



Maryland Green Building Council

Annual Report | 2015



Presented to
Governor Larry Hogan
and the Maryland General Assembly
November 1, 2015



ON THE COVER:

Rendering of Center for Natural Sciences, Mathematics & Nursing,
Bowie State University, Prince George's County

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Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor



C. Gail Bassette
Secretary

MARYLAND DEPARTMENT OF GENERAL SERVICES
OFFICE OF THE SECRETARY

November 1, 2015

The Honorable Larry Hogan
Governor of Maryland

The Honorable Thomas V. Mike Miller, Jr.
President of the Senate

The Honorable Michael E. Busch
Speaker of the House of Delegates

The Honorable Members of the General
Assembly of Maryland

Re: Maryland Green Building Council Annual Report

Ladies and Gentlemen:

At the close of 2014, the Green Building Council tasked itself with developing a vision for the future of green buildings in Maryland and creating a strategic plan based on that vision. By mid-year, the Council adopted a vision statement which is simple, inspirational, actionable, and worthy of the great State of Maryland:

The vision of the Maryland Green Building Council is to provide leadership and inspiration for the State of Maryland and for Maryland to serve as a national example by ensuring that the design, construction, and operations of public facilities are as healthy, efficient, and socially responsible as possible. Maryland public buildings shall reflect and preserve the unique natural, historical, and cultural identity of our state, embrace relationships with the natural environment, and encourage vibrant, diverse and thriving communities.

In support of this vision, the Council has undertaken an effort to develop recommendations for the state to take. We expect this plan to be well under way and outlined by the end of 2015. The Council has taken to asking difficult questions in order to provide leadership on these issues: Is it possible to design and build state funded buildings to higher performance and zero-net-energy standards? What would it mean to the state if its buildings were 'Living Buildings'? What can we do to begin

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to green the stock of existing state buildings? We believe that contemplating and answering these questions will provide a path forward for high performance building in Maryland.

Additionally, the Council took up the task of updating the “Green Building Program” document after the adoption of the International Green Construction Code as an alternate compliance path. Countless volunteer Council hours were spent on this task which was completed earlier this year.

As the year closes, the Council looks forward to another productive year advancing the cause of responsible, healthy and efficient buildings for the citizens of Maryland.

Respectfully submitted,

A. Prescott Gaylord
LEED AP BE+C and Homes, CPHC

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TABLE OF CONTENTS

MEMBERSHIP 1

INTRODUCTION3

I. COUNCIL ACTIVITIES5

II. LEGISLATIVE REPORT: Maryland General Assembly 2015 Session8

**III. STATE HIGH PERFORMANCE
GREEN BUILDING PROGRAM UPDATE..... 9**

**IV. MARYLAND PUBLIC SCHOOLS
GREEN SCHOOLS REPORT 23**



Engineering and Aviation Science Building, University of Maryland Eastern Shore, Princess Anne County



Center for Communications and Information Technology, Frostburg State University, Allegany County

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INTRODUCTION

The 2015 Annual Report of the Maryland Green Building Council (the Council) is written to comply with the requirement of Chapter 116 of the 2007 Laws of Maryland, which directs the Council to report annually to the Governor and the General Assembly on the implementation and progress of the State High Performance Green Building Program. The plan for implementation of this program was submitted to executive and legislative leaders of the State of Maryland in January 2008 and was enacted into law as Chapter 124 of the 2008 Laws of Maryland. The primary purpose of this report is to provide a progress report, including brief updates on the 2015 green building related legislative efforts, activities of the Council for 2015 and updates on buildings and building projects complying with the High Performance Buildings Act as well as other High Performance buildings in state service.

This year the Council's appointed members remained the same as 2014, except that Amelia "Mimi" Wright, a member since 2011, resigned her position on the Council. The Council would like to thank Mimi for her work and efforts through the years she served and wishes her well in the future. To fill the vacant position, a nominee has been submitted to the Governor's Appointments Office on behalf of the Council by DGS Secretary C. Gail Bassette. Two other standing Council members have been nominated for re-appointment to additional terms. Their nominations are also pending action by the Governor's office at this writing.

The year 2015 was another busy and eventful year for the Council. After adopting the International Green Construction Code (IgCC) as an alternate compliance path in 2014, the Council took on the task of updating the High Performance Green Building Program. The Council also followed through on another initiative started at the end of 2014, the development of a "Vision Statement" intended to guide its efforts in the coming years. A busy schedule of educational and informative meetings rounded out the Council's schedule for the year. For more details, see the Council Activities section which follows.

As in past years, this report serves to document and track the progress for all of the buildings which are required to comply with Maryland High Performance Building laws. The report also continues to track other state related projects which for certain reasons are not required to comply but have, nevertheless, been inspired to be developed as green buildings. In addition, this year we are including for the first time a list of K-12 schools around the state which have been developed as High Performance Schools.



Performing Arts and Humanities Building, University of Maryland Baltimore County, Baltimore County

Performing Arts and Humanities Building, UMBC



I. COUNCIL ACTIVITIES

In December of 2014, Chairman Prescott Gaylord initiated a specially facilitated meeting of Council members and others with the purpose of prioritizing the Council's goals and developing a vision statement for the future. This "Vision Statement" was discussed at meetings and worked on behind the scenes by a small committee made up of members Prescott Gaylord, Lisa Ferretto and Tom Liebel. After many revisions, a final statement was presented to the Council at the July meeting where it was unanimously approved. The approved "Vision Statement" was presented to Secretary Bassette where it received her support. The statement below has already begun to serve the Council in its strategic planning efforts to promote and raise the standards for High Performance Green Building for state buildings and beyond.

The vision of the Maryland Green Building Council is to provide leadership and inspiration for the State of Maryland and for Maryland to serve as a national example by ensuring that the design, construction, and operations of public facilities are as healthy, efficient, and socially responsible as possible. Maryland public buildings shall reflect and preserve the unique natural, historical, and cultural identity of our state, embrace relationships with the natural environment, and encourage vibrant, diverse and thriving communities.

The other major project undertaken by the Council in 2015 was the much needed revamping of the outdated High Performance Green Building Program. The "Program" was developed by the Council in 2008 to provide state agencies with comprehensive direction regarding the criteria and standards by which to comply with the new high performance building

law for state buildings. The "Program" was subsequently cited in Article 3-602.1 of State Finance and Procurement law as the authority on green building compliance for state buildings, K-12 schools and community colleges using state funds. With the recent addition of the International Green Construction Code (IgCC) as an alternate compliance path to the long standing LEED Silver standard, the "Program" was due for a makeover.

For much of the year, a core committee made up of Council members Lisa Ferretto, Martha Shrader, David St. Jean and Stephen Gilliss worked diligently to improve the "Program" through its first revision since 2008. In addition to the inclusion of the IgCC and revisions to the list of mandated LEED credits for Maryland's state buildings, the "Program" was re-organized for clarity of understanding and ease of use.

The Council has held six meetings to date in 2015. A variety of speakers were scheduled at monthly meetings to educate the members on new green technologies, innovative design and information on LEED and the IgCC. The Council's public meetings are typically held on the fourth Wednesday of each month, however, meetings were not held in January, April and September. The highlights of this year's meetings are described below.



In February, the Council met at the LEED Gold certified headquarters of the Maryland Department of Transportation (MDOT) in Hanover, Maryland. Chairman Prescott Gaylord gave a presentation on the Living Building Challenge (LBC), a building certification program, advocacy tool and philosophy that defines the most advanced measure of sustainability in the built environment. This review of the Living Building Challenge may have been a look at



the future of green building with its net-zero energy and water use reduction aspirations.



The March meeting at MDOT's headquarters included a presentation by Council member David Lever on the Interagency Committee (IAC) High Performance Schools Administrative procedure. Kurt Shickman, Executive Director of the Global Cool Cities Alliance (GCCA), a non-profit organization launched in 2010 by a consortium of scientists and environmental leaders to accelerate a world-wide transition to cooler, healthier cities provided a presentation on heat island effect. This is one of the more controversial concepts in green design. Kurt provided convincing evidence of its existence and the benefits of using light colored roofs and pavements to maintain cooler buildings and sites.



