



Florida Green Commercial Building Standard Reference Guide

Version 2

Effective July 1, 2011

Revised

10/6/2011

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.

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.

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CATEGORY 1: PROJECT MANAGEMENT

PM Prerequisite 1: Green Project Meeting

Requirement: Owner and project team decision makers must participate in a green project meeting no later than the design development phase of the project. Attendees must include a participant from all disciplines currently under contract for the project. FGBC recommends that all design team members, construction team members, owners, and occupants are represented at the green team meeting.

Points: Prerequisite - Required

Intent: To engage all project team members in the green process prior to building design. At a minimum the team meeting shall be used to introduce the FGBC Standard and Checklist to all team members, identify project goals, and complete a preliminary checklist.

Submittals: A letter signed by the project owner that indicates the date, location, and time of the meeting and a copy of the attendance sheet and a copy of the preliminary project checklist.

Resources: -

PM1 Building Information Modeling (BIM)

Requirement: Project team including the contractor uses BIM process to improve the efficiencies related to design, estimating, materials ordering, and construction.

Points: 3

Intent: Maximize project efficiencies, both resources and financial, from planning, design and construction by using Building Information Modeling.

Submittals: Design team and contractor must both submit letters stating BIM software was used. FGBC project team member may sign off on this project credit. Provide a copy of summary report.

Resources: -

PM2 Cost Benefit Analysis

Requirement: FGBC project team member shall document the cost impact of each energy and water credit the project is pursuing for certification. 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: 5

Intent: To collect data on the life cycle cost and environmental impacts of the energy and water credits of this certification.

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.

Resources: -

PM3 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.

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: -

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 categories of the commercial standard. The OPR should indicate minimum goals for each 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 design will achieve the Owner Project Requirements. The Basis of Design should include specifically 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: Mechanical Electrical Plumbing (MEP) Engineering Firm 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, lighting systems and controls, renewable energy systems, hot water system, and energy and water measurement devices. Testing and verification 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.

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 a minimum of 10% better than the current Florida Energy Code - as verified by the Energy Gauge Summit FLA/COM Software

Points: Prerequisite - Required

Intent: Reduce energy use

Submittals: Submit a copy of the FLA/COM Form 400A or printout from software approved by the Florida Building Commission that identifies the percent above code minimum the proposed building design has achieved.

Resources: -

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 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 for using Target Finder

2 points for achieving a Target Finder score > 75

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, ie. 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.

Resources: www.energystar.gov/index.cfm?c=new_bldg_design.bus_target_finder

E2 Portfolio Manager

E2.1 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 print out showing the project listed in Portfolio Manager

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

E2.2 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

E3.1 Fundamental Building Systems Commissioning

Requirement: Implement or have a contract in place to implement all of the following fundamental best practice commissioning procedures.

- Engage a commissioning authority (CxA).
- Develop owner's performance requirements for energy, water and indoor environmental quality (IEQ) and review the basis of design to verify performance requirements have been met.
- Incorporate commissioning requirements into the construction documents.
- Develop and utilize a commissioning plan.
- Verify installation, functional performance, training and operation, and maintenance documentation.
- Complete a commissioning report.

Engage a commissioning authority and adopt a commissioning plan. Include commissioning requirements in bid documents and task the CxA to produce a commissioning report once commissioning activities are completed.

Points: 4

Intent: Verify and ensure that fundamental building elements and systems are designed, installed 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.

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

E3.2 Advanced Building Systems Commissioning

Requirement: In addition to fundamental commissioning, retain a CxA prior to completing the design phase of the project.

The CxA, in addition to the Fundamental Building Commissioning, must:

1. Conduct a focused review of the design prior to the construction documents phase.
2. Conduct a focused review of the drawings and specifications near completion of the construction documents phase and prior to issuing them for construction.
3. Review the contractor submittals relative to systems being commissioned.
4. Provide information to the owner in a single document (manual) that is required for re-commissioning building systems.

5. Within one year after construction completion date, have a contract in place to review building operation with O&M staff, including a plan for resolution of outstanding commissioning-related issues.

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) and a letter from the CxA or the building owner stating all CxA duties were completed.

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

E3.3 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: The designed building must have a minimum of a 15% energy savings above the current minimum energy code to begin accumulating points. To complete the checklist enter the Gross Energy Use numbers for both the "Criteria" and the "Design" conditions from FLA/COM Form 400A page 2 Compliance Summary Gross Energy Use. The building energy savings as a percentage is automatically calculated for the project as are the corresponding FGBC points.

