

WVU DESIGN GUIDELINES & CONSTRUCTION STANDARDS

DIVISION 0 – PROFESSIONAL SERVICES

SECTION AE - 005001 - DESIGN GUIDELINES FOR SUSTAINABILITY

PART 1: GENERAL

1.1 Scope of Standard

- A. This standard is intended to help project managers, architects, and engineers understand University policy and approach for incorporating sustainability practices into construction projects.
- B. WVU will strive to incorporate sustainable practices into its operations and business processes, which includes (but not limited to): purchasing green products, incorporating LEED concepts into building design, promoting recycling throughout university, and encouraging energy and water conservation in all campus buildings.
- C. WVU projects **may** or **may not** choose to pursue certification under the Leadership in Energy and Environmental Design (LEED) Green Building Rating Systems created by the United States Green Building Council (USGBC). However, all WVU projects are expected to apply sustainable practices to the greatest extent possible.
- D. The architect should complete a USGBC LEED checklist as a deliverable at predetermined milestones or at the end of each design phase (SD, DD, and CD) along with a narrative highlighting key aspects of sustainability goals and addressing the six categories of the LEED checklist.
- E. Sustainability goals and checklist should be reviewed at each phase with stakeholders and WVU sustainability Director.

1.2 Reference Standard (s)

- A. US Green Building Council (USGBC) Leadership in Energy and Environmental Design.
- B. All construction to be designed and constructed complying with the “ICC International Energy Conservation Code” and the “ANSI/ASHRAE/IESNA Standard 90.1-2007.” If federal money is used these new standards only apply if consistent with federal standards. The Senate Bill No. 76 was approved by the WV Legislature on March 14, 2012. This is a new section to WV Code Chapter 22 “Environmental Resource” and applies to Higher Education Institutions. A copy of the bill is attached.

- C. WVU has a Sustainability Position Statement that was signed by Narvel Weese, Vice President of Administration and Finance. The position statement is provided below:

Recognizing its social, economic, and educational leadership responsibilities within the state of West Virginia (WV), West Virginia University (WVU) is committed to ensuring a more sustainable future for its students, faculty, and staff, and for the citizens of WV. WVU will promote the use of sound sustainable principles and practices through learning, teaching, research, and facilities management from both an educational and operational perspective.

1. Members of the WVU community (faculty, staff, and students) will have a basic understanding of sustainable practices, communicated through informal learning sessions and the incorporation of sustainability issues into the University curricula.
2. WVU will encourage and support sustainability scholarship and research.
3. WVU will strive to incorporate sustainable practices into its operations and business processes, which includes purchasing green, incorporating green concepts into building design and maintenance, promoting recycling, and encouraging energy and water conservation in all campus buildings.

PART 2: EXECUTION

- A. WVU has incorporated many sustainable principals/practices into the WVU Design Guidelines & Construction Standards. Designs developed in compliance with these standards should result in a project that is equivalent to LEED Certified level.
- B. The sustainability goals for a project will be determined in the programing phase. If the goal of a project is to achieve formal LEED certification, this must be approved by the University Planning Committee (UPC) as part of the project approval. All appropriate USGBC requirements should be followed.
- C. If the goal is not to pursue LEED certification, the following protocol should be followed:
1. Follow USGBC guidelines and checklists as a metric and means for documenting sustainable features, but forgo the process of submitting paperwork to USGBC for formal approval and certification.
 2. WVU would contractually require the architect to complete and submit a LEED checklist to Owner during design and at the completion of construction documenting the probable LEED points achieved. The LEED checklist will be used to document the sustainable features of the facility. The purpose of the

LEED checklist is to demonstrate that a project is equivalent to a “certified” level on the USGBC rating system.