May's meeting was held in the Miller State Office Building in Annapolis and featured an interesting presentation by Michael Furbish, President of the Furbish Company, a local Baltimore company which specializes in the design and construction of innovative green roofs and retaining walls. Mr. Furbish explained that the concept of green roofs is driven by storm water management as well as reducing cooling costs of buildings. He also discussed "Greening", a new proprietary concept of installing movable green palettes similar to flat shipping containers set with media and planting to absorb rainwater and reduce runoff. The stackable pallets are placed on large impervious areas such as shopping mall parking lots and paved seaport shipping and receiving lots to absorb and dissipate rainwater during time when these lots are not filled with cars or shipping containers. Following Mr. Furbish, Katy Byrne of the Baltimore City Department of Housing and Community Development (DHCD) gave a presentation on issues related to the adoption of the International Green Construction Code (IgCC) as a

required code for all buildings 10,000 gross square feet and larger in Baltimore City.



In June, the Council met again in the Miller Building in Annapolis and was pleased to have a presentation by Roger Frechette III of Interface Engineering on Net Zero HVAC design. The international HVAC engineering firm specializes in ecological sensitivity, technical expertise, cost-efficient design and sustainability. Project case studies were presented from around the globe utilizing many innovative design technologies which mimic nature to save energy and adapt to local climate conditions. Following Mr. Frechette's presentation, Prescott Gaylord presented the final proposed "Vision Statement" to the Council. After a brief discussion, a motion was made and the Council approved and adopted the statement.



The July Council meeting was held at the Department of Natural Resources Tawes Building in Annapolis and was highlighted by a presentation on energy audits from Council member, David St. Jean, of the Maryland Energy Administration (MEA). David explained that the MEA won a grant to perform energy audits for smaller state owned buildings which haven't had Energy Performance Contracts (EPCs). David developed a model to include all state agency buildings and found that the State of Maryland owns and leases 11 million square feet of buildings and incurs very high daily energy costs. Maryland leads the country in collecting and tracking energy usage in its buildings through the database maintained by the Office of Energy Performance and Conservation in the Department of General Services. Increased energy management and awareness leads to major cost savings. Following David's talk, the Council reviewed, voted on and approved the updated Maryland High Performance Green Building Program.



◆
August brought the Council meeting back to the Tawes Building where Council member, Lisa Ferretto, gave a presentation on the comparison of the International Green Construction Code (IgCC) and Leadership in Energy and Environmental Design (LEED). Following Lisa's talk, Neil Thompson Shade, President of Acoustical Design Collaborative, Ltd., discussed the differences between the IgCC and

LEED as it pertains to acoustics. Following these presentations, Chairman Gaylord asked for and held a discussion of ideas for the implementation of the Council's Vision Statement.

For more information on any of these topics, please refer to the monthly meeting summaries which can be found on the Department of General Services website under Green Building.



Center for Communications and Information Technology, Frostburg State University, Allegany County



II. LEGISLATIVE REPORT: Maryland General Assembly 2015 Session

The Maryland Green Building Council acts in an advisory capacity to the Governor and members of the General Assembly by reviewing legislation that pertains to high performance green building issues and provides assistance to policy makers when the General Assembly considers relevant legislation.

The Council as presently constituted views its function as one of providing current and well-researched information and advice on green building issues to those who are responsible for enacting laws and regulations in this area.

For 2015 there were no major legislative proposals related to green building except for House Bill 336. This bill would have prohibited the use of state funds to install or replace a permanent outdoor light fixture on the grounds of a building owned or leased by the state and non-state buildings unless the fixture met specific criteria regarding energy efficiency and light emission. Because the bill had wide ranging implications beyond the scope of its work, the Council took no position on this legislation. House Bill 336 received an unfavorable committee report and was withdrawn by the sponsor.



*Wye Oak Building, University of Maryland
College Park, Prince George's County*



III. STATE HIGH PERFORMANCE GREEN BUILDING PROGRAM UPDATE

The number of certified state owned High Performance Green Buildings continues to grow as more projects are completed. The High Performance Green Building databases have been updated as much as the available information allows. Of the forty-three (43) projects required to comply with the High Performance Building Act as fully state funded buildings, fifteen (15) have been completed while eleven (11) are currently under construction and seventeen (17) are in various stages of planning and design. The fifteen (15) completed buildings have achieved six (6) Silver ratings, eight (8) Gold ratings and one (1) Platinum rating.

Of the fifty-four (54) projects which are exempt but have been developed as high performance buildings, thirty-seven (37) are complete, ten (10) are under construction and seven (7) are in the planning and design phase. The completed buildings represent one (1) LEED Certified, twenty-two (22) which were designed to or achieved LEED Silver and fourteen (14) LEED Gold ratings. Most of these projects are exempt only because they receive additional funding from sources outside of the state's capital budget.

For Fiscal Year 2016, funding limitations have stalled, at zero, the number of new state capital budget projects qualified to be designed under the High Performance Green Building Program. However, funding has been appropriated for three new projects which are not required to comply due to being partially funded by the state. These projects, for the Maryland National Guard, are expected to be designed as high performance green buildings and are currently in early stages of project planning.

- The Freedom Readiness Center is being planned as a 67,098 GSF Maryland Army National Guard Readiness Center in Sykesville, Maryland and will consolidate the functions of the existing Ellicott City and Catonsville Armories in a new location. The facility will contain functional spaces to meet all requirements for two National Guard units, including unit administrative offices, equipment storage areas, locker rooms, toilet / shower facilities, classrooms, soldier training areas, an assembly hall and other support spaces.
- The Havre de Grace Readiness Center will be a new 74,683 GSF Maryland Army National Guard Readiness Center in Havre de Grace, Maryland to be built to replace the existing Havre de Grace Armory which occupies the former clubhouse of the town's defunct racetrack. The new facility will contain unit administrative offices, equipment storage areas, locker rooms, toilet / shower facilities, classrooms, soldier training areas, an assembly hall, and other support spaces constructed to the current, modern Readiness Center standards.
- The Easton Readiness Center will be a new 42,779 GSF Maryland Army National Guard Readiness Center in Easton, Maryland to replace the insufficient and functionally inadequate space of the current facility. The current facility was built in 1976 for an all-male, small National Guard Company. The facility now houses two units, both of which have a significant number of positions open to women.



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Completed	St.Mary's College	Goodpaster Hall	DGS for SMC	Silver	52,000		2007	Classroom and laboratory building. Original green building pilot project
Completed	Gunpowder Falls State Park	Hammerman Beach Services Building	DGS for DNR	Silver	7,400		2007	Shower and bathing facilities, park offices and concessions. Original green building pilot project.
Completed	University of Maryland, Baltimore	Pharmacy Hall Addition	USM	Gold	128,591	\$81,000,000	2010	http://phaddition.blogspot.com/
Completed	Salisbury University	Perdue School of Business	USM	Gold	113,000	\$44,900,000	2011	http://www.salisbury.edu/perdue/
Completed	Towson University	Liberal Arts Complex	USM	Gold	253,000	\$147,500,000	07/2011	"Construct a new building in two phases (the first, 100,000 GSF; the second 153,000 GSF) to consolidate and expand the units of the College of Liberal Arts that are now dispersed among three other buildings. http://mlis.state.md.us/2009RS/budget_docs/All/Capital/RB24A_-_Towson_Univ_New_College_of_Liberal_Arts_Complex.pdf "
Completed	North Branch Correctional Facility	MCE Upholstery and Reupholstery Plant	DPSCS	Silver	20,000	\$4,400,000	11/ 2011	"Construct a new Maryland Correctional Enterprises (MCE) building at the North Branch Correctional Institution (NBCI). The project will house an Upholstery and Re-Upholstery Plant with 100 inmate facility. NBCI currently does not have an MCE facility. Bushey Feight Morin Associates was the Architect."
Completed	Annapolis Campus	Lowe House Office Building	DGS	Gold	83,900	\$6,497,000	12/1/2011	States' first green renovation project includes upgrading HVAC and electrical systems and integration with recent new addition.
Completed	Western Correctional Institute	Vocational Education Building	DPSCS	Silver	25,932	\$14,749,000	3/2012	Classrooms, laboratories, computer labs, office space, to retrain inmates. ATI Inc. was the Architect
Completed	Morgan State University	Center for the Built Environment and Infrastructure Studies	Morgan State University	Gold	126,129		08/2012	"Construct a new 68,009 NASF/126,129 GSF Center for the Built Environment and Infrastructure Studies. The Center houses the Institute for Architecture and Planning, the Department of Civil Engineering, and the Institute for Transportation Studies. For more information see http://www.morgan.edu/School_of_Architecture_and_Planning/Center_for_the_Built_Environment_and_Infrastructure_Studies_(CBEIS).html Green features include extensive use of photovoltaic panels and solar hot water, passive cooling, operable interconnected windows, bicycle facilities, daylighting, rain harvesting, green cleaning, educational green screen, pervious parking lot."



