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A	Project Management Policies and Practices		Project Management	
A.1	**Integrated Design Process**			
1.1	Use an integrated design process for the design development to identify functional and environmental priorities at the initiation of the project, evaluate options, and develop the design.			
1.2	Solicit input from all members of the design team at each stage of the design process.			
1.3	Use green design facilitation to support the integrated design process and involve team members throughout each stage of project delivery.			

IAC Comment: There are no apparent conflicts with the design process criteria. It is generally believed that including the building official in the early stages of the design development process is important if potential downstream conflicts are to be avoided.

A.2	**Integration of Environmental Purchasing**			
2.1	Apply environmental purchasing criteria or incorporate aspects of green specifications such as the EPA Comprehensive Procurement Guidelines and/or GreenSpec®			
2.2	Specify energy-saving, high-efficiency equipment based on Energy Star and/or the GreenSpec® menu and/or the Reference Specifications for Energy and Resource Efficiency.			
A.3	**Commissioning Plan –Documentation**			
3.1	Engage an independent Commissioning Authority.	EA-PR1	Fundamental Building Systems Commissioning	Implement all fundamental best practice commissioning procedures. Engage a Commissioning authority to design and implement a commissioning plan.
3.2	Provide "Design Intent" and "Basis of Design" documentation.			
3.3	Include commissioning requirements in the Construction Documentation.			
3.4	Develop a Commissioning Plan.			
	Implementing a commissioning plan is a prerequisite for obtaining final Green Globes certification after construction.	EA 3.0	Additional Commissioning	Implement commissioning plan with additional task specified

IAC Comment: There are potential testing and implementation criteria in the code. It is doubtful they conflict, but may be redundant.

A.4	**Emergency Response Plan**			
4.1	Include the project's environmental goals and procedures with regard to emergency response in Division 1 of the specifications.			
B	**Site**	SS	**Sustainable Sites**	
B.1	**Development Area**			
1.1	Demonstrate on the site plan how any portions of the site identified as being a wetland or wildlife corridor, agricultural land, parkland, or an area notable for its scenic beauty, will be fully preserved. Carry out all required environmental assessments.	SS 1.0	Site Selection	Do not develop buildings on portions of sites that meet any one of the following criteria: · Prime farmland as defined by the United States Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, section 657.5 (citation 7CFR657.5) · Land which is specifically identified as habitat for any species on Federal or State threatened or endangered list. · Within 100 feet of any water, including wetlands (as defined by United States Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22, and isolated wetlands 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 whose elevation is lower than 5 feet above the elevation of the 100-year flood plan as defined by the Federal Emergency Management Agency (FEMA) · Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted is accepted in trade by the public landowner Park Authority projects are exempt).

IAC Comment: There are provisions in the IBC for building in the floodplain that are generally less restrictive.

