

MARYLAND GREEN BUILDING COUNCIL

HIGH PERFORMANCE GREEN BUILDING PROGRAM

October 2017

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A. INTRODUCTION

1. The Maryland Green Building Council

On April 24, 2007, House Bill 942 – Section 4-809 of the State Finance and Procurement Article – entitled “Maryland Green Building Council” was approved. This law re-established the Maryland Green Building Council (the Council) in the Department of General Services (DGS), providing for private sector membership, State agency membership and assistance and staffing by DGS. One of the primary tasks of the Council was to report to the Governor and the General Assembly on recommendations for the implementation of a State High Performance Building Program. Further, Md. STATE FINANCE AND PROCUREMENT Code Ann. § 3-602.1 (2014) requires that the State employ green building technologies when constructing or renovating State buildings that shall meet the criteria and standards established under the State High Performance Green Building Program. This Program shows how these recommendations will be put into practice.

2. The High Performance Green Building Program

The High Performance Green Building Program (Program) is for the use of all State of Maryland agencies that design and build facilities or prepare programs and budgets for the design and construction of their facilities, and for local educational agencies (LEAs) that design and build

new and replacement school facilities. It is intended specifically for the use of project managers, capital planners, and the professionals who will design and operate State-owned facilities and subject LEA-owned facilities. The Program will be reviewed on an as needed basis by the Council and revised to address issues which may occur as the green building of State facilities and public schools evolves.

For all questions concerning this program, refer to the Council's website at: www.dgs.maryland.gov/Energy/GreenBuilding/index.html or contact:

Maryland Green Building Council
c/o Department of General Services - Office of the Secretary
301 West Preston Street - Room 1401
Baltimore, Maryland 21201
(410) 767-4938

B. CRITERIA

1. Applicability: The Program criteria and requirements shall be applied to capital projects that are funded solely with State funds; State-funded new and replacement school construction projects; and community college capital projects that receive State funds.

a. State projects include all new construction projects and major renovations of existing buildings that are 7,500 gross square feet or greater, with the exception of building types listed below.

1. Warehouse / Storage Facilities
2. Garages
3. Maintenance Facilities
4. Transmitter Buildings
5. Pumping Stations
6. Similar Approved Building Types

A major renovation is defined as a renovation in which the building shell (exterior walls, floors and roof structure) is to be reused for the new construction. In major renovation projects, the heating, ventilating and air conditioning (HVAC), electrical, and plumbing systems shall be replaced.

b. Public School projects include all new construction projects and replacement schools in which 80% or more of the final square footage is new.

High Performance Public School buildings are also subject to the requirements of COMAR 23.03.02, Administration of the Public School Construction Program and Section 105 – High Performance Schools of the Public School Construction Program-Administrative Procedures Guide (PSCP-APG).

Public school renovation projects are not required to meet requirements even if partially funded with State funds.

2. Minimum Requirements: Projects required to comply with the Program must use at least one of the following paths – LEED, the Council’s Amended IgCC or Green Globes. Verify with the State Agency or LEA **as to whether there** is a preference. Projects shall comply with the code or rating system version in use at the time of the start of design. Projects which have already been registered under LEED 2009 – V3 may continue as long as this version is still supported by USGBC/GBCI.

a. Minimum requirements – LEED and Green Globes: A minimum LEED Silver certification in the Building Design and Construction (BD&C) rating system by the U.S. Green Building Council (USGBC) or two Green Globes under the Green Building Initiative’s program. Wherever possible, projects shall strive for a LEED Gold rating or three Green Globes or better.

i. The following LEED or Green Globes credits shall be mandatory:

