NEW CONSTRUCTION 2013 PROTOCOLS

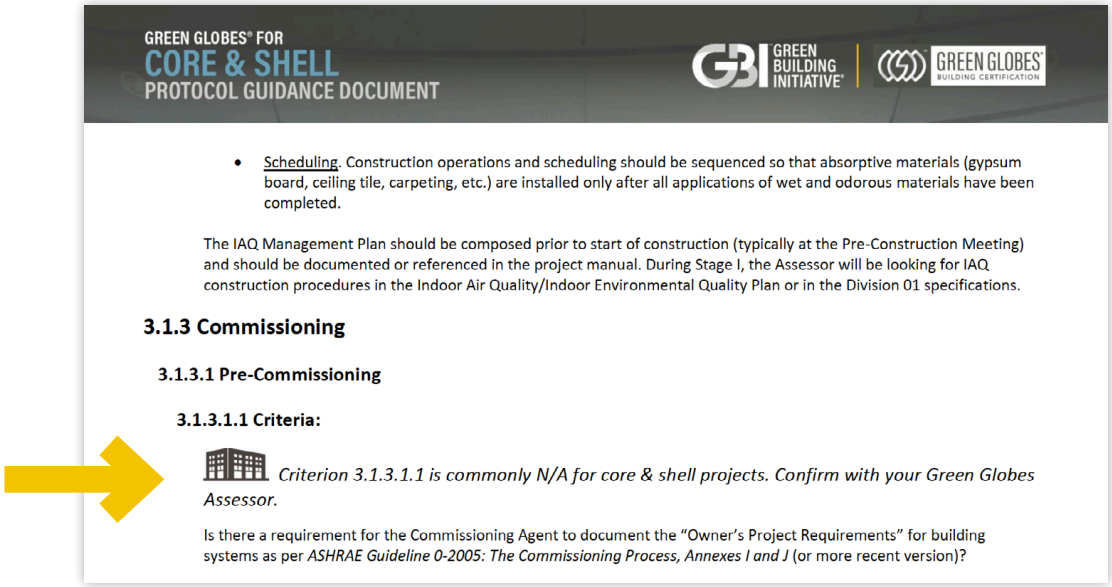
LEARNING OBJECTIVES

- Understand that the Green Globes for Core & Shell protocol is intended for teams with projects limited to the core and/or shell of the building only
- Recognize that the Green Globes Multifamily protocols are intended for teams pursuing financial incentive, such as Fannie Mae, and have additional requirements for certification

CORE & SHELL PROTOCOL

The Green Globes for Core & Shell (C&S) protocol certifies new construction, limited to the core and/or shell of the building only. This includes what are commonly referred to as "cold shell" and "dark shell" projects that may not include HVAC and/or lighting as part of the project's scope.

Green Globes C&S uses the Green Globes NC online criteria and questionnaire, including "new construction" verbiage instead of "core & shell." The Green Globes technical manual (Protocol Guidance) is intended to guide use of the online Green Globes NC questionnaire for core and shell projects.



Users can download the Core & Shell Protocol Guidance from the GBI website. Criteria with a C&S symbol denotes criteria that are commonly not applicable for core and shell projects, pending the type and scope of project. There are many varieties of core and shell projects, and criteria identified as "Commonly N/A" represent all possible core and shell projects. Confirm with your Green Globes Assessor which criteria are not applicable for your core and shell project.

Two types of core and shell projects are termed "Cold Shell" or "Dark Shell," although these are not the only types of projects:

> ***Core and Shell Projects***
>
> - Covers base parts of building, including the envelope and building systems such as HVAC
> - Interior spaces are typically not completed until tenant leases are executed
> - Projects usually do not involve electricity/ lighting
> - Electrical primary feed circuits and/or plumbing may also be in place

Cold Shell

A commercial (e.g. office, retail, academic, warehouse) building with an unfinished interior and no heating, ventilating, and air conditioning (HVAC) and usually without lighting, plumbing, ceilings, elevators or interior walls. If the space lacks lighting, it could be termed a "cold dark shell."

Dark Shell

A commercial or residential building with an unfinished interior, no electric, no lighting and usually without plumbing, ceilings, elevators, or interior walls. For both Cold and Dark, the electrical and plumbing stub-out would typically be provided, especially if service mains are underground (always true for water), and further developed if the building has an owner 'common space' such as a business/leasing/maintenance/office area.

