LEED Credit Requirements, Point Estimates, Documentation Requirements and Action Items

LEED™ Rating System, version 2.1

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
			SUSTAINABLE SITES - 14 possible points													
			Site Prerequisite - Erosion Control													
Y			Design a sediment and erosion control plan, specific to the site, that conforms to the US EPA Document No. EPA 832/R-92-005 (Sept. 1992) ***Stormwater Management for Construction Activities*** , Chapter 3, OR local erosion and sedimentation control standards and codes, whichever is more stringeant. The plan shall meet the following objectives: • Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse. • Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.	None added	Strategy: Confirm and note that this must be conveyed to GC and strategies documented through pictures taken on site. Deliverable: Provide the LEED Letter Template, signed by the civil engineer declaring whether the project follows local erosion and sedimentation control standards or the referenced EPA standard. Provide a brief list of the measures implemented. If local standards and codes are followed, describe how they meet or exceed the referenced EPA standard.					X						
			Site Credit 1: Site Selection													
1			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 USDA. • Land whose elevation is lower than 5' above the 100-year flood as defined by FEMA. • Land which is specifically identified as habitat for any species on Federal or State threatened or endangered lists. • Within 100' 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 stringeant. • 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)	None added	Strategy: Confirm Deliverable: Provide the LEED Letter Template, signed by the civil engineer.					X						
			Site Credit 2: Development Density													
		1	Increase localized density to conform to existing or desired density goals by utilizing sites that are located within an existing minimum development density of 60,000 square feet per acre (2 story downtown development).	N/A	unlikely to be relevent											
			Site Credit 3: Brownfield Redevelopment													
		1	Develop on a site documented as contaminated (by means of an ASTM E 1903-1997 Phase II Environmental Site Assessment) OR on a site classified as a brownfield by a local, state or Federal government agency. Provide remediation as required by EPA's Sustainable Redevelopment of Brownfields Program.	N/A	not relevent											
			Site Credit 4: Alternative Transportation													
		1	4.1 - Locate project within 1/2 mile of a commuter rail, light rail or subway station or 1/4 mile of 2 or more public or campus bus lines usable by building occupants.		no campus bus lines											

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1			4.2 - For commercial or institutional buildings, provide secure bicycle storage, with convenient changing/shower facilities (within 200 yards of the building) for 5% or more of regular building occupants.	No added cost if showers are accounted for.	Strategy: verify #s for bike racks. Showers in dorms within 200 yds? Deliverable: provide the LEED Letter Template, signed by the Architect or responsible party, declaring the distance to bicycle storage and showers from the building entrance and demonstrate that these facilities can accommodate at least 5% of building occupants.						X			X		
	1		4.3 - Provide alternative fuel vehicles for 3% of building occupants AND provide preferred parking for these vehicles, OR install alternative-fuel refueling station(s) for 3% of the total vehicle parking capacity of the site. Liquid or gaseous fueling facilities must be separately ventilated or located outdoors.	Campus or GRT to provide cost data?	Strategy: Campus interested in pilot program with some demo vehicles? Or even Facility Mngmt fleet w/alternative fuels? Deliverable: Provide the LEED Letter Template and proof of ownership of, or 2 year lease agreement for, alternative fuel vehicles and calculations indicating that alternative fuel vehicles will serve 3% of building occupants. Provide site drawings or parking plan highlighting preferred parking for alternative fuel vehicles. OR Provide the LEED Letter Template with specifications and site drawings highlighting alternative-fuel refueling stations. Provide calculations demonstrating that these facilities accommodate 3% or more of the total vehicle parking capacity.	X			(X)					X		
1			4.4 - Size parking capacity to meet, but not exceed, minimum local zoning requirements AND 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 vanpools capable of serving 5% of the building occupants.	no added cost.	Deliverable: provide the LEED Letter Template, signed by the civil engineer , stating any relevant minimum zoning requirements and declaring that parking capacity is sized to meet, but not exceed them. State the number of preferred parking spaces for carpools.	X				X						
			Site Credit 5: Reduced Site Disturbance													
			5.1 - On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities and playing fields) that require additional staging areas in order to limit compaction in the constructed area; OR,	N/A												
	1		5.1 - On previously developed sites, restore a minimum of 50% of the site area (excluding the building footprint) by replacing impervious services with native or adapted vegetation.	Native vegetation may reduce long term cost because it may need less maintenance and water.	Strategy: Partly, this depends on type of grasses or vegetation agreeable by College, and program area available for this. Verify. Deliverable: LEED Letter Template, signed by the civil engineer or responsible party, declaring and describing restoration of degraded habitat areas. Include highlighted site drawings with area calculations demonstrating that 50% of the site area that does not fall within the building footprint has been restored.	X					X					

