

UMBC Facilities Master Plan Update 2009-2019

EXECUTIVE SUMMARY



University of Maryland, Baltimore County
March 10, 2010

UMBC Facilities Master Plan Update 2009-2019

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The Campus Today

Introduction

The 2009-2019 UMBC Facilities Master Plan Update is an update of the UMBC 2003 Facilities Master Plan. This document reinforces UMBC's comprehensive, long-term vision for development and is a plan reflective of the University's academic mission and its institutional values. Through a campus-wide effort, we have a framework that will guide facility additions and renovations to UMBC's campus buildings, grounds and infrastructure. It serves to anticipate facilities needs to aid in realizing UMBC's aspirations: to become one of the nation's best research universities; to contribute to the intellectual, economic and cultural richness of the greater Baltimore area; and, to engender pride among the faculty, staff, students, alumni and the citizens of Maryland.

UMBC is committed to a Facilities Master Plan that reflects the interests, needs and desires of the large and diverse community it serves. To achieve this goal of cooperative involvement, the University developed a process that included a wide range of faculty, staff and student representatives to inform and review the document. The year-long process began with the creation of a Steering Committee, six Stakeholder groups and ten Space Planning groups. Overall, over 120 members of the campus community representing academic, research, athletics, outreach, and facilities management participated directly in the development of this document. In addition, the plan was presented at various campus forums and to representatives of adjoining communities to elicit comments and input.

Early in the process a set of guiding principles were established to define the fundamental values necessary to support the University's strategic aspirations. They set the parameters for the master plan, which when followed, will assure that the physical environment aligns with and provides for academic, student life, and outreach program needs.

Facilities Master Plan Principles

Moving Forward

- Continue to develop and grow to meet the institution's mission.
- Focus on student success by continually improving retention and graduation rates.
- Develop new and expand existing academic and research programs.
- Create a physical environment, indicative of the high quality programs of the University.
- Plan for the future in a fiscally responsible way.
- Promote life-long engagement of our students through academic, alumni, professional, and co-curricular programs.

Community/Campus Life

- Embrace and foster a residential atmosphere supportive of the academic aspirations of the University.
- Create a sense of "campus life" which supports multi-culturalism, student/faculty engagement, community interaction, and social responsibility.
- Create and foster partnerships throughout the greater Baltimore-Washington region. Increase collaborations with government, corporations, private enterprise, school districts, and non-profit organizations.
- Enhance efficient delivery of support services.
- Attract and retain the best faculty, staff, and students to support the Institution's programs.

Sustainability

- Institute sustainability objectives that support Campus Climate Commitment efforts to reduce the University's carbon footprint.
- Develop and operate in a sustainable and fiscally responsible way to enhance administrative effectiveness.
- Implement initiatives that improve energy efficiency, enhance water and air quality, and engage natural systems.
- Embrace and support a cultural shift in educational, operational and social behavior that supports a commitment to sustainability.

Campus Setting

- Assure that the campus is an aesthetic, inviting, accessible and safe place.
- Create a campus that has dynamic learning environments to foster interaction.
- Support all campus programs with high quality facilities, technology, site amenities and infrastructure.
- Support and enhance the social, physical, and cultural diversity on the campus.

University Description

UMBC is located in suburban Baltimore County, on the I-95 corridor between Washington, D.C., and Baltimore and surrounded by one of the greatest concentrations of commercial, cultural and scientific activity in the nation. The location is a strength that gives UMBC a high profile in the metropolitan area and attracts new entrepreneurial partnerships.

The campus has excellent access to both I-95 via I-195 and the Baltimore Beltway (I-695). The impact of the proximity of these major roadways is not felt on campus due to the heavily wooded periphery of the campus site. The forested edges, sloping topography with views to the east, and the low density of surrounding residential development all work to define the pastoral setting for the campus.

UMBC is a public research university, emphasizing graduate programs in the sciences, engineering, public policy, information technology, and human services and building on a strong undergraduate liberal arts and sciences core. Established in 1966, UMBC is one of thirteen universities and institutions that together constitute the University System of Maryland. UMBC is recognized as a major resource for building the State's economy and addressing its social concerns.

UMBC offers 42 majors, 41 minors and 17 certificate programs in the physical and biological sciences, the social and behavioral sciences, engineering, mathematics, information technology, the humanities, and the visual and performing arts. UMBC's Graduate School offers 33 master's degree programs, 24 doctoral degree programs and 20 graduate certificate programs in various areas of interest.



Since the 2003 Facilities Master Plan, the University has developed new programs to support its mission. Seven new undergraduate degrees and seven upper division certificate programs have been added. In addition, the University has added eleven new graduate degrees and twelve post-baccalaureate certificate programs.

The University is home to a number of research centers and institutes, including the Center for Advanced Studies in Photonics Research (CASPR), The Hilltop Institute (formerly the Center for Health Program Development and Management (CHPDM)), the Center for Urban Environmental Research and Education (CUERE), the Goddard Earth Sciences and Technology Center (GEST), the Imaging Research Center (IRC), the Joint Center for Astrophysics (JCA), the Joint Center for Earth Systems Technology (JCET), the Center for Advanced Sensor Technology (CAST), the Dresher Center for Humanities, and the Maryland Institute for Policy Analysis and Research (MIPAR).

In terms of funding, UMBC is among the nation's fastest-growing research universities. The University's research funding has grown to \$88.9 million, up from \$36 million in 1996. UMBC has a dynamic faculty committed to research, a commitment borne out in professors' successes in competing for research funding and external support.

Success for UMBC Athletic programs, including lacrosse, basketball, swimming, and soccer, has grown meteorically over the last ten years. UMBC teams are ranked nationally and generate a high level of pride and school camaraderie. More than 400 student-athletes compete in 19 NCAA Division I sports. Showcasing brains as well as brawn, UMBC takes great pride that their chess team has won the premier national chess tournament, the President's Cup – not just in 2009, but five of the last nine years.

UMBC prides itself on the synergies created by its academic, research and athletics programs. This community outreach is as varied as it is integral to the region. Visual and performing arts programs draw an audience to the campus from the Baltimore-Washington corridor. The campus community hosts visual arts exhibitions in the galleries of the Fine Arts Building and the Albin O. Kuhn Library. The University also has an active outreach arts program with area schools. UMBC was named to the President's Higher Education Community Service Honor Roll with Distinction in 2009, recognizing innovative and effective community service and service-learning programs.