ENVIRONMENTAL ASSESSMENT AREAS

COMMONLY NON-APPLICABLE CRITERIA

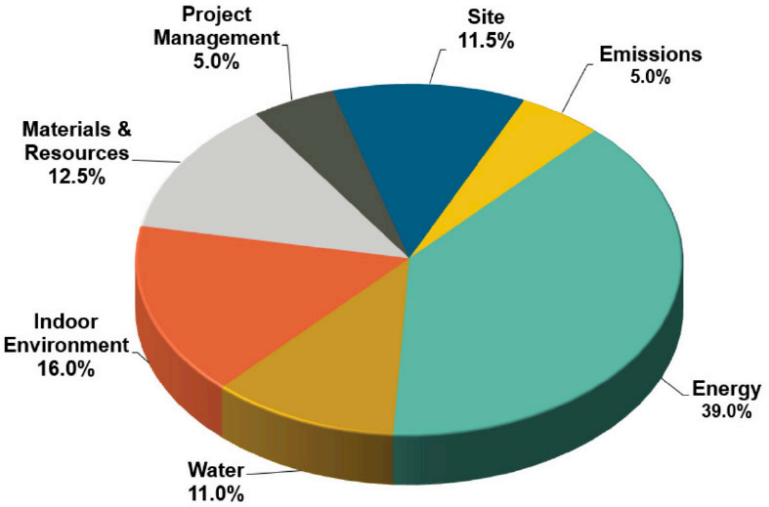
Core & Shell projects can vary in scope and it is important to note that there are criteria that are commonly N/A for these projects.

SI	NC	CS	EB
Project Management	Project Management	Project Management	N/A
N/A	Site	Site	N/A (Included with Resources)
Energy	Energy	Energy	Energy
Water	Water	Water	Water
Materials & Resources	Materials & Resources	Materials & Resources	Resources
Emissions	Emissions	Emissions	Emissions, Effluents, & Pollution Controls
Indoor Environment	Indoor Environment	Indoor Environment	Indoor Environment
N/A	N/A	N/A	Environmental Management

Green Globes for Core & Shell is designed specifically for new construction limited to the core and/or shell of the building only and thus shares the same environmental assessment areas.

POINT ALLOCATION

The allocation of points within Core & Shell is also identical to New Construction 2013.



PROJECT MANAGEMENT

Criteria #	Area / Section / Subsection	N/A Points
3.1.1	**Integrated Design Process (IDP)**	**0.0**
3.1.1.4	Capital Asset Plan & Business Case Summary	0.0
3.1.2	**Environmental Management During Construction**	**5.0**
3.1.2.2	Clean Diesel Practices	2.0
3.1.2.4	IAQ During Construction	3.0
3.1.3	**Commissioning**	**29.0**
3.1.3.1	Pre-Commissioning	3.0
3.1.3.2	Whole Building Commissioning	19.0
3.1.3.3	Training	1.0
3.1.3.4	Operations and Maintenance Manual	6.0

Capital Asset Plan & Business Case Summary criteria applies to federal building projects only.

IAQ During construction is commonly N/A for core and shell projects since they are typically not occupied during construction

Commissioning criteria may not apply because there is no tenant occupancy, and no O&M Manual and/or CMMS due to a lack of building-wide systems (e.g. HVAC, electricity).

SITE

Criteria #	Area / Section / Subsection	N/A Points
3.2.2	**Ecological Impacts**	**9.0**
3.2.2.2	Tree Integration	5.0
3.2.2.3	Tree Preservation	4.0

Tree integration and preservation criteria will not apply when there are no existing, adaptive, or native trees for the core & shell project's location.

ENERGY

Criteria #	Area / Section / Subsection	N/A Points
3.3.2	**Energy Demand**	**29.0**
3.3.2.1	Passive Demand Reduction	13.0
3.3.2.2	Power Demand Reduction	16.0
3.3.3	**Metering, Measurement & Verification**	**12.0**
3.3.3.1	Metering	8.0
3.3.3.2	Measurement and Verification	4.0
3.3.5	**Lighting**	**15.0**
3.3.5.2	Interior Automatic Light Shut-off Controls	3.0
3.3.5.3	Light Reduction Controls	4.0
3.3.5.4	Daylighting	2.0
3.3.5.5	Controls for Daylighted Zones	6.0

Many core & shell projects are commercial buildings that do not involve electricity or lighting, and may also have no heating, ventilating, and air conditioning (HVAC) until a tenant moves in.