Points: **Points awarded increase as energy efficiency increases according to the table provided below**

2 points	≥ 5% and < 10% above minimum energy code	24 points	≥ 50% and < 55% above minimum energy code
4 points	≥ 10% and < 15% above minimum energy code	27 points	≥ 55% and < 60% above minimum energy code
6 points	≥ 15% and < 20% above minimum energy code	30 points	≥ 60% and < 65% above minimum energy code
8 points	≥ 20% and < 25% above minimum energy code	34 points	≥ 65% and < 70% above minimum energy code
10 points	≥ 25% and < 30% above minimum energy code	38 points	≥ 70% and < 75% above minimum energy code
12 points	≥ 30% and < 35% above minimum energy code	42 points	≥ 75% and < 80% above minimum energy code
15 points	≥ 35% and < 40% above minimum energy code	46 points	≥ 80% and < 85% above minimum energy code
18 points	≥ 40% and < 45% above minimum energy code	50 points	≥ 85% and < 90% above minimum energy code
21 points	≥ 45% and < 50% above minimum energy code	60 points	≥ 90% and < 100% above minimum energy code
		70 points	Building is net zero

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

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

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

E5 Envelope Testing

Requirement: Conduct a commercial blower door test of the building envelope to help identify and correct building infiltration to improve the buildings performance. To qualify for this credit, the building must be designed with sufficient outdoor air intake to meet the ASHRAE 62.1 minimum air changes per hour rate and the intake system shall have an easily accessible and clearly marked filter that can be regularly changed by the building maintenance staff.

Points: **1 point for ACH50 < 8.0 (but greater than 5.0)**
2 points for ACH50 < 5.0

Intent: Identify and correct any building envelope deficiencies prior to building occupancy.

Submittals: Provide a copy of the commercial energy rater report.

Resources: www.fsec.ucf.edu/en/education/cont_ed/bldg/commrater.php

E6 Renewable Energy Production

Requirement: YOU MAY ONLY CLAIM RENEWABLE ENERGY PRODUCTION CREDITS IF THE BUILDING HAS ACHIEVED A MINIMUM OF 20% PERFORMANCE IMPROVEMENT (E4 of 4 points). FGBC strongly encourages conservation before purchasing renewable energy. Renewable energy Production, for the purposes of this certification, refers to renewable power generated ON THE BUILDING SITE

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. The Checklist requires that you enter the total kWh of energy that your specified renewable systems can generate. The checklist will automatically generate the percentage of renewable energy and corresponding FGBC Points.

Points:

1 points ≥1% and <3% of demand supplied by renewables	10 points ≥13% and <15% of demand supplied by renewables
2 points ≥3% and <5% of demand supplied by renewables	12 points ≥15% and <17% of demand supplied by renewables
3 points ≥5% and <7% of demand supplied by renewables	15 points ≥17% and <19% of demand supplied by renewables
4 points ≥7% and <9% of demand supplied by renewables	18 points ≥19% and <21% of demand supplied by renewables
6 points 9% and <11% of demand supplied by renewables	21 points ≥21% and <23% of demand supplied by renewables
8 point 11% and <13% of demand supplied by renewables	24 points ≥23% and <25% of demand supplied by renewables
	28 points ≥25% of demand supplied by renewables

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: -

E7 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. Earn one point for each 25% of the building total annual energy demand from certified green power generator for one year, i.e. purchase/contract 50% for 1 year OR 25% for 2 years (2

points), purchase/contract 75% for 1 year OR 25% for 3 years (3 points). The FGBC Checklist requires that you enter the kWh that are being purchased and the length of the contract.

Points: **1 point for 25% for 1 year**
2 points for 50% for 1 year or 25% for 2 years
3 points for 75% for 1 year or 25% for 3 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 green power purchase contract.

Resources: -

E8 Daylight Sensors

Requirement: Earn one point for each 25% of the building, based on total square feet, which are equipped with daylighting sensors. 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 ≥ 25% and < 50% of building square footage equipped with daylight sensors**
2 points ≥ 50% and < 75% of building square footage equipped with daylight sensors
3 points ≥ 75% and < 100% of building square footage equipped with daylight sensors
4 points 100% 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 and either a cut sheet of the sensors or copy of the specifications that call out the sensors.

Resources: -

E9 Occupancy Sensors

Requirement: Earn one point for each 25% of the building square feet that include areas with occupancy sensors. Occupancy sensors shall be equipped to automatically turn lighting off within 15 minutes of all occupants leaving a space and allow "manual off" control. In addition, all occupancy sensor controls shall be either "manual on" or use bi-level switching coupled with manual-on control ("automatic on" programmed to a low light level combined with multi-level circuitry and "manual on" switching for higher lighting levels). Where occupancy sensors and daylighting sensors are utilized, the occupancy sensor shall work in conjunction with the daylighting controls.

Points:

- 1 point** ≥ 25% & < 50% of building square footage equipped with occupancy sensors
- 2 points** ≥ 50% & < 75% of building square footage equipped with occupancy sensors
- 3 points** ≥ 75% & < 100% of building square footage equipped with occupancy sensors
- 4 points** 100% of building square footage equipped with occupancy sensors

Intent: Reduce energy demand from the building by incorporating occupancy sensors that turn off lighting when an area is not in use.

