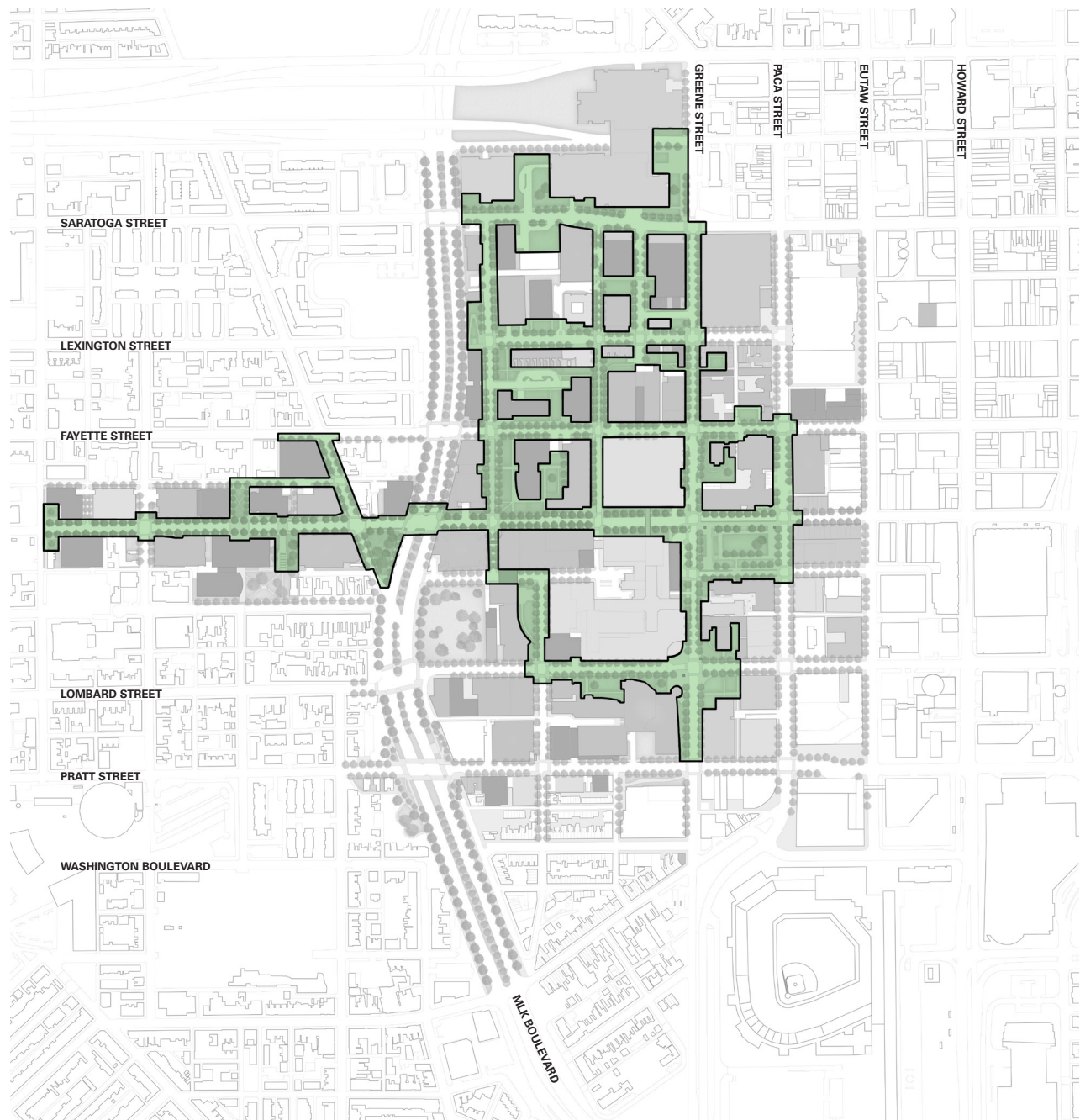
# PAVING PLAN



*Intersection at MLK and Baltimore*

# PAVING PLAN





*The University and the BioPark will improve landscaping on Martin Luther King, Boulevard, and Freemont Park, greatly expanding the University's open space network.*

0 100 200 400



## OPEN SPACE PLAN



## Landscape and Open Space Design

### *Philosophy*

In an urban downtown location, real estate is at a premium. Land values require maximum development within the building site footprint, leaving little landscaped open space for general, public use. However, the University is not a typical real estate landholder. Connected, organized open spaces on the UMB campus will reinforce campus identity, activate streetscapes, and soften the harshness of the urban environment. Since 2001, UMB has begun strategically “collecting” open spaces in order to create a ring of green around the campus. This concept reinforces the University’s identity, visually reminding the campus community and visitors that UMB is a unified campus.

Moving forward, the 2010 Facilities Master Plan Update proposes not a single ring of green, but several connected “rings.” This concept serves to tie each of the seven schools of the University together, giving each a common open space to share. The rings of green will be created by strengthening and visually connecting already existing green spaces on campus and by implementing the proposed campus streetscape.

### *Open Space Typologies*

The landscape open spaces at the UMB campus generally fall into one of several categories:

#### GREENS AND LAWNS

Healthy places to live, work, and study have ample access to greens and outdoor spaces. One particularly effective type of landscape for accommodating these activities is the “Green.” This landscape is essentially a flat, open lawn area, sometimes framed by a planting of trees to provide shaded seating. Public greens will be within a short, five-minute walk from offices; otherwise, the distance will overwhelm the need. Greens will help cool surrounding temperatures and reduce the heat island effect, making campus a more enjoyable place to be. Using native grasses and plantings will minimize the irrigation requirements of greens.