Criteria #	Area / Section / Subsection	N/A Points
3.3.6	**HVAC Systems and Controls**	**59.0**
3.3.6.1	Building Automation System	10.0
3.3.6.2	Cooling Equipment	13.0
3.3.6.3	Cooling Towers	8.0
3.3.6.4	Heat Pumps	6.0
3.3.6.5	Heating Equipment	8.0
3.3.6.6	Condensate Recovery	3.0
3.3.6.7	Steam Traps	2.0
3.3.6.8	Domestic Hot Water Heaters	3.0
3.3.6.9	Variable Speed Control of Pumps	6.0

All the items related to an HVAC system may not be relevant to the project scope.

Criteria #	Area / Section / Subsection	N/A Points
3.3.7	**Other HVAC Systems and Controls**	**30.0**
3.3.7.1	Minimizing Re-heat and Re-cool	6.0
3.3.7.2	Air Economizers	1.0
3.3.7.3	Fans and Ductwork	7.0
3.3.7.4	Demand Controlled Ventilation	10.0
3.3.7.5	Variable Refrigerant Flow Systems	6.0
3.3.8	**Other Energy Efficient Equipment and Measures**	**5.0**
3.3.8.1	Elevators and Escalators	5.0
3.3.9	**Renewable Energy**	**50.0**
3.3.9.1	On-site Renewable Energy	32.0
3.3.9.2	Off-site Renewable Energy	18.0

WATER

"Dark Shell" projects are typically commercial or residential buildings with an unfinished interior and no plumbing. Water consumption and applications may not be in place until future tenant improvements.

Criteria #	Area / Section / Subsection	N/A Points
3.4.1	**Water Consumption**	**24.0**
3.4.2	**Cooling Towers**	**9.0**
3.4.3	**Boilers and Water Heaters**	**4.0**
3.4.4	**Water Intensive Applications**	**18.0**

3.4.4.1	Commercial Food Service Equipment	6.0
3.4.4.2	Laboratory and Medical Equipment	5.0
3.4.4.3	Laundry Equipment	4.0
3.4.4.4	Special Water Features	3.0
3.4.5	**Water Treatment**	**3.0**
3.4.7	**Metering**	**8.0**
3.4.8	**Irrigation**	**14.0**

MATERIALS & RESOURCES

There is usually no interior fit-out, no existing structures for re-use, and no compostable organic waste. In the case of a retrofit, there may also be no newly installed foundational systems.

Criteria #	Area / Section / Subsection	N/A Points
3.5.2	**Interior Fit-out (including finishes and furnishings)**	**16.0**
3.5.3	**Re-use of Existing Structures**	**22.0**
3.5.3.1	Facades	6.0
3.5.3.2	Structural Systems	6.0
3.5.3.3	Non-structural Elements	10.0
3.5.4	**Waste**	**1.5**
3.5.4.1	Construction Waste	1.0
3.5.4.2	Operational Waste	0.5
3.5.8	**Envelope – Foundation, Waterproofing**	**2.0**
3.5.8.2	Below Grade Wall Slabs and Above Grade Horizontal Assemblies	2.0
3.5.9	**Envelope – Cladding**	**2.0**
3.5.9.2	Rainscreen Wall Cladding	2.0
3.5.10	**Envelope – Barriers**	**3.0**
3.5.10.2	Vapor Retarders	3.0

EMISSIONS

Criteria #	Area / Section / Subsection	N/A Points
3.6.1	**Heating**	**18.0**
3.6.2	**Cooling**	**9.0**
3.6.2.4	Leak Detection	9.0
3.6.3	**Janitorial Equipment**	**3.0**

These criteria will not apply where there is no HVAC, and where there is no interior fit-out for janitorial supplies.

INDOOR ENVIRONMENT

Many IEQ criteria will not apply due to no HVAC, and oftentimes no lighting.