Submittals: Floor plan indicating the location of the occupancy sensors and either a cut sheet on the sensors or a copy of the specifications that call out the sensors.

Resources: -

E10 Interior Lighting

Requirement: Building has an “all off” policy where all interior lighting is on timer, or motion sensors with override, so no lights can be left on after regular business hours - except for security lighting.

Points: 1

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

Submittals: Letter from Owner agreeing to “all off” policy and a letter from the lighting designer or MEP that explains the installed system, features and benefits.

Resources: -

E11 Lighting Power Density

Requirement: The average lighting power density for the building is < 0.8 W/SF

Points: 5

Intent: Reduce energy consumption associated with lighting.

Submittals: Florida Building Commission approved Energy Code printout, signed by lighting designer or MEP with lighting power densities.

Resources: -

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.

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 work station.

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) and photos of the device(s) and the information sign.

Resources: -

CATEGORY 3: WATER

W Prerequisite 1 Water Use Reduction, acquire at least 3 points from W1

Requirement: Water Use Reduction, acquire at least 3 points from Section W1 below (i.e. any combination of W1.1 - W1.6)

Points: Prerequisite - Required

Intent: Reduce the potable water demand inside buildings

Submittals: FGBC Checklist

Resources: -

W Prerequisite 2 No Invasive (native or exotic) Plants

Requirement: Landscape comprised of no invasive plants.

Points: Prerequisite - Required

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

Submittals: Landscape plan and plant list

Resources: A list of such plants can be found at <http://www.fleppc.org/list/list.htm>

W Prerequisite 3 Irrigation zones for turf and landscape beds are separate

Requirement: Florida WaterStar Prerequisite

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.

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 4 Rain shut off device installed CORRECTLY and operable

Requirement: Install a 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 5 Drought Tolerant Landscape, 25%

Requirement: Landscaped area is a minimum of 25% 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
- 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

W1.1 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 ≤ 1.1 gpf. Points available for this credit are listed below.

- Points:**
- | | |
|-----------------|---|
| 1 point | all toilets ≤ 1.28 gallons per flush (gpf) |
| 2 points | all dual flush (one flush option must be < 1.1gpf) |
| 3 points | all toilets ≤ 1.0 gpf |

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: Cut sheet for toilets.

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.

W1.2 Urinals

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

- Points:**
- | | |
|-----------------|--|
| 1 point | all urinals ≤ 0.5 gpf |
| 2 points | Waterless urinals |

Intent: Reduce potable water used inside the building

Submittals: Cut sheet for urinal

Resources: -

W1.3 Lavatory Faucets

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

- Points:**
- 1 point** all lavatory faucets are ≤ 2.0 gallons per minute (gpm)
 - 2 points** all lavatory faucets are ≤ 1.5 gpm
 - 2 points** all lavatory faucets are WaterSense Certified
 - 3 points** all lavatory faucets are ≤ 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: Cut sheet for lavatory faucets

Resources: -

W1.4 Kitchen Faucets

Requirement: All kitchen faucets must have a flow rate less than or equal to 2.2 gpm. Points available are listed below.

- Points:**
- 1 point** all kitchen faucets are ≤ 2.2 gpm
 - 2 points** all kitchen faucets are ≤ 1.5 gpm

Intent: Reduce potable water used inside the building

Submittals: Cut sheet for kitchen faucets

Resources: -

W1.5 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 ≤ 2.2 gpm
 - 2 points** all showerheads are ≤ 1.75 gpm
 - 3 points** all showerheads are ≤ 1.5 gpm

Intent: Reduce potable water used inside the building

Submittals: Cut sheet for showerheads

Resources: -

W1.6 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 dishwashers are Energy Star Qualified with Water Factor (WF ≤ 7.0)
 - 2 point** all dishwashers are Energy Star Qualified with Water Factor (WF ≤ 5.8)

Intent: Reduce the amount of potable water used inside the building

Submittals: Cut sheet for dishwashers

Resources: -

W2 Greywater Reuse

W2.1 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. 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: -

W2.2 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. Greywater system is installed to reduce demand on potable water. System must have a specific collection source and a dedicated use.

Points: 3 point

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 Rainwater Harvesting

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.

Requirement: Install rainwater harvesting collection and storage system. The minimum requirement for this credit is a simple collection system, which for all intents and purposes would be for demonstration. 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.

1. Simple Collection: Used to supplement irrigation and for demonstration purposes.
2. Dedicated use for irrigation: Harvested Rainwater is used to supply irrigation to landscape.

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3. Rainwater is collected and used in lieu of potable water for flushing toilets and urinals: Rainwater is collected and fed to dual piping system as greywater to reduce potable water demand inside the building.