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	1		5.2 - Reduce the development footprint (defined as entire building footprint, access and parking) to exceed the local zoning's open space requirements for the site by 25% For areas with no local zoning requirements (e.g., some university campuses), designate open space area adjacent to the building that is equal to the development footprint.	Cost neutral if open space designation is possible.	Strategy: College, Arch and Landscape calc. or designate open space. Deliverable: Provide a copy of the local zoning requirements highlighting the criteria for open space. Provide the LEED Letter Template, signed by the civil engineer or responsible party, demonstrating and declaring that the development footprint exceeds the local zoning open space requirement for the site by 25%. **OR** For university campuses, designate open space area adjacent to the building that is equal to the development footprint. Provide a letter from the property owner stating that the open space will be conserved for the life of the building.	X				X				X		
			Site Credit 6: Storm Water Management													
			6.1 - If existing imperviousness is less than or equal to 50%, implement a stormwater management plan that prevents the post-development 1.5 year, 24 hour peak discharge rate from exceeding the pre-development 1.5 year, 24 hour peak discharge rate,		Strategy: Determine ratio of existing and then analyze and est. cost for water mngmnt strategies Deliverable: Provide the LEED Letter Template, signed by the civil engineer, declaring that the post-development 1.5 year, 24 hour peak discharge rate does not exceed the pre-development 1.5 year 24 hour peak discharge rate. Include calculations demonstrating that existing site imperviousness is less than or equal to 50%. **OR** Provide the LEED Letter Template, signed by the civil engineer declaring and demonstrating that the stormwater management strategies result in at least a 25% decrease in the rate and quantity of stormwater runoff. Include calculations demonstrating that existing site imperviousness exceeds 50%.										
1			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.	Varies - depending on strategy used. Landscape to prepare cost analysis w/ GRT help if needed.	Strategy: Seems possible greater than 50%. Confirm w/calculations, decrease in runoff achievable through constructed aquifer, collection or constructed wetlands.					X	X		GRT			
1			6.2 - Construct site stormwater treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Non-point Pollution in Coastal Waters (Doc. No. EPA 840-B-93-001c, Jan. 1993) or the local government's BMP document (whichever is more stringeant).	Landscape to provide comparative cost savings or increase w/GRT help if needed	Strategy: use simple plantings and constructed wetland, vegetated filter strips or bioswales as discussed in workshop Deliverable: Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that the design complies with or exceeds EPA or local government Best Management Practices (whichever set is more stringent) for removal of total suspended solids and total phosphorous.					X	X		GRT			
			Site Credit 7: Landscape & Exterior Design to Reduce Heat Islands													
	1		7.1 - Provide shade (within 5 years) AND/OR use light-colored/ high-albedo materials (reflectance of at least 0.3) or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.), OR 7.1 - Place a minimum of 50% of parking spaces underground or covered by structured parking, OR	Landscape to confirm shading in parking lot and any added cost for additional landscaping. GC cost pavement options	Strategy: Either use trees/vegetation to shade areas or look into combining with Renewables and getting alum to donate $ for solar shaded parking to both get renewable energy that is highly visible and reduce maintenance on parking lot. Deliverable: Provide the LEED Letter Template, signed by the civil engineer referencing the site plan to demonstrate areas of paving, landscaping (list species) and building footprint, and declaring that: A minimum of 30% of non-roof impervious surfaces areas are constructed with high-albedo materials and/or open grid pavement and/or will be shaded within five years **OR** a minimum of 50% of parking spaces have been placed under-ground or are covered by structured parking **OR**						X			X	X	