Criteria #	Area / Section / Subsection	N/A Points
3.7.1	**Ventilation**	**37.0**
3.7.1.1	Ventilation Air Quality	11.0
3.7.1.2	Air Exchange	8.0
3.7.1.3	Ventilation Intakes and Exhausts	8.0
3.7.1.4	CO2 Sensing and Ventilation Control Equipment	5.0
3.7.1.5	Air Handling Equipment	5.0
3.7.2	**Source Control and Measurement of Indoor Pollutants**	**41.0**
3.7.2.1	Volatile Organic Compounds	10.0
3.7.2.2	Moisture and Vapor Control Methods	8.0
3.7.2.3	Access for HVAC Maintenance	4.0
3.7.2.4	Carbon Monoxide Monitoring	4.0
3.7.2.5	Wet Cooling Towers	2.0
3.7.2.6	Domestic Hot Water Systems	2.0
3.7.2.7	Humidification and Dehumidification Systems	3.0
3.7.2.9	Other Indoor Pollutants (Tobacco, Radon)	6.0
3.7.2.10	Ventilation and Physical Isolation for Specialized Activities	2.0

Criteria that pertain to occupancy are also N/A.

Criteria #	Area / Section / Subsection	N/A Points
3.7.3	**Lighting Design and Systems**	**6.0**
3.7.3.2	Lighting Design	6.0
3.7.4	**Thermal Comfort**	**12.0**
3.7.4.1	Thermal Comfort Strategies	12.0
3.7.5	**Acoustic Comfort**	**19.5**
3.7.5.1	Acoustic Comfort Design	8.5
3.7.5.2	Mechanical, Plumbing, and Electrical	11.0

MULTIFAMILY PROTOCOL

Green Globes Multifamily for New Construction (Green Globes MF NC) provides a certification option that meets the needs of owners and project teams with multifamily projects who are pursuing financial incentive.

GBI offers Green Globes Multifamily for New Construction or Existing Buildings and Green Globes Multifamily Performance Plus for New Construction or Existing Buildings.

The Green Globes Multifamily programs include minimum requirements for energy and water efficiency that ensure resource conservation and best practices for future occupancy in a new or renovated space.

These programs have separate Green Globes Multifamily Technical Manuals which indicate Green Globes for NC or EB criteria that may be 'Not Applicable' for a multifamily project. The assessment process is the same as the process for Green Globes for NC and Green Globes EB. The project team will still complete the questionnaire, work with a third-party assessment and receive a preliminary and final assessment report.

These programs are for use for the residential buildings only of a multifamily project. Leasing offices, clubhouses and community centers should use the standard Green Globes NC or EB programs.

Two options

Green Globes Multifamily for NC or EB

Green Globes Multifamily Performance Plus for NC or EB

Green Globes Multifamily for New Construction (Green Globes MF NC) provides a certification option that meets the needs of owners and project teams with multifamily projects who are pursuing financial incentive.

GBI offers Green Globes Multifamily for New Construction or Existing Buildings and Green Globes Multifamily Performance Plus for New Construction or Existing Buildings.

The Green Globes Multifamily for New Construction protocol includes minimum requirements for ventilation and energy efficiency and The Green Globes Multifamily for Existing Buildings protocol includes minimum requirements for energy efficiency that ensure resource conservation and best practices for future occupancy in a new or renovated space.

These programs have separate Green Globes Multifamily Technical Manuals which indicate Green Globes for NC or EB criteria that may be 'Not Applicable' for a multifamily project. The assessment process is the same as the process for Green Globes for NC and Green Globes EB. The project team will still complete the questionnaire, work with a third-party assessor, and will undergo mandatory reviews as applicable within the programs.

These programs are for use for the residential buildings only of a multifamily project. Leasing offices, clubhouses and community centers should use the standard Green Globes NC or EB programs.

The minimum requirements:

- Are separate from the criteria used in the assessment (do not result in point awards)
- Ensure that multifamily projects meet energy or water savings requirements as applicable to, and identified for, the project.

In order to certify under the Green Globes Multifamily or Multifamily Performance Plus program:

- Projects must achieve all Minimum Requirements for Energy
- Projects must achieve a minimum 35% out of total applicable points, which is applies to all Green Globes projects

GBI offers several free resources for both the Green Globes Multifamily and Green Globes Multifam-ily Performance Plus protocols including aminimum requirements questionnaires for both multifamily protocol and recorded webinars.

Assessors assigned to Multifamily protocol projects will be requested to review the minimum requiremets survey for accuracy after it has been reviewed and approved by GBI staff.