- a) Light Pollution Reduction *for LEED and Exterior Light Pollution for Green Globes*
 - Projects shall also comply with Maryland State Finance and Procurement Article 14-412
- b) Water Efficient Landscape
 - 50% minimum reduction - Reduce the project’s potable landscape water requirement (LWR) by at least 50% from the calculated baseline for the site’s peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.
- c) Indoor Water Use Reduction
 - 35% minimum reduction over the minimum applicable code
- d) Optimize Energy Performance
 - Performance based designs demonstrating energy savings of at least 15% better than the current adopted version of the International Energy Conservation Code (IECC).
- e) Construction Waste Management
 - 75% minimum reduction
- f) Low Emitting Materials
 - LEED 2009-v3- achieve a minimum of 3 points.
 - LEED v4- achieve a minimum of 1 point.
 - Green Globes – achieve a minimum of three criteria categories
- g) IAQ during Construction
 - LEED -Construction IAQ Management Plan
 - Green Globes –3.1.2.4.1 – IAQ During Construction
- h) IAQ Before Occupancy:
 - Required for LEED 2009-v3 only. Option 2. Air testing

- ii. All LEED and Green Globes projects shall also comply with the following Sections of the Council's most recently amended version of the International Green Construction Code.
 - a. Section 603 – Energy Metering, Monitoring and Reporting
 - b. Section 705.1 – Metering (under Chapter 7- Water Resource Conservation, Quality and Efficiency)
Meters shall be located in easily accessible, readable locations.
- iii. All Green Globes School projects shall comply with the following:
 - a. Site environmental assessment
 - b. Acoustical performance – Comply with 3.7.5.1.1, 3.7.5.1.5 and 3.7.5.2.1
- iv. LEED 2009 projects may not use the Certified Wood credit in complying with the Maryland Green Building Program. The Council encourages the use of the Regional Materials credit, part of which may be satisfied through use of Maryland sourced timber products or pilot credit Mrpc102-Legal Wood. This item is not applicable to LEED v4, as Certified Wood is no longer a standalone credit, nor is it in Green Globes.
- v. All LEED and GG projects shall include the purchase and installation of a plaque in a conspicuous location in the building.

b. International Green Construction Code (IgCC): Comply with the Council's most recently amended version of the IgCC. This code supplement document can be found on the Department of General Services website under Green Building Laws and Regulations

3. Reporting: Projects required to comply with the Program shall submit compliance documentation in accordance with Appendix B. - Reporting Requirements

4. Waivers: In the event of undue hardship in complying with the Program, a Using Agency or LEA may apply for a waiver for a particular project or a particular credit or code requirement.

a. State agencies: The Using Agency shall provide a brief (no more than two pages) letter of request for a waiver to the Council explaining why a proposed project is unable to meet Program requirements. The waiver request should be provided in MS Word or pdf format for distribution, review and consideration by the Council three months prior to the submission of the Part I building program to the Department of Budget and Management. Waiver requests for individual credit or code requirements should be submitted to the Council as early as possible in the design process. Design teams should allow a minimum of eight weeks for Council response to waiver requests.

b. Local Educational Agencies (LEAs) for K-12 schools may apply for a waiver in accordance with Section 105 of the PSCP-APG.

C. INTEGRATED DESIGN TEAM, APPROACH and PROCESS

- 1. Sustainability Consultant:** An individual or firm shall be designated to serve as the Sustainability Consultant (SC) for the project. The SC may be a member of the primary firm or a consulting individual or firm and shall be responsible for facilitating and coordinating all related high performance green building activities. For the LEED and Green Globes paths, they shall have performed previous certifications in either of those programs for projects of a similar size and complexity. For the IgCC path, they shall meet the requirements in the definition of Sustainability Consultant in Chapter 2-Definitions in the Council's most recently amended version of the IgCC. The SC shall adequately demonstrate the knowledge necessary to perform the work necessary. The SC must be approved by the State during the Architectural and Engineering (A/E) services selection process.
- 2. Commissioning:** All projects shall have third party commissioning agents (Cx) engaged no later than the start of the Design Development Phase. Third party Cx shall be contracted under a separate contract by the building owner / developer. The Cx may not be the same firm as the mechanical design firm for the project and shall demonstrate experience on a minimum of three projects of similar size and scope or shall be selected from an existing on call contract specifically for Commissioning Agents.
- 3. Sustainability Meetings:** Prior to the start of design, the SC shall conduct a green building pre-design meeting with all consultant team members, the State or LEA project manager, and members of the using Agency team to establish the direction and scope of green building principles, including construction and maintenance procedures, to be employed in this project to meet the requirements of the Program. Regular sustainability updates should also be included at subsequent meetings throughout the design and construction process.