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			7.1 - Use an open-grid pavement system (< 50% impervious) for a minimum of 50% of the parking lot area.		OR an open-grid pavement system (less than 50% impervious) has been used for a minimum of 50% of the parking lot area.											
1			7.2 - Use ENERGY STAR Roof-compliant, high-reflectance AND high emmissivity roofing (initial reflectance of at least 0.65 and three-year-aged reflectance of at least 0.5 when tested in accordance with ASTM E903 and emmissivity of at least 0.9 when tested in accordance with ASTM 408) for a minimum of 75% of the roof surface, OR	GC give cost estimate.	Deliverable: Provide the LEED Letter Template, signed by the architect, civil engineer or responsible party, referencing the building plan and declaring that the roofing materials comply with the ENERGY STAR Label requirements and have a minimum emissivity of 0.9. Demonstrate that high-albedo and vegetated roof areas combined constitute at least 75% of the total roof area. OR								X	X	
			7.2 - 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.	No added cost for structure necessary. GC give estimates.	Strategy: Determine if there's interest in demo for green roof. Deliverable: Provide the LEED Letter Template, signed by the architect, civil engineer or responsible party, referencing the building plan and demonstrating that vegetated roof areas constitute at least 50% of the total roof area.				X			GRT	X	X	
			Site Credit 8: Light Pollution Reduction													
1			8 - Meet or provide lower light levels and uniformity ratios than those recommended by IESNA ***Recommended Practice Manual: Lighting for Exterior Environments*** (RP-33). 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. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no light or brightness from that luminaire crosses the property boundary.	None added	Provide the LEED Letter Template, signed by an appropriate party, declaring that the credit requirements have been met.	X					X		X	X		
7	4	3	**Black typeface: Probable Points** Gray Typeface: Possible Points ***Red and Italicized Typeface: No Points Likely***													

WATER EFFICIENCY - 5 possible points

Water Credit 1: Water Efficient Landscaping

1			1.1 - 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.	Irrigation system is added cost. Confirm intention.	Strategy: Irrigation not needed on site, but possibly for adjacent sites? Deliverable: Provide the LEED Letter Template, signed by the architect, engineer or responsible party, declaring that potable water consumption for site irrigation has been reduced by 50%. Include a brief narrative of the equipment used and/or the use of drought-tolerant or native plants.	X					X					

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1			1.2 - Use only captured rain or recycled site water to eliminate all potable water use for site irrigation (except for initial watering to establish plants), OR do not install permanent landscape irrigation systems.	No permanent landscape irrigation is saved cost.	Strategy: Confirm no premanent system installed. Deliverable: Provide the LEED Letter Template, signed by the responsible architect and/or engineer, declaring that the project site will not use potable water for irrigation. Include a narrative describing the captured rain system, the recycled site water system, and their holding capacity. List all the plant species used. Include calculations demonstrating that irrigation requirements can be met from captured rain or recycled site water. **OR** Provide the LEED Letter Template, signed by the landscape architect, declaring that the project site does not have a permanent landscape irrigation system. Include a narrative describing how the landscape design allows for this.	X					X						
			Water Credit 2: Innovative Wastewater Technologies													
	1		2 - Reduce the use of **municipally provided potable water** for building sewage conveyance by a minimum of 50%, OR, treat 100% of wastewater on site to tertiary standards.	Using rainwater to flush may add small cost up front, save over time. This depends on site work and other issues. Treating wastewater on site is a big added cost up front.	Strategy: Recommend using rainwater/runoff for flushing. Treatment on site prohibitively expensive. Deliverable: Provide the LEED Letter Template, signed by the architect, MEP engineer or responsible party, declaring that water for building sewage conveyance will be reduced by at least 50%. Include the spreadsheet calculation and a narrative demonstrating the measures used to reduce wastewater by at least 50% from baseline conditions. OR Provide the LEED Letter Template, signed by the civil engineer or responsible party, declaring that 100% of wastewater will be treated to tertiary standards on site. Include a narrative describing the on-site wastewater treatment system.	X				X	X		X	X			
			Water Credit 3: Water Use Reduction													
1			3.1 - Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.	Incremental costs may be in higher efficiency fixtures, waterless urinals, etc. MEP to perform cost analysis.	Strategy: Calculate baseline. MEP evaluate options. Deliverable: Provide the LEED Letter Template, signed by the MEP engineer or responsible party, declaring that the project uses 20% less water than the baseline fixture performance requirements of the Energy Policy Act of 1992. Provide the spreadsheet calculation demonstrating that water-consuming fixtures specified for the stated occupancy and use of the building reduce occupancy-based potable water consumption by 20% compared to baseline conditions.	X			X					X	X		
	1		3.2 - Employ strategies that in aggregate use 30% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.	same as above	Deliverable: Provide the LEED Letter Template, signed by the MEP engineer or responsible party, declaring that the project uses 30% less water than the baseline fixture performance requirements of the Energy Policy Act of 1992. Provide the spreadsheet calculation demonstrating that water-consuming fixtures specified for the stated occupancy and use of the building reduce occupancy-based potable water consumption by 30% compared to baseline conditions.												
3	2	0	**Black typeface: Probable Points** Gray Typeface: Possible Points ***Red and Italicized Typeface: No Points Likely***													