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	Building Site Criteria (choose ONE of the 3 below):			
1.2	Select an existing serviced site. Existing minimum development density of 60,000 ft²/acre. Remediated, previously contaminated site.	SS 2.0	Urban Redevelopment	Increase localized density by utilizing sites that are located within an existing minimum development density of 60,000 square feet per acre (2 story downtown development)
1.3	Minimize the disturbance of undeveloped areas of the site. Minimize the area of the site for the building, parking, and access roads, and locate new building on previously disturbed parts of the site. Preserve significant trees and natural slopes to maintain the existing direction of groundwater flow. Map all the exiting site vegetation.	SS 5.1	Reduced Site Disturbance, Protect or Restore Open Space	On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; or, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation.
	IAC Comment: There are provisions in the IBC that require open space around the building perimeter for fire department access. There is potential conflict should the building or fire official require unobstructed open space, such as for unlimited area buildings or open perimeter calculations. There are also criteria in the Urban Wildland Interface Code that requires the clearance of vegetation away from the structure. See Chapter 34 of the IEBC. Lastly, there are criteria in the IFC related to fire service access points around the building perimeter that may be affected.			
B.2	**Strategies to Minimize Ecological Impact**			
2.1	Provide a drainage and erosion/sediment control plan that includes measures such as limiting grading, leaving steeper slopes undisturbed, avoiding soil compaction, and protecting vegetative ground cover. Include measures for the construction stage.	SS-PR1	Erosion & Sedimentation Control	Design to a site sediment and erosion control plan that conforms to best management practices
	IAC Comment: Same as 1.3. The need for open perimeter and unobstructed space around the building may be required by the building or fire official.			
2.2	Provide natural cover including trees that within with in 5 years will shade at least 30% of impermeable surfaces. At minimum there should be one tree for every 100 ft² of impermeable surface including parking, walkways and plazas. Where natural shading is not possible, install artificial shading such as covered walks, or light-colored, high-albedo materials (reflectance of at least 0.3) over the site's impervious surfaces	SS 7.1	Landscape & Ext Design to Reduce Heat Islands, Non-Roof	Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light colored/ high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space underground OR use open-grid pavement system (net impervious area of LESS than 50%) for a minimum of 50% of the parking lot area.
2.3	Specify measures to reduce heat build-up on the roof (i.e. either high-albedo roofing materials - reflectance of at least 0.65 and emissivity of at least 0.9 for a minimum of 75% of the roof surface - OR a green roof, OR a combination of both high-albedo materials and green roof).	SS 7.2	Landscape & Ext Design to Reduce Heat Islands, Roof	Use ENERGY STAR® compliant (high-reflectance) AND high emissive roofing (at least 0.9 when tested in accordance with ASTM 408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area. Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area.
	IAC Comment: There is a Only thermal transmittance requirements are specified in the IECC. There is a possible conflict if vegetated roof does not meet the thermal requirements.			
2.4	Minimize the obtrusive aspects of exterior lighting (e.g. glare, light trespass and sky glow) as per the optical design recommendations of the Illuminating Engineering Society of North America (IESNA), such that: • No light is emitted above a horizontal plane passing through the bottom of the fixture; and • Less than 10% of the emitted light shines within 10 degrees below the a horizontal plane passing through the bottom of the fixture.	SS 8.0	Light Pollution Reduction	Do not exceed Illuminating Engineering Society of North America (IESNA) foot-candle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site.
B.3	**Watershed Features**			
3.1	Provide a stormwater management plan to prevent damage to project elements, including vegetation, on both the project site and those adjacent to it. Include an engineering design of the site drainage pattern, including volume calculations and site management strategies. Aim for no increase in run-off. Or, if the site already consists of more than 50% impervious surface in its pre-development state, aim for a reduction of 25% in stormwater run-off	SS 6.1	Stormwater Management, Rate and Quantity	Implement a stormwater management plan that results in no net increase in the rate or quantity of stormwater runoff from existing to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate or quantity of stormwater runoff.
3.2	Provide measures to control run-off from the roof and direct it to a pervious area, or a green roof			

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B.4	**Site Ecology Enhancement**			
4.1	Remediation of a Brownfield site.	SS 3.0	Brownfield Redevelopment	Develop a site that is documented as contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment) OR on a site designated a Brownfield by authorities with jurisdiction. Effectively remediate site contamination.
4.2	Specify a landscape plan that creates/preserves natural corridors both within site and beyond its boundaries. Specify a naturalized landscape using native trees, shrubs and ground cover.			
C	**Energy**	**EA**	**Energy**	
C.1	**Energy Performance - select only ONE of choices below**			
1.1	Achieve levels of performance better than that of a building that meets the target defined by the EPA energy target finder:	EA-PR2	Minimum Energy Performance	Design to meet building energy efficiency and performance as required by ASHRAE/IESNA 90.1-1999 or the local energy code, which ever is the more stringent. Analyze expected baseline building performance using the System/Component Method.
1.2	- 5% or more		Optimize Energy Performance	(Select ONE of options below, if applicable)
	- 10% or more	EA 1.1		- 20% reduction
	- 15% or more	EA 1.2		- 30% reduction
	- 20% or more	EA 1.3		- 40% reduction
	- 25% or more	EA 1.4		- 50% reduction
	- 30% or more	EA 1.5		- 60% reduction
	- 35% or more			
	- 40% or more			
	- 45% or more			
	- 50% or more			
C.2	**Reduced Energy Demand**			
	Space Optimization			
2.1	Design floor area efficiently to fulfill the building's functional and spatial requirements, including circulation and services. Identify spaces that can accommodate more than one function or can be adapted to more or less intensive occupancy.	SS 5.2	Reduced Site Disturbance	Reduce development footprint (including building, access roads and parking) to exceed the local zoning's open space requirement for the site by 25%.
2.2	Where a building design is based on future projections of increased occupant population, phase the construction process, distinguishing between immediate functional needs versus long-term projected needs. Provide adaptable structure and services, and load-bearing capacity for future building expansion.			
	Response to Microclimate and Topography			
2.3	Use orientation and site features to optimize the effect of microclimatic conditions for heating or cooling.			
2.4	Base decision on wind and snow control studies for areas where this could be a problem, develop strategies - including location, use of site topography and orientation - to minimize the exposure to wind and the accumulation of snow.			
2.5	Develop a building form that, site permitting, can benefit from natural or hybrid ventilation to provide natural cooling during the time of year when outdoor air is cooler than indoor air.			
	Integration of Daylighting			
2.3.1	Implement a fenestration strategy that maximizes daylighting through building orientation, window-to-wall size ratios - th maximizes daylighting.			
2.3.2	Install window glazing which optimizes daylight (high visible transmittance, VT).			
2.3.3	Integrate electrical lighting design with daylighting, with controls to adjust the electrical lighting in response to available daylight, taking into account daily and seasonal variations in each lighting zone of the building.			