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/ REMARKS
Completed	University of Maryland, Baltimore County	Performing Arts and Humanities Building, Phase I	USM	Gold	91,100	\$84,200,000	2012	http://www.umbc.edu/pahb/
Completed	University of Baltimore	John and Frances Angelos Law Center	USM	Platinum	190,000	\$114,300,000	4/2013	The UB School of Law is the 6th largest public law school in the country and possibly the greenest. The new building achieved LEED Platinum status with features such as revolutionary heating and cooling using an active slab system which keeps the structure temperature steady reducing the need for heating and cooling. The building also features rainwater harvesting, a green roof and automated windows. More info at http://www.ubalt.edu/template.cfm?page=2571
Completed	University of Maryland College Park	Physical Sciences Complex Phase 1	USM	Gold	160,246	\$118,474,123	2013	" http://www.hdrinc.com/portfolio/physical-sciences-complex http://oxblue.com/open/gilbane/umcp "
Completed	Frostburg State University	Center for Communications and Information Technology	USM	Gold	127,000	\$68,100,000	2014	http://www.frostburg.edu/budget/budget-resources/capital-budget-projects/
Completed (new addition-renovation portion proceeding under new contract)	Deer's Head Hospital Center, Salisbury MD.	Kidney Dialysis Addition and Renovation	DGS for DHMH	Silver (est)	7,800 gsf new 7,130 gsf renovation	\$4,760,000	4/1/2014 (new addition)	Add new dialysis wing to increase the number and size of the existing dialysis stations. Convert the former dialysis space into administrative and support functions for the new wing.
Substantially Complete	Department of Health and Mental Hygiene	State Public Health Laboratory	Maryland Economic Development Corporation (MEDCO) for DHMH	Gold expected	196,000	\$165,000,000	4/19/2014	Replaces outdated labs located at State Center. Planned for six lab divisions, support services and administration
Construction	Morgan State University	Business Management Complex at Northwood Shopping Center	MSU	Gold (est)	136,895	\$58,425,000	2015	"Construct a new School of Business Complex at the Northwood Shopping Center. The proposed building will house the School of Business and Management which includes the Hospitality Management program. Features include green roof, daylighting, green cleaning, energy and water conservation, operable windows, bike facilities, reserved parking for efficient vehicles."
Construction	Maryland State Department of Education	Western Maryland Regional Library		Silver (est)	91,000	\$24,500,000	no schedule provided	Renovate and expand the W MD Regional Library that serves Garrett, Allegany and Washington Counties



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Construction Mobilization	Coppin State University	New Science and Technology Center	USM	Gold (est)	134,882	\$81,748,000	2015	"Construct a new academic facility to house all science-related disciplines, including the Departments of Natural Sciences, Mathematics and Computer Science, and Management Science and Economics. Facility will contain faculty and staff offices, computerized laboratories, networking hardware and software systems, classrooms, class laboratories, conference areas, meeting rooms, and support areas. The facility will also include a satellite central utilities building. http://www.coppin.edu/info/200871/science_and_technology_center "
Construction	University of Maryland Eastern Shore	Aviation and Engineering Sciences Bldg	USM	Gold (est)	163,000	\$98,200,000	2015	Construct a replacement facility for the existing Aviation Science and Engineering Building at the University of Maryland, Eastern Shore. The new facility will house the Aviation Science and Engineering program, the Departments of Computer Science, Mathematics, and Technology.
Construction	University of Maryland Center for Environmental Science - Chesapeake Biological Laboratory	Truitt Lab Replacement	USM	Silver (min)	20,764	\$21,800,000	2015	Demolish the existing RV Truitt Building and construct a new 2-story research laboratory building with modular wet laboratories with running fresh water and seawater, teaching laboratories, culture labs, faculty offices, conference room and seawater processing room/pumphouse.
Construction	St. Mary's College of MD	Anne Arundel Hall	SMCM	Gold (est) Silver (min)	39,119	\$36,396,000	Completion Spring 2016	LEED features include 20kv photovoltaic array, heating and AC via geothermal heatpumps, incorporates sinker cypress and other green building products.
Construction (85% complete)	Cheltenham Youth Detention center Center	Cheltenham Youth Facility, Prince George's County	DGS for DJS	Silver (est)	99,000	\$48,309,000	2/15/2016	Construct a new 72 bed juvenile detention center to replace the existing outdated facility. New facility will provide sleeping, dining, education, training, recreation, counseling, somatic and mental health services and visitation.
Construction (70% complete)	Harriet Tubman Underground Railroad StatePark	Harriet Tubman Underground Railroad Interpretive Center	DGS for DNR	Silver (est)	15,000	\$14,200,000	4/15/2016	Exhibit space, orientation film theater, library, gift shop and multipurpose meeting space. Memorial garden, trails, picnic pavilion and information kiosk.
Construction	Baltimore City Detention Center	Youth Detention Center	DPSCS	Silver/Gold (est)	60,000	\$38,000,000	December 2016 (estimate)	Construction is 10% complete as of September 2015.



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Construction	Bowie State University	Natural Sciences, Mathematics and Nursing Center	USM	Gold (est)	149,930	\$102,200,000	2017	This building replaces the Crawford Science Building and addresses numerous facility problems such as insufficient class laboratories and support space, lack of specialized class laboratories, insufficient office space and inadequate building systems. The building will be located at the former site of the Wiseman Center and includes the demolition of the existing Crawford Bldg.
Construction 30% Complete	University of Maryland, Baltimore	Health Sciences Facility III	USM	Gold (est)	435,000	\$305,000,000	10/1/2017	Construct a new research building for the Schools of Medicine, Pharmacy and Dentistry. The facility will be located on the site presently occupied by Hayden-Harris Hall at 666 West Baltimore Street http://www.budget.umaryland.edu/capitalbudget/health_sciences_facility.html
60% Construction Documents	Board of Public Works - Judiciary	Catonsville District Court	DGS	Silver	125,000	\$61,000,000	2018	The building will house seven new courtrooms in Catonsville, Baltimore County. This will be the State's first courthouse built under the high performance building act.
Design	Frostburg State University	Public Safety Facility	USM	Silver (min)	10,745	\$5,500,000	2016	New 10,735 GSF facility to house FSU's Police Department which will include spaces for public operations such as communications, report writing, and holding cells. It also will include specialized storage for evidence, recovered property, weapons, sally port and records. Support spaces include network server, locker and shower rooms, fitness room, break room and kitchen.
Design	Morgan State University	Jenkins Behavioral Sciences Center	MSU	Gold (goal)	148,229	\$64,000,000	2017	Construct a new building to house the Behavioral and Social Sciences. The proposed facility will replace the existing Jenkins Behavioral and Social Sciences Building.
Design	University of Maryland Shady Grove	Biomedical Education Facility	USM	Silver (min)	220,000	\$161,000,000	2018	Design and construct a Biomedical Sciences and Engineering Education Facility. Building will provide specialized laboratory space to support new academic programs such as Engineering and Dentistry, additional space for Pharmacy, Nursing, classrooms, laboratories, clinical training, faculty and staff offices and academic support space is also being provided.



