



# Florida Green Commercial Building Standard Reference Guide

## Version 4

Effective January 1, 2023

Required January 1, 2024

Revised

3/8/2023

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This reference guide is intended to serve two purposes:

- To provide information on green commercial practices.
- To provide details on how to earn points for complying with the Florida Green Commercial Designation Standard.

The Florida Green Building Coalition Green Commercial Standard applies to:

- All commercial buildings in Florida
- New construction and existing buildings
- Core and Shell Commercial Buildings

For each commercial application, the following are required submittals:

- Photos of the completed building – Front, back and sides.
- A complete set of construction drawings including:
  - General Pages
  - Civil
  - Architecture
  - Mechanical
  - Electrical
  - Plumbing
  - Landscape & Irrigation

Depending on the credits selected, please be prepared to submit the following for documentation:

- Elevation Certificate
- Environmental Site Assessment
- Demolition Plans
- Survey

**Some of the credits have required submittals, these are designated by the color red.**

### Core and Shell

When using this standard for a core and shell project, if accommodations are allowed for a given credit, the modified requirement is identified as “core and shell” and indicated within this reference guide.

### Note:

It is possible to combine many submittals in one detailed plan. Letters or documented verbal communication from vendors can substitute for material and equipment cut sheets where required. No document produced by FGBC is intended to supersede or contradict the Florida Building Code.

### **INSTRUCTIONS FOR SUBMISSIONS:**

#### **Electronic Submission (required)**

[Pay online](#) or complete the credit card authorization on the Final Application Form. (Note: Payment by check is acceptable - see mailing instructions below).

Send the completed Excel file containing the Final Application and Checklist, along with all supporting documents to the BuilderTrend.

BuilderTrend Link: <https://buildertrend.net/>

#### **Payment Mailing Instructions**

Mail check or credit card authorization (see Final Application Form) to FGBC at the address below. Include a printed copy of the Final Application Form. Submit complete checklist and documentation via Hightail as shown above.

#### **FGBC**

**222 2<sup>nd</sup> Street, North  
St. Petersburg, FL 33712**

For Additional Information contact your Project Evaluator or FGBC at PH: 407-777-4914. All documents are available for download on the FGBC website: [www.FloridaGreenBuilding.org](http://www.FloridaGreenBuilding.org)

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## CATEGORY 1: PROJECT MANAGEMENT

### PM Prerequisite 1: Green Project Meeting

**Requirement:** Design Team, Owner and project team decision makers must participate in a Green Building Design Charrette conducted by an FGBC Designated Professional. The team must review the FGBC Commercial Building Standard Checklist and identify credit of interest for the project. The training must be project specific, general green education courses do not comply.

**Points:** **Prerequisite - Required**

**Intent:** Familiarize the project team decision makers with the FGBC checklist requirements and identify a path to pursue certification.

**Submittals:** Provide documentation of design charrette, virtual or in person, such as a copy of the meeting agenda, outline of notes, dated sign in sheet and or screen captures of the virtual attendees. Provide a copy of the FGBC Checklist that resulted from the Charrette.

### PM Prerequisite 2: Green COMMERCIAL Designated Professional

**Requirement:** The project team includes a certified FGBC COMMERCIAL Green Designated Professional.

**Points:** **Prerequisite - Required**

**Intent:** The FGBC Green COMMERCIAL Designated Professional is familiar with the credits, credit requirements, intent and submittals associated with the Green COMMERCIAL Standard. The FGBC Green Designated Professional shall act as a liaison between the project team and the FGBC.

**Submittals:** Copy of FGBC Green COMMERCIAL Designated Professional Certificate.

### PM1.01 Comprehensive Design Charrette/Design Team Training

**Requirement:** Prior to 100% Construction Documents (CD's) the design team, owner and project team decision makers must participate in a green project training. This training must be specific to the FGBC Green COMMERCIAL Standard and may be offered by the FGBC or the FGBC Designated Professional for the project. Attendees must include a participant from all disciplines currently under contract for the project.

**Points:** **2**

**Intent:** Reduce costs associated with redesign by introducing the design team to the credit requirements prior to completing the building design.

**Submittals:** Provide training content documentation, means of training, and dated sign in sheet

### PM1.02 Construction Team Training

**Requirement:** Design team, Owner, Project Team Decision Makers, General Contractor, and subcontractors currently under contract for the project participate in an FGBC High-Rise training that addresses the overall certification standard and focuses on the credits targeted by the high-rise project. Subcontractors associated with the following activities must be trained prior to commencing VERTICAL work on the site: General Contracting, MEP, HVAC, irrigation, and interior finishes. Multiple trainings may be required to properly educate the construction team.

**Points:** **2**

**Intent:** Clearly identify the credits the project is pursuing towards certification, identify credits that require contractor input, sub bids, documentation during construction, additional training, or participation to minimize any cost associated with construction delays or misinterpretation of targeted credits.

**Submittals:** Provide training content documentation, means of training and a dated sign-in sheet.

### **PM1.03 Facility Manager & Staff Training**

**Requirement:** Operational staff, including facility manager, leasing agent, sales staff, or any individual that works over 20 hours a week in a capacity managing or maintaining the building must attend a green training. This training must be specific to the FGBC Green COMMERCIAL Standard and may be offered by the FGBC or the FGBC Designated Professional for the project. Training must include an explanation of the certification, criteria pursued/achieved, and information regarding green operation and maintenance of the building.

**Points:** 1

**Intent:** Maintain the integrity of the green certification by educating staff regarding proper operation and maintenance of their high-performance building.

**Submittals:** Provide training content documentation, means of training and a dated sign-in sheet. If training is recorded for use by future staff provide link to training video.

### **PM1.04 Green Website**

**Requirement:** Provide information on the project website regarding the FGBC green certification of the project, a link to the project score sheet, information on green operation and maintenance, helpful links regarding FGBC, energy efficiency, water efficiency, and healthy buildings.

**Points:** 1

**Intent:** Maintain the integrity of the green project by educating occupants regarding proper operation and maintenance of their high-performance building.

**Submittals:** Provide the web address and copies of the content.

### **PM1.05 Green Education**

**Requirement:** Provide permanently installed signage that educates building occupants and visitors of the sustainable features and benefits that are incorporated into the building. A minimum of 5 signs must be placed in public/common/high traffic areas of the building to receive this credit. Education may be displayed in common areas by electronic means as an alternative to physical signs.

**Points:** 1

**Intent:** To educate both building occupants and visitors on the green features and benefits of the building. FGBC also recommends that the signs are made from a green material.

**Submittals:** Submit a floor plan of the building indicating the location of the signs, the content for each of the 5 signs, and either a graphic design of the sign or a photo of the actual sign.

**Resources:** -

## **PM2.00 Building Information Modeling (BIM)**

**Requirement:** Design team and construction teams use BIM process to optimize the efficiencies related to design, estimating, materials ordering, and construction.

**Points:** **1 point for Architect**

**2 points for Architect, Structural, and MEP**

**5 points for Architect, Structural, MEP, Contractor and Mechanical, Electrical, Plumbing and Fire Subs**

**Intent:** Reduce costs associated with design and construction conflicts by identifying issues prior to construction.

**Submittals:** Provide a minimum of 6 examples of 3D renderings and conflict reports, Meeting minutes discussing conflict resolution may be submitted in lieu of conflict reports.

## **PM3.00 Cost Benefit Analysis**

**Requirement:** FGBC Designated Professional in coordination with the General Contractor and Owner shall document the cost impact of the energy and water credits. Earn 1 point for each energy or water credit Cost-Benefit Analysis. Analysis shall include a minimum of two building alternatives considered to achieve the credit, the cost associated with each alternative and calculated annual kWh, gallons of water, and cost savings.

**Points:** **1-5**

**Intent:** Provide cost data so that the project owner may make informed decisions regarding energy and water efficiency.

**Submittals:** The project must submit a copy of the FGBC Checklist from:

1. The team kickoff meeting
2. 100% Construction Document Phase
3. Final FGBC Submittal

Include assumptions regarding interest rates, life of materials, and any other assumptions made for the analysis. A short narrative must accompany each credit explaining the options reviewed, environmental benefits, and reasoning for final selection for inclusion in the project.

## CATEGORY 2: ENERGY

### E Prerequisite 1: Owner Project Requirements (OPR)

**Requirement:** Owner designated representative must develop a list of owner project requirements related to each of the FGBC categories of the commercial standard. The OPR should indicate minimum goals for each FGBC category and any specific credits the Owner wishes to target.

**Points:** **Prerequisite - Required**

**Intent:** To establish performance criteria for the project as it relates to each of the FGBC Green Commercial Building categories.

**Submittals:** Submit a narrative explaining the OPR for the project.

**Resources:** -

### E Prerequisite 2: Basis of Design (BOD)

**Requirement:** Design team representatives develop and document how the building design will achieve the Owner Project Requirements. The Basis of Design should specify how the FGBC goals of the OPR are addressed and how the performance desires of the Owner will be achieved by the proposed design.

**Points:** **Prerequisite - Required**

**Intent:** To assist the design team in fulfilling the Owner project requirements.

**Submittals:** The design team must submit a narrative that explains how the design decisions support the Owner project requirements.

**Resources:** -

### E Prerequisite 3: Testing and Balancing of Installed Equipment

**Requirement:** 1. Mechanical Electrical Plumbing (MEP) Engineering Firm, Commissioning Agent or Independent inspector representing the owner works with the Architect or design team leader to verify field installed equipment meet OPR, BOD and is installed and operating correctly. Testing and verification must include at a minimum, Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R) systems & controls and shall be performed by a licensed engineer or a professional certified by the National Environmental Balancing Bureau (NEBB), the Associated Air Balance Council (AABC), or other nationally accredited organization. For residential units, perform a comfort balance on a minimum of 1 of each unit type to verify that the CFM is consistent with the Manual D's

2. Functional Testing of the lighting systems and controls, renewable energy systems, hot water system, and energy and water measurement devices as determined by the project engineer of record.

**For buildings with less than 40 tons or HVAC:** Verify field installed equipment meet the OPR, BOD and are installed and operating correctly. Field verify cfm provided is as designed by the engineer of record, verify air temperature at vent is 55 degrees and if mechanically supplied dedicated outside air is present, verify the quantity of ventilation air.

**Points:** Prerequisite - Required

**Intent:** To verify that the as built structure performs as the design intended and that the installed equipment is installed and set to the manufacturer's requirements.

**Submittals:** The design team shall provide a copy of the testing and balancing report.

**Resources:** -

## E Prerequisite 4: Minimum Energy Performance

**Requirement:** Building must perform the minimum required by the Florida Commercial Building Energy Code when the building is permitted - as verified by the Energy Gauge Summit Fla/Com software or other state approved performance-based software. A whole building performance model is required, projects using software such as ComCheck will comply with this prerequisite but will not receive points under credit E4.

**Points:** Prerequisite - Required

**Intent:** Reduce energy use

**Submittals:** Submit a copy of the Energy Gauge Summit "Total Building Performance Method for Commercial Buildings – Project Summary" (Form 506-2010) or its equivalent) from software approved by the Florida Building Commission that identifies the percent above code minimum the proposed building design has achieved.

**Resources:** [www.floridabuilding.org/fbc/committees/energy/Energy\\_Code\\_Compliance\\_Software.html](http://www.floridabuilding.org/fbc/committees/energy/Energy_Code_Compliance_Software.html)

## E Prerequisite 5: Ozone Depletion Potential Management

**Requirement:** Requires that all building HVAC&R systems be free of CFC's and Halons.  
When reusing existing base building HVAC equipment, complete a comprehensive 5-year CFC phase-out conversion.

**Points:** Prerequisite - Required

**Intent:** Reduce ozone depletion.

**Submittals:** Mechanical engineer will submit a signed letter declaring that the building's new HVAC&R systems do not use CFC-based refrigerants or that the existing HVAC&R systems will be phased out in 5 years.

**Resources:** -

### E1.01 EPA Target Finder

**Requirement:** Designated project team member is required to enter baseline building and proposed design building information into the EPA Target Finder Program.

**Points:** 1 point

**Intent:** Target Finder is a no-cost online tool that enables you to set energy targets and receive an EPA energy performance score for projects during the design process. The "Target Rating" uses the EPA energy performance rating of 1-100. 75 or higher denotes ENERGY STAR. An "Energy Reduction Target" is the percentage reduction from the average energy consumption of a similar building in your climate region, i.e. A Target Finder score of 75 indicates that the building performs better than 75% of similar buildings in its region.



**Submittals:** Submit a copy of the printout of the building from the Target Finder Program. Please note that there are instances where the Target Finder database does not have enough information to generate a report for your building type. If you enter your building data and the report results in an error, simply provide a copy of the error report page and you will be awarded 1 point.

**Resources:** [www.energystar.gov/index.cfm?c=new\\_bldg\\_design.bus\\_target\\_finder](http://www.energystar.gov/index.cfm?c=new_bldg_design.bus_target_finder)

## **E2 Portfolio Manager**

### **E2.01 Input building into Portfolio Manager**

**Requirement:** Use EPA Portfolio Manager to baseline and track building design and ongoing performance

**Points:** 1

**Intent:** To assist the project team in benchmarking, tracking, and reporting on their building projects with respect to environmental impacts. Portfolio Manager is an interactive energy management tool that allows you to track and assess energy and water consumption across your entire portfolio of buildings in a secure online environment. Whether you own, manage, or hold properties for investment, Portfolio Manager can help you set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.

**Submittals:** Submit a printout showing the project listed in Portfolio Manager

**Resources:** <https://www.energystar.gov/istar/pmpam/>

### **E2.02 Grant FGBC access to the project Portfolio Manager Account**

**Requirement:** FGBC is given access to the building information within Portfolio Manager.

**Points:** 1

**Intent:** To allow FGBC to collect performance data on FGBC Certified Projects.

**Submittals:** User name and password (access information) for Portfolio Manager

**Resources:** <https://www.energystar.gov/istar/pmpam/>

## **E3 Commissioning**

### **E3.01 Fundamental Building Systems Commissioning**

**Requirement:** Fundamental Building Systems Commissioning: Implement or have a contract in place to implement all of the following fundamental best practice commissioning procedures Commissioning includes verifying installation, functional performance testing, training and documentation for EACH of the commissioned system or components as compared to the design intent, training of owner designated O&M professional and completion of the operation and maintenance manuals.

The minimum requirements for serving as the commissioning agent are:

1. Must have served as the commissioning agent of record on at least two (2) projects certified by a state or nationally recognized green certification program, OR

2. Participated in the commissioning of at least two (2) green certified projects and have a letter of recommendation from the project's commissioning agent of record, OR
3. Possess one of the following designations:
  - a. CPMP - Commissioning Process Management Professional Certification (ASHRAE)
  - b. BCxP – Building Commissioning Professional (ASHRAE)
  - c. CEM - Certified Energy Manager (AEE - Association of Energy Engineers)
  - d. PE - Professional Engineer
  - e. ACG Commissioning Agent - (ACG - AABC Commissioning Group)

The commissioning agent (CxA) be an independent party hired by the owner, reporting to the owner. If the CxA is contracted as part of the design or construction team, the CxA must have in their contract that they report directly to the owner with respect to performance verification and they must disclose any involvement with the design team to verify unbiased ability to verify OPR and BOD.