*Open space at the School of Nursing and Campus Center*

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POCKET PARKS AND ACCESSORY LANDSCAPES

At UMB, remnant or “left over” areas between buildings are too valuable to remain undeveloped. The design of new projects should thoughtfully address these spaces so that they integrate into the campus open space network and serve the needs of the University community. Landscape enhancements will transform such locations into valuable assets, as has been done in front of the Heath Sciences Facility and the School of Nursing. Wherever their location on campus, these remnant spaces shall be open and inviting to the University community, yet also shield and protect from the noise and traffic of surrounding public streets. This balance of openness and protection must be determined on a site-specific basis using existing buildings, carefully sited new structures, site masonry and fencing, and site furniture and plantings.



*Examples of “pocket parks” tucked between buildings on campus*

## COURTYARDS

A final type of open space on the UMB campus is the Courtyard. Courtyards, when designed correctly, create welcoming, well-used spaces associated with a specific school or building. To the extent possible, courtyards shall be designed to connect into the rings of green to provide benefit to the overall campus open space network. To be successful, courtyards need to have exposure to sunlight and a view or opening into a larger space. Natural connections to other spaces and integration into primary pedestrian paths will draw people into the space, thereby activating it. The Law School courtyard represents a very successful example of this type of landscape.



*Since opening, the School of Nursing courtyard has become a popular location on warm days. The opening of the University Campus Center further enhances this area of campus.*



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## *Principles*

Principles to ensure optimal use and quality of open spaces:

### OPEN SPACE HIERARCHY

Open spaces must relate in a hierarchical manner. They have greater meaning when integrated with one another through a progression of scale. Small courtyards and spaces shall be designed to connect to one another in an intentional manner within the rings of green.

### CONTEXTUAL DESIGN

The design of open spaces shall be sensitive to the context of surrounding buildings, expressed through the selection of materials. Context will also influence scale and proportions of the designed landscapes.

### SOUTH FACING OUTDOOR SPACES

Whenever possible, buildings shall be placed to the north side of sites to preserve the sunny areas to the south for outdoor uses (trees will be required to provide select areas of shade for days of extreme heat). Designers for particular parcels shall perform sun and shade studies, ensuring that the deep shade of buildings does prevent sun from reaching open spaces.

### URBAN WATER FEATURES

Water, when expressed in an articulated and defined way, imbues a space with a refreshing sense of urbanity and civil generosity. On a practical level, the sound of moving water neutralizes city noises. A water



*Baltimore City public park featuring water elements*

element shall be part of the redesign of University Plaza and other University spaces as appropriate.

When possible, water features shall make use of condensate from adjacent buildings, collected and stored in cisterns as a source of make-up water. Such collection systems are also appropriate for campus irrigation purposes.



*Public park in front of Baltimore City Hall featuring water elements*

#### BUILT ENVIRONMENT

The University's Urban Design Guidelines specify treatments for buildings, entrances, and street frontage to ensure an inviting, pedestrian-oriented campus. These same guidelines also improve the quality of the campus open spaces by enabling active, lively areas at the exteriors of buildings. Campus buildings must have some degree of outward orientation. Buildings shall have edges with depth to create pockets for the placement of seats, benches, planters, flowers, etc. Building entrances shall have space for those using the building to sit, congregate, and socialize.

#### ENERGY-EFFICIENT DESIGN

The University landscape design shall serve the needs of an energy-efficient, environmentally sustainable campus. Plantings of trees or vines will shade the southern or western facades of buildings. Trees shall be planted sparingly on the north sides of buildings to give building users access to natural light. Paving materials within landscape areas shall be selected to reduce heat-island effects, which will also reduce energy costs within adjacent buildings.

#### STORMWATER MANAGEMENT

Stormwater bio-filtration, or the diverting of stormwater run-off flows to planted holding areas, offers a simple and effective way to manage stormwater in an environmentally sustainable way. Planting areas shall be designed as bio-filtration areas for stormwater run-off, cleaning water before surface run-off is piped to the storm water system. Such areas

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thrive from the supplemental watering and become educational demonstrations for the University community.

#### PLANTING DESIGN

Planting design on campus shall allow for ease of maintenance and reinforcement of the collegiate setting. Urban-tolerant native species and adapted non-invasive exotics shall be used to limit maintenance and water consumption. Seasonal plantings of annuals shall be limited to highly visible locations such as building entrances, garden areas, and/or campus portals where they can be selectively used to reinforce the identity of the University or of the individual school.

Water-efficient irrigation systems shall be included with future construction to protect plants and to limit hand-watering. Irrigation systems shall make use of harvested (and filtered) stormwater from suitable roof surfaces as well as harvested condensate from building cooling systems. Where appropriate, stormwater runoff shall be directed from paved areas into planting beds as a natural water supply. (Note: designs must avoid introducing salt-laden runoff from heavily trafficked paved areas).

Additional principles for planting design:

- A subdued and consistent palette of plants shall be used to reinforce the character and identity of the University
- Street trees shall be scaled to mediate the height of buildings and the experience of pedestrians
- Tree canopies shall be designed to form a green fabric of healthy, vigorous trees
- Plantings shall reinforce the architecture of buildings at entrances

#### Urban Horticulture

Within the UMB campus setting, strong urban horticulture practices are critical to the success of the campus landscape. The following section provides a condensed resource for urban horticulture. It sets appropriate standards for the design of planting areas on future construction projects around campus.