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POINTS Y	?	N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
			ENERGY AND ATMOSPHERE - 17 possible points													
			Energy Prerequisite 1: Fundamental Building Systems Commissioning													
Y			P.1 - Implement or have a contract in place to implement all of the following fundamental best practice commissioning procedures: • Engage a commissioning authority. • Develop Owner's performance requirements for energy, water and IEQ an 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.	none	Deliverable: Provide the LEED Letter Template, signed by the owner or commissioning agent(s), confirming that the fundamental commissioning requirements have been successfully executed or will be provided under existing contract(s).	X							X			
			Energy Prerequisite 2: Minimum Energy Performance													
Y			P.2 - Design the building to comply with ASHRAE/IESNA 90.1-1999 (without amendments) or the local energy code, whichever is more stringent.	energy modeling, see below	Deliverable: Provide a LEED Letter Template, signed by a licensed professional engineer or architect, stating that the building complies with ASHRAE/IESNA 90.1-1999 or local energy codes. If local energy codes were applied, demonstrate that the local code is equivalent to, or more stringent than, ASHRAE/IESNA 90.1-1999 (without amendments).				X							
			Energy Prerequisite 3: CFC Reduction in HVAC&R Equipment													
Y			P.3 - 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.	minimal	Strategy:Determine if this is an issue, or if a phase out plan is acceptable. Deliverable: Provide a LEED Letter Template, signed by a licensed professional engineer or architect, declaring that the building's HVAC&R systems do not use CFC-based refrigerants.	X			X							
			Energy Credit 1: Optimize Energy Performance.													
			1.0 - Reduce design energy cost compared to the energy cost budget for regulated energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 (without amendments), as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11 of the Standard.	Most important added cost up front is Energy Modeling. This will be a minimum of $10,000.00 for full building simulation. Local utility may contribute to the cost of this service. The results of the simulation will provide data to do cost/benefit analysis of other strategies such as added insulation, higher performance windows, etc. Until modeling is done, those costs are difficult to quanitfy. Energy efficiency measures may have an added first cost, but decisions can be made on the basis of reasonable return on investment and life cycle cost.	Strategy: Simultaneously execute energy modeling simulation and: analysis of building envelope upgrades, lighting efficiency measures and daylight options. Deliverables: Complete the LEED Letter Template incorporating a quantitative summary table showing the energy saving strategies incorporated in the building design. Demonstrate via summary printout from energy simulation software that the design energy cost is less than the energy cost budget as defined in ASHRAE/IESNA 90.1-1999, Section 11.	X			X					Energy Mod.	X		

			New Bldgs.	Existing Bldgs.
1			15%	5%
1			20%	10%
1			25%	15%
1			30%	20%
	1		35%	25%
	1		40%	30%
	1		45%	55%
		1	50%	40%
		1	55%	45%
		1	60%	50%