**Points:** 4

**Intent:** Verify that the OPR and BOD have been met, identify equipment shortcomings and verify corrections to failures of equipment start-up or inadequate operations

**Submittals:** Submit a copy of the CxA signed contract (black out fees), OPR, BOD, Commissioning Plan and Commissioning Report. The commissioning plan should include an overview of the commissioning process, a list of systems and features, the commissioning participants and their roles, a communication and management plan, an outline of the scope of commissioning tasks, and a schedule. Where possible, include copies of the completed startup checklists. The commissioning report should contain the analysis of whether each commissioned system or component meets the design intent, specifications, was properly installed, passed the functional performance tests, was properly documented in the O&M manuals, and was covered in the operator training.

**Resources:** <http://www.wbdg.org/project/buildingcomm.php>

### E3.02 Advanced Building Systems Commissioning

**Requirement:** Complete Fundamental Commissioning and the following commissioning process (CxP) activities for mechanical, electrical, plumbing, and renewable energy systems and assemblies in accordance with ASHRAE Guideline 0–2005 and ASHRAE Guideline 1.1–2007 for HVAC&R systems, as they relate to energy, water, indoor environmental quality, and durability. In addition to fundamental commissioning the CxA:

1. Review contractor submittals.
2. Verify inclusion of systems manual requirements in construction documents.
3. Verify inclusion of operator and occupant training requirements in construction documents.
4. Verify systems manual updates and delivery.
5. Verify operator and occupant training delivery and effectiveness.
6. Verify seasonal testing.
7. Review building operations 10 months after substantial completion.
8. Develop an on-going commissioning plan.

The minimum requirements for serving as the commissioning agent for advanced commissioning are serving as the commissioning agent of record on at least two (2) projects certified by a state or nationally recognized green certification program..

**Points:** 5

**Intent:** Verify and ensure that the entire building is designed, constructed and calibrated to operate as intended.

**Submittals:** Copy of signed contract explaining scope of work (contract amount may be excluded). Provide a copy of the CxA design document review report provided to the owner and design team, provide a copy of the review notes of the specifications provided to the design team, provide a copy of the owner manual for re-commissioning and copy of building operation review contract.

**Resources:** <http://www.wbdg.org/project/buildingcomm.php>

### **E3.03 Additional Building Systems Commissioning**

**Requirement:** Commissioning shall also include building envelope, elevators, commercial kitchen equipment, and any other equipment as recommended by the CxA.

**Points:** 1

**Intent:** Verify and ensure that the entire building is designed, constructed and calibrated to operate as intended.

**Submittals:** Copy of signed contract explaining scope of work (contract amount may be excluded) and a letter from the CxA or the building owner stating all CxA duties were completed. Also, should include a list of equipment from the CxA that they recommended for additional commissioning.

**Resources:** <http://www.wbdg.org/project/buildingcomm.php>

### **E4 Energy Performance Improvement**

**Requirement:**

Submit performance-based energy calculations indicating **base/required** energy performance for passing Florida Energy code and **designed** building energy performance of the building as designed. For example, if using Energy Gauge Summit® the results report indicates the “Passing Criteria” and the “Design (including any credits) numbers. These are the numbers used to calculate the energy performance percentage better than code used to determine the points received for this credit.

**Points:** 2 points for each percentage point below Florida Energy Code.

**Up to 60 points**

**Intent:** Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

**Energy Performance Improvements greater than 30% below the Florida Energy Code:**

It is FGBC’s intent to encourage conservation and the reduction of energy use in the building environment. The FGBC Certification programs are designed to encompass a broad spectrum of green building and sustainable construction practices including energy, water, site, health, materials, and disaster mitigation. If your project achieved the required minimum points in each category the project may claim additional points, 2 points for each percentage greater than 31% energy use reduction, in the innovative credit category.

**Submittals:** Submit a copy of the FLA/COM Form 400A

**Resources:** <http://www.energygauge.com/flacom/>

## **E5 Renewable Energy Production**

**Requirement:** Supply a fraction of the building's total energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.

**Points:** 1 point per 1% of the building power provided. Maximum 20 points.

**Intent:** Encourage improved efficiencies and reduce reliance on non-renewable energy sources.

**Submittals:** Provide a copy of the contract for the purchase of renewable energy indicating the types of renewable purchased and the total kWh of energy production capacity.

**Resources:** -

## **E6 Green Power**

**Requirement:** Provide a percentage of the building's electricity from renewable sources by engaging in at least a one-year renewable energy contract to purchase green power. The Checklist requires that you enter the kWh that are being purchased and the length of the contract.

**Points:** **1 point for 50% for 1 year**

**2 points for 100% for 1 year**

**3 points for 100% for 2 years**

**Earn 1 bonus point for Certified Green Power which is provided by renewable generation in Florida.**

**Intent:** Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis. Renewable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements. Green power may be procured from a Green-e certified power marketer, a Green-e accredited utility program, or through Green-e certified Tradable Renewable Certificates.

**Submittals:** Provide a copy of the signed green power purchase contract.

**Resources:** -

## **E7 Daylight Sensors**

**Requirement:** Install daylight sensors in occupied areas of the building. Earn 1-2 based on the building square footage, not required by code, that has daylight sensors. Note spaces where daylight sensors are not allowed due to safety/security or spaces without windows (or natural light) may be excluded from the square foot calculation. Daylighting sensors installed shall provide controls that automatically reduce lighting power in response to available daylighting, either by continuous daylight dimming OR a combination of stepped switching and daylight-sensing automatic controls, which are capable of incrementally reducing the light level in step automatically and turning the lights off automatically.

**Points:** **1 point ≥ 50% of building square footage equipped with daylight sensors**

**2 points ≥ 75% of building square footage equipped with daylight sensors**

**Intent:** Reduce energy consumption from lighting by installing sensors that automatically dim artificial lighting when enough daylight is available for the tasks conducted in a given building space.

**Submittals:** Floor plan with location of daylight sensors, approved submittals and photos of installed sensors.

**Resources:** -

## E8 Occupancy Sensors

This credit has been removed as occupancy sensors are required by the 2020 Florida Building Code

## E9 Interior Lighting

**Requirement:** Building lighting is designed to turn off after regular business hours. This may be achieved by lighting controls, timers, or motion, occupancy, vacancy sensors with override. Lighting required for safety and security except.

**Points:** 1

**Intent:** Reduce energy demand from artificial lighting in unoccupied buildings after business hours.

**Submittals:** Provide electrical drawings, approved submittal for sensors and photos of installed sensors

**Resources:** -

## E10 Lighting Power Density

**Requirement:** Design and construct such that the average lighting power density for the building, which includes conditioned space and enclosed spaces defined as enclosed with doors, windows and roof (for instance fire truck bay) and which excludes the structures exterior and parking area shall be  $\leq 0.7$  W/SF.

**Points:** 1 – 5

1 point:  $\leq 0.7$ W/SF

2 points:  $\leq 0.6$ W/SF

3 points:  $\leq 0.5$ W/SF

4 points  $\leq 0.4$ W/SF

5 points  $\leq 0.3$ W/SF

**Intent:** Reduce energy consumption associated with lighting.

**Submittals:** Signed approved lighting submittal, photos of installed lighting and Watt per square foot calc.

**Resources:** - <http://www.energygauge.com/>

## E11 Exterior Lighting Efficiency

**Requirement:** Meet or exceed the efficiency requirements of the 2018 IECC Chapter 4 Commercial Energy Efficiency for Exterior Lighting C405.4.2.

**Points:** 3

**Intent:** Reduce energy consumption associated with lighting.

**Submittals:** Signed approved lighting submittal, photos of installed lighting and Watt per square foot calc.

**Resources:** - <http://www.energygauge.com/>

## Florida Green Commercial Building Standard Reference Guide

Version 4 Rev 1.0, Revised 11/2/2022

LIGHTING ZONE	DESCRIPTION
1	Developed areas of national parks, state parks, forest land, and rural areas
2	Areas predominantly consisting of residential zoning, neighborhood business districts, light industrial with limited nighttime use and residential mixed-use areas
3	All other areas not classified as lighting zone 1, 2 or 4
4	High-activity commercial districts in major metropolitan areas as designated by the local land use planning authority

**TABLE C405.4.2(2)  
LIGHTING POWER ALLOWANCES FOR BUILDING EXTERIORS**

	LIGHTING ZONES			
	Zone 1	Zone 2	Zone 3	Zone 4
Base Site Allowance	350 W	400 W	500 W	900 W
<b>Uncovered Parking Areas</b>				
Parking areas and drives	0.03W/ft <sup>2</sup>	0.04 W/ft <sup>2</sup>	0.06 W/ft <sup>2</sup>	0.08 W/ft <sup>2</sup>
<b>Building Grounds</b>				
Walkways and ramps less than 10 feet wide	0.5 W/linear foot	0.5 W/linear foot	0.6 W/linear foot	0.7 W/linear foot
Walkways and ramps 10 feet wide or greater, plaza areas, special feature areas	0.10 W/ft <sup>2</sup>	0.10 W/ft <sup>2</sup>	0.11 W/ft <sup>2</sup>	0.14 W/ft <sup>2</sup>
Dining areas	0.65 W/ft <sup>2</sup>	0.65 W/ft <sup>2</sup>	0.75 W/ft <sup>2</sup>	0.95 W/ft <sup>2</sup>
Stairways	0.6 W/ft <sup>2</sup>	0.7 W/ft <sup>2</sup>	0.7 W/ft <sup>2</sup>	0.7 W/ft <sup>2</sup>
Pedestrian tunnels	0.12 W/ft <sup>2</sup>	0.12 W/ft <sup>2</sup>	0.14 W/ft <sup>2</sup>	0.21 W/ft <sup>2</sup>
Landscaping	0.03 W/ft <sup>2</sup>	0.04 W/ft <sup>2</sup>	0.04 W/ft <sup>2</sup>	0.04 W/ft <sup>2</sup>
<b>Building Entrances and Exits</b>				
Pedestrian and vehicular entrances and exits	14 W/linear foot of opening	14 W/linear foot of opening	21 W/linear foot of opening	21 W/linear foot of opening
Entry canopies	0.02 W/ft <sup>2</sup>	0.25 W/ft <sup>2</sup>	0.4 W/ft <sup>2</sup>	0.4 W/ft <sup>2</sup>
Loading docks	0.35 W/ft <sup>2</sup>	0.35 W/ft <sup>2</sup>	0.35 W/ft <sup>2</sup>	0.35 W/ft <sup>2</sup>
<b>Sales Canopies</b>				
Free-standing and attached	0.04 W/ft <sup>2</sup>	0.04 W/ft <sup>2</sup>	0.6 W/ft <sup>2</sup>	0.7 W/ft <sup>2</sup>
<b>Outdoor Sales</b>				
Open areas (including vehicle sales lots)	0.02 W/ft <sup>2</sup>	0.02 W/ft <sup>2</sup>	0.35 W/ft <sup>2</sup>	0.05 W/ft <sup>2</sup>
Street frontage for vehicle sales lots in addition to "open area" allowance	No allowance	7 W/linear foot	7 W/linear foot	21 W/linear foot

## **E12 Solar Study of Building**

**Requirement:** Project team conducts solar study of project site and building location – To receive this credit the team must document the design or orientation modification that was incorporated into the project to reduce solar heat gain as a result of the solar study.

**Points:** 2

**Intent:** Reduce energy consumption by modifying the building design and orientation based on solar study findings.

**Submittals:** Submit the design or orientation modification that was incorporated into the project to reduce solar heat gain as a result of the solar study. Provide copies of the solar study graphics and outputs.

**Resources:** -

## **E13 Energy Monitoring Interface**

**Requirement:** Install a building user feedback system that indicates the real time building energy consumption. The monitoring interface should be available to facility or building manager. If the building uses renewable energy generation on site, the energy generated from renewable sources should also be displayed. To receive 5 points the energy monitoring interface must be centrally located in a public or common space with appropriate signage. To receive 10 points the energy monitoring interface should be available at multiple feedback points and provide an interface at each building occupant workstation.

**Points:**       **5 points**           **Single system in common area**  
                  **10 points**       **System has multiple feedback points AND may be viewed by every building occupant.**

**Intent:** Improve the energy performance

**Submittals:** A floor plan showing the location of the energy monitoring interface device(s), approved submittal for system and photos of the device(s) with the installed information sign.

**Resources:** -

## CATEGORY 3: WATER

### W Prerequisite 1 No Invasive Plants

**Requirement:** Landscape comprised of no invasive plants. NO category 1 plants. Use of no category II plants is highly recommended.

**Points:** **Prerequisite - Required**

**Intent:** Avoid the spread of invasive plants and promote a Florida Friendly landscape.

**Submittals:** Landscape plan, plant list and photos of installed landscaping.

**Resources:** A list of such plants can be found at:  
<https://floridainvasivespecies.org/plantlist2019.cfm>

### W Prerequisite 2 Irrigation zones for turf and landscape beds are separate

**Requirement:** Implemented landscape design must separate irrigation zones for turf and landscape beds.

**Points:** **Prerequisite - Required**

**Intent:** Reduce the amount of supplemental water, potable and non-potable, needed for irrigation.

**Submittals:** Landscape plan indicating vegetation and irrigation zones, location, and type of controller. Photos of installed landscaping.

**Resources:** <http://www.sjrwmd.com/floridawaterstar/index.html> and Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries, <http://www.floridayards.org/>

### W Prerequisite 3 Rain shut off device installed CORRECTLY and operable

**Requirement:** Verify correct installation of a Rain shut off device for irrigation per Florida Statutes 373.62 effective May 1, 1991, and field verify that the device is operating correctly

**Points:** **Prerequisite - Required**

**Intent:** Reduce the amount of supplemental water, potable and non-potable, needed for irrigation.

**Submittals:** Field inspection report signed by a responsible team member indicating that the rain shut off device is correctly functioning.

**Resources:** Florida Statutes 373.62

### W Prerequisite 4 Drought Tolerant Landscape, 50%

**Requirement:** Landscaped area is a minimum of 50% Drought Tolerant Plants

**Points:** **Prerequisite - Required**

**Intent:** Reduce the amount of supplemental water, potable and non-potable, needed for irrigation.

**Submittals:** Plant list for the project specifically identifying Florida Friendly low water plants and calculation of percent drought tolerant vegetation.