4. Collected and treated to potable standards for whole building use: Water is treated to potable standards and supplements whole building water use

Points:	1 point	Simple Collection
	3 points	Collection with dedicated use for irrigation
	5 points	Collection for toilet/urinal flushing
	10 points	Rainwater is collected and treated to potable standards for use throughout the building

Intent: Decrease both potable and non potable water use by collecting and using rainwater

Submittals: Construction drawings indicating design and location of 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

Additional information on rainwater harvesting can be found at:

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

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

W4 Installed Landscape

W4.1 Florida Friendly Low Water 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:	1 point	≥ 60% and < 80% Low water Florida Friendly
	2 points	≥ 80% and < 100% Low water Florida Friendly
	3 points	100% Low water Florida Friendly

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.

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/>.

W4.2 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:

- 1 point** < 50% Turf/sod
- 2 point** < 40% Turf/sod
- 3 point** < 30% Turf/sod
- 4 point** < 20% Turf/sod
- 5 point** < 10% Turf/sod

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 turf. 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: -

W4.3 No Turf/ Sod and No Installed Irrigation

Requirement: Landscape has no turf or sod installed and contains no permanently installed irrigation system.

Points: 10

Intent: Reduce both potable and non potable water used for irrigation

Submittals: Copy of landscape plan and letter from the building owner stating that no permanent irrigation will be used at the site

Resources: -

W4.4 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>

W4.5 Evenly shaped turf areas, no turf on berms

Requirement: 100% of turf is planted in evenly-shaped areas (such as circles, ovals, and large rectangular areas rather than in long thin strips) and if no turf is planted on berms.

Points: 2

Intent: Evenly-shaped turf areas are easier to water efficiently and easier to maintain. Turf planted on berms requires more water to remain healthy, due to water run-off from the slope.

Submittals: Landscape plans and photos of installed vegetation

Resources: -

W4.6 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: -

W4.7 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 vegetation

Resources: http://fyn.ifas.ufl.edu/materials/FYN_Handbook_vSept09.pdf



Incorrect Volcano Mulching



Correct Installation

W5 Water Conservation Certifications

W5.1 Meet or exceed Florida WaterStar™ or WaterSense Standards

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

Points: 5

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/

W5.2 Florida Friendly Landscape™ Program Certification

Requirement: Obtain Florida Friendly Landscaping™ Program New Construction Certification

Points: 2

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, Chp. 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/>

W6 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 ¾" 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 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. A minimum of 5-inch sprinkler heads for St. Augustine, Zoysia and Bahia grasses

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- b. A minimum of 4-inch sprinkler heads for centipede, Bermuda and seashore paspalum

Points: 15

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>

CATEGORY 4: SITE

S Prerequisite 1: Copy of 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.

Points: Prerequisite - Required

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

Submittals: Copy of Notice of Intent

Resources: -

S1 FDEP Professional

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

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

S2 Site Selection

S2.1 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: -

S2.2 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

S2.3 Permit Ready Site

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

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

S2.4 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.

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

S2.5 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: 3

- 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/>

S2.6 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 can be measured as the crow flies).
- Points:** 2
- 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.

S2.7 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 10 units per acre (this can be measured as the crow flies).
- 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:** -

S2.8 Access to Basic Services

- Requirement:** Locate the building on a site that is within 1/2 mile of and has 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. Site must be within 1/2 mile of 3 services to receive 1 point, 1 additional point is available for each 2 additional services as listed below.

- financial institutions
- place of worship
- convenience grocery store
- day care
- dry cleaners
- fire station
- beauty shop
- hardware store
- Laundromat
- Library

- Medical/dental office
- senior care facility
- park
- pharmacy
- post office
- restaurant
- school
- supermarket
- theater
- community center
- fitness center
- museum
- local government facility

Points:

points	number of services
1	3 services
2	5 services
3	7 services
4	9 services
5	11 services
6	13 services
7	15 services
8	17 services
9	19 services
10	21 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

S3.1 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: -

S3.2 Minimize Site Disturbance

Requirement: The maximum square footage of the site that may be disturbed, excluding the building footprint, must be less than or equal to the building footprint.

Points: 1

Intent: Minimize site disturbance.

Submittals: Copy of project site indicating building footprint, square footage of building footprint and outlining site cleaning operation boundaries and staging areas. Provide photos of site demonstrating minimal site disturbance.

Resources: -

S3.3 Site Open Space

Requirement: Provide shaded open space, minimum of 50% shade coverage from trees within 10 years for open space. Meet minimum zoning requirements for open space or if there is no local zoning requirement for open space, provide vegetated and shaded area equivalent to the square footage of the building footprint, or 20% of the site, whichever is greater.

Points: 2

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. Also provide a list of trees and their projected canopies after 10 years.

Resources: -

S3.4 Sidewalks

Requirement: Provide sidewalks for all paths marked for use by the building occupants. Sidewalks shall be a minimum of 4' wide, stable, firm, slip-resistant materials.

Points: 1

Intent: Improve the walkability and safety of the site.

Submittals: Site plan showing sidewalks.

Resources: -

S3.5 Connectivity

Requirement: Provide connections to adjacent sites via sidewalks, bike paths, and trails.