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	Building Envelope			
2.9	Design the building's thermal resistance of the exterior enclosure to exceed Federal and State Building Energy Codes for the walls by 25-30%.			
	Design the building's thermal resistance of the exterior enclosure to exceed Federal and State Building Energy Codes for the roof by 25-30%.			
2.10	Provide window glazing with a low U factor, and window treatments that enhance interior thermal comfort.			
2.11	Design the building to prevent groundwater and/or rain penetration into the building.			
2.12	Best air and vapor barrier practices to assure integrity of buildings envelope with respect to: - meeting the requirements of local and national building codes - detailing of roof to wall air barrier connections. - mock-ups and mock-up testing for air and vapor barrier systems. - field review and testing for air and vapor barrier systems.			
2.13	Prevent unwanted stack effect by appropriate sealing of the top, bottom, and vertical shafts of the building.			
	Integration of Energy Sub-metering			
2.14	Provide sub-metering of major energy uses (such as lighting, motors, hot water heaters, boilers, fans, cooling and humidification plant, computers and catering facilities) in buildings greater than 50,000 ft^2	EA 5.0	Measurement & Verification	Comply with the installed equipment requirements for continuous metering per Option B, C or D o the 2001 International Performance Measurements & Verification Protocol (IPMVP) Vol. I: Concepts and Options for Determining Energy and Water Savings
	N.A. Green Globes Existing Buildings operational criteria	EA 6.0	Green Power	Engage in a 2 year contract to purchase power generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-E products certification requirements.

IAC Comment: The unlimited glazing allowable under the IECC, without commiserate improvements in the envelope, is in conflict with the basic principles of green building. This is an area that puts the IECC significantly out of alignment with green building standards and could weaken the relevancy of the IECC as a baseline for energy efficient building.

C.3	**Integration of Energy Efficient Systems**			
3.1	Specify energy efficient technologies, such as: - high-efficiency lamps, and luminaries with electronic ballasts. - lighting controls. - energy-efficient HVAC equipment. - high efficiency or condensing type boilers or other higher-efficiency heating sys. (e.g. infrared heating in industrial buildings.) - high efficiency chillers. - energy-efficient hot water service systems. - building automation systems. - variable speed drives. - energy-efficient motors on fans/pumps. - energy- efficient elevators. - other energy-saving systems or measures (i.e. displacement ventilation, cogeneration, heat recovery etc.).			
C.4	**Renewable Energy Sources (select ONE of the 2, as applicable)**			
4.1	Integrate renewable energy sources (solar, wind, biomass, or photovoltaics etc.):			
	- for more than 5% and less than 10% of the total load.	EA 2.1	Renewable Energy	Supply 5% of the total load being by renewable energy
	- for more than 10% of the total load.	EA 2.2		Supply 10% of the total load being by renewable energy
		EA 2.3		Supply 20% of the total load being by renewable energy
C.5	**Energy Efficient Transportation**			
	Public Transport		***Public Transport***	
5.1	Provide access to public transport within 500 yards of the building, with service at least every 15 minutes during rush hour.	SS 4.1	Access to Public Transportation	Locate buildings w/in 1/4 mile of commuter or light rail, subway station or 1/4 mile of 2 or more public or campus bus lines.
5.2	Designated preferred parking for car/van pooling, and shelter at pick-up and drop-off locations.	SS 4.4	Parking Capacity	Parking capacity to meet but not exceed local zoning requirements AND provide preferred parking for carpools.
5.3	Provide an alternative-fuel re-fueling facilities on-site or in the general vicinity.	SS 4.3	Alternative Fuel Refueling Stations	Provide alternative fuel vehicles for 3% of the building occupants AND provide preferred parking for these vehicles - OR install alternative-fuel vehicle refueling stations for 3% of the total vehicle parking capacity of the site.