**Resources:** To obtain a list of drought tolerant plants and trees for your area, contact your local water management district, consult the Waterwise Florida Landscapes publication, or consult



with a FY&N professional, Master Gardener, Florida WaterStar or WaterSense Certifier.

For References here are some helpful websites:

<http://www.sjrwmd.com/waterwiselandscapes/>

<http://fyn.ifas.ufl.edu>

<http://www.floridawaterstar.com>.

## W1 Interior water use reduction

### W1.01 Toilets

**Requirement:** All installed toilets must have a minimum MaP (Maximum Performance) rating of 800 OR are WaterSense Certified. For Dual Flush toilets, to receive one point, ONE of the two flush options must be  $\leq 1.1$ gpf. Points available for this credit are listed below.

**Points:**

<b>1 point</b>	<b>all toilets <math>\leq 1.28</math> gallons per flush (gpf)</b>
<b>2 point</b>	<b>all dual flush with one flush option <math>\leq 1.1</math> gpf and one <math>&lt; 1.28</math> gpf</b>
<b>3 points</b>	<b>all toilets are single flush <math>\leq 1.1</math> gpf</b>

**Intent:** Toilets represent the largest source of indoor water use in buildings, accounting for up to 30%-40% of water demand. The Florida building code and National Energy Policy Act of 1992 (EPACT) require that all installed toilets be rated at a maximum flow rate of 1.6 gallons/flush. There are toilets on the market today that exceed these standards.

To make it easy to find and select water-efficient products with good performance, the EPA (Environmental Protection Agency) has introduced its WaterSense® program, a label that's backed by independent testing and certification. WaterSense®-labeled products perform their intended functions as well as or better than their less-efficient counterparts. And generally speaking, they're about 20 percent more water efficient.

**Submittals:** Signed approved submittal and photos of installed fixtures.

**Resources:** For a list of high efficiency commodes that have earned the WaterSense® label, visit <http://www.epa.gov/watersense/pp/het.htm>. For MaP ratings of commercial (flushometer) toilets, select "Reports" from <http://www.veritec.ca> (Veritec Consulting, Inc.). For MaP and Water-Sense combined results for Toilets (commercial and non), visit [http://www.cwwa.ca/freepub\\_e.asp](http://www.cwwa.ca/freepub_e.asp).

### W1.02 Urinals

**Requirement:** All installed urinals must have flow rate of less than 0.5 gpf or be waterless.

**Points:**

<b>1 point</b>	<b>all urinals <math>\leq 0.5</math> gpf</b>
<b>2 points</b>	<b>all urinals <math>\leq 0.125</math> gpf (1 pint)</b>
<b>3 points</b>	<b>Waterless urinals</b>

**Intent:** Reduce potable water used inside the building

**Submittals:** Signed approved submittal and photos of installed fixtures.

**Resources:** -

### W1.03 Lavatory Faucets

**Requirement:** All lavatory faucets must be low flow, WaterSense, or sensor faucets to achieve this credit. Points available are listed below

**Points:**

- 2 points** all lavatory faucets are  $\leq 1.5$  gpm
- 3 points** all lavatory faucets are  $\leq 0.5$  gpm
- 3 points** Motion Sensor self-closing faucet (0.25 gal/metering cycle Max)

**Intent:** Reduce potable water used inside the building

**Submittals:** Signed approved submittal and photos of installed fixtures.

**Resources:** -

**W1.04 Kitchen Faucets**

**Requirement:** All kitchen faucets must have a flow rate less than or equal to 2.0 gpm. This includes break rooms, commercial kitchen, or any other kitchen. Points available are listed below.

- Points:**
- 1 point** all kitchen faucets are  $\leq 2.0$  gpm
  - 2 points** all kitchen faucets are  $\leq 1.75$  gpm
  - 3 points** all kitchen faucets are  $\leq 1.5$  gpm
  - 4 points** all kitchen faucets are  $\leq 1.0$  gpm

**Intent:** Reduce potable water used inside the building

**Submittals:** Signed approved submittal and photos of installed fixtures.

**Resources:** -

**W1.05 Showerheads**

**Requirement:** All Installed showerheads with flow rate less than or equal to 2.2 gallon per minute (gpm). Points available are listed below

- Points:**
- 1 point** all showerheads are  $\leq 2.2$  gpm
  - 2 points** all showerheads are  $\leq 2.0$  gpm
  - 3 points** all showerheads are  $\leq 1.75$  gpm
  - 4 points** all showerheads are  $\leq 1.5$  gpm

**Intent:** Reduce potable water used inside the building

**Submittals:** Signed approved submittal and photos of installed fixtures.

**Resources:** -

**W1.06 Dishwashers**

**Requirement:** All installed dishwashers must be Energy Star qualified with a Water Factor (WF) of 7.0 or less. Dishwashers installed in commercial kitchens must be Energy Star Qualified.

**Points:**

- 1 point** All residential style dishwashers are Energy Star Qualified with Water Factor (WF  $\leq 7.0$ )
- 2 point** All residential style dishwashers are Energy Star Qualified with Water Factor (WF  $\leq 5.8$ )
- 3 points** All commercial dishwasher  $<1.2$  gallons per rack for fill and dump machines or  $< 0.9$  gallons per rack for all other types. Under counter machines  $< 1.0$  gallon per rack for high temperature and  $< 1.7$  gallon per rack for low temperature

**Intent:** Reduce the amount of potable water used inside the building  
**Submittals:** Signed approved submittal and photos of installed fixtures.  
**Resources:** -

## **W2 Greywater Reuse**

### **W2.01 Air conditioner condensate collected and used to reduce potable water use**

**Requirement:** Greywater system is installed to reduce demand on potable water. System must have a specific collection source and a dedicated use.

**Points:** 1 point

**Intent:** Reduce the consumption of potable water by using alternative sources. For example, air conditioner condensate could be used to refill site water features, used for irrigation, or as make-up water chillers.

**Submittals:** Construction drawings indicating design and location of system

**Resources:** -

### **W2.02 Greywater System - dual piping system is installed throughout building**

**Requirement:** Greywater system is installed to reduce demand on potable water. System must have a specific collection source and a dedicated use.

**Points:** 3 – 28 points

**3 points:** Collect, treat, and use AC condensate as a supplement for potable water.

**10 points:** Collect, treat, and use greywater from all commercial spaces to supply the water used for irrigation OR for cooling tower make up water.

**5 points:** Collect, treat, and use greywater from all interior sources to supply the water used for toilet/urinal flushing. Collected and treated greywater must supply a minimum of 25% of the water required for toilet/urinal flushing.

**10 points:** Collect, treat, and use greywater from all interior sources and treated to potable standards for use throughout the building. Greywater collected must provide a minimum of 25% of the buildings annual water use.

**Intent:** Reduce the consumption of potable water by using alternative sources. For example, water from lavatory sinks could be used to refill site water features, used for irrigation, or as make-up water chillers.

**Submittals:** Construction drawings indicating design and location of system

**Resources:** -

### **W3.01 Rainwater Harvesting**

**Requirement:** Install rainwater harvesting collection and storage system to reduce the demand on potable water. Achieve additional points, per the break down below, as the rainwater

collection system increases in functional use to replace both potable and non-potable water.

**Points:** 2 – 15 points

**2 points:** Collect, treat, and use rainwater to supply 50.0% of the water used for irrigation.

**5 points:** Collect, treat, and use rainwater to supply 100.0% of the water used for irrigation.

**2 points:** Collect, treat, and use rainwater to supply 1.0% of the annual cooling tower make up water.

**5 points:** Collect, treat, and use rainwater to supply 2.0% of the annual cooling tower make up water.

**2 points:** Collection for toilet/urinal flushing. Collected rainwater must supply a minimum of 25% of the water required for toilet/urinal flushing.

**5 points:** Rainwater is collected and treated to potable standards for use throughout the building. Rainwater collected must provide a minimum of 25% of the buildings annual water use.

**Intent:** Decrease both potable and non-potable water use by collecting and using rainwater. With an average rainfall of 54 inches/year in the state of Florida (compared to the national average of 27 inches/year), harvested rainwater is an excellent source of water for landscape irrigation, chiller water make-up, some industrial uses, greywater (toilet and urinal flushing) and with minimal treatment can be made potable for consumption. Rainwater is generally harvested from a roof surface, and system components include properly designed gutters, piping, roof washes, screens, and storage tank/cisterns.

**Submittals:** Construction drawings indicating design and location of system, signed approved submittal of system installed and photos of installed system.

**Resources:** For more information consult A Guide to Environmentally Landscaping: Florida Friendly Landscape Handbook or visit

[http://fyn.ifas.ufl.edu/materials/FYN\\_Handbook\\_vSept09.pdf](http://fyn.ifas.ufl.edu/materials/FYN_Handbook_vSept09.pdf)

Additional information on rainwater harvesting can be found at:

<http://rainwater.sustainablestudies.com/> and

<http://www.toolbase.org/TechInventory/TechDetails.aspx?ContentDetailID=918&BucketID=6&CategoryID=11>.

### W 3.02 Cooling Tower Water Conservation

**Requirement:** Install conductivity meter to monitor cooling tower water chemistry to minimize make up water needs. Maximize the number of cycles of concentration by using a conductivity meter to determine water replacement and blow downs.

**Points:** 3

**Intent:** Save water by reducing the number of blow downs required to effectively maintain your cooling tower.

**Submittals:** Construction detail and signed approved submittal.

## W4 Installed Landscape

### W4.01 Florida Friendly Drought-Tolerant Landscape

**Requirement:** Use of at least 60% of the plants and trees incorporated into the landscape are from a local drought tolerant list; 2 points are available if 80% are from such a list; and 3 points are available if 100% of the plants and trees are from such a list. A minimum of twelve total plants must be present in the landscape to qualify for the credit.

**Points:**

<b>1 point</b>	<b>≥ 60% and &lt; 80% Drought Tolerant Florida Friendly</b>
<b>2 points</b>	<b>≥ 80% and &lt; 100% Drought Tolerant Florida Friendly</b>
<b>3 points</b>	<b>100% Drought Tolerant Florida Friendly</b>

**Intent:** Decrease the water resources used to irrigate landscape

**Submittals:** Letter verifying compliance with the criteria is signed by one of the following: the landscape architect, a WaterStar or WaterSense Certifier, a Florida Friendly Landscape representative, or a Master Gardener. The team may also provide a list of installed plants and the corresponding plant drought tolerance rating according to Florida Friendly Landscape database. <http://www.floridayards.org/fyplants/index.php>

**Resources:** To obtain a list of drought tolerant plants and trees for your area, contact your local water management district, consult the Waterwise Florida Landscapes publication, or consult with a FY&N professional, Master Gardener, or Florida WaterStar or WaterSense Certifier. For References here are some helpful websites:

<http://www.sjrwmd.com/waterwiselandscapes/>, <http://fyn.ifas.ufl.edu>,  
<http://www.floridawaterstar.com/floridawaterstar/>.

### W4.02 Turf/Sod Percentage

**Requirement:** Turf is installed on less than 50% of landscape, install drought tolerant turf, Bahia, Zoysia, or Bermuda grass in sunny areas (<20% shade on June 21) and do not use turf is used in densely shaded areas (>60% shade on June 21).

**Points:**

<b>1 point</b>	<b>&lt; 50% Turf/sod</b>
<b>2 point</b>	<b>&lt; 40% Turf/sod</b>
<b>3 point</b>	<b>&lt; 30% Turf/sod</b>
<b>4 point</b>	<b>&lt; 20% Turf/sod</b>
<b>5 point</b>	<b>&lt; 10% Turf/sod</b>

**Intent:** Turf is generally the largest consumer of water in the landscape, and most types will not flourish in shady areas. Use of drought tolerant plants in shaded areas

**Submittals:** Site plan indicating total SF of site and total SF of turf, turf calculation as a percentage of the site and or turf square footage as purchased on the plant list invoice.

**Resources:** -

### W4.03 All plants/trees selected to be compatible with local environment / microclimate

**Requirement:** All plants (including shrubs, groundcovers, and vines and trees) are compatible with their location in the landscape

**Points:** 2

**Intent:** Even if preferred native, drought tolerant, and low maintenance plants are selected for the landscape, many times the plants are installed in areas of the landscape where they are not likely to remain healthy due to various sun/shade and soil type requirements. Incompatibility between the plant(s) and their placement results in over watering and over fertilizing.

**Submittals:** Landscape plan and plant list. Letter verifying compliance with the criteria is signed by one of the following: the landscape architect, a WaterStar or WaterSense Certifier, a Florida Friendly Landscape representative, or a Master Gardener.

**Resources:** <http://floridayards.org/fyplants/index.php>

#### **W4.04 Plants with similar maintenance grouped together**

**Requirement:** Landscape is planned and installed according to plant maintenance requirements such that similar maintenance plants are grouped together.

**Points:** 2

**Intent:** Grouping plants with similar maintenance requirements together increases irrigation efficiency. Lawns that require a lot of water from sprayers and rotors should not be watered in the same irrigation zone as drought-tolerant plants that require less water and that can be efficiently irrigated with micro-irrigation (micro-spray jets, drip systems, bubblers, or soaker hoses).

**Submittals:** Landscape plans and photos of installed vegetation. Letter verifying compliance with the criteria is signed by one of the following: the landscape architect, a WaterStar or WaterSense Certifier, a Florida Friendly Landscape representative, or a Master Gardener.

**Resources:** -

#### **W4.05 Mulch (non-cypress) applied 3"-4" deep**

**Requirement:** Apply 3-4" of mulch around plants and trees (extending out to drip line) and in landscaped beds avoiding volcano mulching.

**Points:** 2

**Intent:** In addition to preventing weed growth, a thick layer of mulch will help retain soil moisture, retard erosion, cool the soil surface, and reduce some soil pests. Mulching around trees also reduces damage from mowers and line trimmers. It is important to avoid volcano mulching (a cone of piled mulch placed around newly installed plants and trees). This practice can hold moisture against the tree and encourages rot in the trunk.

**Submittals:** Landscape plans and photos of installed mulched vegetation

**Resources:** [http://fyn.ifas.ufl.edu/materials/FYN\\_Handbook\\_vSept09.pdf](http://fyn.ifas.ufl.edu/materials/FYN_Handbook_vSept09.pdf)



**Incorrect Volcano Mulching**



**Correct Installation**

## **W5 Water Conservation Certifications**

### **W5.01 Meet or exceed Florida WaterStar™ or WaterSense Standards**

**Requirement:** Meet the WaterStar™ or WaterSense certification program requirements.

**Points:** **5 points for Silver Level Certification**

**7 points for Gold Level Certification**

**Intent:** Florida WaterStar™ is a voluntary, third-party certification program designed to increase water efficiency in landscapes, irrigation systems and indoor uses. While many certification programs provide general guidelines for water efficiency, Florida WaterStar™ specifically addresses uses relevant to Florida.