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Design Development	Department of Juvenile Services	New Female Detention Center	DJS	Silver (est)	92,803	\$51,835,000	12/1/2018	This 48 bed facility, to be located on the grounds of the former O'Farrell Center in Carroll County will serve female youth pending court disposition or post-adjudication placement.
Schematic Design	Department of Natural Resources	Wellington Wildlife Management Area Shop and Offices	DGS	not certified	not provided	\$2,876,000	no schedule provided	New construction portion of the project is too small for LEED certification however the project will include green enhancements such as geothermal HVAC and green roof.
Programming	Baltimore City Detention Center	Women's Detention Center	DPSCS	Silver/Gold (est)			Programming complete, awaiting DBM approval	512 bed women's detention center with sleeping, dining, education, training, recreation, counseling, somatic and mental health services and visitation.
Design - Pending	Southern Maryland	Southern Maryland Higher Education Center	SMHEC/USM	Silver (min)	TBD	\$78,250,000	2021	Construct a third academic building on the Southern Maryland Higher Education Center campus to address space deficiencies due to increased enrollment and the expansion of programs offered at the facility. Partners in the development are the SMHEC, the University System of Maryland and the Southern Maryland Navy Alliance.
Planning	Board of Public Works	Annapolis Post Office renovation and addition	DGS	Silver	22,000	\$13,470,000	no schedule provided	This project will renovate the existing Annapolis Post Office Building to provide office space for State agencies currently leasing space.
Planning	State Library Resource Center	Central Branch Enoch Pratt Free Library System	DGS for EPFLS	Silver (est)	290,000	\$79,000,000	08/ 2018	Improve building systems and life safety components
Site Acquisition	Southern Regional Childrens Center	Southern Regional Childrens Center	DGS for DJS	Silver (min)	78,806	\$36,420,000	Site has not yet been selected or acquired	Construct a new 48 bed secure detention center in Southern Maryland. The new facility will include space for housing, dietary services, education, somatic and behavioral health, recreation, administration and general support.
Planning	Springfield Hospital Center	Secure Evaluation and Therapeutic Treatment Center (SETT)	DGS for DHMH	Silver (min)	35,000	TBD		Construct a 32 bed facility to house individuals with development disabilities and forensic involvement
Planning	University of Maryland Center for Environmental Science - Chesapeake Biological Laboratory	Communications Services Building	USM	Silver (min)	12,600	\$14,200,000	2018	This 12,600 GSF building will provide library and computer services to the CBL faculty and graduate students and serve as an information resource and database of environmental issues for other local research institutions, museums, and the general community.



STATE PROJECTS DEVELOPED IN COMPLIANCE WITH THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Planning	Morgan State University	New Student Services Support Building	MSU	Silver (min)	180,000	\$80,450,000		Construct a new 130,000 GSF/ 71,595 NASF building to house the student support services functions of the University on the site of the old Soper Library.
Planning	University of Maryland Baltimore County	Interdisciplinary Life Sciences Building	USM	Silver (min)	131,000	\$123,452,000		Construct a new building for interdisciplinary STEM learning and life sciences research. The facility will include active learning classrooms, multi-disciplinary teaching labs, and technology-equipped seminar rooms that will allow course redesign to enhance student learning and success, leading to increased degree production in high need areas of STEM programs.
Planning	Department of Juvenile Services	Lower Shore Treatment Center	DGS for DJS	Silver (min)	48,531	\$60,566,000		New thirty six (36) bed hardware secure treatment center to serve male youth whom the courts have committed to DJS for secure residential treatment.
Planning	Salisbury University	Maggs Gym Renovation	USM	Silver (min)	TBD	\$42,000,000	2021	Renovate and add space to existing physical activity building



Cheltenham Youth Detention Center, Department of Juvenile Services, Prince George's County, construction photo



Harriet Tubman Underground Railroad Visitor Center, Dorchester County, construction photo



STATE PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Completed	MDOT Headquarters Anne Arundel County	Harry R. Hughes Building	MDOT	Gold	22,000	unavailable	2002	"Houses the Office of the Secretary and several divisions of MDOT. Promotes Transit-Oriented-Development. Uses 48% less energy than the ASHRAE baseline. Incorporates rapidly renewable, recycled content, post-industrial, post-consumer materials. Water conservation is achieved through the use of waterless urinals and sensors and aerators on showers and faucets. A state-of-the-art storm-water management system was utilized to create zero net increase in storm-water runoff; recharges wetlands which are permanently preserved by a conservation easement."
Completed	Coppin State University	Physical Education Complex	USM	Silver	246,359	\$127,663,000	2010	The Physical Education building received a LEED silver rating. The PEC has 2,040 roof-mounted crystalline photovoltaic solar panels, that supply more than 600,000 kilowatt-hours of electricity annually. http://www.coppin.edu/capitalplanning/PEC.aspx
Completed	Frostburg State University	Lane Student Center Renovation & Expansion	USM	Gold	76,000	\$19,285,000	2011	http://www.frostburg.edu/budget/lane-center-renovation/
Completed	Salisbury University	Pocomoke Hall Renovation	USM	Gold	22,000	\$6,941,026	2010	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Salisbury University	Manokin Hall Renovation	USM	Gold	22,000	\$5,837,504	2010	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Salisbury University	Wicomico Hall Renovation	USM	Gold	22,000	\$6,878,205	2011	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Salisbury University	Nanticoke Hall Renovation	USM	Gold	36,000	\$11,094,364	2011	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Towson University	West Village Housing	USM	Silver	159,000	\$35,000,000	2011	http://www.towson.edu/adminfinance/facilities/archengconst/campusconstruction/AECCurrentProjects2_000.asp
Completed	Towson University	West Village Commons	USM	Silver	85,000	\$41,000,000	2011	http://www.towson.edu/adminfinance/facilities/archengconst/campusconstruction/AECCurrentProjects2_000.asp
Completed	Universities at Shady Grove	Camille Kendall Academic Center	USM	Gold	195,000	\$54,586,521	2007	http://www.shadygrove.umd.edu/about/campus-sustainability/sgii/green-features



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/ REMARKS
Completed	University of Maryland Eastern Shore	Somerset Hall Renovation for School of Pharmacy	USM	Gold	22,000	\$6,800,000	2010	http://www.delmarvanow.com/article/20110731/BUSINESS/107310318/UMES-hall-goes-green
Completed	University of Maryland University College	Marriott Inn and Conference Center	USM	Certified	110,000	\$21,000,000	2004	http://www.marriott.com/hotels/travel/wasum-the-marriott-inn-and-conference-center-university-of-maryland-university-college/
Completed	University of Maryland University College	Center of Academic Operations (Largo)	USM	Gold	236,000	\$60,000,000	2009	http://www.umuc.edu/visitors/news/pressreleases/news321.cfm
Completed	Bowie State University	Wiseman Student Center	USM	Gold	95,685	\$41,540,000	2013	http://www.bowiestate.edu/campus-life/wiseman-student-center/
Completed	Salisbury University	Teacher Education Technology Center	USM	Silver	165,000	\$62,100,000	2008	http://www.salisbury.edu/newsevents/fullstoryview.asp?id=3691
Completed	Salisbury University	Seagull Square Development	USM	Silver	285,000	\$40,862,109	2011	http://www.salisbury.edu/fpcp/sgs/factsheet.html
Completed	Towson University	Tiger Arena	USM	Silver (est)	110,000	\$50,000,000	2012	http://www.tigerarena.com/TigerArena.dbml?DB_OEM_ID=21300
Completed	University of Maryland, Baltimore County	Research Park Building	USM	Silver	110,400	\$25,000,000	2008	http://www.bwtechumbc.com/pdf/5520_factsheet_rev09.pdf
Completed	University of Maryland, College Park	M Square	USM	Silver	120,000	\$23,000,000	2007	http://www.newsdesk.umd.edu/uniini/release.cfm?articleID=1661
Completed	University of Maryland, College Park	M Square	USM	Silver	120,000	\$29,000,000	2009	http://www.newsdesk.umd.edu/uniini/release.cfm?articleID=1661
Completed	University of Maryland, College Park	John S. & James L. Knight Hall	USM	Gold	53,400	\$24,800,000	2010	http://www.merrill.umd.edu/deadline/index.php/2010/08/27/knight-hall-certified-as-first-green-building-at-university-of-maryland-college-park/
Completed	University of Maryland, College Park	Denton Dining Hall	USM	Silver	43,859	\$17,384,922	2010	http://www.sustainability.umd.edu/content/campus/dining.php#Denton
Completed	University of Maryland, College Park	Fraternity/ Sorority Renovations Ph. 9	USM	Silver	22,278	\$13,730,000	2012	http://greek.umd.edu/2013/08/08/sorority-houses-achieve-leed-silver-rating/
Completed	University of Maryland, College Park	Shuttle Bus Building	USM	Silver	10,906	\$7,303,332	2012	http://www.sustainability.umd.edu/content/campus/green_buildings.php#ShuttleUM
Completed	University of Maryland, College Park	University House	USM	Gold	14,025	\$7,200,000	2012	https://umdrighnow.umd.edu/news/university-house-achieves-leed-gold-certification