##### *Planting in an Urban Environment*

Urban landscapes require thorough planning, forethought, and a basic understanding of the unique challenges faced by plants in the urban environment. Some of these challenges include:

- Higher temperatures during the day (Heat-Loading on adjacent pavements)
- Higher temperatures during the night (Heat-Island Effect)
- Higher wind velocity due to “tunneling effect” of urban buildings



- Poor soil nutrient quality
- Poor drainage and carrying capacity
- Homogenous soil structure
- Higher pH, due to adjacent concrete run-off
- Drought and/or lack of water access to roots
- Poor aeration and gaseous exchange
- Salt-spray and salt-laden run-off (De-icing compounds)
- Damage to limbs by passing trucks and buses on the street

The designer shall investigate these site conditions and select proper plant materials and soil resources accordingly.

An urban horticultural “program” promotes and enforces consistent cultivation practices to overcome the outlined challenges. Urban horticulture must meet the following conditions for plant health:

#### *Good Soil Characteristics*

Trees require soils that have sufficient organic material and nutrients for long-term growth and health benefits. Urban soils are usually disturbed soils, with low organic content and very poor nutrient levels. Tree pits and planting strips need to be treated like containerized planters. Existing soils may require extensive modification and thorough amending with organic matter and fertilizers prior to tree planting. In some instances, the designer will need to specify the excavation of unsuitable materials from tree pits before backfilling with topsoil.

Good drainage is also essential for the health of all trees and plants. Most trees in urban environments will actually drown without special drainage provisions. An interconnected 3-4 inch diameter perforated drainage pipe tied to the storm drain system is recommended for all street trees. This recommendation is essential to protect the University’s investment in its trees. Good drainage will also prevent excesses of salt from building up near the tree roots.

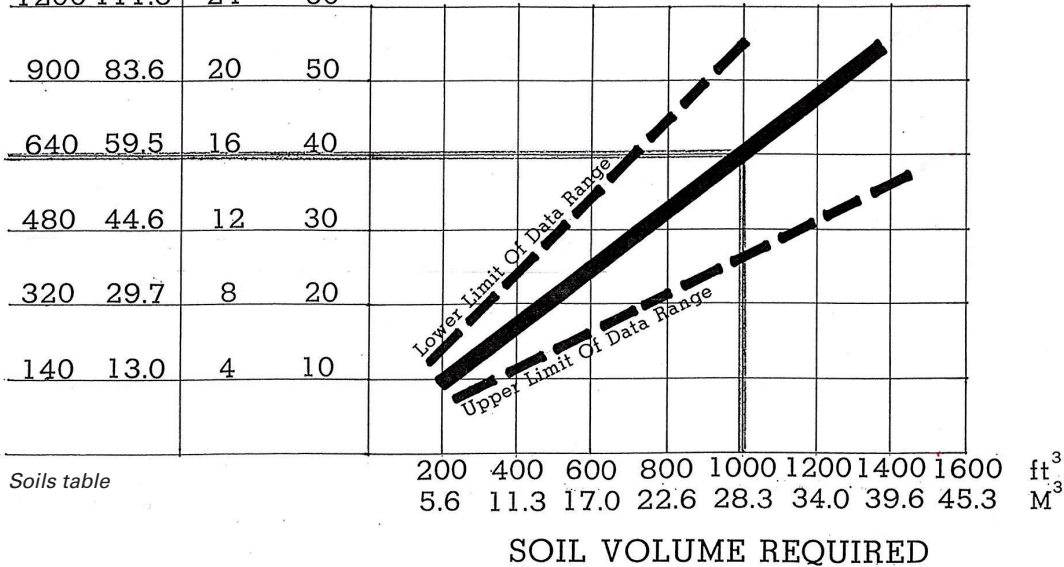
Poor drainage often results from soil compaction, which has other negative consequences on plant health such as reduced porosity, or micro-gaps between soil particles. Porosity allows for the transmission of gas-exchange (roots need to breathe) and the infiltration of water. Without adequate soil porosity, plant roots will suffocate. Compacted soils in existing tree pits around campus will be aerated or tilled as needed before new tree specimens are planted. With new construction, root zones and planting areas must be protected from compaction during and after construction. Unsuitable materials shall be removed from tree pits and plant beds following construction and replaced with good planting medium.

#### *Irrigation*

The use of native and adapted plantings will help reduce, but not eliminate, the need for irrigation water. The recommended species in the plant lists below are generally drought tolerant, but for any of these plants to flourish, proper irrigation systems are required. In addition to nourishing the plant, irrigation

**ULTIMATE TREE SIZE**

Crown Projection		Diameter Breast Height	
ft <sup>2</sup>	m <sup>2</sup>	inch	cm
1200	111.5	24	60
900	83.6	20	50
640	59.5	16	40
480	44.6	12	30
320	29.7	8	20
140	13.0	4	10



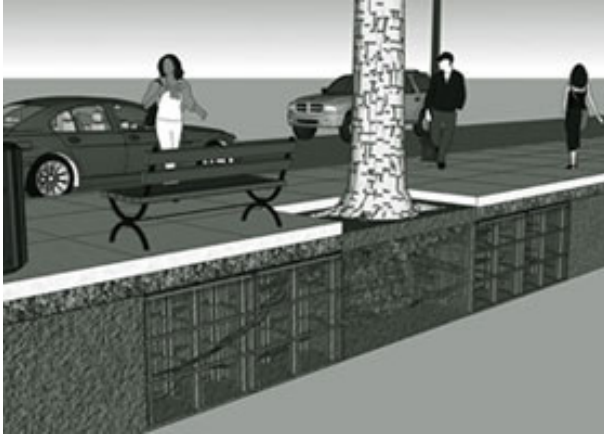
systems help flush salts and other soil contaminants from around the root system.