WaterSense® labeled new homes will combine WaterSense® labeled products with other water-efficient fixtures and practices to reduce the amount of water used by approximately 20 percent. Homes must meet criteria in three areas: indoor water use, outdoor water use, and homeowner education.

**Submittals:** Copy of certificate

**Resources:** <http://www.sjrwmd.com/floridawaterstar/index.html>  
[www.epa.gov/watersense/](http://www.epa.gov/watersense/)

### **W5.02 Florida Friendly Landscape™ Program Certification**

**Requirement:** Obtain Florida Friendly Landscaping™ Program New Construction Certification

**Points:** **2 points for Silver**

**3 points for Gold**

**Intent:** Florida-Friendly Landscaping™ offers a certification program for new construction throughout the state. The new construction checklist for builders and developers for certification of Florida-Friendly Landscaping™ includes design criteria that help drive maintenance of landscapes in a Florida-Friendly way; that is through less use of irrigation, fertilizers and pesticides. The certification criteria embrace the nine principles of Florida-Friendly Landscaping™ which are: Right plant, right place; water efficiently; fertilize appropriately; mulch; attract wildlife; manage yard pests responsibly; recycle yard waste; reduce stormwater runoff; and protect the waterfront. Florida-Friendly Landscapes, as defined in 2009 Florida Statutes, Ch. 373, are landscapes which are: "...quality landscapes that conserve water, protect the environment, are adaptable to local conditions, and are drought tolerant." For more information, contact the county UF/IFAS Extension office. Many of the criteria dovetail with other green certification programs.

**Submittals:** Copy of certificate

**Resources:** [http://fyn.ifas.ufl.edu/materials/FYN\\_Handbook\\_vSept09.pdf](http://fyn.ifas.ufl.edu/materials/FYN_Handbook_vSept09.pdf)  
<http://fyn.ifas.ufl.edu/>

## **W6 Installed Irrigation**

### **W6.01 Installed Irrigation**

**Requirement:** Irrigation must comply with all of the following to achieve Installed Irrigation W6 credits. To receive points for Installed Irrigation, each system must have the following features:

1. **Separate zones for turf and landscape beds – multi program controller:** It is recommended that the irrigation systems be calibrated to supply less than  $\frac{3}{4}$ " of water per zone, per application. The controller must be a multiple program controller that can divide the landscape into zones and operate the different zones for different lengths of time. The controller must have a battery backup to retain system settings and include a functioning rain sensor in an operable location as required by Florida Statute 373.62.
2. **High volume irrigation (>0.5gpm) does not exceed 60% of the landscape area:** Landscape zones requiring a high volume of water supplied by rotors or spray heads cannot exceed 60% of the landscape area.
3. **Head-to-head coverage for rotor/spray heads:** Many irrigation system designs incorporate spray/rotor head pattern overlap to ensure complete coverage. In order to minimize over watering in the overlap zone, one emitter's coverage pattern should not extend past adjacent emitters.
4. **Micro-irrigation only in landscape beds and narrow areas:** Landscape features other than turf can be watered much more efficiently by using micro-irrigation rather than sprayers and rotors. Equipment such as drip emitters, bubblers, micro-spray jets, and soaker hoses deliver water precisely where it is needed. In contrast, much of the water emitted from sprayers and rotors is blown away by wind or evaporates. In addition, narrow areas that are 4 ft. wide or less are difficult to irrigate effectively with rotor or spray heads, for most patterns are greater than 4 feet in diameter. Micro-irrigation is a better choice for irrigating narrow areas.
5. **Minimize overspray on impermeable surfaces:** The irrigation system must be visually inspected while operating to ensure that no irrigation water is directed to areas not intended to be watered (driveway, street, etc.). The system must also not direct water onto walls of the house.
6. **In poor drainage (low) areas, heads are installed with check valves:** Equipment with check valves must be used in some areas to prevent low pressure drainage. Low pressure drainage is a situation in which the system drains to the lowest head and resultant water flows onto or over adjacent property, non-irrigated areas, walks, roadways, or structures. Not only could this be a localized wet spot problem, but it also wastes the water that is in the zone piping each time the system runs. To help prevent this situation, heads with check valves need to be installed if there is over an 18-inch difference in elevation or if there is undulating terrain.
7. **Provide building owner and or facility manager with plan and instructions:** The building owner and the facility manager should receive a copy of as built plans, operating manuals, and warranties. The package should also include a general irrigation schedule with recommendations and instructions on modifying the schedule for local climatic and growing conditions. Each of the following items should be installed adjacent to the controller or in an easily accessible weather-protected area:
  - a. Controller handbook/operating instructions
  - b. Zone diagram
  - c. Specific zone application rates and maintenance run times
  - d. Soil moisture sensor probe location (when applicable)
8. **Irrigation heads have matched precipitation rates:** Matching precipitation rates allows for sprinklers with various arcs and radii to be included in the same zone and each deliver the same target application rate.



9. **Pop-up sprinkler heads significantly rise about turf grass height:** If heads do not pop up sufficiently above turf, the uniformity of distribution will not be adequate and will result in poor coverage.
- A minimum of 5-inch sprinkler heads for St. Augustine, Zoysia and Bahia grasses
  - A minimum of 4-inch sprinkler heads for centipede, Bermuda and seashore paspalum

**Points:** 10

**Intent:** Use water correctly to irrigate landscape only when necessary

**Submittals:** Irrigation system design drawing as installed and irrigation schedule.

**Resources:** <http://www.sjrwmd.com/floridawaterstar/index.html> and Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries, <http://www.dep.state.fl.us/water/nonpoint/docs/nonpoint/grn-ind-bmp-en-12-2008.pdf>

### **W 6.02 Micro-irrigation (irrigation with a maximum application rate of 0.5 gallons per minute) used and irrigated to FGBC Standard**

**Requirement:** All irrigation must be micro irrigation, system must include a rain sensor and controller, and the owner must be provided with the irrigation plan, management plan and instructions.

**Points:** 3

**Intent:** Reduce water used for irrigation

**Submittals:** Copy of the irrigation design, and photos of installed irrigation.

**Resources:** -

### **W 6.03 No Permanent in-Ground Irrigation System**

**Requirement:** No permanent or no in ground irrigation system is installed.

**Points:** 10 points no permanent  
15 points no irrigation

**Intent:** The most effective outdoor water conservation strategy to employ is to design the landscape in such a way that it exists primarily on natural rainfall, and no permanent irrigation system is required. A temporary irrigation system may be set up during establishment.

**Submittals:** Provide a signed letter from the project owner.

**Resources:** N/A

### **W 6.04 Advanced Irrigation Control Systems**

**Requirement:** Install irrigation control systems that are controlled by Soil moisture sensors or other WaterSense weather-based Wi-Fi enabled irrigation controllers at both the ground level and amenity decks with irrigation.

**Points:** 2

**Intent:** FGBC encourages innovative technologies to conserve water. Recent technologies such as soil moisture sensors or weather-based controllers are ways of conserving irrigation water

**Submittals:** Cut sheet of sensor and photos of innovative equipment.

**Resources:** -

## **W7 Water Source Conservation**

### **W 7.01 Reclaimed Water for Irrigation**

**Requirement:** Irrigation uses non potable water, is metered and fee structure is based on volume used.

**Points:** 1-4

**2 points: All irrigation using non potable water**

**1 point: Meter on reclaimed irrigation system**

**1 point: Volume-based pricing arrangement**

**Intent:** Reduce potable water used for irrigation

**Submittals:** Construction drawings details showing reuse water supply and meter(s). Provide fee structure from entity supplying reuse water.

**Resources:** -

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## CATEGORY 4: SITE

### S Prerequisite 1: Stormwater Pollution Prevention Plan (SWPPP) and Florida Department of Environmental Protection (FDEP) Notice of Intent (NOI) onsite

**Requirement:** Keep copy of SWPPP & FDEP National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) onsite for contractor to implement & maintain SWPPP Best Management Practices (BMP) as designed by civil engineer or SWPPP designer. For projects less than 1 acre, implement SWPPP on site as designed by the project Civil Engineer.

**Points:** **Prerequisite - Required**

**Intent:** Reduce the quantity and improve the quality of stormwater discharge that leaves the jobsite.

**Submittals:** Details of stormwater pollution prevention plan and photos of installed stormwater pollution prevention measures.

**Resources:** -

#### S1 FDEP Professional

**Requirement:** The general contractor has on staff or contracts with a FDEP Certified Erosion and Sedimentation Control Professional (Tier 2).

**Points:** 3

**Intent:** Increase the proper design, construction, and maintenance of erosion and sediment control during construction to assure the proper long-term operation and maintenance of stormwater systems after construction is complete.

**Submittals:** Name of Certified FDEP Professional and a copy of the page of the permit application identifying the FDEP individual and their contact information.

**Resources:** [www.dep.state.fl.us/water/nonpoint/erosion.htm](http://www.dep.state.fl.us/water/nonpoint/erosion.htm)

#### S2 Site Selection

##### S2.01 Select Appropriate Site

**Requirement:** Do not develop buildings, roads, or parking areas on portions of sites that meet any one of the following criteria:

- Prime farmland as defined by the United States Department of Agriculture.
- Land which elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA.
- Land that is specifically identified as habitat for any species on Federal or State threatened or endangered lists.
- Within 100 feet of any water including wetlands as defined by 40 CFR, Parts 230-233 and Part 22, and isolated wetland or areas of special concern identified by state or local rule OR greater than distances given in state or local regulations as defined by local or state rule or law, whichever is more stringent.

Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner (Park Authority projects are exempt).

**Points:** 1

**Intent:** Avoid development of environmentally sensitive sites.

**Submittals:** Provide a site plan, in context, so the credit criteria may be verified and a letter from the building owner or civil engineer confirming site as appropriate.

**Resources:** -

## S2.02 Urban Growth Boundary

**Requirement:** Locate building on a site that is located inside the designated Urban Growth Boundary

**Points:** 1

**Intent:** Reduce the need for additional infrastructure to service the building.

**Submittals:** Map of Urban Growth Boundary with project site identified.

**Resources:** Local Government Website – Planning Department

## S2.03 Permit Ready Site

**Requirement:** Locate building on a site that is listed as "Permit Ready" and designated by local government as preferred growth area. Sites such as:

1. Parcels on a master concept plan designated for future use
2. EPA National Priorities List, Federal Empowerment Zones
3. Federal Enterprise Communities
4. Department of Treasury Community Financial Institutions Fund Qualified Low-income Communities
5. U.S. Department of Housing and Urban Development Qualified Census Tract (QCT) or Difficult Development Areas (DDA)

**Points:** 1

**Intent:** Respect the municipal governments planning for development.

**Submittals:** Letter from the local government indicating that the site is "permit ready" or a preferred site targeted for development.

**Resources:** Local Government Website – Planning Department

## S2.04 Greyfield/Redevelopment of an existing site

**Requirement:** Locate the building on a site that has existing hardscape or other structure that must be replaced. To achieve this credit, the site must have utility connections available within 1/8-mile boundary.

**Points:** 3

**Intent:** Encourage redevelopment, increase density, and reduce the need for additional infrastructure.

**Submittals:** Copy of a site plan with the existing conditions at the time of permit application. Copy of Civil demolition plan

**Resources:** Many economic development boards have a list of existing sites ready for redevelopment.

## **S2.05 Brownfield Redevelopment**

**Requirement:** Development of any EPA or Federal/State/Local Government Classified Brownfield and provide remediation as required by EPA's Sustainable Redevelopment of Brownfields Program.

**Points:** **5 points for site (soil and groundwater) contamination**

**Intent:** Rehabilitate and use damaged sites

**Submittals:** Provide a copy of the Phase II Environmental Site Assessment OR a letter from a local, state or federal regulatory agency confirming that the site is classified as a brownfield.

**Resources:** <http://epa.gov/brownfields/>

## **S2.06 Access to Public Transportation**

**Requirement:** Site is located within 1/2 mile of an existing or funded rail node OR within 1/4 mile of at least 1 active bus stop (this must be measured as a safe walk).

**Points:** **2 – 4**

**2 Points: 60 weekday and 40 weekend trips**

**3 Points: 76 weekday and 50 weekend trips**

**4 Points: 100 weekday and 65 weekend trips**

**Intent:** Reduce traffic, greenhouse gas emissions, need to expand roadways and overall pollution from automobile use.

**Submittals:** Regional/Local drawing or transit map highlighting the building location and the fixed rail stations and bus lines and indicate the distances between them. Include a scale bar for distance measurement.

**Resources:** Local jurisdiction website.

## **S2.07 Adjacent to dense residential development**

**Requirement:** Locate the building on a site that is within 1 mile of residential developments with the minimum density of 20 units per acre (this can be measured as the crow flies). Buildings that integrate residential units at a density of 20 dwelling units per acre also qualify for this credit.

**Points:** **1**

**Intent:** Locate commercial buildings close to densely populated areas to reduce vehicle miles traveled.

**Submittals:** Area map that identifies adjacent properties, their use, and the building site.

**Resources:** -

## **S2.08 Access to Basic Services**

**Requirement:** Locate the building on a site that is within 1/2 mile of and has safe and walkable access to basic services (this can be measured as the crow flies). Each type of service may only be counted once, i.e. if there are 3 banks, for the purposes of this checklist that is equal to ONE service. Services include:

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Arts and entertainment center	Local Government Facility
Bank	Medical or dental office
Beauty Shop	Pharmacy
Bike Share Station	Place of worship
Civic Center	Police station
Community Center	Post office
Convenience store	Restaurant
Daycare center	School
Dry Cleaners	Senior Care Facility
Fire station	Supermarket
Fitness center or gym	Theater
Laundromat	Unique Service not stated in list
Library	Other Neighborhood-serving retail
Other office building or major employment center	

**Points:** 1 point awarded for each 3 unique services

**Intent:** Reduce vehicle miles traveled by locating building close to basic services.

**Submittals:** Aerial context map with building location, and location and type of basic services within ½ mile.

**Resources:** -

### S3 Site Enhancement

#### S3.01 Wetland Protection and Enhancement

**Requirement:** Sites located within 100 feet of wetlands shall restore the wetland and provide a minimum of a 25-foot buffer of uplands that include native vegetation, no irrigation, and signs indicating that the area is a restored natural area.

**Points:** 2

**Intent:** Minimize the impact and restore the wetlands.

**Submittals:** Site map identifying wetlands, plant list and restoration plan, delineating 25' upland buffer and showing that no irrigation will be installed within the 25' upland buffer.

**Resources:** -

#### S3.02 Minimize Site Disturbance

**Requirement:** Limit site disturbance to a maximum of 40 feet beyond the building footprint and 25 feet beyond any parking or site amenity.