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			Regulated energy systems include HVAC (heating, cooling, fans and pumps), service hot water, and interior lighting. Non-regulated systems include plug loads, exterior lighting, garage ventilation and elevators (vertical transportation). Two methods may be used to separate energy consumption for regulated systems. The energy consumption for each fuel may be prorated according to the fraction of energy used by regulated and non-regulated energy. Alternatively, separate meters (accounting) may be created in the energy simulation program for regulated and non-regulated energy uses. If an analysis has been made comparing the prposed design to the local energy standards and the USGBC has determined equivalency between the local codeand ASHRAE/IESNA Standard 90.1-1999, then the comparison against the local code may be used in lieu of the ASHRAE Standard. Project teams are encouraged to apply for Innovation Credits if the energy consumption of non-regulated systems is also reduced.													
			Energy Credit 2: Renewable Energy													
	1	*1* *1*	2.0 - Supply a net 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. Level — % of Total Energy Load in Renewables Level 1 — 5% Level 2 — 10% Level 3 — 20%	Recommend that College make a specific campaign for Renewables from Alum. to offset total cost of hardware and installation. Provides tax credit to 'donor'.	**Strategy**:Perhaps college can get an alum to donate the specific renewable hardware and collect the federal tax credit at the same time (?) **Deliverable**: Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that at least 5% of the building's energy is provided by on-site renewable energy. Include a narrative describing on-site renewable energy systems installed in the building and calculations demonstrating that at least 5% of total energy costs are supplied by the renewable energy system(s).	X		X	X					X		
			Energy Credit 3: Additional Commissioning													
1			3.0 - In addition to the Fundamental Building Commisioning prerequisite, implement or have a contract in place to implement the following additional commissioning tasks: • A Commissioning Authority independent of the design team shall conduct a focused review of the design prior to the construction documents phase. • The independent Commissioning Authority shall conduct a focused review of the construction documents near completion of the construction document development and prior to issuing the contract documents for construction. • The independent Commissioning Authority shall review the contractor submittals relative to the systems being commissioned. • Produce a recommissioning management manual for the Owner • Have a contract in place to review building operation with O&M staff, including a plan for resolution of outstanding commissioning-related issues within one year after construction completion date.	moderate cost	Deliverable: Provide the LEED Letter Template, signed by the owner or independent commissioning agent(s) as appropriate, confirming that the required additional commissioning tasks have been successfully executed or will be provided under existing contract(s).	X							X			
			Energy Credit 4: Elimination of HCFC's and Halons													
		1	4.0 - Install base building HVAC and refrigeration equipment and fire suppression systems that do not contain HCFCs or Halons.	none added	Deliverable: Provide the LEED Letter Template, signed by the architect or engineer, stating that HVAC&R systems as-built are free of HCFCs and Halons.				X							
			Energy Credit 5: Measurement and Verification													

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1			5.0 - Install continuous metering equipment for the following end-uses: • Lighting systems and controls. • Constant and variable motor loads. • Variable frequency drive (VFD) operation. • Chiller efficiency at variable loads (kW/ton). • Cooling load. • Air and water economizer and heat recovery cycles. • Air distribution static pressures and ventilation air volumes. • Boiler efficiencies. • Building specific process energy efficiency systems and equipment. • Indoor water risers and outdoor watering systems. Develop a Measurement and Verification plan that incorporates the monitoring information from the above end-uses and is consistant with Option B, C or D of the 2001 ***International Performance Measurement and Verification Protocol (IPMVP) Volume I: Concepts and Options for Determining Energy and Water Savings.***	added cost. MEP and commissioning agent to provide estimates	Deliverable: Provide the LEED Letter Template, signed by the licensed engineer or other responsible party, indicating that metering equipment has been installed for each end-use and declaring the option to be followed under IPMVP version 2001. AND Provide a copy of the M&V plan following IPMVP, 2001version, including an executive summary.	X			X								
			Energy Credit 6: Green Power													
	1		6.0 - Provide at least 50% of the building's electricity from renewable sources by engaging in at least a 2-year renewable energy contract. Reneable sources are as defined by the Center for Resource Solutions (CRS) Green-e products certification requirements. Gren power may be procured from a Green-e certified power marketer, a Gren-e accredited utility program, or through Green-e certified Tradable Renewable Certificates.	Varies. Owner to verify.	Deliverable: Provide the LEED Letter Template, signed by the owner or other responsible party, documenting that the supplied renewable power is equal to 50% of the project's energy consumption and the sources meet the Green-e definition of renewable energy. Provide a copy of the two-year electric utility purchase contract for power generated from renewable sources.	X											