Facility Changes to the Campus Since 2003

Since the 2003 Facilities Master Plan, UMBC has experienced continued growth and development on campus, including completion of both the Information Technology & Engineering Building and the Public Policy Building, the construction of the Walker Avenue Apartments, and the renovation and addition of the UMBC Stadium complex. Since 2003, extensive renovations to the Chemistry Building (built in 1971) were completed, as well as renovations or systemic replacements to the mechanical systems of several buildings, including the dining hall and numerous residential communities. Today, the campus consists of 3,613,000 square feet of buildings, of which 2,146,782 are assignable.

The last six years has also seen an expansion of bwtech@UMBC, the University's integrated research park, incubator and accelerator. The five new, high-tech buildings of bwtech@UMBC, comprising 515,000 square feet of office and lab space, are home to 55 companies, which generate over \$200 million annually in total business sales. Situated at the main approach to the University from the interstates and the Thurgood Marshall BWI Airport, bwtech@UMBC serves as a handsome forecourt to the campus entry, reinforcing the strong connection between academics, research and business that is vitally important to the University.



The new Public Policy Building

The UMBC campus has witnessed improvements to existing outdoor areas. These include new athletic fields, the upgrade of the soccer field complex, extensive tree plantings, the reseeding of quadrangles and comprehensive pedestrian walkway improvements.

Of the original campus buildings, those in most need of a major renewal include the Fine Arts Building (1973), University Center (1982), Sondheim Hall (1973), the Math/ Psychology Building (1969), Academic IV Building (1980), Lecture Hall 1 (1967), the Administration Building (1973), the original wings of the Albin O. Kuhn Library (1968), and part of the Biological Sciences Building (commonly referred to as Martin Schwartz Hall, 1983).



The Behm Garden at the Administration Building

Enrollments and Projections for Growth

Overall, UMBC's enrollment grew to 12,870 students in the fall of 2009. This enrollment growth of 8.4% over six years exceeded the 2003 USM enrollment projections of 5% over ten years. Full-time enrollment has remained steady at 75% of the total enrollment.

Total undergraduate enrollment has increased since 2003, growing from a headcount of 9,646 to 9,947, a 3.1% increase. The most dramatic growth has occurred in graduate level enrollment. Graduate student enrollment in fall 1999 was 1,484, in fall 2003 it was 2,226, and today it is 2,923, an increase of nearly 100% in ten years, and 31.3% since 2003.

UMBC as an institution is proud of the diversity of the student body, especially in undergraduate minority enrollments. In 2009, the African American student body comprised 16.5% of the undergraduates, with 21.2% Asian American and 4% of Hispanic origin.



Along with an increase in enrollments, credit hours have increased considerably, especially for graduate students. Undergraduates completed 136,197 credit hours in 2009, an increase of 5.1% since 2003. Graduate student credit hours increased dramatically from 11,377 in 2003 to 15,119 in 2009, an increase of 32.9% over the same period.

PROJECTED ENROLLMENTS

The future development of the UMBC campus will respond directly to anticipated growth of the student body. Factoring in the economy, growth over the past ten years, regional influences, demographic studies, campus mission, values, and strategic plans, the University projects student enrollment growth of approximately 10% about equally between undergraduate and graduate students in the next ten years. It is believed much of the growth will occur in the first five years resulting in a cumulative projection of 10.4% over the next decade. The following table illustrates the projected growth for undergraduate and graduate students in terms of both credit hours, full time equivalent (FTE) students, and overall student headcount.

	Credit Hours 2009	Student Enrollment 2009 FTE	Headcount 2009	Credit Hours 2019	Student Enrollment 2019 FTE	Headcount 2019
Undergraduate, TOTAL	136,197	9,080	9,947	150,372	10,025	10,983
Undergraduate, BEFORE 5PM	119,467	7,964		131,901	8,793	
Graduate TOTAL	15,119	1,388	2,923	16,693	1,532	3,227
Graduate BEFORE 5PM	12,299	1,145		13,579	1,264	
TOTAL	151,316	10,468	12,870	167,065	11,557	14,210

PROJECTION OF SPACE NEEDS

UMBC has created a space modeling tool that illustrates facilities needs based on a number of planning variables that describe potential scenarios for the UMBC campus in the future. The model is driven by programmatic needs to predict the long range space needs for the campus based on varying assumptions. UMBC's space planning model utilizes over 12,000 programming variables that were developed by the campus community. This assures that the master plan remains as programmatically driven as possible.