Points: 1

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

Submittals: Site plan showing connections and trails.

Resources: -

S4 Reduce Heat Islands – Hardscape

S4.1 Minimize Provided Parking

Requirement: Parking provided on site must be less than required by local jurisdiction. Design team must work with the local jurisdiction to reduce the typically required parking by proposing shared parking or other multimodal transportation methods. The project must also provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants; OR add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants.

Points: 2

Intent: Reduce areas that may be impervious, create heat islands, or discourage use of multimodal transportation.

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: -

S4.2 Under Building 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 the site plan indicating parking layout and building footprint.

Resources: -

S4.3 Shaded, Covered or High Albedo Hardscape

Requirement: Shade, cover or use high albedo hardscape for a minimum of 20% of the site hardscape. For the purpose of this credit site hardscape includes roads, sidewalks, courtyards, 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 a SRI \geq 78, structured parking or hardscape with a SRI $>$ 35. The building footprint, ie. square footage of roof, is NOT considered hardscape. 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. (note: enter "0" in the checklist if the project does not have any SF associated with the shading type). Earn 1 point for each 20% of the hardscape that is shaded, covered or has a high albedo. The checklist requires that you enter the square footage of the total hardscape and the square footage of the complying hardscapes and will calculate the total shaded hardscape and corresponding points.

Points:

1 point	\geq 20% and $<$ 40% shaded, covered or reflectent
2 points	\geq 40% and $<$ 60% shaded, covered or reflectent
3 points	\geq 60% and $<$ 80% shaded, covered or reflectent

4 points **≥ 80% shaded, covered or reflectent**

Intent: Reduce heat islands of the developed site.

Submittals: Provide a site plan identifying all the site features and a cut sheet for any reflective materials used to achieve this credit.

Resources: -

S5 Reduce Heat Islands - Roof

Requirement: To qualify for this credit, the roof materials must be Energy Star, have a SRI ≥ 78 or be a vegetated roof structure. 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. The Checklist requires that you enter the total square footage of the roof and the square footage of Energy Star, high reflectance, and vegetated roof. It will return the percentage and award points.

Points:

1 point	≥ 20% and < 40% Energy Star, reflectent or vegetated roof
2 points	≥ 40% and < 60% Energy Star, reflectent or vegetated roof
3 points	≥ 60% and < 80% Energy Star, reflectent or vegetated roof
4 points	≥ 80% Energy Star, reflectent or vegetated roof

Intent: Reduce heat island effect of site development.

Submittals: Provide a roof drawing with area calculations and cut sheets for the materials used.

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 a SRI ≥ 78 or be shaded by tree canopy. One additional point is awarded for each additional 20% of reflective or shaded exterior wall surface area.

Points:

1 point	≥ 20% and < 40% reflectent or shaded exterior wall
2 points	≥ 40% and < 60% reflectent or shaded exterior wall
3 points	≥ 60% and < 80% reflectent or shaded exterior wall
4 points	≥ 80% reflectent 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 and any shading calculations of claimed.

References: -

S7 Stormwater

S7.1 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:

1 point	≥ 50% and < 100% increase in water quality
2 points	≥ 100% and < 150% increase in water quality

3 points **≥ 150% increase in water quality**

Intent: Improve natural waterways by minimizing stormwater run-off contaminants.

Submittals: Civil Engineer stormwater calculations.

References:

S7.2 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:

S7.3 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.

Resources: -

S7.4 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 and detention pond design.

References: -

S7.5 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:**
- 1 point ≥ 25% and < 50% pervious hardscape installed**
 - 2 points ≥ 50% and < 75% pervious hardscape installed**
 - 3 points ≥ 75% pervious hardscape installed**

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

Submittals: Site drawing with pervious hardscape identified and cut sheet or calculations regarding percolation or perviousness.

References:

S7.6 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:**
- 1 point ≥ 50% and < 75% of stormwater is collected using LID techniques**
 - 2 points ≥ 75% and < 100% of stormwater is collected using LID techniques**
 - 3 points 100% of stormwater is collected using LID techniques**

Intent: Improve quality of natural waterways and stormwater discharge.

Submittals: Site design, stormwater calculations and construction details of low impact development designs.

Resources: -

S8 Vehicular Transportation Alternatives

S8.1 Bicycle Storage

Requirement: Project must provide securing locations for minimum of 2 bicyclers (1 bike rack) or 1 bike rack per 10,000 square feet of retail and 25,000 SF of commercial.