6			**Black typeface: Probable Points**
	5		Gray Typeface: Possible Points
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MATERIALS AND RESOURCES - 13 possible points

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			Materials Prerequisite 1 - Storage & Collection of Recyclables													
Y			P.1 - 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.	none added	Deliverable: Provide the LEED Letter Template, signed by the architect or owner, declaring that the area dedicated to recycling is easily accessible and accommodates the building's recycling needs. Provide a plan showing the area(s) dedicated to recycled material collection and storage.									X		
			Materials Credit 1 - Building Reuse													
		1	1.1 - Maintain at least 75% of existing building structure and shell (exterior skin and framing, excluding window assemblies).	GC to estimate cost of reusing or salvaging materials (I.e., reuse concrete/brick on site)	Strategy: (Unlikely) Determine if appropriate to reuse or salvage materials for new site/bldg. If so, this may be Innovation for 'Reuse". Deliverable: Provide the LEED Letter Template, signed by the architect, owner or other responsible party, listing the retained elements and declaring that the credit requirements have been met.	X									X	
		1	1.2 - Maintain an additional 25% (100% total) of existing building shell (exterior skin and framing, excluding window assemblies) and non-structural roof material		same											
		1	1.3 - Maintain 100% of existing building shell (exterior skin and framing, excluding window assemblies and non-structural roof material) AND at least 50% non-shell areas (walls, floor coverings, and ceiling systems).		same											
			Materials Credit 2 - Construction Waste Management													

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1			2.1 - Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage at least 50% of construction, demolition, and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.	GC sometimes adds charge for separation on site and site mngr overseeing waste plan. Verify.	Strategy: Work out C&D waste plan to implement on site. Deliverable: Provide the LEED Letter Template, signed by the architect, owner or other responsible party, tabulating the total waste material, quantities diverted and the means by which diverted, and declaring that the	X		X							X	
	1		2.2 - Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage an additional 25% (75% total) of construction, demolition, and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.		same											
			Materials Credit 3 - Resource Reuse													
	1		3.1 - Use salvaged, refurbished or reused materials, products and furnishings for at least 5% of building materials.	Cost depends on materials used.	Deliverable: Provide the LEED Letter Template, signed by the architect, owner or other responsible party, declaring that the credit requirements have been met and listing each material or product used to meet the credit. Include details demonstrating that the project incorporates the required percentage of reused materials and products and showing their costs and the total cost of materials for the project.	X		X						X	X	
		1	3.2 - Use salvaged, refurbished or reused materials for 10% of building materials.		same											
			Materials Credit 4 - Recycled Content													
1			4.1 - Use materials with recycled content such that post-consumer recycled content constitutes at least 5% of the total value of materials in the project OR combined post-consumer and post-industrial recycled content constitutes at least 10%.	Depends on the materials.	Strategy: Determine which materials meet criteria and calculate %. Deliverable: Provide the LEED Letter Template, signed by the architect, owner or other responsible party, declaring that the credit requirements have been met and listing the recycled content products used. Include details demonstrating that the project incorporates the required percentage of recycled content materials and products and showing their cost and percentage(s) of post-consumer and/or post-industrial content, and the total cost of all materials for the project.			X						X		
	1		4.2 - Use materials with recycled content such that post-consumer recycled content constitutes at least 10% of the total value of materials in the project OR combined post-consumer and post-industrial recycled content constitutes at least 20%. 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 the 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 FTC document, Guides for Use of Environmental Marketing Claims, 16 CFR 260.7(e).		same											
			Materials Credit 5 – Local/Regional Materials													
1			5.1 - Use a minimum of 20% of total building materials that are manufactured regionally within a radius of 500 miles. (Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesmen).	Likely none added	Strategy: review materials specified. Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of regional materials/products and showing their cost, percentage of regional components, distance from project to manufacturer, and the total cost of all materials for the project.			X						X		