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	Cycling Facilities		***Cycling Facilities***	
5.4	Provide safe, covered storage areas with fixed mountings for securing bicycles.	SS 4.2	Bicycle Storage & Changing Rooms	For commercial/institutional buildings: secure bicycle storage w. changing/shower facilities (within 200 yards of buildings) for more than 5% of building occupants. For residential buildings, provide covered storage facilities for securing bicycles for 15% or more of building occupants in lieu of changing facilities.
5.5	Provide changing facilities or large washrooms for occupants to change from cycling wear to office-work apparel.			
D	**Water**	**WE**	**Water Efficiency**	
D.1	**Water Performance (choose ONE of the 3 below, as applicable)**			
1.1	Achieve water-use targets of:			
	- less than 35 gal / ft^2 / year or less than 66,000 gal / apartment / year, or less than 45 gal / student / year	WE 3.1	Water Use Reduction, 20% Reduction	Employ strategies that use 20% less water than baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture preferred. requirements.
	- less than 20 gal / ft^2 / year or less than 33,000 gal / apartment / year, or less than 25 gal / student / yea			
	- less than 10 gal / ft^2 / year or less than 11,000 gal / apartment / year, or less than 15 gal / student / year	WE 3.2	Water Use Reduction, 30% Reduction	Exceed potable water use reduction by an extra 10% (30% total efficiency increase).
D.2	**Integration of Water Conserving Features**			
	Integration of Water Efficient Equipment			
2.1	Where appropriate, provide water sub-metering of water uses for high-water-usage operations or occupancies such as boilers, cooling tower make-up lines, water-cooled air conditioning units or special laboratory operations.			
2.2	Increase the building water-efficiency through the use the following water-efficient equipment:			
	- low flush (LF) toilets (less than or equal to 1.6 gallons/flush).			
	- water-saving fixtures on faucets (2.0 gallons/min.) and showerheads (2.4 gallons/min.)			
	- urinals with proximity detectors or waterless urinals where applicable (e.g. offices).			
	- water efficient (H-axis) washing machines + low water dishwashers (8 gallons) where applicable (i.e. in MURBs)			

IAC Comment: The International Plumbing Code currently requires urinals to conform to specific referenced standards, none of which are intended to be applicable to waterless urinals. Although there was an attempt to reference a standard for waterless urinals during the last code cycle, the standard had not yet been published, so the committee felt it was premature to reference it. It is likely that this standard will be referenced in the 2009 IPC, and possibly in the supplements to the International Codes in the interim.

	Strategies for Minimal Use of Water for Cooling Towers			
2.3	Where applicable install features to minimize the consumption of make-up water for wet-cooling towers.			
	Strategies for minimal use of water for irrigation (select ONE within 2.6 below, if applicable)		***Minimal Use of Water for Irrigation***	
2.4	Provide landscaping that can withstand extreme local weather conditions and require minimal irrigation.	WE 1.1	Reduce by 50%	Use high efficiency irrigation technology, OR, use captured rain or recycled site water, to reduce potable water consumption for irrigation by 50% over conventional means.
2.5	Specify a water-efficient irrigation system (e.g. high efficiency technology, rain sensors).			
2.6	Specify irrigation using a portion of non-potable water (captured rainwater or recycled site water).	WE 1.2	No Potable Use or No Irrigation	Use only captured rain or recycled site water for additional 50% reduction of potable water for irrigation needs.
	Specify irrigation using all non-potable water (i.e. captured rainwater or recycled site water).			
D.3	**Strategies to Reduce Off-Site Treatment of Water**		**Reduce off-site treatment of waste water**	
3.1	Where feasible, integrate a graywater collection, storage and distribution system to collect, store, treat and redistribute laundry and bathing effluent for toilet flushing, irrigation, janitorial cleaning, cooling and car washing.	WE 2.0	Innovative Wastewater Technologies	Reduce use of municipal potable water for buildings. sewage conveyance by min. 50% - OR treat 100% of wastewater on site to tertiary standards.
3.2	Where feasible, integrate a biological waste treatment system for the site and building such as peat mos drain field, constructed wetlands, aerobic treatment systems, solar aquatic waste systems (or living machines), and composting or eco-logically-based toilets.			