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Completed	University of Maryland, College Park	Chincoteague Hall Renovation	USM	Gold	22,648	\$7,826,463	2012	http://www.umdrightnow.umd.edu/news/umds-chincoteague-hall-renovation-project-wins-gold-leed-certification
Completed	University of Maryland, College Park	Oakland Hall (Residence)	USM	Gold	231,704	\$74,873,285	2011	http://reslife.umd.edu/halls/denton/oakland/
Completed	University of Maryland, College Park	Fraternity/Sorority Renovations Ph. 8	USM	Silver	20,645	\$10,607,487	2010	http://greek.umd.edu/2013/08/08/sorority-houses-achieve-leed-silver-rating/
Completed	Maryland National Guard Facility, Salisbury MD	Salisbury Readiness Center	DGS for MDNG	Silver certified 2013	38,055	\$13,400,000	2012	Construct a 20,826 GSF addition and renovate the existing 17,229 GSF Westminster Readiness center to support the newly acquired Combat military Police Company.
Completed	South Mountain Welcome Center	Maryland Department of Transportation	State Highway Administration	Silver certified	20,240 total sf in 4 buildings	\$21,000,000	2010	The South Mountain rest areas are used by nearly 1.5 million travelers annually. The new Welcome Centers are each approximately 3,940 square feet and the new restrooms are 6,180 square feet. The new buildings will reduce energy consumption and lower operating costs with the use of lower energy use lighting, sensors to monitor water usage and an onsite wastewater treatment plant.
Completed	University of Maryland College Park	Building and Landscape Service Building (Wye Oak)	USM	Silver & Three Green Globes	12,774	\$5,909,000	2014	This two story building houses units of the department of Building and Landscape Management Department. This building has achieved dual certification with LEED and Green Globes.
Completed	Westminster Readiness Center	Maryland National Guard	DGS for MDNG	Designed to LEED Silver standard - not certified	33,249	\$8,157,903	2015	Additions and renovations to the existing Westminster Armory



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Completed	Maryland House	MDOT	MDOT- public Private Partnership	Silver	42,000	\$30,000,000	2014	The new travel plaza is LEED Silver certified and includes "green" features such as high albedo material covers 80 percent of the building roof area to minimize heat island effect, natural light and high efficiency interior lighting, building systems and envelope design for a building energy performance that is 26% more efficient than the baseline case, and a 40% reduction in water usage in the building is accomplished through low-flow fixtures.
Completed	Chesapeake House	MDOT	MDOT- public Private Partnership	Silver	30,000	\$26,000,000	2014	The new travel plaza is LEED Silver certified and includes "green" features such as high albedo material covers 100 percent of the building roof area to minimize heat island effect, natural light and high efficiency interior lighting, building systems and envelope design for a building energy performance that is 26% more efficient than the baseline case, and a 35% reduction in water usage in the building is accomplished through low-flow fixtures.
Completed	Salisbury University	Choptank Hall Renovation	USM	Silver	48,118	\$7,500,000	2013	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Salisbury University	Chester Hall Renovation	USM	Silver	48,118	\$7,500,000	2013	http://www.salisbury.edu/fpcp/housing/overview.html
Completed	Jessup Community Correctional Facility	Dorsey Run Correctional Facility	DPSCS	Certified SSB, Silver Housing Unit #1, Silver Housing Unit #2 (3 certifications) (estimate)	83,306 Phase I	\$24,000,000 Phase I.	July 2013 for Phase I	Construct a new minimum security complex consisting of two adjacent minimum security compounds for 560 inmates each. The new facility will contain housing, inmate transition services, educational, and recreational functions. Project is being done as a design - build construction delivery method. The Certified rating will be achieved on the Services Support Building and Silver on the 2 Housing Units. Construction submittal review is ongoing.
Construction	Jessup Community Correctional Facility	Dorsey Run Correctional Facility - Phase II	DPSCS	Silver (est)	82,000 Phase II	\$26,264,000 Phase II	2/2016 (est)	Similar to Phase I above - additional 560 bed facility including three buildings, Support Services and 2 Housing Units (#3 and #4). Design submittal review is complete



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Construction	University of Maryland, College Park	Pocomoke Building Renovation	USM	Gold	27,000	\$9,480,000	2013	The Pocomoke Building Renovation involves demolition of existing spaces on all three floors. The historic building will undergo a complete replacement of HVAC and electrical systems.
Construction	University of Maryland, College Park	Prince Frederick Hall (Residence)	USM	Silver (est)	154,085	\$70,291,000	2014	http://www.resnet.umd.edu/princefrederick/
Construction (92% complete)	LaPlata Readiness Center	Maryland National Guard	DGS for MDNG	Designed to LEED Silver standard - not certified	28,630	\$9,910,906	2015	Construct a new readiness center in La Plata. The proposed readiness center will house the 253rd Engineer Company that was transferred to the La Plata Readiness Center as part of the national "Grow the Army Initiative."
Construction (92% complete)	Dundalk Readiness Center	Maryland National Guard	DGS for MDNG	Designed to LEED Silver standard - not certified	65,930	\$15,430,903	2015	Additions and renovations to the existing Dundalk Armory
Construction	University of Maryland College Park	Edward St. John Learning and Teaching Center	USM	Silver (min)	180,744	\$114,600,000	2016	https://www.facilities.umd.edu/ESJ-LTC/default.aspx
Construction	Salisbury University	East Campus Athletic Stadium	USM	Silver (est)	30,931	\$19,400,000	2016	Construction of a new athletic stadium on the East Campus where the existing Sea Gull Stadium is located. Stadium will include locker rooms, concessions, retail area, box office, storage room, equipment and training room, restrooms, press box, Varsity Club, catering areas and a seating capacity of 3,000. Project also includes associated site improvements, exterior lighting, walkways, parking and service roads.
Construction	University of Maryland College Park	A. James Clark Bioengineering Building	USM	Silver (min)	184,715	\$173,910,000	2017	Construction of a new Bioengineering Building to house the Robert E. Fischell Department of Bioengineering and the Robert E. Fischell Institute for Biomedical Devices.
Construction	University of Maryland Shady Grove	Parking Garage II	USM	Green Garage Certification by the Green Parking Council (est)	202,280	\$20,100,000	2016	This project was the first to be registered with the Green Parking Council under their new Green Garage Certification program.
Construction	Salisbury University	Academic Commons	USM	Gold (est)	221,037	\$117,088,000	2016	New Academic commons and Library Facility on the site of Carruthers Hall http://www.salisbury.edu/newsevents/fullstoryview.asp?ID=5337



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Development	Towson University	Newell/ Richmond Halls Renovation	USM	Silver (est)	90,000	\$29,000,000		http://www.towson.edu/housing/prospective/halls/richmond.asp
Development	University of Maryland, Baltimore County	Patapsco Hall Renovation & Addition	USM	Gold (est)	53,500	\$15,500,000		http://www.umbc.edu/reslife/news/pat_addition.html
Design-Pending	University of Maryland Eastern Shore	Nuttle Residence Hall Renovation	USM	Silver (min)	TBD	\$10,800,000	2017	http://www.salisbury.edu/fpcp/housing/overview.html
Design	University of Maryland College Park	Brendan Iribe Center (formerly Computer Science Building)	USM	2012 IgCC	216,600	\$142,550,000	2018	This project will house the Department of Computer Science and the University of Maryland Institute for Advanced Computer Studies. Project will support the growth of the department teaching and research programs, facilitate the integration of modern teaching and research activities, improve the ability of students and faculty to collaborate, and promote collaboration with industrial and community partners.
Planning	Freedom Readiness Center	Maryland National Guard	DGS for MDNG	Silver (min)	67,098	\$25,784,000		Design and construct a new Army National Guard Readiness Center in Sykesville, Maryland. The prospective facility will contain functional spaces to meet all requirements for two National Guard units, including administrative offices, equipment storage areas, locker rooms, toilet/shower facilities, classrooms, soldier training areas, an assembly hall, and other support spaces.
Planning	Havre de Grace Readiness Center	Maryland National Guard	DGS for MDNG	Silver (min)	74,683	\$16,000,000		Construct a new Maryland Army National Guard Readiness Center in Havre de Grace. The new Havre de Grace Readiness Center will contain unit administrative offices, equipment storage areas, locker rooms, toilet/shower facilities, classrooms, soldier training areas, an assembly hall, and other support spaces constructed to the current, modern Readiness Center standards.