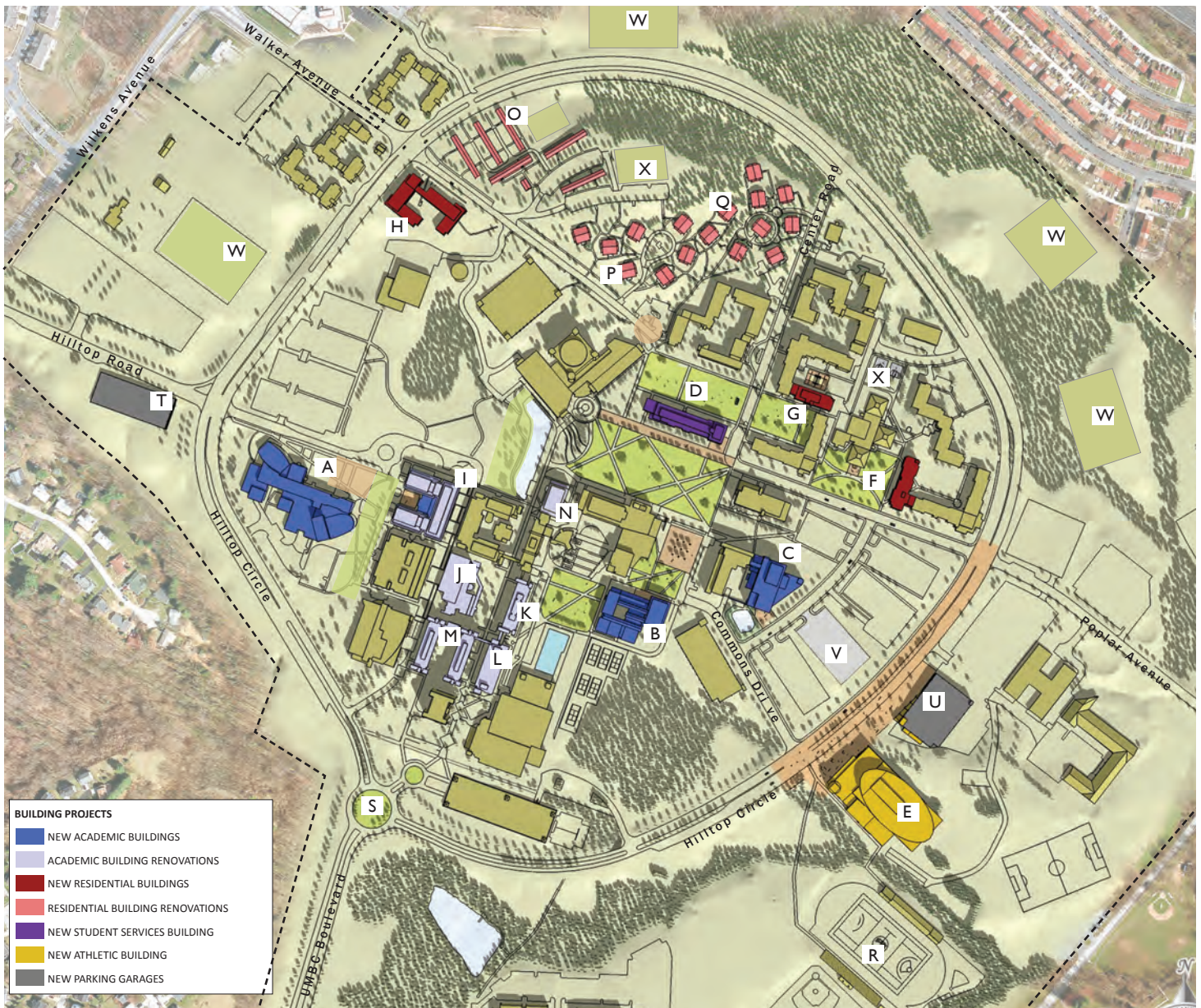
Based on the enrollment scenario described above, the space planning model has calculated a non-residential space deficit of approximately 491,000 square feet (net assignable) within ten years. This deficit affects every space use category and if left unanswered will limit instructional, research and student life programs. The following table illustrates the space needs for teaching, research, and auxiliary spaces associated with the projected growth in student enrollment.

Space Type	Existing Space	Projected Space	Deficit
Classroom	99,491	136,262	(36,772)
Laboratories	292,934	410,837	(117,903)
Office	385,300	437,687	(52,388)
Study	146,390	180,269	(33,878)
Special Use	103,896	245,775	(141,879)
General Use	156,636	207,578	(50,942)
Support	71,427	123,616	(52,189)
Health	2,982	7,993	(5,011)
Total	1,259,056	1,750,017	(490,961)

RESIDENTIAL NEEDS

Many of the college campuses in the University System of Maryland are ringed by neighborhoods of medium to high-density residential communities affording students off-campus living opportunities. The UMBC campus is situated in an area of established low-density residential development and, subsequently, must provide for a larger portion of the housing demand of students on its campus. This demand for student housing remains strong and the University is committed to providing this essential service to students.

The projected amount of residential space was determined by the need for additional beds to accommodate growth in undergraduate enrollment. To retain its highly residential character, the University plans to continue to provide housing for 40% of its undergraduate population, including 75% of its entering Freshman. This commitment could require nearly 650 additional beds on campus by 2019.



Illustrative Campus Plan in 2019

NEW ACADEMIC BUILDINGS

- A. Performing Arts and Humanities Building and plazas
- B. Interdisciplinary Life Sciences Building and The Commons Plaza renovation
- C. Multidisciplinary Academic Building

NEW STUDENT SERVICE BUILDING

- D. Student Services / Student Life Building and campus quadrangles

NEW ATHLETIC BUILDING

- E. UMBC Events Center and UMBC Stadium Plaza

NEW RESIDENTIAL BUILDINGS

- F. Patapsco Hall Addition and True Grit's Plaza
- G. Chesapeake Hall Addition and quadrangle
- H. Walker Avenue Residential Community and Walker Avenue improvements

BUILDING RENEWALS

- I. Global Studies and Culture Building (former Fine Arts Building) and Pond renovation
- J. University Learning Center and Plaza
- K. Math / Psychology Building
- L. Sondheim Hall
- M. Academic IV Building
- N. Biological Sciences Building

- O. West Hill Apartments and recreation fields
- P. Terrace Apartments
- Q. Hillside Apartments
- R. UMBC Stadium

NEW ROADWAY IMPROVEMENTS / PARKING FACILITIES

- S. Campus Traffic Safety and Circulation Improvements
- T. Hilltop Road Garage
- U. Events Center Garage and Hilltop Circle improvements
- V. Park Road Lot

RECREATIONAL FACILITIES

- W. Multi-purpose Fields
- X. Courts

The Campus Tomorrow

Master Plan Goals

The following collaboratively-derived goals have served to guide the University in the development of this Master Plan.

- Goal 1 - Create a physical environment that enhances the learning, working and living experiences of campus users.
- Goal 2 - Establish land use strategies to support future programs and facilities needs.
- Goal 3 - Organize and plan for exterior open space.
- Goal 4 - Support teaching, research, student life and outreach programs with adequate facilities.
- Goal 5 - Reduce the physical and environmental impact of vehicular circulation and parking on campus.
- Goal 6 - Be good stewards of the earth and its natural resources.

The 2009 Campus Master Plan

This Master Plan establishes the basis for future development of campus required to support UMBC's Mission and Vision. As UMBC moves forward, the campus community places a high value on doing so in a way that is sustainable, economically sound, builds collegiality and is aligned with the UMBC mission and vision.

The 2009 Campus Master Plan, on the facing page, illustrates proposed facilities projects in the context of the existing campus. These projects range in scale from roadway and pedestrian improvements to the 167,000 square foot Performing Arts and Humanities Building. The following section illustrates how the six Master Plan Goals inform the 2009 Campus Master Plan.

Goal 1 - Create a **physical environment that enhances** the learning, working and living experiences of campus users.

One of the main objectives of the Campus Master Plan is to further develop the collegiate nature of the campus, creating a sense of place and community. UMBC has a unique physical environment, defined by the landscape and terrain, the pedestrian paths, the relationship of buildings to one another, and the character of the open spaces. It is with this in mind that we developed the Campus Framework Plan.