**Points:** 1

**Intent:** Minimize site disturbance.

**Submittals:** Copy of project site indicating building footprint, parking and amenities that includes the limits of construction activities and the site boundary

**Resources:** -

### S3.03 Site Open Space

**Requirement:** Exceed minimum zoning requirements for open space by 25%. Stormwater retention/detention areas may be included in the open space calculations if they are specifically designed for dual use/function, for example, recreation areas that function as dry detention may be included in the calculation. Earn additional points for shaded open space: a minimum of 50% of the open space must be shaded by structures or vegetation within 10 years.

**Points:** **2 points: Increased Open Space**  
**4 points: Increased Shaded Open Space**

**Intent:** Provide natural open space with shade to reduce the heat islands around the building, provide building occupants with outdoor spaces, and enhance the environment with trees.

**Submittals:** Provide a site plan with the building footprint, square footage of building footprint (or a copy of the local zoning open space requirements) that shows the designated open space and landscape plan. If claiming shaded area using trees, also provide a list of trees and their projected canopies after 10 years.

**Resources:** -

### S3.04 Sidewalks

**Requirement:** Provide sidewalks for all paths marked for use by the building occupants. Sidewalks shall be a minimum of 5' wide (unless connecting to a sidewalk of different width), stable, firm, slip-resistant materials.

**Points:** **1**

**Intent:** Improve the walkability and safety of the site.

**Submittals:** Site plan showing sidewalks and photos of completed installed sidewalks.

**Resources:** -

### S3.05 Connectivity

**Requirement:** Provide connections to adjacent sites via sidewalks, bike paths, and trails. A minimum of a 2-mile radius of connectivity must be provided to claim this credit.

**Points:** **1**

**Intent:** Improve the connectivity of the community and encourage pedestrian and bike traffic.

**Submittals:** Site plan showing connections and trails. Include photos of completed site identifying connectivity features.

**Resources:** -

## S4 Reduce Heat Islands – Hardscape

### S4.01 Parking Capacity

**Requirement:** Pursue parking reduction via waiver, variance, or shared parking agreement. Parking quantity required must be less than the base parking ratio calculation.

- Points:** 1-3
- 1 point:** Provide less parking than required by the base parking ratio calculation.
  - 1 point:** Enter into a shared parking use agreement with surrounding properties.
  - 2 points:** Provide 5% less parking than required by the base parking ratio calculation.
  - 3 points:** Provide 10% less parking than required by the base parking ratio calculation.
- Intent:** Reduce areas that may be impervious, create heat islands, or discourage use of multimodal transportation. Design team must work with the local jurisdiction to reduce the typically required parking by proposing shared parking or other multimodal transportation methods.
- Submittals:** Provide a calculation of the zoning required parking spaces, a letter from the local jurisdiction indicating the projects parking requirements and a site plan with a total parking count.
- Resources:** -

#### **S4.02 Under Building or Structured Parking**

- Requirement:** A minimum of 50% of the space under the building shall be used for parking.
- Points:** 3
- Intent:** Reduce heat islands, reduce impervious surface, and raise the finish floor elevation (FFE) for disaster mitigation.
- Submittals:** Provide construction drawings and photos of structured parking.
- Resources:** -

#### **S4.03 Shaded, Covered or High Albedo Hardscape**

- Requirement:** Shade, cover or use high albedo hardscape for a minimum of 40% of the site hardscape. For the purpose of this credit site hardscape includes roads, sidewalks, courtyards, amenity decks, and parking lots. Areas square footage that may be included in this calculation are hardscape shading by trees within 10 years, structures with roof materials with an SRI  $\geq 78$  or an LRV  $\geq 50$ , structured parking or hardscape with an SRI  $> 35$ . The building footprint, i.e., square footage of roof is NOT considered hardscape unless used as a rooftop terrace amenity. Hardscape shaded by photovoltaic panels or other systems that are generating electricity can be included in the shade square footage calculation and are exempt from meeting the SRI  $\geq 78$  requirement.
- Points:** 2 points: 40% hardscape coverage  
3 points: 60% hardscape coverage  
4 points: 80% hardscape coverage
- Intent:** Reduce heat islands of the developed site.
- Submittals:** Provide a site plan identifying all the site features and hardscape quantities. Provide approved submittals and photos of hardscape materials and photos of installed hardscape.
- Resources:** -



## S4.04 Compact or Automated Parking

**Requirement:** Incorporate lifts, elevators, or valet parking to reduce the structure required to support the parking demands of the high rise. Earn 1 point if a minimum of 10% of the total parking spaces provided are stack parking, elevators, or lifts. Earn 2 points for 20% and 3 points for 30%. Three points are also available if the project has 100% valet parking.

**Points:** 1 – 3

**1 point:** ≥ 10% stacked parking

**2 points:** ≥ 20% stacked parking

**3 points:** ≥ 30% stacked parking

**3 points:** 100% Valet Parking

**Intent:** Minimize the site footprint of construction materials associated with on-site parking

**Submittals:** Detail and description of plan and system

**Resources:**

## S4.05 Alternative Fuel Vehicles

**Requirement:** Provide preferred parking and or accommodations based on the requirements listed below, for alternative fuel, hybrid, high capacity or electrical vehicle. Points are available based on the percentage of preferred parking and type of accommodations installed.

**Points:** 1 - 4

**1 point:** 3% of the total parking spaces provided are designated for alternative fuel, hybrid, high capacity or electrical vehicle

**1 point:** 10% of the total parking spaces are designed and constructed to include conduit and dedicated electrical capacity that will allow for non-invasive installation of electric chargers at a future date

**2 points:** 1.5% of the total parking spaces provided are designated for electrical vehicle charging. Provide a minimum of one 220-volt 40 Amp outlet at each parking space

**3 points:** 3% of the total parking spaces provided are designated for electrical vehicle charging. Provide a minimum of one 220-volt 40 Amp outlet at each parking space

**Intent:** Reduce pollution and land development impacts from automobile use.

**Submittals:** Plan identifying location of preferred parking, description of charging apparatus and photos of installed equipment

**Resources:** -

## S5 Reduce Heat Islands - Roof

**Requirement:** To qualify for this credit, the roof materials must be Energy Star, have a SRI  $\geq$  60 or be a vegetated roof structure. If vegetated, the vegetated roof must have a minimum of 80% Florida friendly low water vegetation installed. One point is awarded for each 20% of roof area that is reflective, vegetated, or shaded by solar electric devices.

- Points:** 1-4  
**1 point:**  $\geq 20\%$  and  $< 40\%$  Energy Star, reflective or vegetated roof  
**2 points:**  $\geq 40\%$  and  $< 60\%$  Energy Star, reflective or vegetated roof  
**3 points:**  $\geq 60\%$  and  $< 80\%$  Energy Star, reflective or vegetated roof  
**4 points:**  $\geq 80\%$  Energy Star, reflective or vegetated roof
- Intent:** Reduce heat island effect of site development.
- Submittals:** Provide a roof drawing with area calculations, signed approved submittal of roof materials and photos of installed roofing where possible.
- Resources:** -

## S6 Reduce Heat Islands - Building

**Requirement:** To qualify for this credit, a minimum of 20% of the exterior wall surface area minus the glazing must have an LRV or SRI  $\geq 60$  for stucco and painted all finishes, an SRI  $\geq 29$  for metal and vinyl. Natural and man-made stone products must be light in color and comparable to LRV  $\geq 60$  paint. If a documented reflectivity is not available, this credit may only be awarded to “white” or “off white” finishes.

- Points:**
- |                 |   |
|-----------------|---|
| <b>1 point</b>  | $\geq 20\%$ and $< 40\%$ reflectant or shaded exterior wall |
| <b>2 points</b> | $\geq 40\%$ and $< 60\%$ reflectant or shaded exterior wall |
| <b>3 points</b> | $\geq 60\%$ and $< 80\%$ reflectant or shaded exterior wall |
| <b>4 points</b> | $\geq 80\%$ reflectant or shaded exterior wall              |
- Intent:** Reduce heat island effect of site development and vertical construction.
- Submittals:** Provide a cut sheet of the exterior wall coating/paint, shading calculations, and photos of building exterior.
- References:** [www.sherwin-williams.com/architects-specifiers-designers/specs-and-green-solutions/](http://www.sherwin-williams.com/architects-specifiers-designers/specs-and-green-solutions/)  
[www.texcote.com/specs.php](http://www.texcote.com/specs.php)

## S7 Stormwater

### S7.01 Less than 10 acres, less than 2 acres of impact (<10<2)

**Requirement:** Increase the quality of stormwater discharge. One point is available for each 50% improvement in water quality as calculated by the project civil engineer.

- Points:**
- |                 |  |
|-----------------|--|
| <b>1 point</b>  | $\geq 50\%$ and $< 100\%$ increase in water quality  |
| <b>2 points</b> | $\geq 100\%$ and $< 150\%$ increase in water quality |
| <b>3 points</b> | $\geq 150\%$ increase in water quality               |

- Intent:** Improve natural waterways by minimizing stormwater run-off contaminants.
- Submittals:** Civil Engineer stormwater calculations.
- References:**

## S7.02 Standard General

**Requirement:** Increase the quality of stormwater discharge. One point is available for a 50% increase in water quality and a maximum 85% predevelopment discharge. One additional point is available for each 10% decrease in predevelopment discharge.

**Points:**  
**1 point** ≥ 50% increase in water quality, ≤ 85% and > 75% predevelopment discharge  
**2 points** ≥ 50% increase in water quality, ≤ 75% and > 65% predevelopment discharge  
**3 points** ≥ 50% increase in water quality, ≤ 65% predevelopment discharge

**Intent:**

**Submittals:** Civil Engineering stormwater calculations and narrative explaining how the design improves the water quality

**References:**

## S7.03 Treat Stormwater from adjacent sites

**Requirement:** Collect and treat stormwater from adjacent properties to assist in controlling both the quantity and quality of stormwater in the community. Earn one point for each additional 10% of stormwater volume the project site can retain and treat.

**Points:**  
**1 point** Collect and treat an additional 10% to < 20%  
**2 points** Collect and treat an additional 20% to < 30%  
**3 points** Collect and treat an additional 30% or more

**Intent:** Improve the quality of natural waterways by improving the quality of and reducing the quantity of stormwater discharge.

**Submittals:** Civil Engineering stormwater calculations and narrative indicating quantity and treatment of stormwater collected from adjacent sites.

**Resources:** -

## S7.04 Littoral Vegetation of Manmade Stormwater Detention

**Requirement:** Littoral zone of man-made stormwater detention basins that function as wet ponds shall have a minimum of 50% of the pond bank vegetated with native wetland plants of diverse species in appropriate locations for the vegetation type. To create this landscaped littoral shelf, the slope between the normal water level elevation and three feet below the normal water level elevation should be no greater than 6:1. Earn one point for 50% of pond bank coverage and earn an additional point for each additional 25% of pond bank coverage.

**Points:**  
**1 point** ≥ 50% and < 75% of pond bank planted with littorals  
**2 points** ≥ 75% and < 100% of pond bank planted with littorals  
**3 points** 100% of pond bank planted with littorals

**Intent:** Improve stormwater quality, littoral vegetation reduces the amount and proximity of sod which also reduces the amount of pesticides and fertilizers that enter our waterways.

**Submittals:** Plant list, detention pond design and photos of final installed stormwater system.

**References:** -

## S7.05 Pervious Hardscape

**Requirement:** Install pervious hardscape for a minimum of 25% of the site. Site hardscape includes roads, sidewalks, courtyards, and parking lots. Hardscape may be porous pavers (open grid pavers) or permeable pavement (minimum percolation rate of 2 gal/min/SF and a minimum of 6 inches of open graded base below.

**Points:**

<b>1 point</b>	<b>≥ 25% and &lt; 50% pervious hardscape installed</b>
<b>2 points</b>	<b>≥ 50% and &lt; 75% pervious hardscape installed</b>
<b>3 points</b>	<b>≥ 75% pervious hardscape installed</b>

**Intent:** Improve quality of stormwater discharge and allow groundwater recharge.

**Submittals:** Site drawing with pervious hardscape identified, approved submittal of hardscape materials, percolation calculation and photos of installed hardscape.

**References:**

## S7.06 Alternative Stormwater Detention

**Requirement:** Uses Low Impact Development (LID) alternatives to collect and treat stormwater. Alternative systems that qualify include rain gardens, bio-retention filtration systems, infiltration trenches, and vegetated roofing. A minimum of 50% of the stormwater collection and treatment must use the low impact development treatment system to achieve this credit. Earn one point if 50% of the site stormwater is collected using low LID techniques. Earn an additional point for each additional 25% of total site stormwater that is collected using LID techniques.

**Points:**

<b>1 point</b>	<b>≥ 50% and &lt; 75% of stormwater is collected using LID techniques</b>
<b>2 points</b>	<b>≥ 75% and &lt; 100% of stormwater is collected using LID techniques</b>
<b>3 points</b>	<b>100% of stormwater is collected using LID techniques</b>

**Intent:** Improve quality of natural waterways and stormwater discharge.

**Submittals:** Site design, stormwater calculations, construction details of low impact development designs and photos of final installed stormwater system.

**Resources:** -

## S8 Vehicular Transportation Alternatives

### S8.01 Bicycle Storage

**Requirement:** Project must provide securing locations for minimum of 2 bicyclers (1 bike rack) or 1 bike rack per 5,000 square feet of retail and 5,000 SF of commercial.

**Points:** 2

**Intent:** Encourage transportation alternatives to the automobile.

**Submittals:** Site plan identifying bike racks and cut sheet of bike racks selected.

**Resources:** -

## S8.02 Changing Rooms

**Requirement:** Project must provide a minimum of 1 changing room per 25,000 SF of building. **Single bathrooms may qualify, gang style bathrooms do not.**

**Points:** 1

**Intent:** Provide a location for individuals walking or biking to work to change.

**Submittals:** Floor plan that identifies changing room.

**Resources:** -

## S8.03 Showering Facility

**Requirement:** Full time occupants have access to a shower facility, free of charge, located on site or in an immediately adjacent facility (within 200 yards). If the showers are located on site, one shower for each 5% full time equivalent employee.

**Points:** 1

**Intent:** Provide a location for individuals walking or biking to work to change.

**Submittals:** Floor plan that identifies the showers.

**Resources:** -

## S9 Exterior Lighting (not attached to building)

### S9.01 Meets Dark Sky Requirements

**Requirement:** Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IESNA Classification. If the bulb exceeds 26W the lights shall be full cut off luminaires so that no light or brightness from those luminaires crosses the property boundary.

**Points:** 1

**Intent:** Eliminate light trespass from the building and site, improve night sky access and reduce development impact on nocturnal environments.