IAC Comment: Requirements for gray water recycling systems are provided in Appendix C of the International Plumbing Code. Note, however, that the appendix must be specifically adopted to be enforceable. It is not automatically adopted when the plumbing code is adopted. When Appendix C is adopted, it requires that Section 301.3 of the IPC be amended such that bathtubs, showers, lavatories, clothes washers and laundry sinks are not required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water recycling system. The appendix also defines gray water as: waste water discharged from lavatories, bathtubs, showers, clothes washers and laundry sinks.

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E.1	**Integration of Systems and Materials With Low Environmental Impact During Their Life Cycle**			
1.1	Select materials that reflect the results of a "best run" life cycle assessment for the following: - foundation and floor assembly and materials - column and beam or post and beam combinations, and walls. - roof assemblies. - other envelope assembly materials (cladding, windows etc.) .			
E.2	**Minimal Consumption of Resources**			
2.1	Specify used building materials and components.	MR 3.1	Resource Reuse	Specify salvaged or refurbished materials for 5% of building materials
		MR 3.2		Specify salvaged or refurbished materials for 10% of building materials.

IAC Comment: Building code provisions permitting the reuse of the structural materials are vague. The following sections are taken from the 2003 IBC. Section 104.9: Approved materials and equipment. Materials, equipment and devices approved by the building official shall be constructed and installed in accordance with such approval. Section 104.9.1: Used materials and equipment. The use of used materials which meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless approved by the building official. Section 1701.3 Used materials. The use of second-hand materials that meet the minimum requirements for this code for new materials shall be permitted. Steel 2203.1 Identification. Steel furnished for structural load-carrying purposes shall be properly identified for conformity to the ordered grade in accordance with the specified ASTMstandard or other specification and the provisions of this chapter. Steel that is not readily identifiable as to grade from marking and test records shall be tested to determine conformity to such standards.

Wood Section 2303.1.1 ...Grading practices and identification shall comply with rules published by an agency approved in accordance with the procedures of DOC PS 20 or equivalent procedures. In lieu of a grade mark on the material, a certificate of inspection as to species and grade issued by a lumber-grading or inspection agency meeting the requirements of this section...
Section 1712.1 Where required. Where proposed construction is not capable of being designed by approved engineering analysis, or where proposed construction design method does not comply with the applicable material design standard, the system of construction or the structural unit and the connections shall be subjected to the test prescribed in Section 1714. The building official shall accept certified reports of such tests conducted by an approved testing agency, provided that such tests meet the requirements for this code and approved procedures.

2.2	Specify materials with recycled content.	MR 4.1	Recycled Content	Specify materials with recycled content such that the sum of post-consumer recycled content plus 1/2 of the post industrial content constitutes at least 5% of the total value of the materials of the project.
		MR 4.2		Specify materials with recycled content such that the sum of post-consumer recycled content plus 1/2 of the post industrial content constitutes at least 10% of the total value of the materials of the project.

IAC Comment: There is nothing in the code which prohibits the use of material manufactured from recycled content. There are a few code sections that may relate to new and innovative products manufactured from recycled content material.

IBC 104.11.1. Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specially provided for in this code, shall consist of valid research reports from approved sources.

IBC 1710.2 New materials. For materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests as provided for in Section 1711.

2.3	Specify materials from renewable sources that have been selected based on a life-cycle assessment (LCA).	MR 6.0	Rapidly Renewable Materials	Specify rapidly renewable building materials for 5% of total building materials.
2.4	Specify locally manufactured materials that have been selected based on a life-cycle assessment (LCA)	MR 5.1	Locally Manufactured	Specify min 20% of buildings materials manufactured regionally within a radius of 500 miles.