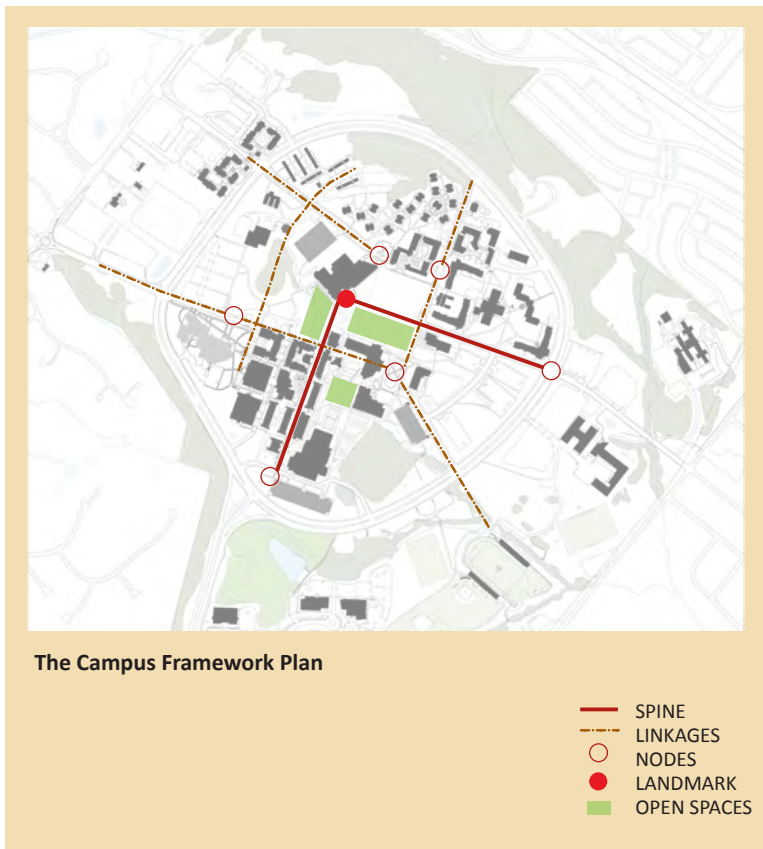
This framework is the underlying design concept by which all components of the master plan follow. It provides organization and a unique structure for campus development by which campus buildings, open space, and circulation are organized. The framework for UMBC is comprised of three basic parts: the Spine, a series of major Linkages, and three major Open Spaces.

SPINE

Two main pedestrian walkways radiate from UMBC's landmark building, the Albin O. Kuhn Library and Gallery, at the center of campus. These promenades form the basis of the campus Spine, extending from the Library both south and east and terminating at the main vehicular portals. The Spine is the heart of the campus framework and serves as the main path for pedestrian movement.

LINKAGES

Complementing the Spine is a series of other pedestrian ways that act as major circulation routes. These Linkages provide connectivity among the academic, residential, athletic and natural areas of campus improving program collaboration and creating a more unified collegiate atmosphere. Locating buildings and open spaces appropriately along the Linkages creates a more walkable, pedestrian-friendly campus.



OPEN SPACES

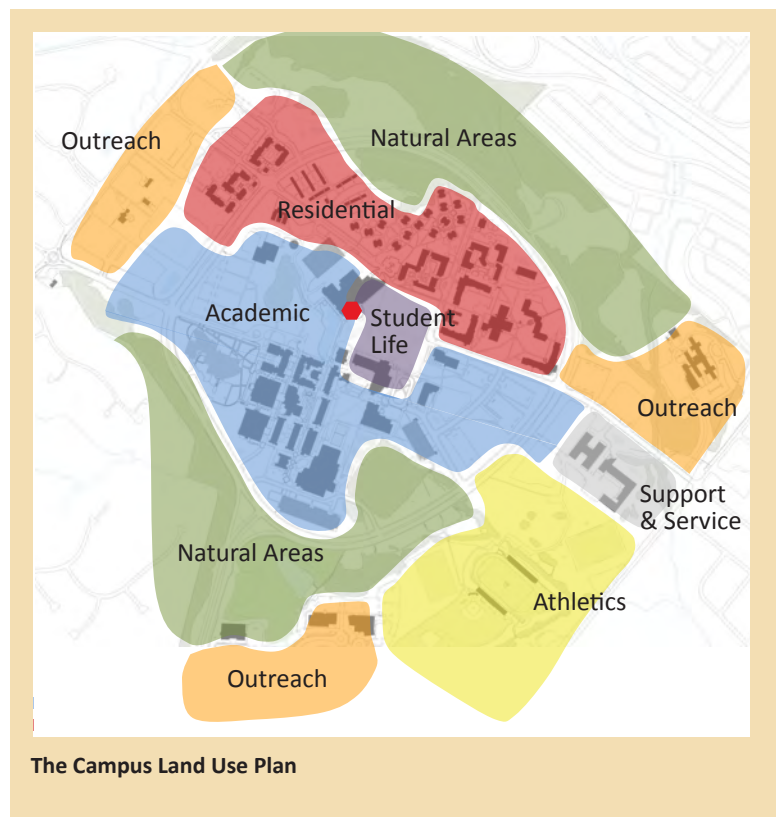
There are three major Open Spaces within the central core of campus. These spaces, due to their scale and importance on campus, are part of the campus framework. They are well defined and memorable spaces, providing relief from the main circulation paths of campus. The Open Spaces, considered part of the campus framework, include the academic quadrangle south of The Commons, the pond adjacent to the Albin O. Kuhn Library and Gallery, and a planned central green north of The Commons. The Open Spaces are bound by the major pedestrian circulation elements of campus, like the Spine and Linkages, reinforcing the framework of the campus plan.

Goal 2 - Establish **land use strategies** to support future programs and facilities needs.

The Campus Land Use Plan clusters similar activities and programs into identifiable zones. This fosters community, provides an order and sense of place, improves interdisciplinary collaboration, and improves efficiency. Each zone has an atmosphere and physical environment that best supports and identifies the uses within it. The links between diverse zones are planned and implemented in ways that foster collaboration and collegiality.

UMBC is proud of its “student centered” philosophy. It is clearly evident even in the physical campus. Land uses are organized around the central **Student Life** zone which is flanked by academic uses to the south and residential uses to the north. The Student Life zone acts as the bridge between academics and residential life. It embraces The Commons and the Albin O. Kuhn Library and Gallery at the center of campus.

The **Academic** zone includes almost all of the instruction and research programs. The traditional core of campus reaches to the main south entry to the Albin O. Kuhn Library and Gallery. The intent is to develop the precincts for academic expansion matching the successful densities of the existing academic core, using limited land resources as efficiently as possible.