**Submittals:** Provide signed approved submittal and photos of installed lighting

**Resources:** -

### S9.02 Lights Provide >100 lumens/watt

**Requirement:** Exterior lighting fixtures selected provide a minimum of 100 lumens/watt.

**Points:** 1

**Intent:** Provide lighting while reducing energy consumption.

**Submittals:** Provide signed approved submittal and photos of installed lighting.

**Resources:** -

### S9.03 Lights are Solar Powered

**Requirement:** Exterior lighting fixtures are equipped with solar panels. Site design and landscape design allow for maximum solar collection over the life of the PV's. Collectors must remain unobstructed from shade from trees (within the site boundaries) for 15 years

**Points:** 1 point for 50% of site lighting  
2 points for 70% of site lighting  
3 points for 90% of site lighting

**Intent:** Provide exterior lighting while reducing energy consumption.

**Submittals:** Cut sheets of lighting fixtures selected and a copy of the landscape plan that indicates mature growth does not obstruct lights.

**Resources:** -

### **S9.04 Exterior lighting is on timers or daylight sensors**

**Requirement:** A minimum of 50% of the installed exterior lighting in controlled by timers or daylight sensors

**Points:** 1

**Intent:** Reduce energy consumption from lighting by installing sensors that automatically dim artificial lighting in daylight or are set to an automatic timer and are daylight hours.

**Submittals:** Provide approved submittal of sensors or timer or lighting submittal indicating sensors are integral to lights. Include Site plan with location of daylight/motion sensors. Provide photos of installed sensors and installed lighting.

**Resources:** -

## CATEGORY 5: HEALTH

### H Prerequisite 1: Environmental Tobacco Smoke (ETS) Control

**Requirement:** No smoking allowed in the building. If smoking is allowed on the site, designated smoking areas must be located a minimum of 25 feet away from all doors, operable windows, HVAC equipment, and fresh air intakes. **No smoking signs must be installed at all main building entrances.** No smoking campuses and no smoking buildings also comply with this prerequisite

**Points:** **Prerequisite - Required**

**Intent:** Prevent exposure of building occupants and systems to Environmental Tobacco Smoke (ETS).

**Submittals:** **Photos of no smoking signs installed at all main building entrances are required.** If smoking is allowed on the site, please provide dimensioned site plan indicating designated smoking area indicating the distances to doors and intakes. If no smoking campus or building, please provide the written policy.

**Resources:** -

### H Prerequisite 2: Indoor Air Quality (IAQ) Management Plan, During Construction

**Requirement:** Indoor Environmental Quality shall be protected during construction according to the Sheet Metal & Air Conditioning Contractors' National Association (SMACNA) guidelines for occupied buildings under construction.

**Points:** **Prerequisite - Required**

**Intent:** Prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the long-term health, comfort and well-being of construction workers and building occupants.

**Submittals:** Provide copy of the specifications indicating use of SMACNA guidelines, a copy of the written Indoor Air Quality Management (IAQ) Plan and photos of the IAQ procedures in place during construction.

**Resources:** -

## H1 Protect, Monitor, & Remediate Poor IAQ

### H1.01 Carbon Dioxide

**Requirement:** Systems shall be designed to monitor carbon dioxide (CO<sub>2</sub>) within the building and activate an audible alarm w/ corrective action plan such that mechanical air conditioning system can introduce treated fresh air as needed.

**Points:** **1**

**Intent:** Provide capacity for indoor air quality (IAQ) monitoring to help sustain long-term occupant health, comfort and well-being.

**Submittals:** Provide copy of approved submittal of equipment provided, plans indicating installed locations. Mechanical engineer may provide a brief narrative indicating system design and function.

**Resources:** -

## H1.02 Humidity Monitoring & Control

**Requirement:** Systems shall be designed to monitor humidity within the building and activate an audible alarm w/ corrective action plan. System installed to control building humidity such as a desiccant system, enthalpy wheel, heat pipes, or dual path system. The dehumidification system shall be a centrally located and permanent.

**Points:** 5

**Intent:** Reduce relative humidity inside the building to improve the indoor environment

**Submittals:** Provide a copy of the signed approved submittal of the equipment used for dehumidification. The mechanical engineer must provide calculations and narrative describing the removal of latent heat and humidity range that will be maintained by the system.

**Resources:** -

## H1.03 Building Entrance – Outdoor Pollutants

**Requirement:** Project shall employ measures such as permanent walk-off grates or mats located at the building main entrance to reduce pollutant contamination of the building entrances. If mats are used, the mats must be, at a minimum, the width of the door and 4 feet in the line of travel. Mats may be placed inside or outside the building entrance, however if placed outside the mat must be under appropriate cover. A maintenance plan must be included to maintain the integrity of the installed system.

**Points:** 1

**Intent:** Improve the indoor environmental quality by reducing the amount of pollutants brought inside the building by foot traffic.

**Submittals:** Provide construction detail of the system installed and photos or photos of installed mats and a copy of the maintenance plan/contract.

**Resources:** -

## H1.04 Building Entrance – Covered Entrance

**Requirement:** Main entrance of the building shall be covered with no less than 50 square feet of roof to protect entrance from rain. 1 point is available for a covered entrance; 2 points are available if there is a covered path from parking to the main entrance or a porte cochere at the main entrance.

**Points:** 1 point            50 SF minimum of covered entrance  
2 points                50 SF minimum covered entrance covered path from parking to main entrance or porte cochere.

**Intent:** Protect the building from water intrusion from rain and provide a protected path for building occupants.

**Submittals:** Provide a copy of the dimensioned plan indicating the covered entrance, the square footage of the entrance cover and photos of the entrance.

**Resources:** -



## H1.05 High Efficiency Air Filtration System

### H1.05.01 Common Areas

**Requirement:** Design a mechanical ventilation system to include improved air filtration.

**Points:** 1-6

**1 point:** Install MERV 8 Air Filters During Construction

**1 point:** Install MERV 8 Air Filters Pre-Occupancy

**2 points:** Install MERV 13 Air Filters During Construction

**2 points:** Install MERV 13 Air Filters Pre-Occupancy

**2 Points:** Equip air conditioning systems with UV lights

**Intent:** Provide improved indoor air quality.

**Submittals:** Cut sheet of air filter system.

**Resources:**

### H1.05.02 Tenant Spaces

**Requirement:** Design a mechanical ventilation system to include improved air filtration.

**Points:** 1-6

**1 point:** Install MERV 8 Air Filters During Construction

**1 point:** Install MERV 8 Air Filters Pre-Occupancy

**2 points:** Install MERV 13 Air Filters During Construction

**2 points:** Install MERV 13 Air Filters Pre-Occupancy

**2 Points:** Equip air conditioning systems with UV lights

**Intent:** Provide improved indoor air quality.

**Submittals:** Cut sheet of air filter system.

**Resources:**

## H1.06 Chemical and Cleaning Product Storage

**Requirement:** Any room(s) containing chemicals or cleaning products for building O&M is ventilated at a minimum of 0.5 cfm per square foot creating negative pressure with respect to the building. The room must also have a door installed that will automatically close. The deck-to-deck partition must be sealed.

**Points:** 1

**Intent:** Provide for the effective delivery and mixing of fresh air to support the health, safety, comfort, and well-being of building occupants.

**Submittals:** Provide for the effective delivery and mixing of fresh air to support the health, safety, comfort, and well-being of building occupants

**Resources:** -

**H1.07 Radon Mitigation**

**Requirement:** Install a passive or active system as needed for your building location to mitigate for radon.

**Points:** 1

**Intent:** Improve the indoor environment

**Submittals:** Construction detail and photos of installed system

**Resources:** -

**H1.08 Pre-Occupancy IAQ testing**

**Requirement:** Perform IAQ testing over a minimum 4-hour period for a minimum of at least one (1) test per 25,000 s.f. within the breathing zone, which is between 3’0” and 6’ 0” above the finished floor. Test and remediate building prior to occupancy using procedure consistent with the United States Environmental Protection Agency’s current *Protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445*.

Test for the following contaminants and maximum concentration:

<b>Contaminant</b>	<b>Maximum Concentration</b>
Formaldehyde	50 parts per billion
Particulates (PM10)	50 micrograms per cubic meter
Total Volatile Organic Compounds (TVOC)	500 micrograms per cubic meter
* 4-Phenylcyclohexene (4-PCH)	6.5 micrograms per cubic meter
Carbon Monoxide (CO)	9 parts per million and no greater than 2 parts per million above outdoor levels.

\*This test is only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed as part of the base building systems.

**Points:** 1

**Intent:** Provide the Owner with the option to test indoor air quality prior to occupancy.

**Submittals:** Copy of the IAQ testing results indicating that the maximum chemical contaminant concentration requirements are not exceeded.

**Resources:** -

**H2 Low Emitting Materials**

**H2.01 Adhesives and Sealants**

**Requirement:** All Adhesives and Sealants shall be low Volatile Organic Compound (VOC) and meet the VOC limits below which were established by the South Coast Air Quality Management District (SCAQMD) Rule #1168 or CDPH STD Method V1.1 AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

**VOC Limit, Less Water and Less Exempt Compounds in Grams per Liter**

<u>Architectural Applications</u>	<u>Current VOC Limit</u>
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

**Points:** 1

**Intent:** Improve indoor air quality by minimizing the VOC’s used during the construction process.

**Submittals:** Contractor shall maintain all Material Safety Data Sheet (MSDS) highlighting the stated VOC emissions for each adhesive and sealant used in the building.

**Resources:** <http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF>

**H2.02 Paints & Coatings**

**Requirement:** Interior paints and coatings shall be less than 100 g/l for non-flat paint and less than 50 g/l for flat paint.

For additional architectural coating VOC limits please refer to SCAQMD Rule 1113 or CARB 2007 SCM.

**Points:** 1

**Intent:** Improve indoor air quality by minimizing the VOC’s used during the construction process.

**Submittals:** Provide signed approved submittal for paints and coatings. Contractor shall maintain all Material Safety Data Sheet (MSDS) highlighting the stated VOC emissions for each adhesive and sealant used in the building.

**Resources:** <http://www.greenseal.org/FindGreenSealProductsandServices/Products.aspx?vid=ViewProductDetail&cid=10>

**H2.03 Carpet Systems**

**Requirement:** All carpet and carpet products shall meet the Carpet & Rug Institute Green Label or Green Label Plus Certification Program.

**Points:** 1 point: Green Label  
2 points: Green Label Plus

**Intent:** Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the health, comfort and well-being of installers and occupants.

**Submittals:** Provide signed approved submittal and photos of installed carpet  
**Resources:** <http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/green-building-standards.cfm>

## H2.04 Healthy Flooring

**Requirement:** 80% of a minimum of the flooring installed shall be classified as hard or resilient and comply with GreenGuard, Floorscore, Declare, RED LIST FREE, Cradle to Cradle, Blue Angel, Greenhealth or similar health related certification.

**Points:** 1

**Intent:** Provide signed approved submittal for installed flooring and photos of final installed flooring.

**Submittals:** Cut sheets of flooring selections.

**Resources:** <http://www.greenguard.org/>

## H2.05 Composite Wood and Agrifiber

**Requirement:** All composite wood and agrifiber products that are ultra-low emitting formaldehyde (ULEF) or are no added urea formaldehyde (NAUF).

**Points:** 1

**Intent:** Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the health, comfort and well-being of installers and occupants.

**Submittals:** Provide signed approved submittal for installed products and manufacturers catalog cut sheet for each composite wood or agrifiber product used in the building indicating that the bonding agent used in each product contains no added urea-formaldehyde. Also provide photos of installed wood and agrifiber products.

**Resources:** -

## H2.06 Insulation

**Requirement:** Use healthy insulation products

**Points:** 1 point: Formaldehyde free

2 points: GreenGuard

3 points: GreenGuard Gold or Biobased Insulations

**Intent:** Reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the health, comfort and well-being of installers and occupants.

**Submittals:** Provide signed approved submittal for insulation materials and manufacturers catalog cut sheet for each insulation product used in the building indicating that it contains no formaldehyde.

**Resources:** greenguard.org

## H2.07 Green Cleaning - Environmentally Friendly Maintenance - Green Cleaning Products in Common Areas

**Requirement:** Owner shall maintain or contract a cleaning service to maintain the property using only non-toxic cleaning supplies in the regular maintenance of the building. A list of approved supplies must be posted in janitor closets and in common areas such as break rooms and restrooms. Non-Toxic is defined as having a zero Health Hazard rating on the product’s Material Safety Data Sheet (MSDS) and listed as “non-toxic” for Acute Toxicity under “Section V - Health Information” on the MSDS. Alternatively, the products may be approved by the EPA’s Design for Environment program or Green Seal.

**Points:** 2

**Intent:** Reduce the amount of harmful chemicals used in the maintenance operations of the building

**Submittals:** Provide a list of approved cleaning products for the building

**Resources:** <http://www.epa.gov/dfe/pubs/projects/formulat/formpart.htm>  
<http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=16>

## H2.08 Furniture Fixtures and Equipment

**Requirement:** Purchase furniture certified by Greenguard Certified, Greenguard Gold Certified, Cradle to Cradle Certified™ Silver, Business plus Institutional Furniture Manufacturers Association (BIFMA) level™ or other similar program

**Points:** 2

**Intent:** Reduce the amount of harmful chemicals introduced while furnishing the project

**Submittals:** Provide documentation of furniture purchased and furniture certification

**Resources:**

## H3 System Control

### H3.01 Lighting

**Requirement:** A minimum of 25% of the full-time occupants must be able to directly control their individual lighting either through ambient or task lighting. One additional point is available for each additional 25% of full-time occupants that can control their lighting.

**Points:**

<b>1 point</b>	<b>≥ 25% and &lt; 50% of full-time occupants can control individual lighting</b>
<b>2 points</b>	<b>≥ 50% and &lt; 75% of full-time occupants can control individual lighting</b>
<b>3 points</b>	<b>≥ 75% and &lt; 90% of full-time occupants can control individual lighting</b>
<b>4 points</b>	<b>90% of full-time occupants can control individual lighting</b>

**Intent:** Increase occupant comfort and productivity by providing individual control over building occupant workspaces.

**Submittals:** Provide the building floorplan indicating lighting controls, a narrative explaining how occupants can control their immediate environment and cut sheets of lighting selections.

**Resources:** -

### H3.02 Thermal Comfort

**Requirement:** A minimum of 25% of the full-time occupants must be able to directly control their temperature settings for thermal comfort. One additional point is available for each additional 25% of full-time occupants that have control over their thermal comfort settings. Comply with ASHRAE Standard 55-1992, Addenda 1995, for thermal comfort standards including humidity control within established ranges per climate zone. Projects must employ both thermal and humidity control measures and systems to keep the space within the designated ranges specified by ASHRAE 55-1992.

**Points:**

- 1 point**     **≥ 25% & < 50% of full-time occupants can control temperature settings**
- 2 points**    **≥ 50% & < 75% of full-time occupants can control temperature settings**
- 3 points**    **≥ 75% & 90% of full-time occupants can control temperature settings**
- 4 points**    **90% of full-time occupants can control temperature settings**

**Intent:** Increase occupant comfort and productivity by providing individual control over building occupant workspaces.