Proper irrigation systems conserve water and reduce operating costs. One recommended irrigation system is the pressure compensating drip system manufactured by Netafim Corporation. This system only waters the tree well (or planter) and not the surrounding pavement, thus conserving water. Water conservation shall also be achieved by harvesting and reusing stormwater runoff from suitable roofs and condensate from building cooling systems.

*Sidewalk Tree Pits*

Large areas of pavement, building foundations, and soil compaction on campus greatly limit the amount of soil available for the mature growth of trees. The soil volume chart below is included in the appendix, which shows the minimum soil that is required to establish mature canopy trees. In order to provide a sufficient volume of un-compacted soils for tree roots, these Guidelines recommend the use of Deep Root's Silva Cell system under sidewalks with street trees.

Silva Cells are modular, hollow blocks made of fiberglass-reinforced polypropylene with galvanized steel tubes. The combination of perforated plates and rigid columns create soil vaults meeting any size or configuration. These vaults also provide structural



*Silva Cell tree pit structure*

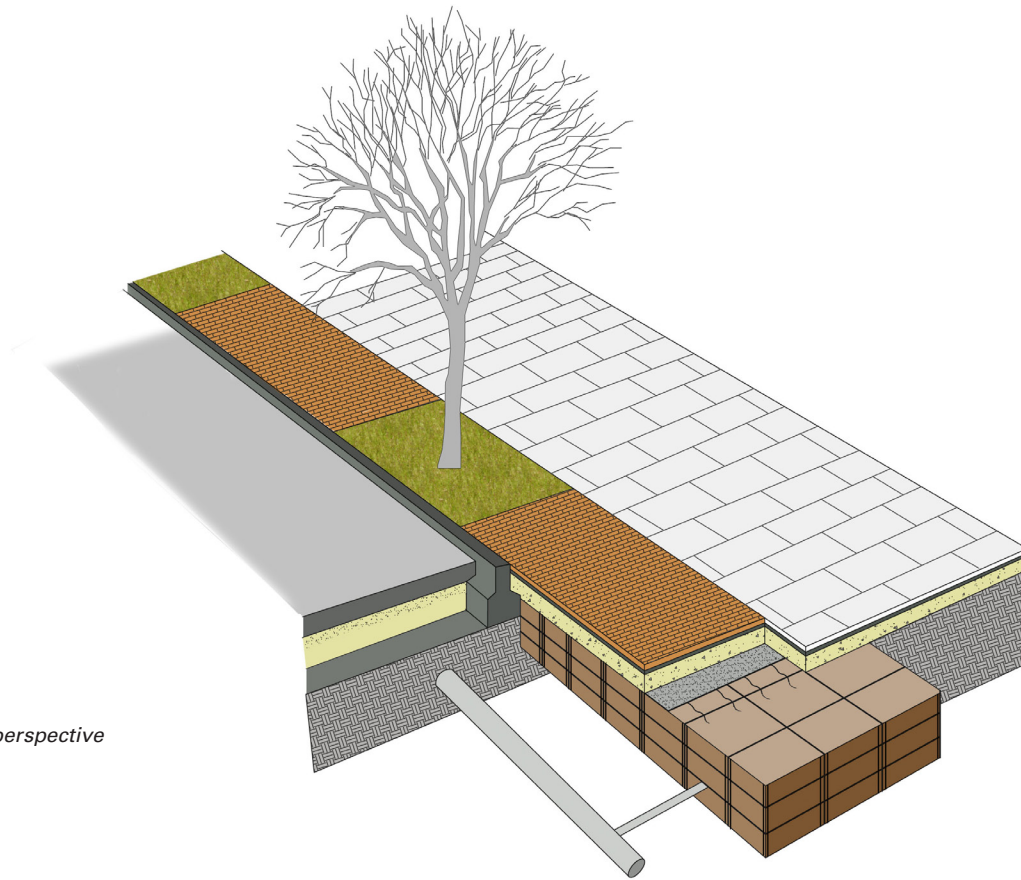


*Single Cell with Deck*

support for sidewalk paving and take the load off soils immediately under the paving slab. This allows the zone under sidewalks, adjacent to tree pits, to be filled with planting soils, which have higher organic content and lower compaction rates. The Silva Cell system also functions as part of a stormwater management system by collecting, detaining, and treating runoff onsite. These tree pits will be designed with irrigation and subsurface perforated drainage piping that overflows into the city's stormwater sewers.

Future construction projects on campus shall integrate systems similar to the Silva Cell system into the streetscape. In instances where the Silva Cell system is not appropriate (e.g. areas with significant vehicular loading), a system of reinforced concrete slabs and concrete piles should be designed to support the load of the vehicles. Reinforced concrete slabs should be cast-in-place above the piles as a base for high-traffic paving. On larger projects, the use of pre-cast panels and piles will minimize the added cost and allow for the removal of specific areas for access to utilities. Such a system will need to be custom-designed on a project-by-project basis, with oversight by the University.