The **Residential** zone is located to the north of the Academic and Student Life zones. As the percentage of students living on campus has increased over the years, the University has responded by developing new, higher-density residential communities offering a variety of housing options appealing to today's students. As the student population continues to grow, new residential facilities will be modeled after our most successful communities, organized around intimate courtyards.

The **Outreach** land use zones are strategically located near the three main entries to campus. This not only provides ideal access for such programs, but also places these activities adjacent to academic, research and residential activities, providing improved opportunities for future economic development partnerships, alumni outreach and research centers for collaboration with external partners.

The **Athletics** land use zone, located to the south and east of the Academic land use zone, is isolated due to the hilly terrain and its location outside of Hilltop Circle. With the continued consolidation of Athletic programs in this area, the need to interconnect with adjoining land uses rises in importance. Steps are being taken to mitigate the impact of Hilltop Circle to better connect athletic facilities and programs back to the campus community with increased visibility and access.

Deciduous forests surround the campus on the northern, eastern, and southern sides. To protect and preserve this area a distinct type of land use zone was developed in the plan. The **Natural Areas** zones create opportunities for recreation, education and research while increasing awareness of the natural environment.

The **Support and Service** zone is located on the eastern edge of campus, adjacent to the campus entry along Poplar Avenue. Facilities in this area allow for efficient access to the campus and resources beyond UMBC.

Goal 3 - Organize and plan for exterior open space.

The UMBC community has placed a high priority not just on its buildings but also on its open spaces. Open spaces provide a sense of place and are key factors in creating a collegiate atmosphere indicative of higher learning. They provide places for learning, research, contemplation, gathering, study and recreation.

ICONIC GREEN SPACES

The rising stature and advancing maturity of UMBC warrant investment in iconic and memorable green spaces indicative of most mature universities of its size. These spaces are scaled to the size of the campus buildings with distinctive landscape elements.

The open space north of The Commons and east of the Albin O. Kuhn Library and Gallery is currently not well utilized due to its large size and configuration, though it sits at an important crossroad between academic, student life and residential land use zones. The Master Plan proposes to redefine



UMBC Central Green

A stately campus green in the heart of the University, surrounded by student services, including the Commons, the Albin O. Kuhn Library and Gallery and the proposed Student Services/ Student Life Building.

This important open space project will enhance the campus, creating a gathering place for informal collaboration.

this important space by lining it with new student oriented facilities and reconnecting it to the Pond. This new green space will be the heart of the campus and will reinforce the elements of the framework.

Additional open spaces in this category include the Quad south of The Commons, and the pond area adjacent to the Library. The redevelopment of these spaces will greatly enhance the sense of place and collegiate character of the UMBC campus.

PLAZAS, QUADRANGLES AND RESIDENTIAL COURTS

Complementing the Iconic Green Spaces on campus are several typologies of open spaces for a variety of active and passive activities. Some spaces, like the south plaza of The Commons, can serve high levels of activity, including dining in pleasant weather. Other spaces, especially courts within the residential communities, are more intimate in scale and filled with pedestrian scaled elements like benches, grills and tables. The Master Plan proposes to develop, renovate or rejuvenate a number of exterior open spaces concurrently with the development of each capital project.

RECREATION

UMBC, like other residentially oriented campuses, requires open spaces and fields to provide facilities for social interaction, play and recreation. Rapid campus development in the past two decades displaced fields for general recreation. A new multi-purpose field was constructed in 2009 to serve club sports, intramurals and open recreational demands. In addition, two athletic practice fields were constructed to support the men's and women's track and field teams. Additional recreation facilities will be required over the next ten years to meet recreational needs, including:

- Three additional recreational multi-purpose fields for such diverse sports as lacrosse, cricket, soccer, rugby and field hockey. These fields will be used by student club and intramural teams.
- Several new outdoor basketball courts. One is currently being planned with the development of

the Patapsco Hall addition.

- New hard-surface, multi-purpose courts for games and sand courts for volleyball.
- An improved play field adjacent to Erickson Hall for pick-up games and unscheduled recreation.
- A network of trails for jogging, walking and biking that utilize natural areas and connect with off-campus recreational facilities, like Patapsco State Park.

Goal 4 - Support teaching, research, student life and outreach programs with **adequate facilities**.

The University has developed specific projects to satisfy the space needs generated by enrollment growth over the next ten years. A series of major capital projects are required to address both current space deficits and future space needs in support of UMBC's teaching, research and service mission.

Together the projects add 928,000 gross square feet of buildings (not including parking structures) and will add 592 beds to the campus inventory. The new construction, renovations of existing buildings, site work and utility upgrades and parking structures have been calculated to cost about 850,000,000 in 2009 dollars. Collectively these facilities support our Vision – to be the best public research university of our size.

Projects Underway

Two projects are currently underway: the Performing Arts and Humanities Building and the Patapsco Hall Addition. Both of these projects are expected to break ground in the summer of 2010.

Performing Arts and Humanities Building

Design is complete for a proposed 167,641 GSF / 89,340 NASF facility, to be built in two phases, with Phase I housing the departments of Theater and English, Dresher Center for the Humanities, the Linehan Artist Scholarship program and the Arts Management office. Phase II, awaiting funding approval, will be the home for music, dance, philosophy and ancient studies. The construction of the Performing Arts and Humanities Building will play a large and essential role in our required general education curriculum, fully integrating learning in both the arts and sciences. The facility will house classroom and lab space for several departments, like English, that have mandatory classes for Freshmen, ensuring a high degree of use by all students.

The new facility will provide an appropriate environment for students to not only be formally and informally involved in the development and production of performances, but otherwise gain exposure to the arts through cross-disciplinary activities. This project is central to supporting the University's mission to offer academically talented students a strong undergraduate liberal arts foundation.



Performing Arts and Humanities Building

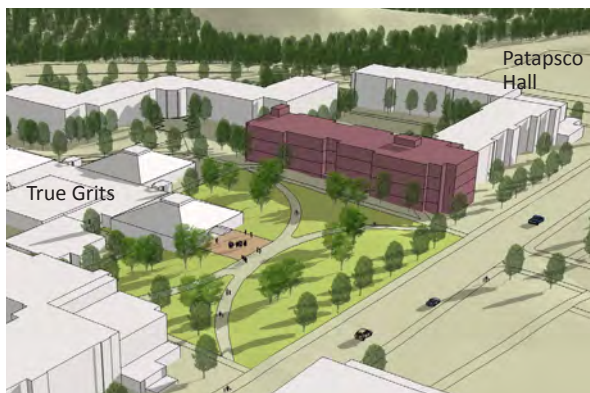
Phase I of this project, to break ground in June of 2010, will include a 275-seat theatre and a 100-seat black box theatre. These performance arts venues will be supported by classrooms, laboratories, offices, and support spaces for many departments in the humanities, including English.