**Submittals:** Provide a narrative from the mechanical engineer explaining how the project complies with ASHRAE Standard 55-1992, Addenda 1995.

**Resources:** -

## H4 Productive Work Environment

### H4.01 Daylighting

**Requirement:** Simulation: Demonstrate, through computer simulation, that a minimum daylight illumination level of 25 footcandles (or 250 lux) at 30 inches above the floor has been achieved in a minimum of 25% of all regularly occupied areas.

**Measurement:** Demonstrate, through records of indoor light measurements, that a minimum daylight illumination level of 25 footcandles (or 250 lux) has been achieved in at least 75% of all regularly occupied areas. Measurements must be taken on a 10-foot grid for all occupied spaces and must be recorded on building floor plans. Measurements must be taken under clear sky conditions, at 30" above the floor.

Achieve a minimum glazing factor of 2% in a minimum of 25% of all regularly occupied areas using the following:

$$Glazing\ Factor = \left(\frac{window\ area\ (sf)}{Floor\ area\ (sf)}\right)(window\ Geometry\ Factor)\left(\frac{Actual\ T_{vis}}{Minimum\ T_{vis}}\right)(window\ height\ factor)$$

**Core & Shell:** Core and shell buildings with 0.3 < window to wall ratio < 0.45 may also claim 1 daylight point.

**Points:**

- 1 point**           **≥ 25% and < 50% of occupied spaces achieve 2% Daylight Factor**
- 2 points**         **≥ 50% and < 75% of occupied spaces achieve 2% Daylight Factor**
- 3 points**         **≥ 75% and < 90% of occupied spaces achieve 2% Daylight Factor**
- 4 points**         **90% of occupied spaces achieve 2% Daylight Factor**

- Intent:** Increase occupant comfort and productivity by providing natural light to the building occupant workspaces.
- Submittals:** Provide plans specifying the daylight areas and daylighting calculations for occupied spaces. For core and shell buildings, provide the window to wall ratio calculations.
- Resources:** -

**H4.02 Acoustics**

**Requirement:** Earn one point for each assembly, exterior, interior, and fenestration that complies with the sound transmission coefficient (STC) ratings listed.

Exterior wall and Roof assembly have STC rating $\geq$ 50
Fenestration STC rating $\geq$ 30
Interior spaces: Private adjacent to private STC $\geq$ 45
Interior spaces: Private adjacent to public/common space STC $\geq$ 55

- Points:**
- |                 |                     |
|-----------------|---------------------|
| <b>1 point</b>  | <b>1 assembly</b>   |
| <b>2 points</b> | <b>2 assemblies</b> |
| <b>3 points</b> | <b>3 assemblies</b> |
| <b>4 points</b> | <b>4 assemblies</b> |

**Intent:** Increase occupant comfort and productivity by providing appropriate acoustical control for the building occupants.

**Submittals:** Provide cut sheets for the wall assembly and fenestration indicating the STC ratings.

**Resources:** -

**H4.03 Views**

**Requirement:** To comply with this credit, a minimum of 25% of the full-time occupants must have line of sight from their workstation to the exterior. Earn one point for each 25% of the full-time occupants that have line of site to the exterior.

- Points:**
- |                 |  |
|-----------------|--|
| <b>1 point</b>  | <b><math>\geq</math> 25% and <math>&lt;</math> 50% of full-time occupants have line of sight to exterior</b> |
| <b>2 points</b> | <b><math>\geq</math> 50% and <math>&lt;</math> 75% of full-time occupants have line of sight to exterior</b> |
| <b>3 points</b> | <b><math>\geq</math> 75% and <math>&lt;</math> 90% of full-time occupants have line of sight to exterior</b> |
| <b>4 points</b> | <b>90% of full-time occupants have line of sight to exterior</b>   |
- 1 Bonus point available if  $\geq$  50% of the views with access to nature, sky, or movement.**

**Core & Shell:** Core and shell buildings with  $0.3 <$  window to wall ratio  $<$  0.45 may also claim 1 point.

**Intent:** Increase occupant comfort and productivity by providing line of site to the outdoors.

**Submittals:** Provide a furniture plan of the building; indicate the location of building occupants and their line of site to the outdoors. For core and shell buildings, provide the window to wall ratio calculations.

**Resources:** -

#### **H4.04 Outdoor Space Provided for Employees**

**Requirement:** Provide a covered and or screened area outdoors for employee meetings or lunch breaks. To receive credit, this space must be designated non-smoking and be a minimum of 250 SF.

**Points:** 1

**Intent:** Increase occupant productivity by covered outdoor space for lunch, breaks, and meetings.

**Submittals:** Provide a site plan indicating outdoor space, type of cover, square footage and photos.

**Resources:** -



## CATEGORY 6: MATERIALS

### M1 Material Efficiency and Global Responsibility

#### M1.01 Remodel Existing Building

**Requirement:** Rehabilitate existing building.

Maintain a minimum of 10% of an existing building structure and shell (exterior skin and framing, excluding window assemblies) and non-structural roofing material.

**Points:** **1 point per 10% of building structure that is maintained**

**Intent:** Renovate existing building stock to conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

**Submittals:** Floor plan of existing building, demolition plan, and new building floor plan.

**Resources:** -

#### M1.02 Recycled Content

**Requirement:** Incorporate recycled materials (based on materials cost). Use materials with recycled content such that post-consumer and/or post-industrial recycled content constitutes a minimum of 5% of the total project cost. Earn one additional point for each additional 5% of recycled content materials. The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

Mechanical and electrical components shall not be included in this calculation. Recycled content materials shall be defined in accordance with the Federal Trade Commission document, Guide for the Use of Environmental Marketing Claims, 15 CFR 260.7 (e), available at [www.ftc.gov/bcp/gmrule/guides980427.htm](http://www.ftc.gov/bcp/gmrule/guides980427.htm).

**Points:**

<b>1 point</b>	<b>≥ 5% and &lt; 10% recycled content</b>
<b>2 points</b>	<b>≥ 10% and &lt; 15% recycled content</b>
<b>3 points</b>	<b>≥ 15% and &lt; 20% recycled content</b>
<b>4 points</b>	<b>≥ 20% recycled content</b>

**Intent:** Encourage the use of recycled content materials to minimize the environmental impacts associated with the extraction of virgin materials.

**Submittals:** Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.

**Resources:** -

#### M1.03 Rapidly Renewable Materials

**Requirement:** Incorporate rapidly renewable (plant to harvest cycle <10 years) into the project such as bamboo flooring, wool carpets, straw board, cotton batt insulation, linoleum flooring, poplar OSB, and sunflower seed board and wheatgrass cabinetry qualify for this credit.

- Points:** 1 point for using rapidly renewable materials
- Intent:** Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.
- Submittals:** Submit signed approved submittal and photos of installed materials.
- Resources:** -

### M1.04 Certified Wood

**Requirement:** All hardwood used on the project must be FSC, SFI or CSA certified. Use a minimum of 50% certified of wood-based materials and products, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers. Earn one additional point for each 25% additional certified wood used on the project.

- Points:**
- |          |                                   |
|----------|-----------------------------------|
| 1 point  | ≥ 40% and < 60% of certified wood |
| 2 points | ≥ 60% and < 80% of certified wood |
| 3 points | 80% of certified wood             |

- Intent:** Encourage environmentally responsible forest management.
- Submittals:** Submit a copy of the wood certification and the calculations showing percentage of certified wood used in the construction of the project. Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.
- Resources:** -

### M1.05 Biobased Materials

**Requirement:** Incorporate biobased materials into the project such as solid wood, engineered wood, bamboo, wool, cotton, cork, agricultural fibers, or other bio-based materials with at least 50% bio based content.

- Points:** 1 point for incorporating biobased materials
- Intent:** Encourage the use of natural products.
- Submittals:** Submit signed approved submittal and photos of installed materials.
- Resources:** -

### M1.06 Resource Efficient or Panelized Wall Systems

**Requirement:** Install a minimum of 80% of the non-structural exterior walls must be Autoclaved Aerated Concrete (AAC), Insulated Concrete Forms (ICF), or Structural Insulated Panels (SIPs) or a combination thereof.

- Points:** 2
- Intent:** AAC is composed of cement, sand, lime, and an aerating agent, which is baked in an autoclave oven. The result is a very lightweight insulated concrete product. Blocks and panels are stacked similar to bricks and held together with adhesive. ICFs are a family of exterior wall systems that provide the strength of structural concrete walls with the thermal performance of integral insulation and high thermal mass. Generally, a

Styrofoam form is filled with poured concrete, or concrete is used to surround a Styrofoam core. SIPs generally consist of two (outer) layers of structural sheet material and foam core, ranging from 2 to 12 inches thick. They can be used to build exterior walls, roofs, and floors.

**Submittals:** Photo, detailed plans, or material cut sheets.

**Resources:**

## **M2 Waste Management**

### **M2.01 Construction Waste Recycling**

**Requirement:** Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage a minimum of 50% of construction, demolition, and land clearing waste. Calculations can be done by weight or volume but must be consistent throughout. Earn additional points for increased diversion of waste.

**Points:** **2 point:**  $\geq 50\% < 75\%$

**3 points:**  $> 75\% < 90\%$

**4 points:**  $> 90\%$

**Intent:** Divert construction, demolition, and land clearing debris from landfill disposal. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

**Submittals:** Provide copies of the monthly waste reports indicating diverted waste and calculate the total waste material diversion rate

**Resources:** -

### **M2.02 Recycling for Building and Tenants**

**Requirement:** Provide an accessible area that serves all the building occupants that is dedicated to the collection, separation, and storage of recyclables. Recycling rooms in the buildings shall be a minimum of 0.05% of the total conditioned square footage of the building while recycling areas outside the structure shall accommodate a minimum of a 3 CY dumpster for every 50,000 SF of conditioned space. Alternatively install an integrated recycling trash chute, which are serviced by a recycling waste hauler, that allow the occupants, when disposing of waste, to select either recycling or waste. FGBC will consider multiple pick-ups per week when reviewing compliance with the credit. This credit is only available to locations that are serviced by an existing commercial recycling provider

**Points:** **1**

**Intent:** To increase the reclamation and recycling of one of the largest volumes of landfill materials.

**Submittals:** Provide a copy of the contract that highlights the terms of the purchase / lease of floor coverings that will be taken back by the manufacturer for recycling rather than disposal in landfill

**Resources:** -

## M2.03 Recyclable Materials

**Requirement:** Use materials that at the end of their useful lifecycle can be recycled by the manufacturer into the raw materials stream of another product. The value of such products will constitute a minimum of 10% of the total value of the materials in the project. The materials selected to comply with this category must be recyclable through a structured existing program.

**Points:** 1

**Intent:** Increase the demand for materials that are recyclable at the end of their useful life cycle.

**Submittals:** Provide cut sheets for the products calculated as a part of this credit and information about the existing recycling facilities. This credit may also be claimed if the area has an established C&D waste recycling infrastructure.

**Resources:** -

## M2.04 Demountable / Adaptable Interiors

**Requirement:** A minimum of 50% of the linear feet (LF) of interior wall partitions must be constructed from demountable / adaptable partitions.

**Points:** 1

**Intent:** Reduce the amount of waste generated over the life of the building as a result of churn and remodeling.

**Submittals:** Provide a floor plan indicating the location of the demountable wall partitions, a calculation of the total LF of partition walls and a calculation of the total LF of demountable walls. Also provide a cut sheet and photos of the installed wall systems used.

**Resources:** -

## M2.05 Durable Materials, Exterior Finish Materials

**Requirement:** Use finishes systems and materials capable of withstanding the moisture and heat impacts of the local climate for a period of 25 years on 100% of the exposed exterior surfaces. Exterior surface products must have a minimum of a 25-year warranty.

**Points:** 1

**Intent:** Improve the durability of the building envelope and reduce the need to replace existing structural finish components and materials over the expected lifetime of the building.

**Submittals:** Provide plan details identifying the exterior materials, approved submittals, and corresponding warranty certificate for exterior finish materials

**Resources:** -

## M2.06 Low Maintenance Finishes

**Requirement:** Use interior and exterior finish materials that require minimal or no periodic cleaning. Use materials (on the floors, walls, and ceilings) that can be maintained in a serviceable condition with minimal periodic cleaning for 100% of the interior finishes and 50% (by surface area) of the exterior finishes of the building.

- Points:** 1
- Intent:** Reduce the need for harsh maintenance chemicals thereby reducing the source pollution within and around the building and improving the indoor air quality.
- Submittals:** Provide copies of the manufacturer’s recommended maintenance procedures for the interior and exterior finishes.
- Resources:** -

### M3 Local/Regional Materials

#### M3.01 Local Manufacturing

**Requirement:** Earn one point by using a minimum of 25% (by cost) based on project cost (div 2-10) of building materials and products that are manufactured\* within a 700-mile radius of the project site. Earn one additional point for each additional 25% of materials that are manufactured within 700 miles of the project site.

\*Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesman. For example, if the hardware comes from Dallas, Texas, the lumber from Vancouver, British Columbia and the truss is assembled in Kent, Washington; then the location of the final assembly is Kent, Washington.

6 OUT OF 31 PROJECTS CLAIMED THIS CREDIT. THE AVERAGE WAS 26.8, THE HIGH 43.2 AND THE LOW 13.0

- Points:**
- 1 point:**  $\geq 10\% \leq 20\%$  of building materials manufactured within 700-mile radius
  - 2 points**  $> 20\%$  and  $\leq 30\%$  of building materials manufactured within 700-mile radius
  - 3 points**  $> 30\%$  and  $\leq 40\%$  of building materials manufactured within 700-mile radius
  - 4 points**  $> 40\%$  of building materials manufactured within 700-mile radius

**Intent:** Increase demands for building materials and products that are extracted and manufactured within the region, thereby reducing the environmental impacts resulting from transportation and supporting the regional economy.

**Submittals:** Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.

**Resources:** -

#### M3.02 Local Raw Materials Extraction

**Requirement:** A minimum of 10% of the project materials are made from raw materials that are harvested, extracted, or recovered within a 700-mile radius from project site. Earn additional points for each additional 10% of the project materials that are extracted within 700 miles of project site.

- Points:**
- 1 point**  $\geq 5\%$  and  $< 10\%$  harvested, extracted, or recovered within 700-mile radius
  - 2 points**  $> 10\%$  and  $< 15\%$  harvested, extracted, or recovered within 700-mile radius
  - 3 points**  $> 15\%$  and  $< 20\%$  harvested, extracted, or recovered within 700-mile radius
  - 4 points**  $> 20\%$  harvested, extracted, or recovered within 700-mile radius

**Intent:** Reduce the use of virgin materials.

**Submittals:** Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.

**Resources:** -

### **M3.03 Resource Reuse**

**Requirement:** **Incorporate** salvaged, refurbished, or reused materials, products and furnishings into the project to earn one point.