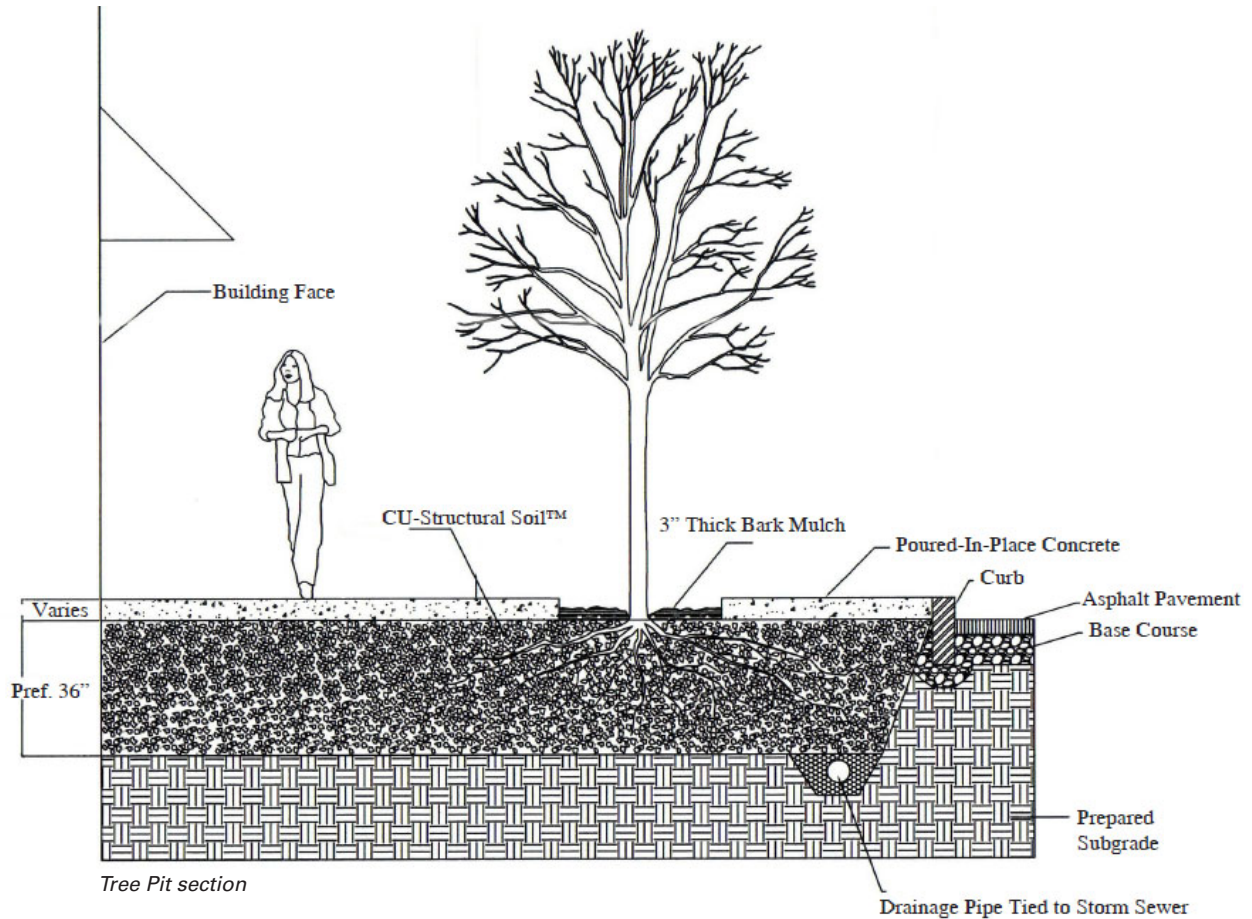


*Tree Pit perspective*

Structural soil systems, such as the Amsterdam Soil and Cornell University (CU) Soil, are satisfactory alternatives to Silva Cell or Pile-based systems, but only when these first two options are not feasible.

Amsterdam Soil consists of varying grades of semi-rounded silica and organic matter. The sand's uniform texture evenly distributes loads from pedestrian and vehicular traffic above, while offering a displaceable substance for extended root growth. In addition, vital air and moisture exchange can happen freely. One drawback is the low organic content (roughly 4.9%) and the tendency of the sand to absorb heat from adjacent utilities, such as steam lines.

Cornell University (CU) Structural Soil is a designed medium that can meet or exceed pavement design and installation requirements while also remaining root penetrable and supportive of tree growth. It is a proprietary soil product produced by licensed local manufacturers. The soil mixture consists of graded stone, clay loam, and hydrogel. Though the planting medium conveniently services the structural needs of paving and the growth requirements of plantings, it only provides 15% actual soil per volume.



### *Streetscape Plant Beds*

Plant beds in sidewalk areas need to be protected from salt-laden runoff in the winter months. The Guidelines recommend raised plant beds with a perimeter curb.

The exception is when the plant bed is used as a vegetated swale in service of stormwater treatment. These beds shall be flush or slightly lower than the adjacent pavements, or, if the beds have a perimeter curb, the curb shall be interrupted in a number of places to allow stormwater runoff to run into the plant bed.

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## Plant Palette

### *Campus Lawns*

Lawns should consist of native plants and non-native plants that have adapted to the regional climate. Irrigation systems that use reclaimed gray-water or harvested stormwater will ensure that the lawn keeps a maintained, well-kept aesthetic. This, in turn, illustrates clear ownership of the space, discouraging vandalism and other undesirable activities. Designers shall study campus microclimates, conditions on the north side of buildings, and tight spaces between buildings before recommending design approaches.

### TREES

Street tree species selected for the campus must have the ability to withstand urban conditions, be pollution and drought tolerant, have long life spans, and ideally have a rapid growth rate when young that slows with maturity. Street trees also need to have a root structure that will not easily upend curbs and pavements. In all cases, the designer shall consider site conditions, such as shallow utility lines and pedestrian lighting, before choosing a tree species for planting. In the case of shallow utilities, smaller trees or a raised planter may be used. Pedestrian safety is a primary concern of the University. Therefore, trees should be pruned annually so as not to disrupt street lighting.