3. WVU supports design phase energy modeling to support completion of LEED checklist.
4. WVU promotes third party commissioning on all major capital projects and will consider “enhanced commissioning” of large, complex facilities.
5. WVU targets 24% of optimizing energy performance under Energy and Atmosphere section of the LEED checklist.
6. WVU encourages energy-saving features that can show a life-cycle cost savings with respect to energy, maintenance, and/or operations.
7. WVU encourages involvement from LEED accredited professionals on the project team

PART 3: Verification/Validation

- A. During the design phase, the Architect shall maintain an appropriate level of documentation to substantiate that the sustainability goals have been incorporated into the project design. The documentation should support the LEED points being pursued on the checklist. The documentation should be sufficient to pass a sustainability audit by the Owner or their designee. For example, appropriate calculations must be completed to support any LEED points related to efficiencies requiring a "percent reduction".
- B. During the construction phase, the contract documents shall also require the Contractor to submit appropriate documentation to validate and verify LEED points earned. For example if credits are being pursued for diversion of construction waste, appropriate documentation must be submitted. The standard submittal process may be sufficient to document points earned for certain products or equipment that earn LEED points.
- C. **All relevant LEED information and documentation must be compiled and delivered to WVU at the completion of the project.**

Note: A sample USGBC LEED checklist and sustainability LEED process are attached. The checklist is color coded noting the University standard or likelihood of pursuing various sustainable aspects or points.

Green → standard
Yellow → possible
Red → not probable

COMMITTEE SUBSTITUTE

FOR

Senate Bill No. 76

(By Senator Unger)

[Originating in the Committee on Government Organization;
reported February 22, 2012.]

A BILL to amend the Code of West Virginia, 1931, as amended, by adding thereto a new article, designated §22-29-1, §22-29-2, §22-29-3 and §22-29-4, all relating to requiring new building construction projects of public agencies and projects receiving state funds to be designed and constructed complying with the ICC International Energy Conservation Code and the ANSI/ASHRAE/IESNA Standard 90.1-2007; setting forth findings; defining terms; and setting standards for construction projects with federal funding.

Be it enacted by the Legislature of West Virginia:

That the Code of West Virginia, 1931, as amended, be amended by adding thereto a new article, designated §22-29-1, §22-29-2, §22-29-3 and §22-29-4, all to read as follows:

ARTICLE 29. GREEN BUILDINGS MINIMUM ENERGY STANDARDS.

§22-29-1. Short title and effective date.

This article is called the Green Buildings Act and is effective

July 1, 2012.

§22-29-2. Findings and purpose.

(a) The Legislature finds that:

(1) Encouraging the construction of energy-efficient public buildings is in the public interest and promotes the general welfare of the people of the state.

(2) Efficient energy use by public buildings contributes substantially to improving the environment.

(3) Public buildings can be built in accordance with energy-efficient standards.

(b) This article is enacted to more efficiently spend public funds and protect the health and welfare of West Virginia residents.

§22-29-3. Definitions.

As used in this article:

(a) "ANSI" means the American National Standards Institute;

(b) "ASHRAE" means the American Society of Heating, Refrigerating and Air-Conditioning Engineers;

(c) "IESNA" means the Illuminating Engineering Society of North America;

(d) "ICC" means the International Code Council; and

(e) "Public agency" means an agency of the state and political subdivisions, public institutions of higher education and boards of education.

§22-29-4. Minimum energy standards for new building construction projects of public agencies.

All new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this section shall only apply to the extent such standards are consistent with the federal standards.

JUDICIARY COMMITTEE AMENDMENT

By striking out the title and substituting therefor a new title, to read as follows:

Eng. Com. Sub. for Senate Bill No. 76--A BILL to amend the Code of West Virginia, 1931, as amended, by adding thereto a new article, designated §22-29-1, §22-29-2, §22-29-3 and §22-29-4, all relating to requiring new building construction projects of public agencies and projects receiving state funds to be designed and constructed complying with the ICC International Energy Conservation Code and the ANSI/ASHRAE/IESNA Standard 90.1-2007; setting forth findings; defining terms; and setting standards for construction projects with federal funding.