D. APPENDICES

Appendix A: Reporting Requirements

Appendix B: Green Building Operations and Maintenance Manual - Guidance Document

Appendix C: Request for Proposals - Suggested Additions

Appendix A. Reporting Requirements

Projects required to comply with the Program shall provide the following documentation. Projects not subject to comply with the Program requirements shall employ Green Building principles and practices wherever possible. These projects shall strive to meet the program requirements and are encouraged to submit the same documentation. All reporting documentation shall be sent to the Maryland Green Building Council. Public School projects shall also send a copy to:

Public School Construction Program
200 West Baltimore Street
Baltimore, Maryland 21201

All submissions to the Maryland Green Building Council (MDGBC) may be provided in electronic (pdf) format.

A. LEED and GG Projects

1. State Buildings and Community Colleges
 - a. Provide the latest Scoresheet to Project Manager at completion of each phase of design.
 - b. Provide final Scoresheet to the MDGBC at project completion.
 - c. Provide copy of the final Certificate to the MDGBC upon award.
2. K- 12 Schools
 - a. Report as required by IAC 105 regulations and:
 - b. Provide final Scoresheet to the MDGBC at project completion.
 - c. Provide copy of the final Certificate to the MDGBC upon award.

B. International Green Construction Code (IgCC) Projects

1. State Buildings and Community Colleges
 - a. Provide latest IgCC Compliance form to Project Manager at completion of each phase of design.
 - b. Provide final signed IgCC Compliance form to MDGBC at completion of the project.
2. K- 12 Schools
 - a. Report as required by IAC 105 regulations and:
 - b. Provide final signed IgCC Compliance form to the MDGBC at completion of the project.

C. All Projects

1. Annual Project status report
 - a. Using Agencies and Community Colleges report to MDGBC.
 - b. K-12 schools report as required by IAC 105 regulations.
2. Green Building Operations and Maintenance Manual shall be submitted to the Using Agency or the LEA at project Substantial Completion. Refer to Appendix B for requirements.
3. The final energy model for all complying projects (with the exception of K-12 schools) shall be submitted to the Council at the completion of 100% design documents.

D. Projects not required to be comply with the High Performance Green Building Program are encouraged to submit the following to the MDGBC:

1. Submit either a LEED or Green Globes score sheet or an IgCC compliance form.
2. Provide a brief narrative description of how the design team utilized green principles in its design.

END OF APPENDIX A

Appendix B. Green Building Operations and Maintenance Manual Guidance Document

The Sustainability Consultant (SC) shall review the project and develop a Green Building Operations and Maintenance Manual based on the green features and operations of each particular building. This manual shall be provided in addition to the usual submission of operating and maintenance manuals and shall focus on system maintenance required to keep green features operating as intended. The intent is to provide occupant education and system maintenance guidelines as opposed to procedures for maintaining individual pieces of equipment as provided in the standard equipment operating and maintenance manuals. A draft of the manual shall be submitted to the State Project Manager or LEA Project Manager at the 100% Construction Documents (CD) phase for review. The final manual shall be submitted to the Using Agency or LEA Project Manager, prior to the issuance of Certificate of Substantial Completion or Certificate of Occupancy.

Schedule items shall be organized in a one-year calendar format. This information can be collected as the project progresses with the intent of simplifying the effort at the end of the project. The manual shall be prepared in pdf format to allow for convenient reproduction. Provide a copy of the Manual on CD as well.