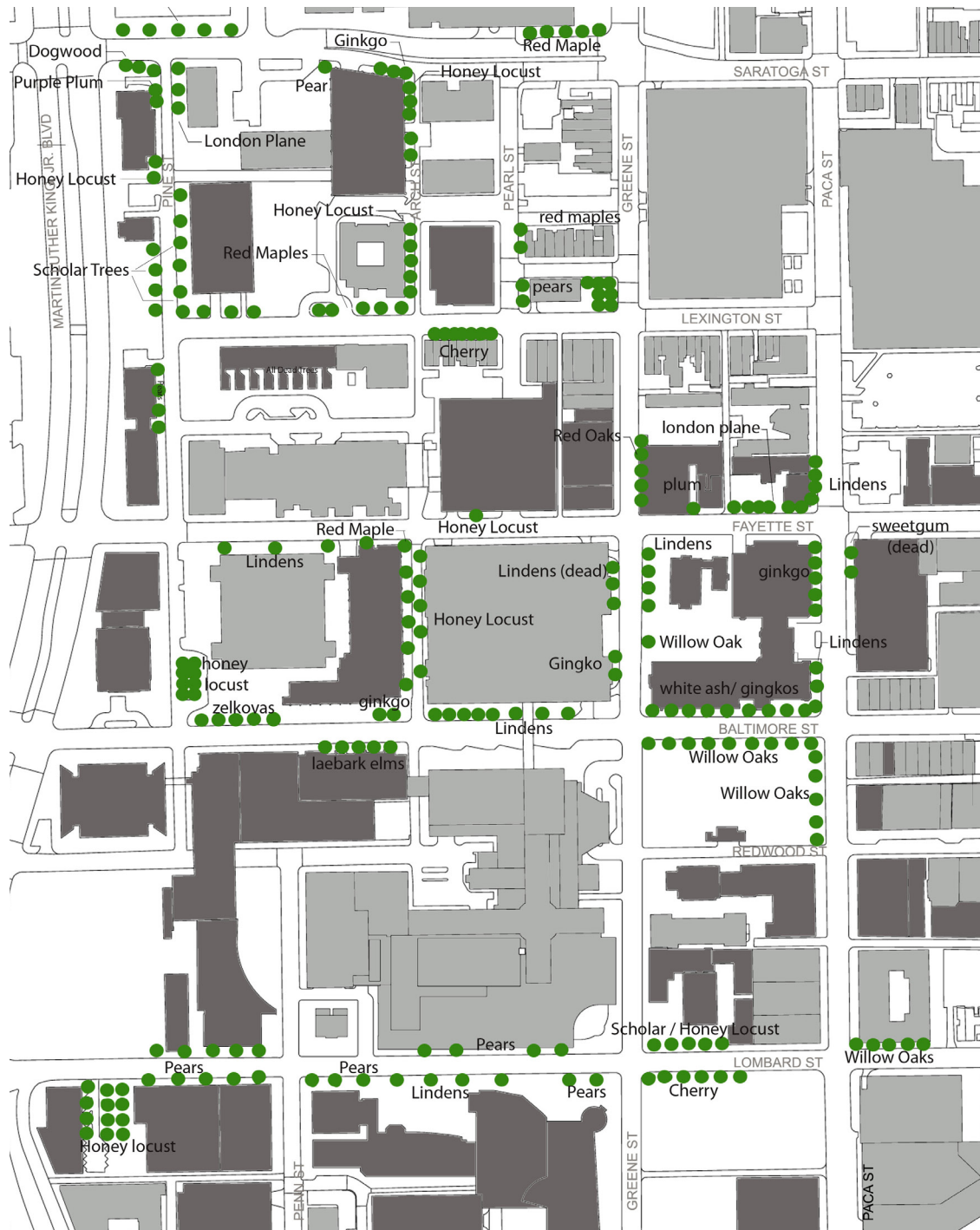
*Example of a successful tree-lined street on UMB's campus*



The recommended trees that meet these requirements are:

BOTANICAL NAME	COMMON NAME
<i>Corylus colurna</i>	Turkish Filbert
<i>Gleditsia triacanthos</i> var. <i>inermis</i> 'Shademaster'	Thornless Honeylocust
<i>Platanus x acerifolia</i> 'Yarwood'	London Plane Tree
<i>Quercus bicolor</i>	Swamp White Oak
<i>Quercus phellos</i>	Willow Oak
<i>Quercus palustris</i> 'Crownright'	Pin Oak
<i>Quercus shumardii</i>	Shumard Oak
<i>Sophora japonica</i> 'Regent'	Scholar Tree
<i>Taxodium distichum</i> 'Shawnee Brave'	Bald Cypress
<i>Tilia americana</i> 'Redmond'	American Linden
<i>Ulmus parvifolia</i> 'Allee'	Lacebark Elm
<i>Ulmus americana</i> (to reference the grand specimen at Davidge Hall—now lost)	American Elm

*Table of tree species*



Existing street trees suggests campus-wide strategy of planting blocks of single species.



# TREE LOCATION PLAN

- EXISTING TREE LOCATION

## SHRUBS

Designers shall select shrub species for their ability to withstand urban conditions, wind, and salt. All of the recommended shrubs listed below attain heights no greater than two to three feet (2'-3'). Intermediate level plantings (like shrubs) can pose a security issue if species exceed the 4-foot height range. Shrubs that produce berries are discouraged, for health and safety

reasons. For ease of security surveillance, shrubs should be planted far enough from building edges to eliminate hiding places.