Phase II will include a 350-seat concert hall, a 100-seat dance studio, an instrument ensemble room, a recording studio, and an archeology laboratory. Additional labs and classrooms will support the departments of Music, Dance, Philosophy and Ancient Studies.

167,641 GSF / 89,340 NASF

Patapsco Hall Addition

Patapsco Hall, a residential hall constructed in the 1970's, will have a new wing providing an additional 180 beds, as well as meeting and study spaces. The project will provide elevator access to all of the rooms of the original building, addressing ADA compliance needs. The project will create a new plaza, flanked by the addition, Susquehanna Hall (opposite) and "True Grits", the campus dining hall. In addition, the project includes the creation of new sand volleyball and basketball courts. The Patapsco Hall Addition is expected to be completed by the fall of 2011.

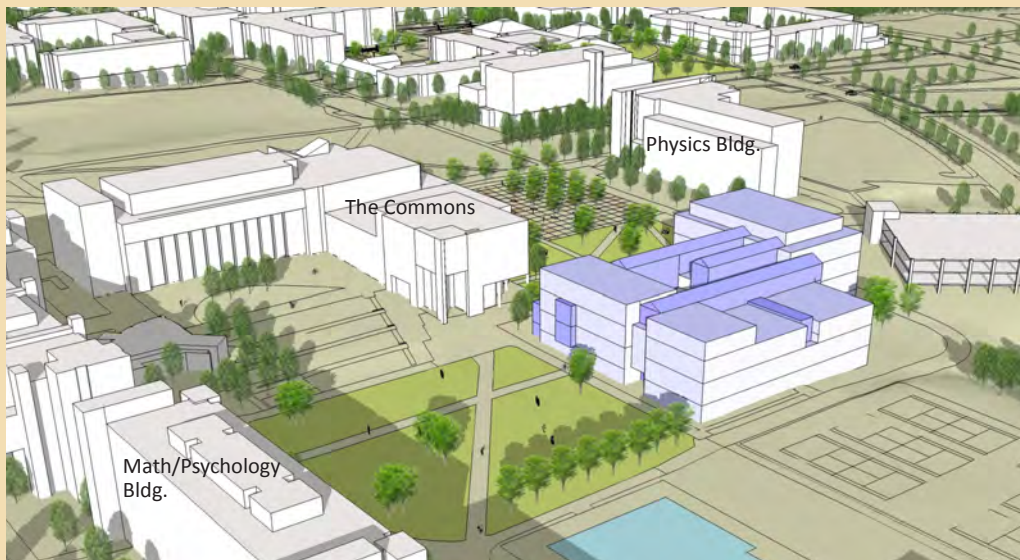


Future Academic Projects

In addition to the Performing Arts and Humanities Building, the 2009 Campus Plan has identified a need for two additional academic buildings to address the current and future deficits for classroom, laboratory, and office space as well as core research facilities. The construction of new buildings will provide the opportunity to begin a complete and comprehensive building renovation program to restore UMBC's aging facilities to full functionality. Equally important is the creation of new quadrangles, plazas and other open spaces. The 2009 Campus Plan links the revitalization of existing open spaces to each major construction or building renewal project.

Interdisciplinary Life Sciences Building and The Commons Plaza

The new Interdisciplinary Life Sciences Building will provide 123,000 GSF of flexible and adaptable research and instructional spaces to support on-going and future interdisciplinary life science programs requiring labs, offices, and support space. This project addresses a campus-wide deficit for teaching and research spaces for life sciences. In addition to labs and classrooms this building is anticipated to house a new vivarium as a central resource for all of the campus' research and academic programs involving animal use protocols. Other core facilities to support campus-wide research activities will be integral elements to this planned facility.



Interdisciplinary Life Sciences Building

This academic building, housing instructional and research labs and classrooms as well as additional special facilities like a vivarium and greenhouses, will replace the one-story Theater and Academic Services Building. Its location will bridge between the two academic zones to the east and west of The Commons. The project will enhance two key campus outdoor spaces: The Commons Plaza to the north and the Quad, toward the west.

123,000 GSF / 70,000 NASF

Global Studies and Culture Building Renovation

At the conclusion of the construction of the Performing Arts and Humanities Building, the 41-year old Fine Arts Building will be sufficiently vacated (as academic programs relocate to the new building) to permit its phased renovation. In order to correct life safety deficiencies and building circulation problems, an addition is proposed between the two building wings, creating a new entrance to the building oriented to the new Performing Arts and Humanities Building.



Concurrent to this project will be a much needed renovation of the Pond. The Pond is one of the most important pieces of the campus storm water management system. It is also a central feature of the campus. This renovation project is envisioned to include the design of the green space around the Pond in order to make this a more accessible and attractive feature of the campus.

Multi-disciplinary Academic Building

To address additional campus-wide space deficits for classrooms, and teaching and research laboratories, a new 148,000 GSF Multi-disciplinary Academic Building is proposed adjacent to the Physics Building. The four story structure will meet the needs for additional laboratory and general classroom space to accommodate increased enrollment projected in the space model. It would also reinforce the quadrangle created by the Public Policy Building and the Physics Building and will share a service area with the latter.

University Learning Center

At the heart of the academic core of campus, this project will renovate the original student union, the 68,700 square foot University Center, into the University Learning Center. The University Learning Center will provide a central location for new general purpose classrooms to serve the entire campus community, tutoring rooms, active-learning teaching studios for courses such as introductory chemistry, math, physics, and biology, and an English Language Center.

Other Building Renewals

Four buildings house a majority of the general purpose classrooms and teaching labs on campus and are scheduled for major renovations. They include Sondheim Hall (built in 1973), the Math/ Psychology Building (built in 1969), Academic IV, which dates from 1980, and Martin Schwartz Hall (a wing of the Biological Sciences Building, constructed in 1983). These buildings are nearing the end of their useful life. Without significant renewal continued operation will not be functional or economically feasible.