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
1			5.2 - Of these regionally manufactured materials, use a minimum of 50% of building materials and products that are extracted, harvested or recovered (as well as manufactured) within 500 miles.		same			X						X		
			Materials Credit 6 – Rapidly Renewable Materials													
		1	6.0 - Use rapidly renewable building materials and products (made from plants that are typically harvested within a 10-year or shorter cycle) for 5% of the total value of all building materials and products used in the project.	unlikely	Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the credit requirements have been met. Include calculations demonstrating that the project incorporates the required percentage of rapidly renewable products. Show their cost and percentage of rapidly renewable components, and the total cost of all materials for the project.											
			Materials Credit 7 – Certified Wood													
1			7.0 - Use a minimum of 50% of wood-based materials and products certified in accordance with the Forest Stewardship Council Guidelines 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. To qualify for this credit, wood-based materials and products must constitute at least 2% of the total value of all materials for the building.	Depends on local manufacturers and supply.	Strategy: Select target materials/products. Determine cost and availability. Deliverable: Provide the LEED Letter Template, signed by the architect, owner or responsible party, declaring that the credit requirements have been met and listing the FSC-certified materials and products used. Include calculations demonstrating that the project incorporates the required percentage of FSC-certified materials/products and their cost together with the total cost of all materials for the project. For each material/product used to meet these requirements, provide the vendor's or manufacturer's Forest Stewardship Council chain-of-custody certificate number.			X						X	X	
5	3	*5*	**Black typeface: Probable Points** Gray Typeface: Possible Points ***Red and Italicized Typeface: No Points Likely***													

INDOOR EVIRONMENTAL QUALITY (IEQ) - 15 possible points

			IEQ Prerequisite 1 - Minimum Indoor Air Quality (IAQ) Performance													
Y			P.1 - Meet the minimum requirements of voluntary consensus standard ASHRAE 62-2001, Ventilation for Acceptable Indoor Air Quality and approved published Addenda using the Ventilation Rate Procedure.	none	Deliverable: Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the project is fully compliant with ASHRAE 62-1999 and all published Addenda and describing the procedure employed in the IAQ analysis (Ventilation Rate Procedure).				X							
			IEQ Prerequisite 2 – Environmental Tobacco Smoke (ETS) Control													
Y			P.2 - Zero exposure of nonsmokers to ETS by EITHER:													

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
			Prohibiting smoking in the building, OR providing a designated smoking room designed to effectively contain, capture and remove ETS from the building. At a minimum, the smoking room must be directly exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable deck-to-deck partitions and operated at a negative pressure compared with the surrounding spaces of at least 7 PA (0.03 inches of water gauge). Performance of the smoking rooms shall be verified by using tracer gas testing methods as described in the ASHRAE Standard 129-1997. Acceptable exposure in non-smoking areas is defined as less than 1% of the tracer gas concentration in the smoking room detectable in the adjoining non-smoking areas. Smoking room testing as described in ASHRAE Standard 129-1997 is required in the contract documents and critical smoking facility systems testing results must be included in the building commissioning plan and report or as a separate document.	none	Deliverable: Provide the LEED Letter Template, signed by the building owner or responsible party, declaring that the building will be operated under a policy prohibiting smoking. OR Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring and demonstrating that designated smoking rooms are exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable deck-to-deck partitions, operated at a negative pressure com-pared with the surrounding spaces of at least 7 PA (0.03 inches of water gauge), and performance has been verified using the method described in the credit requirements.	X			X								
			IEQ Credit 1 - Carbon Dioxide (CO2) Monitoring Control													
1			Install a permanent carbon dioxide (CO2) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments. Refer to the CO2 differential for all types of occupancy in accordance with ASHRAE 62-2001, Appendix D.	MEP provide estimate	Deliverable: Provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring and summarizing the installation, operational design and controls/zones for the carbon dioxide monitoring system. For mixed-use buildings, calculate CO 2 levels for each separate activity level and use.	X			X							
			IEQ Credit 2 - Increase Ventilation Effectiveness													
		1	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.		Deliverable: For mechanically ventilated spaces: provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the design achieves an air change effectiveness (Eac) of 0.9 or greater in each ventilated zone. Complete the table summarizing the air change effectiveness achieved for each zone. OR For mechanically ventilated spaces: provide the LEED Letter Template, signed by the mechanical engineer or responsible party, declaring that the design complies with the recommended design approaches in ASHRAE 2001 Fundamentals Chapter 32, Space Air Diffusion. Complete the table summarizing the air change effectiveness achieved for each zone (must be 0.9 or greater).											
			IEQ Credit 3 - Construction IAQ Management Plan													
1			3.1 - 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 in Design Approaches of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, AND • Protect stored on-site or installed absorptive materials from moisture damage, AND • 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 return air grill during construction.		Deliverable: Provide the LEED Letter Template, signed by the general contractor or responsible party, declaring that a Construction IAQ Management Plan has been developed and implemented, and listing each air filter used during construction and at the end of construction. Include the MERV value, manufacturer name and model number. AND EITHER Provide 18 photographs six photographs taken on three different occasions during construction—along with identification of the SMACNA approach featured by each photograph, in order to show consistent adherence to the credit requirements OR Declare the five Design Approaches of SMACNA IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3, which were used during building construction. Include a brief description of some of the important design approaches employed.								X		X	