**Points:** **1 point**            **1 point for reusing materials**

**Intent:** Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste thereby reducing impacts associated with the extraction and processing of virgin resources.

**Submittals:** Submit supporting documentation and photos

**Resources:** -

## CATEGORY 7: DISASTER MITIGATION

### DM1 Hurricane Resistance

#### DM1.01 Impact Glazing

**Requirement:** ALL installed glazing is impact resistant.

**Points:** 3

**Intent:** Increase the structural integrity of the building during high wind conditions, reducing the potential for damage, thus decreasing the potential waste and need for replacement materials after the storm.

**Submittals:** Provide the manufacturer's cut sheets for the impact resistant products indicating the required approvals and classifications. Photos of the window stickers and or shop drawings may also be provided.

**Resources:** [www.buildingcodeonline.com](http://www.buildingcodeonline.com) or <http://hus.parkingspa.com/hc3.asp>

#### DM1.02 Building Integrated Hurricane Shutters

**Requirement:** Building is equipped with solid, integrated Miami Dade approved hurricane shutters. Shutters that rain can penetrate or shutters that must be manually installed do not qualify for this credit.

**Points:** 3

**Intent:** Improve the durability of the structure against high winds, driving rain conditions, and atmospheric pressurization; thereby reducing the potential for interior damage, and decreasing the potential waste and need for replacement after a storm.

**Submittals:** Signed approved submittal and photos of installed shutters.

**Resources:** [www.buildingcodeonline.com](http://www.buildingcodeonline.com) or <http://hus.parkingspa.com/hc3.asp>

#### DM1.03 Building Hardening

**Requirement:** Building is engineered to withstand design pressures that are 15% greater than the code requirements for the area. Additional points available for Fortified Commercial Certification

**Points:** 2 points for Increased design pressure

2 points for Fortified Roof

4 points for Fortified Silver

5 points for Fortified Gold

**Intent:** Increase the hurricane resistance of the building.

**Submittals:** Design calculations and a narrative from the architect or structural engineer explaining measures taken to improve the buildings resistance to hurricanes.

**Resources:** <https://fortifiedhome.org/commercial-levels/>

## DM1.04 Uninterrupted Operations

**Requirement:** The building through use of renewable energy or generators must be able to continue operations during times of extended grid source power loss. The power back-up system must be designed to provide a minimum 8 hours of operation per day for 3 days.

**Points:** 3

**Intent:** Allow businesses to run and service the community after storm events.

**Submittals:** Approved submittal and photos of installed system

**Resources:** -

## DM1.05 Building is Designated a Hurricane Shelter

**Requirement:** The building is designed to meet or exceed the requirements for Florida hurricane shelters. Requirements may vary based on local jurisdiction and wind loads. The credits are only available if the building complies with the Hurricane Shelter requirements of the location.

**Points:** 5

**Intent:** Provide a durable building that can also service the community.

**Submittals:** A brief narrative describing the features added to comply with the local hurricane shelter requirements.

**Resources:** Florida Disaster Hurricane Shelters and Critical Facilities Library  
<http://www.floridadisaster.org/Response/engineers/library.htm>  
Standards for Hurricane Evacuation Shelter Selection  
<http://www.floridadisaster.org/Response/engineers/SESPlans/2010SESPlan/documents/2010-SESP-AppxCfinal.pdf>  
Performance Standards and Expectations of Hurricane Shelters  
[http://www.floridadisaster.org/Response/engineers/documents/06\\_GHC-PerfStds-of-Shelters.pdf](http://www.floridadisaster.org/Response/engineers/documents/06_GHC-PerfStds-of-Shelters.pdf)  
ICC/NSSA Storm Shelter Standard (Draft)  
<http://www.floridadisaster.org/Response/engineers/documents/2006%20GHC%20ICC%20Tezak.pdf>

2017 Florida Building Code—Building, 6th Edition Section 453.25 Public Shelter Design Criteria

[https://www.floridadisaster.org/globalassets/dem/response/sesp/2018/appendices/2018-sesp-appendix-b\\_fbc-text\\_final\\_1-29-18.pdf](https://www.floridadisaster.org/globalassets/dem/response/sesp/2018/appendices/2018-sesp-appendix-b_fbc-text_final_1-29-18.pdf)

## DMD1.06 Shelter in Place

**Requirement:** Provide an area served by backup power (generator or similar) that is air conditioned for a minimum of 25% of the building full time occupants. Provide backup power to back of house refrigeration. Provide an emergency circuit tied to back up power in each residential unit that serves the refrigerator and a minimum of 2 duplex 110 outlets.

**Points:** 1-4

**1 point: Provide backup power to back of house refrigeration**



**3 points: Provide an air-conditioned common area of respite for a minimum of 25% of the full-time building occupants.**

**Intent:** Provide area for residence to have access to air-conditioning and electric for health and safety.

**Submittals:** Provide generation needs calculation and corresponding construction details.

**Resources:**

## **DM2 Pest Management**

### **DM2.01 Termite Prevention**

**Requirement:** Comprehensive termite prevention: Provide signage in each unit indicating termite treatment provider. Provide the building manager or HOA necessary information for re-inspection and treatment contract renewal.

1. A single slab must be poured monolithically or must have area treated for termites (conventionally or by approved alternative) before each portion of slab is poured.
2. After the slab has substantially cured, any penetration through the slab such as piping, or conduit shall be sealed around its perimeter with an elastomeric sealer.
3. Any foam insulation must terminate above ground such that none of it extends below grade.
4. The exterior cladding of the building must terminate at least 8" above grade.
5. All structural wood products must be treated with Borate or ACQ OR wood must not be used for any structural components of the building.
6. Rainwater conveyance must be discharged into stormwater management system or be conveyed a minimum of 3 feet away from the building foundation.
7. All HVAC condensate line(s) must be collected for reuse, discharged into stormwater management system, or conveyed at least 3 feet away from the building.
8. All plants and irrigation should be at least 3 feet from building.

**Points:** 3

**Intent:** Increase the termite resistance of the building, reducing the potential for damage from termite infestation, thus decreasing the potential waste and need for replacement materials after the damage is detected.

**Submittals:** Provide project photos, copy of warrantee, and appropriate construction details

**Resources:** -

### **DM2.02 Physical Termite Barrier**

**Requirement:** Physical barriers must be used in addition to or in lieu of traditional termite treatments. Physical barriers include stainless steel mesh, elastomeric plumbing boots, or other means of physically sealing the slab penetrations.

**Points:** 3

**Intent:** Increase the termite resistance of the building, reducing the potential for damage from termite infestation, thus decreasing the potential waste and need for replacement materials after the damage is detected.

**Submittals:** Provide photos showing all sealed penetrations.

**Resources:** -

## DM2.03 Integrated Pest Management

**Requirement:** Work with a skilled pest control professional to develop an Integrated Pest Management Plan that addresses the following four items:

- Monitoring and prevention of pest populations.
- Application of pesticides only “as needed” after prevention and physical controls have been implemented.
- Selecting the least hazardous pesticides for control of targeted pests.
- Precision targeting of pesticides to areas not contacted or accessible to the occupants.

**Points:** 3

**Intent:** Integrated pest management (IPM) is a process for achieving long term, environmentally sound pest suppression through the use of a wide variety of technological and management practices. Control strategies in an IPM program extend beyond the application of pesticides to include structural and procedural modifications that reduce the food, water, harborage, and access used by pests. IPM can reduce the use of chemicals and provide economical and effective pest suppression. IPM does not involve the complete elimination of the use of pesticides, nor does it involve solely substituting “good” pesticides for “bad” pesticides. IPM attempts to achieve a balance of both chemical and non-chemical methods to control pest problems. Integrated pest management (IPM) can reduce or eliminate the need for chemicals to control pests inside and outside of the building.

To properly implement IPM, there are maintenance issues that need to be undertaken by the Owner after construction, therefore an IPM maintenance plan should be developed and included in an Owner’s manual that is presented to the Owner.

**Submittals:** IPM plan

**Resources:** An excellent source of information on IPM is the Sustainable Building Sourcebook by Austin Energy, Austin, TX. It can be found on the internet at <http://nontoxictermite.sustainablesources.com/> Another source of information is “Integrated Pest Management for Schools: A Catalog of Resources”, put together by the University of Florida Institute of Food and Agricultural Sciences, and available at: [http://schoolipm.ifas.ufl.edu/school\\_ipm.pdf](http://schoolipm.ifas.ufl.edu/school_ipm.pdf) .

## DM3 Flood

### DM3.01 Finished Floor Elevation (FFE)

**Requirement:** Finished Floor Elevation (FFE) must be above 100-year flood plain or finished grade adjacent to building, whichever is higher. All grades around building must slope away from the foundation a minimum of 6” at 10’-0” distance. The 100-year flood plain is determined by FEMA.

- Points:** **1 Point: FFE 12" above 100-year flood.**  
**2 Points: FFE 24" above 100-year flood.**
- Intent:** Reduce the potential for flooding and the resulting moisture and mildew problems.
- Submittals:** Provide the appropriate drawings illustrating the foundation design, floor elevation and grading requirements. Include a copy of the NFIP Elevation Certificate certified by the surveyor, engineer or architect showing the 100-year flood plain elevation or grade.
- Resources:** -

### **DM3.02 All Critical Infrastructure Elevated**

**Requirement:** All mechanical equipment pads must be 12" above 100-year flood plain or grade, whichever is higher. All grades around building must slope away from the foundation a minimum of 6" at 10'-0" distance. The 100-year flood plain is determined by FEMA. Critical infrastructure beyond mechanical to include electrical transformers, backup power, pumps. Also update to raise above freeboard or 3' or more above 100-yr flood

- Points:** **2 points for mechanical 12" above 100-year flood**  
**5 points if all critical MEP infrastructure 3' or more above 100-year flood**
- Intent:** Increase the longevity of equipment by providing a buffer from flood events.
- Submittals:** Provide the appropriate drawings illustrating the foundation design, floor elevation and grading requirements. Include a copy of the NFIP Elevation Certificate certified by the surveyor, engineer or architect showing the 100-year flood plain elevation or grade.
- Resources:** -

### **DM3.03 Buildings Within 500-year flood Plain**

**Requirement:** When building within the 500 year flood plain elevate critical MEP infrastructure is at least 24" above 100-year flood plain.

- Points:** **2**
- Intent:** Increase the longevity of equipment by providing a buffer from flood events.
- Submittals:** Provide the appropriate drawings illustrating the building proximity to the coast and the elevations of the FFE and equipment slabs. Include a copy of the NFIP Elevation Certificate certified by the surveyor, engineer or architect.
- Resources:** -

### **DM4 Fire Resistant Exterior Finishes**

**Requirement:** Project must utilize fire-resistant exterior wall cladding, roof covering or sub-roof, soffit and vent materials. An exterior cladding other than wood or vinyl must be used on all exterior walls. A roof covering other than asphalt shingles or wood shakes must be used on the entire roof. Roof covering fire resistance shall exceed Code requirements by a minimum of one classification (for example, install Class "A" when Code requires Class "B"). Soffit and vent materials must be other than wood or vinyl. When these parts of the building are compromised, embers from nearby fires can enter the attic.

Strategies: Use exterior wall materials made of stucco, unfinished CBS, brick, aluminum, stone or fiber-cement. Use roof coverings made of metal, concrete, fiber-cement, or tile. Use soffit and vent materials made of aluminum or fiber-cement.

- Points:** 2
- Intent:** Increase the fire resistance of the building, reducing the potential for damage from wildfires, thus decreasing the potential waste and need for replacement materials after the fire.
- Submittals:** Provide the completed Letter Template, signed by the architect or other responsible party, and appropriate drawings and manufacturer's cut sheets illustrating the fire resistance of the exterior finish materials.
- Resources:** -

## **DMD5 Durability**

### **DMD5.01 Durable Materials, Exterior Finish Materials**

**Requirement:** Use finish systems and materials capable of withstanding the moisture and heat impacts of the local climate for a period of 30 years on 100% of the exposed exterior surfaces. Structure shall be Type 1A, exterior materials shall be approved by Miami-Dade County or have a 30-year warranty.

- Points:** 1
- Intent:** Reduce the need to replace existing structural finish components and materials over the expected lifetime of the building thereby reducing impacts resulting from removal and disposal of poorly performing material.
- Submittals:** Plan detail identifying all the systems and materials used for the exterior finish of the building. Attach copies of the NOA for Miami-Dade, manufacturer's warranties or documentation supporting the established history for any material without a written warranty.
- Resources:**

### **DMD5.02 Install Water Leak System and Shutoff System in Residential Units**

**Requirement:** Install a whole house water sensor/shutoff system is installed that detects any sign of water leakage anywhere inside the conditioned space and cuts off the main water supply to the building. At a minimum, sensors must be installed in the vicinity of a bathrooms and tank water heater or as required by manufacturer. Earn additional points if the leak detection system and/or shutoff systems are tied to a mobile smart application.

- Points:** 1-3
- 1 Point: Leak Detection with Automatic Shut Off**
- 2 Points: Leak Detection System Installed and tied to Mobile Smart Application**
- 3 Points: Leak Detection AND Automatic Shut Off Systems Installed and tied to Mobile Smart Application**
- Intent:** Undetected water leak or failures can cause severe damage.
- Submittals:** Construction detail, cut sheet, and photo of system installed
- Resources:**

### **DMD5.03 Durability: Use Armored/Metal Hoses from Service to All Fixtures/Appliances**

**Requirement:** Install armored, braided, pex, or otherwise reinforced hoses to all water using fixtures or appliances.

**Points:** 1

**Intent:** Water consuming fixtures and appliances typically use unarmored hoses for their water supply. Plastic and rubber hoses have a finite life and are likely to eventually fail, potentially causing flooding and unnecessary water use, especially if not discovered immediately.

**Submittals:** Cut sheet, construction detail, signed approved submittal, site photos

**Resources:**

### **DMD5.04 Low Maintenance Finishes**

**Requirement:** Use materials (on the floors, walls and ceilings) that can be maintained in a serviceable condition using green cleaning products and methods for 100% of the interior finishes of the building and 50% (by surface area) of the exterior finishes.

**Points:** 1

**Intent:** Reduce the need for harsh maintenance chemicals thereby reducing the source pollution within and around the building and improving the indoor air quality.

**Submittals:** Provide a copy of the manufacturers recommended maintenance procedures, the type and area of materials that comply.

**Resources:**

## **CATEGORY 8: ENVIRONMENTAL INNOVATION**

### **EI Environmental Innovation**

**Requirement:** Up to five points are available for innovative and environmentally beneficial regionally specific additions to the project.

**Points:** 1-5

**Intent:** These credits are intended to provide the design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the Florida Green Building Coalition and/or innovative performance in Green Building categories not specifically addressed by this standard

**Submittals:** The submittals will be determined based on the innovation request.

**Resources:** -