Student Life Projects

Student Services/Student Life Building

The construction of The Commons in 2003 created a central location for student activity on campus, grouping student support services, meeting spaces, and student life oriented programs. Its success has put strains on the facility, unable to provide the types and amount of space required for student life and service programs. As student enrollment grows new student life spaces will be critically needed. The Student Services/Student Life Building will address current and future space deficits and consolidate currently scattered student services, some of which are housed in temporary trailers.

The Student Services/Student Life Building is sited to reinforce the “student centered” core of the campus and to frame the main campus open space or green. The building will be designed to retain a critical play field adjacent to Erickson Hall, while creating a more formal, iconic green space in the heart of the campus.



Student Services/Student Life Building

A 100,000 GSF (60,000 NASF) building in the center of campus, across from The Commons. The building provides the necessary student life meeting spaces and services to keep up with student enrollment growth. This permeable building, with accessible and open ground floor uses will help to reinforce the “Student Centered” core of the campus, and activate the spine and central green.

UMBC Events Center and Stadium Renovation

The proposed UMBC Events Center will be a 200,000 GSF building, housing a series of flexible meeting rooms and a large multi-purpose gathering space. This building will serve the UMBC campus in many ways. It will give our campus the ability to host events and meetings, including convocation/commencement ceremonies that currently cannot be held on campus for lack of facilities. The facility will be developed to host UMBC and regional athletic events as well as other performances, competitions and student activities. Site improvements include pedestrian improvements to traverse Hilltop Circle, providing greater access to the UMBC Stadium Complex beyond.



UMBC Events Center

The project, housing a series of flexible meeting rooms and a large multi-purpose gathering space, can serve for student events, regional performances, convocation, and serve as a new athletic arena for the University. The main space will have flexible seating configurations for 6,000 to 8,000, with adequate support facilities.

200,000 GSF / 124,000 NASF

The UMBC Stadium Renovation project will improve the existing bleachers, press boxes, restrooms and concession areas of the existing stadium, built in 1976. These modifications will bring stadium facilities up to the level of UMBC's divisional peers, while providing for access for disabled users that is currently not available.

Chesapeake Hall Addition

A new addition to Chesapeake Hall will provide 120 additional beds to the residential building and provide access and handicapped accessibility. The project will create a new lobby at the sidewalk level and provide elevator access to all rooms of the residential community that currently are not accessible above the first floor. The location of the new wing will also create a usable open space on either side of the new addition.



New Walker Avenue Residential Community

This project develops a new residential community along Walker Avenue that would provide an additional 342 beds to the campus residential inventory. The community will be sited to reinforce the approach from Wilkens Avenue, enhancing the street environment of Walker Avenue, one of the important portals to both the campus core and to other residential life facilities.

Goal 5 - Reduce the physical and environmental impact of **vehicular circulation and parking** on campus.

Vehicular Circulation

Consistent with the 2003 Master Plan, diminishing the negative impact of Hilltop Circle is a campus priority as we meet future expansion needs. This encircling roadway separates the core academic and residential land use areas from many important campus areas, including the UMBC Stadium, natural areas, bwtech@UMBC, recreation, and some residential communities. In addition, substantial parking areas are located outside of this loop road. The campus framework emphasizes the need for linkages between land use zones and to bridge terrain changes, dictating a change to the nature of Hilltop Circle.

Campus Traffic Safety and Circulation Improvements

This project will redesign the intersection of UMBC Boulevard and Hilltop Circle, the main entry to campus, to correct vehicular and pedestrian safety and circulation problems. Specific measures that will be taken to eliminate safety concerns will include the installation of a roundabout at the intersection, an appropriate roadway signage system, and clearly delineated pedestrian and bicycle pathways. A secondary circular drive will be installed to provide direct access to visitor parking, as well as a safe, designated passenger drop-off near the main administration building.



Existing intersection of UMBC Boulevard and Hilltop Circle.



The Campus Traffic Safety and Circulation Improvement project will address safety, access and orientation issues at this critical traffic intersection and gateway to the UMBC campus.

Pedestrian Circulation

The Master Plan addresses UMBC's goal to provide a pedestrian-friendly and sustainable campus with three distinct projects:

- The modification of Hilltop Circle to alter the character of the roadway at key pedestrian crossings, with enhanced tree plantings, crosswalks and signage to improve safety. The University is installing enhanced pedestrian crossings at Poplar Avenue and other areas to improve connectivity to areas outside the loop road.
- Poplar Avenue and Center Road will be transformed from a traditional street to a pedestrian way that can support motor vehicles when necessary. This will alter the feel of the campus in these areas, reducing pedestrian and vehicular conflicts within the residential district and providing for improved connectivity between residential communities, academic buildings and parking areas.
- The Commons Plaza will be transformed into a student-oriented plaza that will allow for service to The Commons when it is needed. The current configuration creates a large, vehicular loop that impedes pedestrian circulation between the academic and residential districts of the campus and encourages automobile use within the core of campus. Discouraging vehicles from this area will reduce potential conflicts and increase pedestrian safety.

Transportation Demand Management

The campus currently provides 7,091 parking spaces in its 17 surface parking lots, 3 parking structures and on-street parking. In 2009 the University completed a parking study that concluded that the campus has sufficient existing parking spaces to meet current demands. In anticipation of increased enrollments and campus growth, UMBC will reduce the potential strain on the existing parking inventory through implementation of Transportation Demand Management (TDM) strategies and policies. A number of TDM options will be employed to reduce single-occupancy vehicle travel onto campus, better utilize existing parking facilities, and improve access to alternative transportation modes.

UMBC has launched its first TDM initiative which focuses on improving utilization of existing surface parking lots that appear to be distant from the core. This sustainable project will improve pedestrian crossings along Hilltop Circle on the east side of the campus to greatly increase utilization of existing lots that are currently underused. Future projects will be needed to enhance linkages to other parking areas.

The University will integrate a variety of TDM strategies into its daily operations and implement sustainable facility projects to improve the campus and reduce its impact on the environment. A number of strategies are being considered to reduce the demand for new parking areas and increase use of alternatives to driving including:

- Improvements to bus routes and stations;
- Installation of bike lanes and bike parking facilities including in new residential communities;

- Introducing a bike rental program;
- Development of ride share programs such as carpooling and vanpooling;
- Increasing use of existing remote parking lots;
- Providing car-sharing services for faculty, staff, and students who elect to use alternative modes of transportation;
- Improving pedestrian pathways; and
- Promoting teleworking for faculty and staff.