Examples of the types of information to be provided include, but are not limited to, the following:

Indoor Air Quality	<ul style="list-style-type: none"> A. Recommendations on periodic duct inspection or cleaning as well as HVAC filter changes. B. A list of the low VOC paint, sealant and other products and the colors used in the construction of the project (provide specific manufacturer’s name and product description). C. A schedule for inspecting and cleaning walk-off mat recesses. D. Recommended cleaning and maintenance schedule for carpet and other flooring.
Energy	<ul style="list-style-type: none"> E. Information on minimum paint reflectance for repainting interior areas. F. Schedule recommendations for cleaning of glass and light shelves to maintain reflectance and light transmission for day lighting systems. G. Operation recommendations for HVAC systems (these should be available from the commissioning report). H. Cleaning schedule for roofing materials to maintain optimal reflectance. I. Provide a list of proper lamps (high efficiency/ long life light bulbs) for replacement. J. Schedule and methods for recommended cleaning of photovoltaic solar (PV) panels. K. Monthly reminder of meter reading and reporting – which meters and where they are located.
Water/Storm water	<ul style="list-style-type: none"> L. Maintenance recommendations for “living roof” plantings as well as sources for replacement plants and specification of species etc. used in the building. M. Schedule recommendations and methods for cleaning pervious paving systems. N. A list of the regional planting materials used in the project and any specific care. Provide instructions as well as a statement on the importance of these planting materials in the building’s landscape.

	<p>O. Schedule recommendations for cleaning and maintaining storm water management facilities: rainwater cisterns, stormwater ponds, bioretention areas, etc. Include list of plant materials and expected replacement schedule as applicable. (These are not typically included in any O & M Manuals.)</p> <p>P. Recommended cleaning and maintenance schedule for high efficiency plumbing fixtures.</p>
Materials	<p>Q. Provide a list of the recyclable materials used in the building along with a list of local sources for recycling used material such as carpet, ceiling panels and drywall for small future building renovation/refitting projects.</p> <p>R. Provide a list of the manufacturers and suppliers of all “green” materials used in the building.</p>
Occupant Education	<p>S. Provide a simple list of instructions for building occupants emphasizing the use of the building’s green features such as the purpose of walk-off mats and how to use composting toilets as well as simple instructions for turning out lights, locations of recycling stations, use of individual HVAC controls, water use reduction methods and other green practices.</p>

END OF APPENDIX B

Appendix C. Architectural and Engineering (A/E) Services Request for Proposals – Suggested Additions for High Performance Building Projects

The following items are suggested as additions to Requests for Proposals for Architectural and Engineering (A/E) Services for projects which are required to comply with the High Performance Green Building Program (LEED Silver certified, Green Globes or IgCC compliant projects) and for projects that are not required to comply with the Program. Items should be edited as needed for each specific project.

A. Green Building Projects for which the State or LEA has chosen the LEED Silver certification path to compliance with the State High Performance Building Program are encouraged to add the following language to Requests for Proposals for Architectural and Engineering services

1. The Maryland Green Building Council has established the High Performance Green Building Program (Program). The Program requires that eligible buildings constructed by the State or by LEAs shall be certified under the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Green Building Rating System Refer to the requirements of the High Performance Green Building program found on the Green Building page on the Maryland Department of General Services website.
2. This project shall be required to be LEED Silver (or higher) certified.
3. Submitters shall provide, with their proposal, the name of the Sustainability Consultant (SC) as required by the Program. The SC may be a member of the A/E firm or a consulting individual or a firm Experienced in providing these services. The submission shall include a complete SC resume describing specific experience and qualifications that will demonstrate the ability to perform the work specified; providing descriptions of recent and relevant experience in directing environmentally-responsible design and construction. The submission shall also include a list of projects for which this individual has performed a similar role and state whether the prime A/E firm has worked with this consultant previously.
4. Provide descriptions of recent and relevant experience by the primary A/E firm as well as the mechanical, electrical and site design consultants in providing design services for environmentally-responsible building projects. Provide a list of built and unbuilt projects for which these firms have special related experience.
5. The qualified firm shall include with their Price Proposal an itemized listing of all costs associated with the design and certification of this project as a LEED Silver (or better) Certified Building. These costs shall include, but shall not be limited to, professional fees of the SC, additional design costs (provide justification) which may be attributed to designing a green building, LEED Certification Registration and Documentation, and reimbursable expenses for reproduction of related materials and reports.

B. Green Building Projects for which the State or LEA has chosen the IgCC compliance path to compliance with the State High Performance Building Program.

1. The Maryland Green Building Council has established the High Performance Green Building Program (Program). The Program requires that eligible buildings constructed by the State or by

LEAs shall be certified under the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Green Building Rating System or shall comply with the International Green Construction Code (IgCC) as published by the International Code Council and amended by the Maryland Green Building Council.