Points: 1

Intent: Encourage transportation alternatives to the automobile.
Submittals: Site plan identifying bike racks and cut sheet of bike racks selected.
Resources: -

S8.2 Changing Rooms

Requirement: Project must provide a minimum of 1 changing room per 15,000 SF of building.
Points: 1
Intent: Provide a location for individuals walking or biking to work to change.
Submittals: Floor plan that identifies changing room.
Resources: -

S8.3 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 0.5% 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: -

S8.4 Low-Emitting, Fuel-Efficient and High Occupancy Vehicles

Requirement: Provide preferred parking for 3% of the parking capacity for the use of low-emitting, fuel-efficient and high occupancy vehicles. Preferred parking spaces may also include charging stations for electric vehicles.
Points: 1
Intent: Provide an incentive for individuals to use alternatively fueled vehicles.
Submittals: Site drawing with designated parking spaces and total parking count.
Resources: -

S9 Exterior Lighting (not attached to building)

S9.1 Meets Dark Sky Requirements

Requirement: Do not exceed the light levels and uniformity ratios recommended by the Illuminating Engineering Society of North America (IESNA) Recommended *Practice Manual: Lighting for Exterior Environments* (RP-33-99). 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 specifications, construction detail and lighting cut sheets indicating dark sky compliance.

Resources: -

S9.2 Lights Provide >95 lumens/watt

Requirement: Exterior lighting fixtures selected provide a minimum of 95 lumens/watt.

Points: 1

Intent: Provide lighting while reducing energy consumption.

Submittals: Cut sheets of lighting fixtures selected.

Resources: -

S9.3 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

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: -

S9.4 Exterior lighting is on motion and daylight sensors

Requirement: A minimum of 50% of the installed exterior lighting is controlled by motion and daylight sensors

Points: 1

Intent: Reduce energy consumption from lighting by installing sensors that automatically dim artificial lighting when daylight is available and when occupants are not present.

Submittals: Site plan with location of daylight/motion sensors and either a cut sheet of the sensors or copy of the specifications that call out the sensors.

Resources: -

CATEGORY 5: HEALTH

H Prerequisite 1: Environmental Tobacco Smoke (ETS) Control

Requirement: No smoking allowed in the building and only in designated areas that are located 25 feet away from all doors, operable windows, HVAC equipment, and fresh air intakes.

Points: Prerequisite - Required

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

Submittals: Site plan indicating designated smoking area.

Resources: -

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

Requirement: Indoor Environmental Quality shall be protected during construction according to SMACNA guidelines.

Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:

- During construction meet or exceed the minimum requirements recommended in Design Approaches of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995.
- Protect stored on-site or installed absorptive materials from moisture damage.
- Replace all filtration media immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999 for media installed at the end of construction, and a MERV of 8, for media used to protect HVAC at each return air grill during 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 and letter from the contractor signed both by the project manager and field superintendent indicating they have implemented the SMACNA guidelines.

Resources: -

H1 Protect, Monitor & Remediate Poor IAQ

H1.1 Carbon Dioxide

Requirement: Systems shall be designed to monitor carbon dioxide (CO₂) 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: Mechanical engineer to provide a brief narrative indicating system design and function. Narrative shall also contain construction detail sheet numbers.

Resources: -

H1.2 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: Letter from the mechanical engineer and cut sheet of dehumidification equipment.

Resources: -

H1.3 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.

Points: 1

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

Submittals: Provide cut sheet and construction detail of the system installed

Resources: -

H1.4 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 and the square footage of the entrance cover.

Resources: -

H1.5 High Efficiency Air Filtration System

Requirement: Design a mechanical ventilation system to include a minimum MERV 13 air filter.

Points: 2

Intent: Provide improved indoor air quality.
Submittals: Cut sheet of air filter system.
Resources: -

H1.6 Chemical and Cleaning Product Storage

Requirement: Any room(s) containing chemicals or cleaning products for building O&M is ventilated and under negative pressure with respect to the building. The room must also have a door installed that will automatically close. For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness greater than or equal to 0.9 as determined by ASHRAE 129-1997.

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: Letter from mechanical engineer indicating the design achieves an air change effectiveness of 0.9 or greater in each ventilated zone or that the design complies with the recommended design approaches in ASHRAE 2001 Fundamentals Chapter 32, Space Air Diffusion.

Resources: -

H1.7 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

Resources: -

H1.8 Pre Occupancy IAQ testing

Requirement: 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:

Contaminant	Maximum Concentration
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 part 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

H2.1 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 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>

H2.2 Paints & Coatings

Requirement: Paints and coatings shall have VOC less than or equal to the values listed below.

<u>Interior Coating</u>	<u>Gram / Liter</u>
Non-Flat	150
Flat	50
<u>Exterior Coating</u>	<u>Gram / Liter</u>
Non-Flat	200
Flat	100

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.greenseal.org/FindGreenSealProductsandServices/Products.aspx?vid=ViewProductDetail&cid=10>

H2.3 Carpet Systems

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

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 carpet cut sheets or the VOC limits for each carpet product used in the building.

Resources: <http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/green-building-standards.cfm>

H2.4 Healthy Flooring

Requirement: 80% of a minimum of the flooring installed shall be classified as hard or resilient and comply with GreenGuard or similar health related certification.

Points: 1

Intent: Provide a healthier indoor environment.