STATE BUILDING PROJECTS DEVELOPED INDEPENDENT OF THE HIGH PERFORMANCE BUILDING ACT

STATUS	FACILITY LOCATION	PROJECT NAME	DEVELOPER	LEED RATING	TOTAL GSF	PROJECT COST	OPENED	INFORMATION/REMARKS
Planning	Easton Readiness Center	Maryland National Guard	DGS for MDNG	Silver (min)	42,779	\$15,978,000		Construct a new Army National Guard Readiness Center in Easton to replace insufficient and functionally inadequate space in the current facility. The current facility was built in 1976 for an all-male, small National Guard Company. The facility now houses two units, both units contain a significant number of positions open to females.



Pocomoke Building, University of Maryland College Park, Prince George's County



IV. MARYLAND PUBLIC SCHOOLS • GREEN SCHOOLS REPORT

The Maryland Green Building Council is pleased to report on the progress made in recent years by the state's public school programs to construct High Performance Green Schools. The Interagency Committee on School Construction (IAC) reports, as of January 2015, that a total of ninety-two (92) K-12 high performance schools were in various phases of planning or design, construction, or occupancy. The total of ninety-two (92) schools represents an increase of forty (40) schools, or 77%, more than the total reported for January 2014. Of this total, fifteen (15) are renovation or renovation/addition projects which were carried out to high performance standards at the discretion of the school system.

Forty-two (42) schools have been completed and are occupied, twenty-one (21) are under construction and twenty-nine (29) schools are in the planning or design phase.

Twenty (20) of the ninety two (92) schools have received their final LEED certification. Of these, three (3) achieved LEED Silver while seventeen (17) achieved LEED Gold.

Please note that in the intervening time and with the start of a new school year, it is likely that more schools have been completed, occupied and have received their LEED certification as of this writing.

A highlight of the progress being made in the public school construction program is the planning and construction of the state's first two NetZero schools. The following two major school replacement projects are made possible through grants from the Maryland Energy Administration (MEA).

Wilde Lake Middle School, part of the Howard County Public School system, received a \$2,773,000 grant of which \$533,000 is for design and \$2,240,000 is for construction. The school is currently under construction and will have a target Energy Use Intensity (EUI) of 25 kBtu/sf, an extremely efficient figure considering that typical schools' EUIs range from under 50 to 500 kBtu/sf. Net Zero Building (NZB) features include a modified unitary geothermal design for each room of the building, minimization of lighting power density by specific LED lighting and placement, including all exterior building and site lighting, and use of occupancy sensor controls and photocell dimming capabilities in interior spaces. The insulation upgrades include increasing the building envelope to a minimum R-25 value for exterior walls and R-30 for roof. Energy efficient food service equipment is specified in the kitchen, including Energy Star appliances, boiler-less steamers, and Type II exhaust hoods. Photovoltaic (PV) panel systems, both rooftop and ground based are being installed with approximately 625 KW total capacity (425 KW on the roof, 200 KW on the ground).



Graceland Park/O'Donnell Heights Elementary/Middle School, part of the Baltimore City Public School system, received a \$2,773,000 grant and is currently in design. The target Energy Use Index for the new facility will also be 25 kBtu/sf. This school will be built concurrently with a nearby replacement school to the same prototype design, allowing for a real-time comparison of the performance characteristics of a NZB school with a "net zero ready" high performance school of the same size. The NZB improvements will include a water source heat pump, dedicated outdoor air system (DOAS) and console, closed loop geothermal system serving HVAC needs and a highly reflective roof surface (cool roof) combined with the use of a vegetative roof surface in order to reduce heat gain. Other areas of the roof will be used for electricity producing photovoltaic roof panels. Additional energy efficient features include "Low e" glass and increasing wall and roof insulation R values to reduce heat losses and gains associated with the building envelope, LED lighting fixtures for all interior spaces and most exterior building and site lighting, occupancy sensor controls, photocell dimming capabilities and energy efficient food service equipment, including Energy Star appliances.

During the design phase of this project, Net Zero Building enhancements can be evaluated in terms of environmental and energy savings benefits versus maintenance and operations expenditures over the life of the systems. Systems to be evaluated include photovoltaic (PV) rooftop panels generating an initially estimated 280 KW, Cogeneration or Combined Heat and Power (CHP) technologies using reciprocating engine, gas turbine or thermal biomass power plants, Thermally Activated Technologies such as heat activated chillers, hot water heat recovery and thermal energy storage, traditional wind turbine systems and solar domestic hot water preheating system.

The MEA is also in discussion with Baltimore City Public Schools and the Maryland Stadium Authority (MSA) on the possibility of designating a school within the 21st Century Building Plan as the state's third Net Zero school building. The 21st Century Buildings Plan, is a partnership of Baltimore City Public Schools, the Maryland Stadium Authority, the City of Baltimore, and the Interagency Committee on School Construction to rebuild Baltimore City's schools creating inspiring educational environments for its public school students.

Maryland public schools are leading the way in the use of solar power in the state. The IAC reports that 14 solar arrays are in operation at Maryland public schools. The majority of these arrays are roof mounted, but large ground-mounted solar arrays have been installed in several rural jurisdictions including Caroline County where three ground-mounted solar arrays are providing 80% of the electricity needs for five school buildings.

School systems are also leading the way in the use of vegetated roofs on 33 buildings. Six schools have used porous pavement systems to help handle storm water runoff and provide some relief from the heat island effect. However, both of these green building



systems are being used primarily in demonstration areas rather than for large expanses. School officials report on-going concerns about the maintenance costs associated with these technologies.

The following spread sheet itemizes these Maryland High Performance Schools by location, phase, certification and high performance features.

2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT					
LOCAL EDUCATION AGENCY (LEA)	NAME OF SCHOOL	STATUS	LEED RATING	OPENED	INFORMATION / REMARKS
Allegany County	Allegany HS (Replacement)	Construction	Silver (est)	8/1/2017	Evaluating the use of geothermal system
Anne Arundel County	Lothian ES	Construction	Silver (est)		Geothermal System
	Severna Park HS	Construction	Silver (est)		
	Rolling Knolls ES	Construction	Silver (est)		Geothermal System
	Arnold ES	Planning/Design	Silver (est)		Geothermal System
	Jessup ES	Planning/Design	Silver (est)		Geothermal System
Baltimore City	Waverly PK-8 (AReplacement)	Completed	Silver (est)		
	Holabird PK-8 (Replacement)	Planning/esign	Silver (est)		
	Graceland Park O'Donnell Heights PK-8 (Replacement)	Planning/ Design	Silver (est)		\$2.7 M grant through Maryland Energy Administration to achieve Net Zero Building. Maryland's 2nd NZB school facility
	Fort Worthington PK-8 (Replacement)	Planning/Design	Silver (est)		
	Arundel PK-5 (Replacement)	Planning/Design	Silver (est)		
	Patterson HS (Replacement)	Planning/Design	Silver (est)		
	Cherry Hill Gr. 3-8 (Renovation / Addition)	Planning Design	Silver (est)		
	Frederick ES (Renovation / Addition)	Planning/Design	Silver (est)		
	John Eager Howard PK-5 (Renovation / Addition)	Planning/Design	Silver (est)		
	Lyndhurst PK-8 (Renovation / Addition)	Planning/ Design	Silver (est)		
Baltimore County	West Towson ES (New School)	Completed	Silver	8/1/2014	Green roof
	George Washington Carver School for Arts and Technology (Replacement High School)	Completed	Silver (est)	8/1/2014	
	Dundalk/Sollers Point HS (Replacement High School)	Completed	Silver (est)	8/1/2014	
	Mays Chapel ES (New School)	Completed	Silver (est)	8/1/2015	
Calvert County	Northern HS (Replacement)	Planning/ Design	Silver (est)	10/1/2018	
Carroll County	Mt. Airy MS (Replacement)	Completed	Silver (est)	8/1/2014	Geothermal HVAC, achieved 28% energy cost savings
Cecil County	Perryville ES (Renovation)	Construction	Silver (est)		
Charles County	St. Charles HS 2013 (New)	Completed	Silver or Gold (est)	8/1/2014	Rainwater harvesting, geothermal HVAC, reflective cool roof, and enhanced commissioning
Dorchester County	North Dorchester HS (Replacement)	Planning/ Design	Silver (est)		
Frederick County	Lincoln ES (Renovation / Addition)	Completed	Silver (est)	8/1/2001	
	North Frederick ES (Replacement)	Construction	Silver (est)		