Even as UMBC strives to reduce its carbon footprint through implementation of TDM strategies, the 2009 Campus Plan proposes new structured parking facilities if and when the need arises on campus. These new parking structures would be located near campus portals and provide approximately 1,300 parking spaces.

Goal 6 - Be good stewards of the earth and its natural resources.

In 2007, President Freeman A. Hrabowski, III, became a signatory of the American College and University Presidents Climate Commitment. This action committed UMBC to develop a plan to achieve climate neutrality as soon as possible, to immediately initiate a number of tangible actions to reduce greenhouse gases, and to make our action plan, inventory, and periodic progress reports publicly available.

The UMBC Campus Climate Change Commitment Task Force advises the President on specific interim actions and goals, and establishes mechanisms for regular communications to the campus community. One of the first actions of the Task Force was to complete a comprehensive inventory of all greenhouse gas emissions, completed in 2008.

Energy Conservation

UMBC has been a leader in developing and implementing plans, strategies and upgrades to conserve energy use on the campus and to operate in a more sustainable and efficient way. Some of the initiatives completed or underway include:

- Upgrading heating/cooling systems for campus by retrofitting the Central Plant with high-efficiency boilers, chillers and water pumps.
- Installing a thermal storage system (million gallon chilled water tank) to supplement the Central Plant. Charging the tank at night reduces the load on the electric grid during peak daytime hours.

- Purchasing nearly 20% of the campus' electricity from renewable sources and purchasing of Renewable Energy Credits (RECs) to support development and generation of renewable energy.
- Working with an approved Energy Savings Company (ESCO) to perform an energy audit for the campus to identify projects and quantify additional energy savings from their completion.
- Upgrading exterior lighting for roadways, walkways and parking lots to high-efficiency LED lamps.
- Incorporating a fleet of electric vehicles and compressed natural gas vehicles to perform many maintenance tasks around campus, reducing fuel consumption.



Maintaining the electric vehicle fleet

Buildings

UMBC is committed to promoting the design and construction of buildings and infrastructure that reduce the amount of energy used on our campus. This commitment reduces both the carbon footprint of the campus and operating expenses in the long run. Initiatives that are an integral part of each project, referenced in the 2009 Facilities Master Plan Update, include:

- Budgeting, designing and constructing new buildings to meet or exceed LEED silver rating.
- Optimizing efficiency of existing hot and chilled water systems.
- Upgrading building envelopes on existing buildings. Energy saving measures are now incorporated into the design of replacement roofs, windows and mechanical systems in building renovations.
- Improving building utilization and scheduling of existing buildings for increased efficiency.
- Upgrading existing buildings with more efficient lighting and controls.

This commitment to sustainability and energy conservation is integral to every decision on campus regarding buildings and systems.

Recycling and Waste Reduction

UMBC has initiated a campus-wide recycling program. Currently, paper, plastic, and aluminum are collected separately and recycled. A new program for recycling electronics and other machines is also in place.

UMBC has a comprehensive recycling program which includes donation of office/classroom furniture and athletic equipment to charitable organizations. The campus purchases recycled paper products, cleaning products that are Green Seal certified, and Energy Star appliances.

Environmental Awareness

To support UMBC's commitments to a more sustainable campus, the University has developed various programs, including:

- A Climate Change Task Force, including faculty, staff and students to operationalize the Climate Change Commitment signed by President Hrabowski.
- A Climate Action Plan has been developed to guide actions in the short and long term that will dramatically reduce the University's carbon footprint.
- Student, staff and faculty orientation programs to enhance energy-saving behaviors.
- Degree programs in Biological Sciences, Civil and Environmental Engineering, Geography and Environmental Systems, Physics, and Public Policy, among others that focus on the natural environment and sustainability.



Students conducting environmental research

Implementation Plan

The adjoining table summarizes the various projects highlighted in the 2009 Campus Master Plan. These projects have been developed to ensure that UMBC can continue to fulfill its mission in the coming years. The projects advance University enrollment growth objectives with a balance of new capital projects and reinvestment in existing buildings. The results will be a campus rich with dynamic learning environments and aesthetically pleasing outdoor spaces that foster interaction among all campus users.

PROJECT	AREA (GSF)	APPROX. PROJECT COST (in 2009 dollars)
NEW ACADEMIC BUILDINGS		
A. Performing Arts and Humanities Building and plazas	168,900	\$ 165,300,000
B. Interdisciplinary Life Sciences Building and Commons Plaza renovation	123,000	\$ 104,000,000
C. Multidisciplinary Academic Building	148,000	\$ 114,000,000
NEW STUDENT SERVICES BUILDING		
D. Student Services / Student Life Building and campus quadrangles	100,000	\$ 54,000,000
NEW ATHLETIC BUILDING		
E. UMBC Events Center and UMBC Stadium Plaza	200,000	\$ 80,000,000
NEW RESIDENTIAL BUILDINGS		
F. Patapsco Hall Addition and True Grit's Plaza	52,000	\$ 15,000,000
G. Chesapeake Hall Addition and quadrangle	35,000	\$ 11,000,000
H. Walker Avenue Residential Community and Walker Avenue improvements	142,000	\$ 39,000,000
TOTAL NEW	968,900	
BUILDING RENEWALS		
I. Global Studies and Culture Building (former Fine Arts Building) and Pond renovation	185,000	\$ 58,000,000
J. University Learning Center and plaza	70,700	\$ 16,300,000
K. Math / Psychology Building	60,030	\$ 20,500,000
L. Sondheim Hall	84,870	\$ 29,000,000
M. Academic IV Building	109,106	\$ 37,000,000
N. Biological Sciences Wing	50,220	\$ 20,400,000
O. West Hill Apartments and recreation fields	77,050	\$ 15,000,000
P. Terrace Apartments	62,300	\$ 10,700,000
Q. Hillside Apartments	73,550	\$ 12,600,000
R. UMBC Stadium	13,800	\$ 3,000,000
NEW ROADWAY IMPROVEMENTS / PARKING FACILITIES		
S. Campus Traffic Safety and Circulation Improvements	NA	\$ 11,500,000
T. Hilltop Road Garage	500 spaces	\$ 15,000,000
U. Events Center Garage and Hilltop Circle improvements	800 spaces	\$ 25,800,000
V. Park Drive Lot	150 spaces	\$ 500,000
NEW RECREATIONAL FACILITIES		\$ 2,000,000
UTILITY UPGRADES AND SITE IMPROVEMENTS		\$ 15,000,000
		\$ 874,600,000

Acknowledgements



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