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2.4	Specify locally manufactured materials that have been selected based on a life-cycle assessment (LCA,	MR 5.2	Locally Harvested	Of the regionally-manufactured materials, specify a minimum of 50% that are extracted, or harvested, or recovered within 500 miles.
2.5	Use lumber and timber panel products originating from certified and sustainable sources - certified by the SFI, (Sustainable Forestry Initiative), the FSC (Forestry Stewardship Council), ATFS (American Tree Farm System), or the CSA International. Avoid tropical hardwoods that have not been certified as coming from sustainable resources by an equivalent third party certification system.	MR 7.0	Certified Wood	Use min. 50% of wood-based materials certified in acc. w. Forest Stewardship Council Guidelines for wood buildings components, including, but not limited to: framing, flooring, finishes, furnishings, & non-rented temp. construction (e.g. bracing, concrete form work, safety barriers).
E.3	**Reuse of Existing Buildings (select ONE among 3.1 / 3.2 / 3.3, if applicable)**			
3.1	Retain at least 50% of existing façades in fully renovated buildings.	MR 1.1	Building Reuse	Maintain min. 75% of existing. buildings structure. & shell (ext. skin & framing, excluding windows).
3.2	Retain at least 75% existing façades in fully renovated buildings.			
3.3	Retain 100% of existing façades in fully renovated buildings.	MR 1.2		Maintain 100% of existing. buildings structure. & shell (ext. skin & framing, excluding windows).
3.4	Retain a minimum 50% of the existing major structures (other than the shell i.e. walls, floors and ceilings)	MR 1.3		Maintain 100% of existing. buildings structure. & shell + 50% non-shell (walls, flooring, ceiling systems)
E.4	**Building Durability, Adaptability and Disassembly**			
4.1	Specify durable and low-maintenance building materials and assemblies that can withstand the following: sunlight, temperature and humidity changes, condensation, and wear-and-tear associated with the amount and type of traffic expected.			
4.2	Implement a building design that promotes building adaptability.			
4.3	Specify fastening systems that allow for easy disassembly.			
E.5	**Reduction, Reuse & Recycling of Demolition Waste**			
5.1	Develop and implement a construction, demolition and renovation waste management plan.	MR 2.1	Divert 50%	Recycle and/or salvage min 50% (by weight) of construction, demolition, & land clearing waste.
		MR 2.2	Divert 75%	Recycle and/or salvage another 25% (75% total) of construction. demolition & land clearing debris.
E.6	**Recycling and Composting Facilities**			
6.1	Provide adequate handling and storage facilities for recycling and composting for future occupants to recycle materials and compost organic waste.	MR-PR1	Storage & Collection of Recyclables	Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass plastics, and metals.

IAC Comment: An incidental storage room for recyclables may require fire separation or automatic fire extinguishing system in the space

F	Emissions, Effluents & Other Impacts	EA	Emissions (not in LEED-under Energy and Atmosphere Section)	
F.1	**Integration of strategies to reduce air emissions**			
1.1	Specify low-NO_x boilers and furnaces, which comply with ASME codes.			
F.2	**Integration of ozone depletion reducing strategies (selection required)**			
2.1	Select refrigeration systems that avoid the use of ozone-depleting substances (ODS) and potent industrial greenhouse gases (PIGGs).	EA-PR3	CFC Reduction in HVAC&R Equipment	Zero use of CFC-based refrigerants in new building HVAC&R base building systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phase-out conversion.
2.2	Select refrigerants that have an ozone-depleting potential (ODP) less than 0.05.			
	Select refrigerants that have an ozone-depleting potential (ODP) equal to 0.	EA 4.0	Ozone Depletion	Install base building level HVAC and refrigeration equipment and fire suppression systems that do not contain HCFC's or Halon.
2.3	Ensure air-conditioning systems complies with the requirements of the Safety Code for Mechanical Refrigeration, ASHRAE 15 -1994.			
	N.A. There is no Halon in new buildings. Halon in existing buildings is under Green Globes Existing Buildings operational criteria.			

IAC Comment: Refrigerant must meet safety requirements established in the IMC.

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F.3	**Avoiding Sewer and Waterway Contamination**			
3.1	Prevent storm or wastewater discharges of toxic or harmful materials (solids or sludge, floating debris and oil or scum) into public utilities.	SS 6.2	Storm water Management, Treatment	Storm water management plan that results in treatment sys. designed to remove 80% of the ave. annual post-development total suspended solids (TSS), and 40% of the average annual post-development total phosphorous (TP), and use Best Management Practices (BMPs) in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA 840-B-92- 002 1/93) or the local government's BMP document (whichever is more stringent).
F.4	**Pollution Minimization**			
	Integration of Compliant Storage Tanks			
4.1	Ensure compliance with the nationally recognized standards such as those developed by the Underwriters Laboratory (U.L.) the American National Standards Institute (ANSI), the American Petroleum Institute (API), the American Society for Testing and Materials (ASTM), the American society of Mechanical engineers (ASME), the Street Tank Institute (STI) , the National Association of Corrosion Engineers (NACE), or the National fire Protection Association (NFPA).			
	Control of other pollutants (PCBs, Asbestos, Radon)			
4.2	In the case of a retrofit, regulatory comply with regulations for all PCBs present in the building.			
4.3	In the case of a retrofit, contain, remove, or eliminate asbestos and asbestos-containing materials in compliance with all applicable state and local regulations?			
4.4	Prevent the accumulation of harmful chemicals and gases such as radon and methane in spaces below the substructure, and their penetration into the building.			
	Integrated Pest Management			
4.5	Protect components, materials and the protection of structural openings to avoid infestation by pests (rodents, insects, termites and other pests).			
	Storage and control of hazardous materials			
4.6	Design secure and appropriately-ventilated storage areas for hazardous and flammable materials.			