2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT

LOCAL EDUCATION AGENCY (LEA)	NAME OF SCHOOL	STATUS	LEED RATING	OPENED	INFORMATION / REMARKS
	Frederick HS (Replacement)	Construction	Silver (est)		
Harford County	Joppatowne ES (Replacement)	Completed	Certified (est)	1/1/2010	
	Youth Benefit ES (Replacement)	Construction	Silver (est)		
Howard County	Northfield ES (Renovation / Addition)	Completed	Silver	8/1/2011	Geothermal System, Green Roof
	Thunder Hill ES (Renovation / Addition)	Completed	Silver	8/1/2012	
	Bollman Bridge ES (Renovation / Addition)	Completed	Certified (est)	8/1/2013	Geothermal System
	Atholton (Renovation)	Construction	Silver (est)		Geothermal System
	Stevens Forest ES (Renovation)	Completed	Certified (est)	12/1/2013	Geothermal System
	Phelps Luck ES (Renovation / Addition)	Completed	Certified (est)	8/1/2013	Geothermal System
	Ducketts Lane ES (New ES #41) (New)	Planning/ Design	Gold (est)	8/1/2013	Geothermal System
	Thomas Viaduct MS (New MS #20) (New)	Construction	Silver (est)		Geothermal System
	Longfellow ES (Renovation / Addition)	Construction	Certified (est)		
	Patuxent Valley MS (Renovation / Addition)	Planning/ Design	Certified (est)		
	Wilde Lake MS (Replacement)	Construction	Silver (est)		Geothermal System, Maryland's 1st New Zero Building school facility, 625 KW PV system with 425 KW on roof and 200 KW on ground
Montgomery County	Great Seneca Creek ES (New)	Completed	Gold	8/1/2006	
	Francis Scott Key MS (Replacement)	Completed	Gold	8/1/2009	PV Array on roof
	Wm. B. Gibbs ES (New)	Completed	Gold	8/1/2009	Green roof
	Cashell ES (Replacement)	Completed	Gold	8/1/2009	
	Carderock Springs ES (Replacement)	Completed	Gold	8/1/2010	
	Cresthaven ES (Replacement)	Completed	Gold	8/1/2010	
	Cabin John MS (Replacement)	Completed	Gold	5/1/2011	
	Farmland ES (Replacement / Renovation)	Completed	Gold	8/1/2011	Green roof
	Paint Branch HS (Replacement)	Completed	Gold	8/1/2012	Green roof
	Garrett Park ES (Replacement)	Completed	Gold (est)	1/1/2012	Green roof
	Cannon Road ES (Replacement)	Completed	Gold	9/1/2012	Green roof
	Seven Locks ES (Replacement)	Completed	Gold	12/1/2012	
	Gaithersburg HS (Replacement / Renovation)	Completed	Gold (est)	8/1/2013	Green roof
	Hoover MS (Replacement)	Completed	Gold (est)	8/1/2013	Green roof
	Beverly Farms ES (Replacement / Renovation)	Completed	Gold (est)	1/1/2013	Green roof
	Weller Road ES (Renovation / Addition)	Completed	Gold (est)	8/1/2013	Green roof
	Flora M Singer ES (New)	Completed	Gold	8/1/2012	Green roof
	Glenallen ES (Replacement)	Completed	Gold	8/1/2013	Green roof
	Bel Pre ES (Replacement)	Construction	Gold (est)		Green roof
	Clarksburg Village ES (New)	Construction	Silver (est)		Green roof
	Rock Creek Forest ES (Replacement)	Construction	Gold (est)		Green roof
	Candlewood ES (Replacement)	Construction	Silver (est)		Green roof
	William Farquhar MS (Replacement)	Construction	Silver (est)		Green roof
	Clarksburg Damascus MS (New)	Construction	Silver (est)		Green roof



2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT

LOCAL EDUCATION AGENCY (LEA)	NAME OF SCHOOL	STATUS	LEED RATING	OPENED	INFORMATION / REMARKS
	Wayside ES (Replacement)	Planning/ Design	Silver (est)		
	Wheaton Woods ES (Replacement)	Planning/ Design	Silver (est)		Green roof
	Seneca Valley HS (Replacement)	Planning/ Design	Silver (est)		Green roof
	Brown Station ES (Replacement)	Planning/ Design	Silver (est)		
	Bethesda-Chevy Chase MS (New)	Planning/ Design	Silver (est)		Green roof
	Wheaton HS (Replacement)	Construction	Silver (est)		Green roof
Prince George's County	Vansville ES (New)	Completed	Gold	8/1/2008	Building designed with east-west orientation; large windows and sloping ceiling to maximize natural daylight; eco friendly and Low VOC materials and paint and sealers used, waterless urinals, dual flush toilets and low flow faucets, geothermal wellfield system (no boilers chillers); white energy star roof; construction waste management (75-80% waste recycled)
	Barack Obama ES (New)	Completed	Gold	8/1/2010	Building designed with east-west orientation; large windows and sloping ceiling to maximize natural daylight; eco friendly and Low VOC materials and paint and sealers used, waterless urinals, dual flush toilets and low flow faucets, geothermal wellfield system (no boilers chillers); white energy star roof; construction waste management (80-87% diverted from landfill); recycled content of materials used 25%; Roof drainage collected in rain barrels for use on school grounds.
	Avalon ES (Replacement)	Completed	Gold (est)	8/1/2013	Sustainable design objectives included site design for managing stormwater runoff, rain gardens, reducing heat island effect; maximizing open space and reduction of light pollution. Water efficiency measures included efficient landscaping with native and adaptive vegetation that require no irrigation.
	Henry G. Ferguson ES (Replacement)	Completed	Gold (est)	1/1/2014	High-efficiency chilled beam system energized by geothermal wellfield, pervious pavement and shallow gravel wetlands. Daylighting controls to maximize use of natural daylight, green roof.
	Glenarden Woods ES (Renovation)	Planning/ Design	Gold (est)	12/1/2015	Geothermal wellfield; Bicycle storage and changing facilities; preferred parking for low emitting/fuel efficient vehicles; protection of habitat zones; maximize open space; stormwater quality control; reduction of heat island effect due to roof surfaces; light pollution reduction; joint use of facilities; water efficient landscaping; water use reduction; ground source heat pumps; enhanced building commissioning; enhanced refrigeration management; recycled content building materials; regional building materials; construction indoor air quality management plan; low emitting materials; indoor chemical and pollutant source control; controllability of thermal and lighting systems; post-occupancy thermal comfort survey; daylighting of 90% of core learning spaces; mold prevention plan; school as a teaching tool.



2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT

LOCAL EDUCATION AGENCY (LEA)	NAME OF SCHOOL	STATUS	LEED RATING	OPENED	INFORMATION / REMARKS
	Edward M. Felegy ES (New)	Completed	Gold (est)	3/1/2014	Geothermal wellfield; Stormwater collection for toilet flushing; low water consuming plumbing fixtures and waterless urinals; daylighting; construction waste management; local materials; recycled content of materials; low VOC materials; vegetated roof; bicycle storage.
	Greenbelt MS (Replacement)	Completed	Gold (est)	8/1/2012	Community connectivity; public transportation access; bicycle storage and changing facilities; preferred parking for low emitting/fuel efficient vehicles; protection of habitat zones; parking minimization; open space; stormwater quality control; reflective roofing to reduce heat island effect; light pollution reduction; joint use of facilities; water efficient landscaping (no irrigation); 55% indoor water use reduction (exemplary); dual-flush toilets and 1/8 gpf urinals; energy efficiency (28.5% by cost, 32% by energy); geothermal heat pump system; high efficiency motors; energy recovery ventilation units; enhanced building commissioning; enhanced refrigerant management; 94% construction waste recycling; 30.6% recycled content value in building materials; 32.7% regional building materials; 69% certified sustainably harvested wood; indoor air quality management during construction; MERV 13 outdoor air intake filters; low-emitting materials; controllability of thermal and lighting systems; post-occupancy thermal comfort survey; low-mercury lighting; school as a teaching tool.
	Oxon Hill HS (Replacement)	Completed	Gold (est)	8/1/2014	Geothermal wellfield; storage and collection of recyclables; stormwater collection for irrigation; daylighting; low water consuming plumbing fixtures; construction waste management; use of building materials manufactured within 500 miles; light control systems; gray water collection for toilet flushing; building materials with low VOCs and high recycling content; design includes 15 bioretention facilities.
	Fairmont Heights HS (Replacement)	Planning/ Design	Gold (est)	8/1/2016	Geothermal wellfield; vegetated roof; pervious pavement, and bioretention. Eco friendly and low VOC materials and paint and sealers used; waterless urinals, dual flush toilets and low flow faucets; white energy star roof; construction waste management (80-87%) diverted from landfill; recycled content of materials used 25%; FSC certified wood 90%; GREEN education initiative included with indoor and outdoor signage. Low mercury content in lamps, low energy elevator, green cleaning policy in the building, reduced noise levels throughout the building to enhance student concentration and teacher legibility.