Submittals: Cut sheets of flooring selections.

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

H2.5 Composite Wood and Agrifiber

Requirement: All composite wood and agrifiber products will contain no added urea-formaldehyde.

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 a 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.

Resources: -

H2.6 Insulation

Requirement: All Insulation products will be free of formaldehyde.

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 a manufacturers catalog cut sheet for each insulation product used in the building indicating that it contains no formaldehyde.

Resources: -

H2.7 Cleaning Products

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.

Points: 1

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. Provide documentation confirming a 3rd party verification of green attributes such as Green Seal, GreenSpec or other nationally recognized testing organization or submit the Materials Safety Data Sheet (MSDS) that indicates a zero Health Hazard rating and are listed as "non-toxic" for Acute Toxicity under "Section V - Health Information" on the MSDS.

Resources: -

H3 System Control

H3.1 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:

1 point	≥ 25% and < 50% of full time occupants can control individual lighting
2 points	≥ 50% and < 75% of full time occupants can control individual lighting
3 points	≥ 75% and < 100% of full time occupants can control individual lighting
4 points	100% of full time occupants can control individual lighting

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: -

H3.2 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% & < 100% of full time occupants can control temperature settings**
- 4 points** **100% 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

H4.1 Daylighting

Requirement: Achieve a minimum Daylight Factor (the ratio between the measured interior and exterior light levels in lumens) of 2% for a minimum of 25% of the occupied spaces of the building. Natural light, preferably indirect, is provided via clearstories, solar tubes, light shelves or translucent panels to improve the indoor environmental quality.

*Occupied Space refers to an area occupied at least 75% of regular daytime business hours by a full or part time employee or by multiple individuals who use the same space throughout the day.

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 < 100% of occupied spaces achieve 2% Daylight Factor**
- 4 points** **100% 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 daylit areas and daylighting calculations for occupied spaces

Resources: -

H4.2 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 ≥ 50
Fenestration STC rating ≥ 30
Interior spaces: Private adjacent to private STC ≥ 45
Interior spaces: Private adjacent to public/common space STC ≥ 55

Points:

1 point	1 assembly
2 points	2 assemblies
3 points	3 assemblies
4 points	4 assemblies

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: -

H4.3 Views

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

Points:

1 point	$\geq 25\%$ and $< 50\%$ of full time occupants have line of sight to exterior
2 points	$\geq 50\%$ and $< 75\%$ of full time occupants have line of sight to exterior
3 points	$\geq 75\%$ and $< 100\%$ of full time occupants have line of sight to exterior
4 points	100% of full time occupants have line of sight to exterior

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.

Resources: -

H4.4 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 and square footage.

Resources: -

CATEGORY 6: MATERIALS

M Prerequisite 1: Storage & Collection of Recyclables

Requirement: Provide an accessible area (sized based on building use, operations and building size) that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, plastics and metals. If fluorescent or High Intensity Discharge (HID) lighting is specified and used on the project, space should be allocated in the recycling room for storage and proper disposal of light bulbs.

Points: **Prerequisite - Required**

Intent: Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Submittals: Floor plan indicating recycling room and a list of waste management recycling services or local recyclers.

Resources: -

M1 Material Efficiency and Global Responsibility

M1.1 Remodel Existing Building

Requirement: Rehabilitate existing building.

Maintain 100% total of existing building structure and shell (exterior skin and framing, excluding window assemblies) and non-structural roofing material.

Points: **10**

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: -

M1.2 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/grnrule/guides980427.htm.

Points: **1 point** **≥ 5% and < 10% recycled content**
2 points **≥ 10% and < 15% recycled content**

3 points **≥ 15% and < 20% recycled content**

4 points **≥ 20% recycled content**

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

Submittals: Submit recycled content calculations used in the construction of the project

Resources: -

M1.3 Rapidly Renewable Materials

Requirement: Incorporate rapidly renewable (plant to harvest cycle <10 years) for 3% of the total value of all building materials and products used in the project. Earn one additional point for each 2% of additional rapidly renewable materials 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** **≥ 3% and < 5% rapidly renewable materials**

2 points **≥ 5% and < 7% rapidly renewable materials**

3 points **≥ 7% 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 calculations demonstrating that the project incorporates the required percentage of rapidly renewable products used in the construction of the project.

Resources: -

M1.4 Certified Wood

Requirement: Wood products are 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** **≥ 50% and < 75% of certified wood**

2 points **≥ 75% and < 100% of certified wood**

3 points **100% 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.

Resources: -

M1.5 Biobased Materials

Requirement: Earn one point if 5% of the materials, based on cost, that are biobased such as solid wood, engineered wood, bamboo, wool, cotton, cork, agricultural fibers, or other biobased materials with at least 50% biobased content.