WVU LEED STANDARDS

LEED 2009 for New Construction and Major Renovations

Project Checklist

Project Name: _____
Date: _____
Project Address: _____

0 0 0			Sustainable Sites		Possible Points: 26	Notes:
Y	?	N				
Y			Prereq 1	Construction Activity Pollution Prevention		New Construction vs Major Renovations Any asbestos or reclamation Mountain Line Buses, PRT Stations, Zipcar, Vanpool, WVU Zimride- Carpool matching, Occasional Parking Permit Program
			Credit 1	Site Selection	1	
			Credit 2	Development Density and Community Connectivity	5	
			Credit 3	Brownfield Redevelopment	1	
			Credit 4.1	Alternative Transportation—Public Transportation Access	6	
			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1	
			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	
			Credit 4.4	Alternative Transportation—Parking Capacity	2	
			Credit 5.1	Site Development—Protect or Restore Habitat	1	
			Credit 5.2	Site Development—Maximize Open Space	1	
			Credit 6.1	Stormwater Design—Quantity Control	1	
			Credit 6.2	Stormwater Design—Quality Control	1	
			Credit 7.1	Heat Island Effect—Non-roof	1	
			Credit 7.2	Heat Island Effect—Roof	1	
			Credit 8	Light Pollution Reduction	1	

0 0 0			Water Efficiency		Possible Points: 10	Notes:
Y	?	N				
Y			Prereq 1	Water Use Reduction—20% Reduction		Typically WVU does not use automatic irrigation system for landscaping Low Flush Urinals, Dual Flush Toilets
			Credit 1	Water Efficient Landscaping	2 to 4	
				Reduce by 50%	2	
				No Potable Water Use or Irrigation	4	
			Credit 2	Innovative Wastewater Technologies	2	
			Credit 3	Water Use Reduction	2 to 4	
				Reduce by 30%	2	
				Reduce by 35%	3	
				Reduce by 40%	4	

0 0 0			Energy and Atmosphere		Possible Points: 35	Notes:
Y	?	N				
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems		
Y			Prereq 2	Minimum Energy Performance		
Y			Prereq 3	Fundamental Refrigerant Management		
			Credit 1	Optimize Energy Performance	1 to 19	
				Improve by 12% for New Buildings or 8% for Existing Building Renovations	1	
				Improve by 14% for New Buildings or 10% for Existing Building Renovations	2	
				Improve by 16% for New Buildings or 12% for Existing Building Renovations	3	
				Improve by 18% for New Buildings or 14% for Existing Building Renovations	4	
				Improve by 20% for New Buildings or 16% for Existing Building Renovations	5	
				Improve by 22% for New Buildings or 18% for Existing Building Renovations	6	
				Improve by 24% for New Buildings or 20% for Existing Building Renovations	7	
				Improve by 26% for New Buildings or 22% for Existing Building Renovations	8	
				Improve by 28% for New Buildings or 24% for Existing Building Renovations	9	
				Improve by 30% for New Buildings or 26% for Existing Building Renovations	10	
				Improve by 32% for New Buildings or 28% for Existing Building Renovations	11	
				Improve by 34% for New Buildings or 30% for Existing Building Renovations	12	
				Improve by 36% for New Buildings or 32% for Existing Building Renovations	13	
				Improve by 38% for New Buildings or 34% for Existing Building Renovations	14	
				Improve by 40% for New Buildings or 36% for Existing Building Renovations	15	
				Improve by 42% for New Buildings or 38% for Existing Building Renovations	16	

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Credit 2 **LEED Accredited Professional** 1

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Regional Priority Credits Possible Points: 4

Y ? N

Credit 1.1 Regional Priority: Specific Credit 1
 Credit 1.2 Regional Priority: Specific Credit 1
 Credit 1.3 Regional Priority: Specific Credit 1
 Credit 1.4 Regional Priority: Specific Credit 1

Notes:

Regionally Defined Credits for Morgantown, West Virginia

Sustainable Sites Credit 1	Site Selection
Sustainable Sites Credit 4.4	Alternative Transportation - Parking Capacity
Sustainable Sites Credit 5.1	Site Development - Protect or Restore habitat
Sustainable Sites Credit 6.1	Stormwater Design - Quality Control
Water Efficiency Credit 1	Water Efficient Landscaping (Option 1 - Reduce by 50%)

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Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110