IAC Comment: An incidental storage room for recyclables may require a fire separation or automatic fire extinguishing system in the space

G	Indoor Environment	EQ	Indoor Environmental Quality	
G.1	**Ventilation System**			
1.1	Avoid entraining pollutants into the ventilation air path by: - positioning air intakes and outlets at least 30 ft. apart, and inlets not downwind of outlets. - locating air intakes more than 60 ft. from major sources of pollution and at least the minimum recommended distance from lesser sources of pollution. - protecting air intake openings. - specifying a ventilation lining that will avoid the release of pollution and fibers into the ventilation air path.			
1.2	Provide ventilation in accordance with ANSI/ASHRAE 62.1 – 2004	EQ-PR1	Minimum IAQ Performance	Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality and approved Addenda (see ASHRAE 62-2001, Appendix H, for a complete compilation of Addenda) using the Ventilation Rate Procedure.
1.3	Verify that the ventilation system provides effective air exchange (that the outdoor air delivered to the space actually reaches the occupants).	EQ 2.0	Increase Ventilation Effectiveness	For mechanically ventilated buildings, design ventilation sys. that result in an air change effectiveness (E) > or = to 0.9, per ASHRAE 129-1997 AND for naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room o zone area in the direction of air flow for at least 95% of hours of occupancy.

IAC Comment: Green Globes references 62.1-2004 and LEED references 62-1999. If someone is complying with 62.1-2004 or 62-1999, are they complying with the ventilation requirements of the IMC? Depending on occupancy and type of room, it is possible to comply with the ventilation rates in 62.1-2004, and not comply with the ventilation requirements in the IMC.

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1.4	Monitor indoor air quality either with CO_2 monitoring or digital electronic airflow monitoring.	EQ 1.0	Carbon Dioxide (CO2) Monitoring	Install a permanent CO_2 monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments, AND Specify initial operational set point parameters that maintain indoor carbon dioxide levels no higher than outdoor levels by more than 530 parts per million at any time.
1.5	Provide mechanical ventilation systems that allow for the flushing-out of the building with 100% outside air at ambient temperatures above 32°F.	EQ 3.2	Construction IAQ Management Plan, Before Occupancy	Conduct a minimum two-week building flush out with a Minimum Efficiency Reporting Value (MERV) 13 filtration media at 100% outside air, after construction ends and prior to occupancy.
1.6	Provide mechanical ventilation of enclosed parking areas.			
1.7	Specify personal control over the ventilation rates, either through operable windows, personalized HVAC controls or, in naturally ventilated buildings, trickle vents on all windows.	EQ 6.1	Controllability of Systems, Perimeter	Provide a minimum of one operable window and one lighting control zone per 200 sq. ft for all occupied areas within 15 feet of the perimeter wall.
		EQ 6.2	Controllability of Systems, Non-Per.	Provide controls for each individual for airflow, temperature, and lighting for 50% of the non-perimeter, regularly occupied areas.
IAC Comment: Depending on interpretation, there may be a conflict between the code and LEED related to what percentage of building occupants must have access to controls. The LEED credit requires that controls be available to 50% of occupants the building, while the code interpretation of "controllable by building occupants" may mean "controllable by all (100%) building occupants."				
1.8	Specify filters with a Minimum Efficiency Reporting Value (MERV) of 13 (80-90% atmospheric dust-spot efficiency) for air distributed to occupied spaces.			
	IAQ management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways is addressed in the Construction phase of Green Globes (not scored)	EQ 3.1	Construction IAQ Management Plan, During Construction	Adopt an IAQ management plan to protect the HVAC system during construction, control pollutant sources and interrupt contamination pathways. Sequence the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile and gypsum wall board.
G 2	**Control of Indoor Pollutants**			
2.1	Implement design measures to prevent the growth of fungus, mold, and bacteria on building surfaces and in concealed spaces.			
2.2	Ensure easy access to the air-handling units (AHUs), for regular inspection and maintenance.			
2.3	Design a humidification system that is designed to avoid the growth of microorganisms.			
2.4	Provide Carbon Monoxide (CO) monitoring in parking garages.			
2.5	Provide measures to mitigate pollution at source such as physical isolation of the spaces, separate ventilation, or a combination of isolation and ventilation for areas that generate contaminants.	EQ 5.0	Indoor Chemical & Pollutant Source Control	Avoid exposure of building occupants to potential hazardous chemicals that adversely impact air quality.
2.6	Design and locate wet cooling towers that are designed and located in such as way as to avoid the risk of Legionella.			
2.7	Design a domestic hot water system that is designed to reduce the risk of Legionella.			
2.8	Use interior materials, including paints, sealants, adhesives, carpets and composite wood products that are low-VOC emitting, non-toxic and chemically inert.	EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	Adhesives and sealants must meet VOC limits (South Coast Air Quality Management District #1168. Sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.)
		EQ 4.2	Low-Emitting Materials, Paints	Paints must meet VOC limits (Green Seal's Standard GS-11 requirements)
		EQ 4.3	Low-Emitting Materials, Carpet	Carpets systems must meet or exceed the requirements of the Carpet and Rug Institute's green Label Indoor Air quality test Program.
		EQ 4.4	Low-Emitting Materials, Composite Wood	Composite woods or agrifibre products must contain no added urea-formaldehyde resins.
	N.A. Green Globes Existing Buildings operational criteria	EQ-PR2	Environmental Tobacco Smoke (ETS) Control	Zero exposure of non-smokers to ETS by prohibition of smoking in the building, OR, provide a designated smoking room designed to effectively contain, capture and remove ETS from the building