2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT

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	Crossland ES (Renovation/ Addition)	Completed	Gold (est)	1/1/2014	Geothermal well field storage and collection of recyclables; stormwater collection for irrigation and bio-retention ponds; water efficient landscaping and maximization of site open space; construction waste management; use of regional materials and certified wood; light and thermal control systems; building materials with low VOCs and high recycling.
	Tulip Grove ES (Renovation/ Addition)	Planning/ Design	Gold (est)	12/1/2016	Sustainable design objectives include geothermal well field; green roof, micro-bioretenention areas, rain barrels, increased ventilation, efficient water fixtures, sustainable lighting features (controls, light pollution reduction, low mercury bulbs), enhanced commissioning, regional and recycled materials, and an interior living wall.
	Clinton Grove ES (Major Renovaton/Addition)	Planning/ Design	Gold (est)	12/1/2015	Sustainable design objectives include site design for managing stormwater runoff quality and quantity through measures such as rain gardens; reducing heat island effect; maximizing open space and reduction of light pollution. Water efficiency measures will include efficient landscaping with native and adaptive vegetation that require no irrigation, installation of low flow/energy conserving plumbing fixtures and waterless urinals. The energy usage cost reduction goal is 34% when compared against an ASHRAE 90.1 2007 baseline; commissioning of the building energy systems will also be undertaken to ensure that all systems are running at their optimum level. Reuse of existing building materials will be maximized; at least 75% of construction waste will be recycled; paints, adhesives, flooring systems and composite wood will all be low emitting.
	Eugene Burroughs MS (Renovation)	Construction	Gold (est)	8/1/2015	High-efficiency chilled beam system energized by geothermal wellfield; pervious pavement and shallow gravel wetlands; pervious concrete pavement is utilized in vehicular parking; vegetative roof on bus drop-off canopy; daylighting controls to maximize use of natural daylight. All facilities meet Environmental Site Design to the maximum extent.
Queen Anne's County	Sudlersville MS (Replacement)	Completed	Gold	4/27/2012	
St. Mary's County	Evergreen ES (New)	Completed	Gold	11/3/2009	The building has a Green Roof with a system of trays that contain drought resistant plants that can absorb 3/4" of a 1" rainfall; two 15,000 gallon wooden cisterns collect rainwater from the roof and are utilized to flush all of the toilets in the building. In conjunction with low flow faucets, dual flush toilets and waterless urinals, water consumption is reduced by 92%; there are 26 solar panel that provide 7kw or 1.5% of the school's power. Wind technology on the outdoor 2nd story environmental lab powers an outlet in the science lab.



2015 MARYLAND PUBLIC SCHOOLS GREEN SCHOOLS REPORT

LOCAL EDUCATION AGENCY (LEA)	NAME OF SCHOOL	STATUS	LEED RATING	OPENED	INFORMATION / REMARKS
	Captain Walter Francis Duke ES (New)	Construction	Gold (est)	8/1/2015	The building has a Green Roof with a system of trays that contain drought resistant plants that can absorb 3/4" of a 1" rainfall; two 15,000 gallon wooden cisterns collect rainwater from the roof and are utilized to flush all of the toilets in the building. In conjunction with low flow faucets, dual flush toilets and waterless urinals, water consumption is reduced by 50%; LED exterior lighting; there are 26 solar panel that provide 7kw or 1.5% of the school's power. Wind technology on the outdoor 2nd story environmental lab powers an outlet in the science lab.
Somerset County	J. M. Tawes Center (Replacement)	Planning/ Design	Silver (est)		
Washington County	Bester ES (Replacement)	Completed	Silver (est)		
	West City ES (New)	Construction	Silver / Gold (est)		
Wicomico County	Bennett MS (Replacement)	Construction	Silver (est)		Photovoltaic system on gym roof; two green roof outdoor classrooms accessible rom the 2nd floor academic wing; geothermal / variable refrigerant flow HVAC system.
Maryland School for the Blind	Autism Blind Classroom and Cottage Buildings (Replacement)	Construction	Silver (est)	9/1/2016	



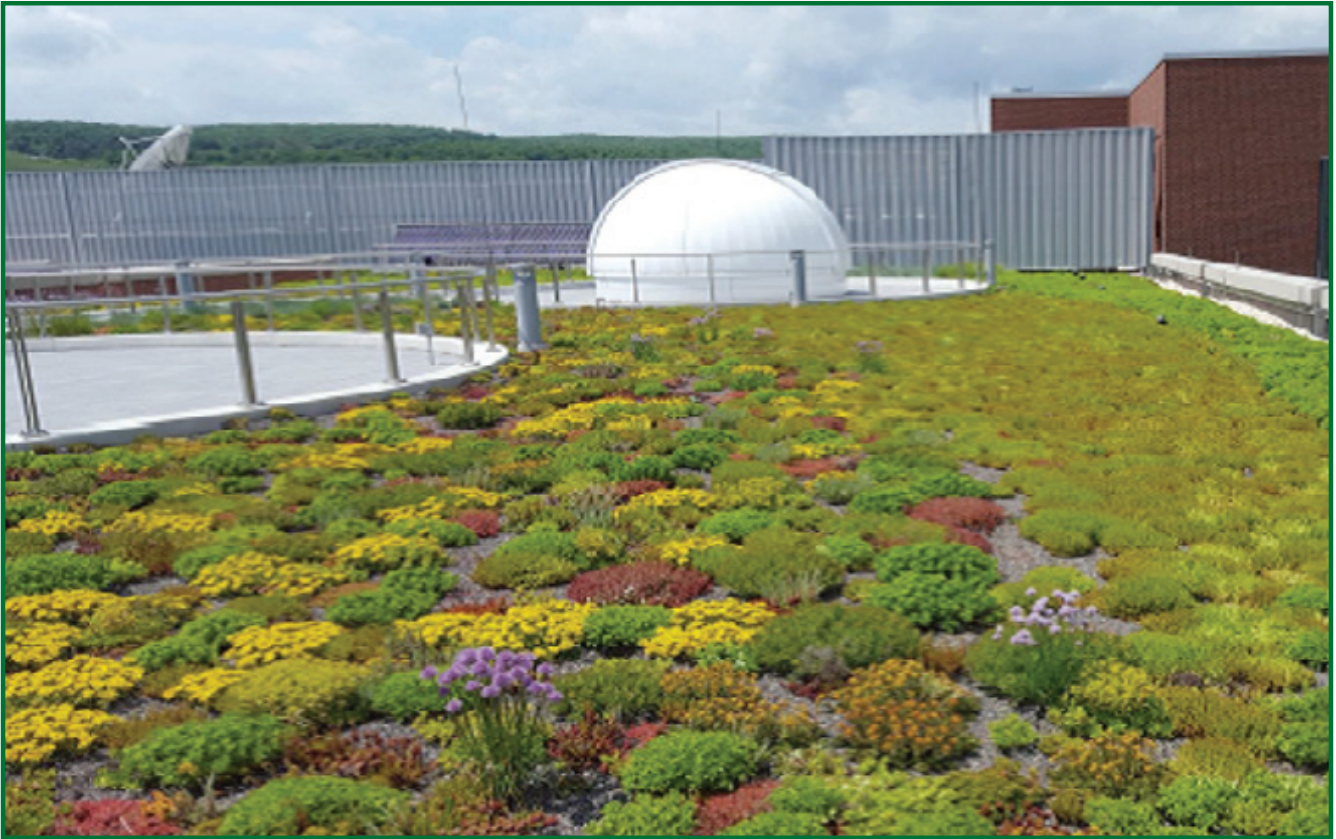
Rendering of Wheaton High School, Montgomery County



Barack Obama Elementary School, Prince George's County



George Washington Carver Center for Arts & Technology, Baltimore County



*Center for Communications and Information Technology, Green Roof,
Frostburg State University, Allegany County*

Green Roof Frostburg State University



MARYLAND GREEN BUILDING COUNCIL
2015 ANNUAL REPORT