Points: 1
Intent: Encourage the use of natural products.
Submittals: Cut sheets of materials used and the calculations showing percentage of biobased materials used in the construction of the project.
Resources: -

M2 Waste Management

M2.1 Construction Waste Recycling

Requirement: Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage a minimum of 25% of construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout. Earn one additional point for each additional 25% of waste diverted.

Points: 1 point $\geq 25\%$ and $< 50\%$ waste diverted
2 points $\geq 50\%$ and $< 75\%$ waste diverted
3 points $\geq 75\%$ and $< 100\%$ waste diverted
4 points 100% waste diverted

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: Calculate the total waste material, quantities diverted and the means by which diverted.

Resources: -

M2.2 Leased Floor Coverings

Requirement: Demonstrate that a minimum of 50% of the floor coverings utilized on the project are being leased from the manufacture and that once the floor coverings are no longer wanted, the manufacture will reclaim the floor coverings for recycling and materials reuse.

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: -

M2.3 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.

Resources: -

M2.4 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 of the wall systems used.

Resources: -

M2.5 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 30 years on 100% of the exposed exterior surfaces. Exterior surface products must have a minimum of a 30 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 a copy of the exterior surface finish warranties.

Resources: -

M2.6 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

M3.1 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.

Points:

- 1 point** ≥ 25% and < 50% of building materials manufactured within 700 mile radius
- 2 points** ≥ 50% and < 75% of building materials manufactured within 700 mile radius
- 3 points** ≥ 75% and < 100% of building materials manufactured within 700 mile radius
- 4 points** 100% 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: Provide calculations demonstrating that the project incorporates the required percentage of regional materials/products and show their cost, and percent of regional components, distance from project to manufacturer and the total cost of all materials for the project.

Resources: -

M3.2 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 (div 2-10). Earn additional points for each additional 10% of the project materials that are extracted within 700 miles of project site.

Points:

- 1 point** ≥ 10% and < 20% harvested, extracted or recovered within 700 mile radius
- 2 points** ≥ 20% and < 30% harvested, extracted or recovered within 700 mile radius
- 3 points** ≥ 30% harvested, extracted or recovered within 700 mile radius

Intent: Reduce the use of virgin materials.

Submittals: Provide calculations demonstrating that the project incorporates the required percentage of regional materials/products and show their cost, and percent of regional components, distance from project to manufacturer and the total cost of all materials for the project.

Resources: -

M3.3 Resource Reuse

Requirement: Use salvaged, refurbished or reused materials, products and furnishings for at least 5% of building materials (based on cost) to earn one point. An additional point may be earned by reusing 10% of materials.

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- Points:** **1 point** **≥ 5% and < 10% of salvaged, refurbished or reused**
 2 points **≥ 10% of salvaged, refurbished or reused**
- 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:** Provide a listing of each material or product and the original source of the material used to meet the credit.
- Resources:** -

CATEGORY 7: DISASTER MITIGATION

DM1 Hurricane Resistance

DM1.1 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.
Provide a door and window schedule listing impact-resistant products used on the project.

Resources: www.buildingcodeonline.com or <http://hus.parkingspa.com/hc3.asp>

DM1.2 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: Cut sheet and design detail of building integrated hurricane shutters.

Resources: www.buildingcodeonline.com or <http://hus.parkingspa.com/hc3.asp>

DM1.3 Building Hardening

Requirement: Building is engineered to withstand design pressures that are 20 mph greater than the code requirements for the area.

Points: 2

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: -

DM1.4 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:** Cut sheet of back-up power system.
- Resources:** -

DM1.5 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/2010SESP/2010-SESP-AppxCfinal.pdf>
Performance Standards and Expectations of Hurricane Shelters
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>

DM2 Pest Management

DM2.1 Termite Prevention

- Requirement:** The building uses an alternative to traditional soil poison for termite treatment. Systems may include the use of borate or Alkaline Copper Quaternary (ACQ) treated lumber or termite bait systems. To achieve this credit any and all plants, turf and irrigation lines must be a minimum of 3' from the foundation. Additionally, any foam insulation must terminate above ground. The exterior cladding of the building must also terminate at least 8" above grade. Rainwater from the roof must also be dispersed a minimum of 3' from the building foundation (by the use of downspouts or scuppers and extensions or splashblocks). All AC condensate lines must also discharge a minimum of 3' from the 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 appropriate drawings and specifications, illustrating compliance to all requirements.

Resources: -

DM2.2 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 slab penetrations.

Resources: -

DM2.3 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 a 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 .

DM3 Flood

DM3.1 Finished Floor Elevation (FFE)

Requirement: FFE must be 12" 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: 2

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: -

DM3.2 All mechanical equipment pads

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.

Points: 2

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: -

DM3.3 Buildings within 1 Mile of the Coast

Requirement: For building within 1 mile of the coast, or seaward of the Coastal Construction Control Line the FFE and equipment elevations are 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 Subroof, 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. Credit is also available if the sub-roof (roof deck) is of a fire resistant material, instead of the covering. 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 into 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: -

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: -