The recommended shrubs that meet these requirements are:

BOTANICAL NAME	COMMON NAME
Berberis x gladwynensis 'William Penn'	William Penn Barberry
Buxus x 'Green Velvet'	Hardy Boxwood
Caryopteris x cladonensis 'Dark Knight'	Blue Mist Spirea
Clethra alnifolia 'Hummingbird'	Dwarf Summersweet
Deutzia gracilis 'Nikko'	Dwarf Slender Deutzia
Hydrangea macrophyllum 'Lanarth'	Bigleaf Hydrangea
Ilex verticillata 'Jim Dandy'	Winterberry Holly (male)
Ilex verticillata 'Red Sprite'	Winterberry Holly (female)
Rhus aromatic 'Gro-Low'	Dwarf Aromatic Sumac
Photinia davidiana var. undulata prostrata	Dwarf Chinese Stranvaesia
Potentilla fruticosa 'Abbotswood'	Cinquefoil
Spirea japonica 'Alpina'	Daphne Spirea
Stephanandra incisa 'Crispa'	Cutleaf Stephanandra
Viburnum carlesii 'Compactum'	Dwarf Koreanspice Viburnum

*Table of shrub species*



GROUNDCOVER AND PERENNIALS

Groundcover and perennial species shall be selected for their ability to withstand urban conditions and provide vigorous and evenly distributed coverage. Perennials need to be drought-tolerant and withstand heat from adjacent sidewalks.

The recommended groundcovers and perennials that meet these requirements are:

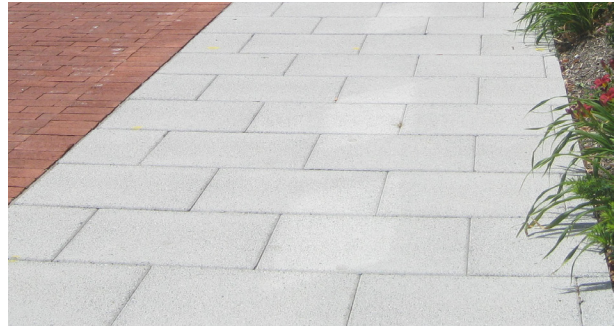
BOTANICAL NAME	COMMON NAME
Agastache 'Summer Love'	Hyssop
Amsonia x 'Blue Ice'	Blue Star
Baptisia australis 'Carolina Moonlight'	Yellow False Blue Indigo
Galium odoratum	Sweet Woodruff
Geranium 'Rosanne'	Rosanne Cranesbill
Liriope spicata	Lilly Turfgrass
Hemerocallis	Day Lily
Juniperus horizontalis 'Bar Harbor'	Bar Harbor Low Juniper
Liatris spicata 'Kobald'	Dwarf Gayfeather
Nepeta x faasseri 'Walker's Low'	Dwarf Catmint
Pachyandra terminalis 'Green Sheen'	Dark Green Japanese Spurge
Veronica spicata	Speedwell

*Table of groundcover species*

## Site Amenities and Furniture Product Standards

### PAVING

- Pre-Cast Concrete Unit Paver
  1. Manufacturer: Hanover
  2. Finish: GroundTudor Finish, non-slip surface
  3. Color: Limestone Gray
  4. Dimensions: 18" x 24" x 2-1/2" thick (pedestrian)
  5. Dimensions: 18" x 24" x 3" thick (vehicular)
  
- Brick
  1. Manufacturer: Pine Hall Brick Company
  2. Finish: Wire Cut
  3. Color: Pathway Red (with Iron Spots)
  4. Dimensions: 4" x 8" x 2-1/2" thick (pedestrian)
  5. Dimensions: 18" x 24" x 3" thick (vehicular)
  
- Brick (city standard)
  1. Manufacturer: Glen-Gery
  2. Finish: Wire Cut
  3. Color: Rosecroft
  4. Dimensions: 4" x 8" x 2-1/2" thick (pedestrian)
  5. Dimensions: 18" x 24" x 3" thick (vehicular)



*Concrete Pavers*



*Brick Pavers*

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### *Street Tree Planting Systems*

- Soil/Pavement Support System (recommended for all campus tree pits)
  1. Manufacturer: Deep Root
  2. Product: Silva Cell

### *Stairs and Ramps*

- Pre-Cast Concrete Unit Paver
  1. Manufacturer: Hanover
  2. Finish: GroundTudor Finish, non-slip surface
  3. Color: Limestone Gray
  4. Dimensions: 18"x24"x2-1/2" thick (pedestrian)
  5. Dimensions: 18"x24"x3" thick (vehicular)

### *Handrails and Guardrails*

- Handrails
  1. Manufacturer: Julius Blum
  2. Rail Product: Moulded Rail 4441
  3. Rail End Product: Forged Lamb's Tongue End
  4. Mounting Wall Bracket: Cast Bracket 381
  5. Finish: Galvanized steel, powder-coated
  6. Color: Black



*Handrail example on campus*



### *Fencing, Guardrails and Gates*

1. Style: Majority of fence panel to be defined between the bottom rail and mid-rail. Top rail to define upper extend of fence with no pickets protruding above. Fence design to incorporate larger components to emphasize horizontal expression. University shall adopt a single product standard similar to campus images, see below.
2. Finish: Galvanized steel, powder-coated
3. Color: Black