Refer to the requirements of the High Performance Green Building program found on the Green Building page on the Maryland Department of General Services website.

2. This project shall be required to comply with the International Green Construction Code (IgCC) as published by the International Code Council and amended by the Maryland Green Building Council. [SG1]
3. Submitters shall provide, with their proposal, the name of the Sustainability Consultant (SC) as required by the Program. The SC may be a member of the A/E firm or a consulting individual or a firm Experienced in providing these services. The submission shall include a complete SC resume describing specific experience and qualifications that will demonstrate the ability to perform the work specified; providing descriptions of recent and relevant experience in directing environmentally-responsible design and construction. The submission shall also include a list of projects for which this individual has performed a similar role and state whether the prime A/E firm has worked with this consultant previously.
4. Provide descriptions of recent and relevant experience by the primary A/E firm as well as the mechanical, electrical and site design consultants in providing design services for environmentally-responsible building projects. Provide a list of built and unbuilt projects for which these firms have special related experience.
5. The qualified firm shall include with their Price Proposal an itemized listing of all costs associated with the design of this project to comply with the IgCC. These costs shall include, but shall not be limited to, professional fees of the SC and additional design costs (provide justification) which may be attributed to designing the building to comply with the IgCC.

C. Green Building Projects for which the State or LEA has chosen the Green Globes Two Globes certification path to comply with the State High Performance Building Program are encouraged to add the following language to Requests for Proposals for Architectural and Engineering services

1. The Maryland Green Building Council has established the High Performance Green Building Program (Program). The Program requires that eligible buildings constructed by the State or by LEAs shall be certified under the Green Building Initiative's Green Globes Green Building Rating System.
Refer to the requirements of the High Performance Green Building program found on the Green Building page on the Maryland Department of General Services website.
2. This project shall be required to be Green Globes Two Globes (or higher) certified.
3. Submitters shall provide, with their proposal, the name of the Sustainability Consultant (SC) as required by the Program. The SC may be a member of the A/E firm or a consulting individual or a firm Experienced in providing these services. The submission shall include a complete SC resume describing specific experience and qualifications that will demonstrate the ability to perform the work specified; providing descriptions of recent and relevant experience in directing

environmentally-responsible design and construction. The submission shall also include a list of projects for which this individual has performed a similar role and state whether the prime A/E firm has worked with this consultant previously.

4. Provide descriptions of recent and relevant experience by the primary A/E firm as well as the mechanical, electrical and site design consultants in providing design services for environmentally-responsible building projects. Provide a list of built and unbuilt projects for which these firms have special related experience.
5. The qualified firm shall include with their Price Proposal an itemized listing of all costs associated with the design and certification of this project as a Green Globes Two Globes (or better) Certified Building. These costs shall include, but shall not be limited to, professional fees of the SC, additional design costs (provide justification) which may be attributed to designing a green building, Green Globes Certification Registration, Documentation, Inspection and reimbursable expenses for reproduction of related materials and reports.

D. Projects Which Are Not Required to be LEED Silver Certified or compliant with the IgCC.

1. The Maryland Green Building Council established the High Performance Green Building Program. The Program requires that eligible buildings constructed by the State or by LEAs shall meet minimum standards of performance based on the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Green Building Rating System or with the International Green Construction Code (IgCC) as published by the International Code Council and amended by the Maryland Green Building Council.
2. This project, in accordance with the Program, is not required to comply with this program. However, all State projects are encouraged to use High Performance Green Building principles in their design and report their efforts to the Council as follows:

For projects which are not required to be LEED Silver certified, Green Globes or compliant with the IgCC, the A/E shall submit a report describing the "green" elements of the projects. Submit either the LEED or Green Globes score sheet or the IgCC compliance form (found in the Maryland Green Building Council's supplement to the IgCC), along with a brief narrative description of how the design team utilized green principles in its design or was unable to. The narrative shall be submitted to the project manager and one copy shall be sent to the Maryland Green Building Council.

END OF APPENDIX C