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G.3	**Lighting design**			
	Daylighting			
3.1	Provide ambient daylight to 80% of the primary spaces.			
3.2	Achieve minimum daylight factor of 0.2 for work places or living/dining areas that require moderate lighting, and 0.5 for work areas requiring good lighting.	EQ 8.1	Daylight & Views, Daylight 75% of Spaces	Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas.
3.3	Provide views to the building exterior, or to atria from all primary interior spaces.	EQ 8.2	Daylight & Views, Views for 90% of Spaces	Direct line of sight to vision glazing from 90% of all regularly occupied spaces, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas.
3.4	Specify solar shading devices to enable occupants to control brightness from direct daylighting.			
	Lighting Design			
3.5	Provide light levels no less than those recommended in IESNA Lighting Handbook, 2000, for the types of tasks that are anticipated in the various building spaces (regardless of daylighting).			
3.6	Avoid excessive direct or reflected glare, as per IESNA RP-5, 1999, Recommended Practice of Daylighting.			
3.7	Specify lighting controls that relate to room occupancy, circulation space, daylighting and the number of workstations in office areas.			
G.4	**Thermal Control**			
4.1	Achieve Compliance with ASHRAE 55 - 2004 for thermal comfort.	EQ 7.1	Comply with ASHRAE 55-1992	Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone.
		EQ 7.2	Permanent Monitoring System	Install permanent temperature & humidity monitoring system configured to provide control over thermal comfort performance & effectiveness of humidification / dehumidification systems.
G.5	**Acoustic Control**			
5.1	Site the building location and zone spaces within the building to provide optimum protection from undesirable outside noise.			
5.2	Specify an appropriate sound transmission class rating of perimeter walls in response to external noise levels.			
5.3	Provide noise attenuation of the structural systems, and measures to insulate primary spaces from impact noise.			
5.4	Specify acoustic controls to meet the acoustic privacy requirements.			
5.5	Specify measures to meet speech intelligibility requirements for the various spaces and activities.			
5.6	Mitigate acoustic problems associated with mechanical equipment and plumbing systems noise and vibration.			
		ID	**Innovation & Design Process**	
		ID 1.1	Innovation in Design	In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance the proposed submittals to requirements for compliance, and the design approach (strategies) that might be used to meet the requirements.
		ID 1.2	Innovation in Design	Same as Credit 1.1
		ID 1.3	Innovation in Design	Same as Credit 1.1
		ID 1.4	Innovation in Design	Same as Credit 1.1
		ID 2.1	LEED™ Accredited Professional	At least one principal participant of the project team that has successfully completed the LEED Accredited Professional Program
TOTAL		**TOTAL**		