*Guard rail example on campus*

- Gates

1. Style: Utilitarian gates to follow the above description. Entrance gates or gates defining the perimeter of courtyards will be designed in accordance with the style of the courtyard and architecture. For example of entrance gate, see Nursing School courtyard gate below.
2. Finish: Galvanized steel, powder-coated
3. Color: Black



*Guardrail example*

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### *Lighting*

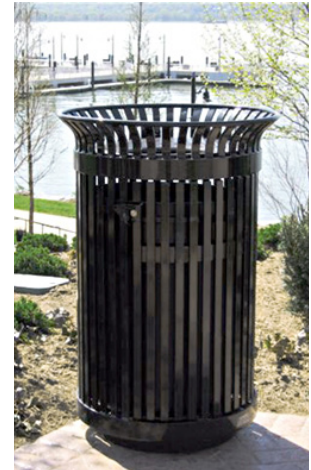
- Lighting: Pedestrian
  1. Manufacturer: Louis Poulsen
  2. Product: Satellit Maxi
  3. Finish: Stainless steel, brushed
  4. Color: Natural
  5. Size: Large (25") fixtures for streets  
Small (18") fixtures for courtyards
  6. Pole: 12', dual round pole
- Lighting: Vehicular
  1. Manufacturer: General Electric
  2. Product: M-400A Luminaire, Cobra Head
  3. Color: Silver



*Pedestrian light fixture*

*Site Furnishings*

- Trash Receptacle
  1. Manufacturer: Victor-Stanley
  2. Product: Ironsites (Bethesda series) S-42
  3. Finish: Powdercoat, steel
  4. Color: Black
  
- Ash Receptacle 1
  1. Manufacturer: Forms + Surfaces
  2. Product: Buttler Ash Receptacle
  3. Finish: Powdercoat
  4. Color: Black
  
- Ash Receptacle 2
  1. Manufacturer: Forms and Surfaces
  2. Product: Butler
  3. Finish: Powdercoat
  4. Color: Black



*Trash receptacles*



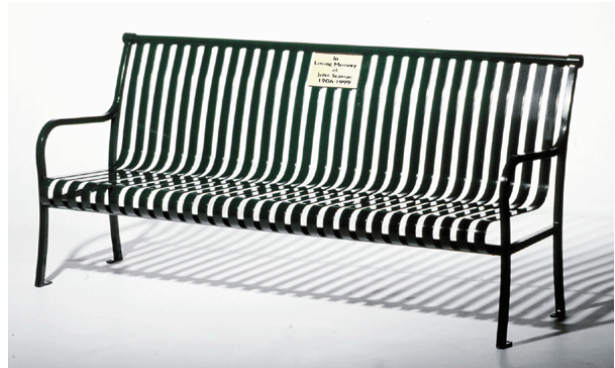
*Ash receptacle*



*Vehicular light fixture*



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- Bench: Metal
    1. Manufacturer: TimberForm
    2. Product: Renaissance Bench 2806-6
    3. Finish: Powder coat
    4. Color: Black



*Bench*

- Bench: Wood
  1. Manufacturer: Country Casual
  2. Product: Brittany Teak Bench (#6304)
  3. Finish:
  4. Color: Wood
  5. Notes: For gardens and courtyards



*Bench*



*Bench*

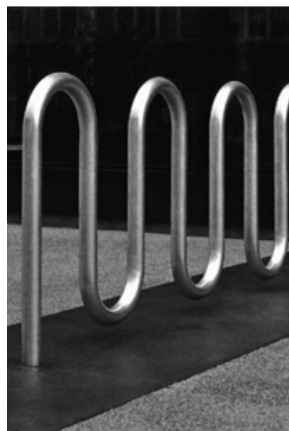
- Tables and Chairs: Metal
  1. Manufacturer: Landscapeforms
  2. Product: Parc Centre table and chairs. Table: square 28"
  3. Finish: Panguard II polyester powdercoat
  4. Color: Titanium



*Table and chairs*

- Tables and Chairs: Wood
  1. Manufacturer: Landscapeforms
  2. Product: Wellspring dining table and chairs
  3. Finish: Unfinished teak
  4. Color: Wood

- Bike Rack
  1. Manufacturer: A A A Ribbon Rack Co.
  2. Product: Ribbon rack (RB-11)
  3. Finish: Stainless steel
  4. Color: Silver



*Bike rack*



*Bollard*

- Bollard (breakaway w/ shear pin)
  1. Manufacturer: Forms and Surfaces
  2. Product: Light Column Bollard (Series 600)
  3. Finish: Satin Stainless Steel
  4. Color: Silver
  5. Notes: Lit, non-lit and break-away all available

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PLANTERS

Where planters are used in lieu of tree pits (i.e. above steam lines or duct banks), they are to match those along Arch Street, to the east of the Dental School building. The planters shown in these images below (1, 2, 3, and 4) are to be used on an ad hoc basis when used as portals or as decorative elements. Planters 1 and 2 should only be used in garden or park areas.

- Planter 1

1. Manufacturer: GSA
2. Product: Bristol

- Planter 2

1. Manufacturer: GSA
2. Product: Dorset Bowl

- Planter 3

1. Manufacturer: GSA
2. Product: Chelsea Box

- Planter 4

1. Manufacturer: BandH Security
2. Product: TF4241

- Security Phones

1. Manufacturer: Rath Securities or approved equal.
2. Notes: Security phones (blue phones, call boxes) will be located across campus, along major pedestrian routes, in all parking garages, and in the lobbies of University buildings. The areas around security phones will be well lit and visible from both street level and adjacent buildings.



*Planter 1*



*Planter 2*



*Planter 3*



*Planter 4*







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