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
1			3.2 - Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows: • After construction ends and prior to occupancy, conduct a minimum two-week building flushout with new filtration media at100% outside air. Replace filtration media used after the flush-out with new filtration media that have a MERV of at least 13, OR • Conduct a baseline indoor air quality testing procedure consistent with the US EPA's current protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445.		Strategy: Determine which strategy is appropriate. Deliverable: Provide the LEED Letter Template, signed by the architect, general contractor or responsible party, describing the building flush-out procedures and dates. OR Provide the LEED Letter Template, signed by the architect or responsible party, declaring that the referenced standard's IAQ testing protocol has been followed. Include a copy of the testing results	X			X							X	
			IEQ Credit 4 - Select Low-Emitting Materials													
1			4.1 - The VOC content of adhesives and sealants used must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168 by, AND all sealants used as fillers must meet or exceed Bay Area Air Quality Mangement District Reg. 8, Rule 51.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, listing the adhesives and sealants used in the building and declar-ing that they meet the noted requirements.			X						X		
1			4.2 - VOC emissions from paints must not exceed the VOC and chemical component limits of Green Seal requirements.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, listing all the paints and coatings used in the building and stating that they comply with the current VOC and chemical component limits of Green Seal's Standard GS-11 requirements.			X						X		
1			4.3 - Carpet systems must meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, listing all the carpet systems used in the building and stating that they comply with the current VOC limits of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.			X						X		
	1		4.4 - Composite wood or agrifiber products must contain no added urea-formaldehyde resins.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, listing all the composite wood products used in the building and stating that they contain no added urea-formaldehyde resins			X						X		
			IEQ Credit 5 - Indoor Chemical Pollutant Source Control													
1			Design to minimize cross-contamination of regularly occupied occupancy areas by chemical pollutants: • Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways, AND • Where chemical use occurs (including housekeeping areas and copy/print rooms), provide segregated areas with deck to deck partitions with separate outside exhaust at a rate of at least 0.50 cfm per sf, no air re-circulation and naintaining a negative pressureof at least 7 PA (0.03 inches of water gauge), AND • Provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, declaring that: Permanent entryway systems (grilles, grates, etc.) to capture dirt, particulates, etc. are provided at all high volume entryways. Chemical use areas and copy rooms have been physically separated with deck-to-deck partitions; independent exhaust ventilation has been installed at 0.50 cfm/square foot and that a negative pressure differential of 7 PA has been achieved. In spaces where water and chemical concentrate mixing occurs, drains are plumbed for environmentally appropriate disposal of liquid waste.				X						X		
			IEQ Credit 6 - Controllability of Systems													

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
		1	6.1 - Provide minimum of one operable window and one lighting control zone per 200 s.f. for all occupied areas within 15 feet of the perimeter wall.		Deliverable: Provide the LEED Letter Template, signed by the architect or responsible party, demonstrating and declaring that for regularly occupied perimeter areas of the building a minimum of one operable window and one light-ing control zone are provided per 200 square feet on average.											
		1	6.2 - Provide controls for each individual for airflow, temperature, and lighting for at least 50% of the occupnats in non-perimeter, regularly occupied areas.		Provide the LEED Letter Template, signed by the architect or responsible party, demonstrating and declaring that controls for individual airflow, temperature and lighting are provided for at least 50% of the occupants in non-perimeter, regularly occupied areas.											
			IEQ Credit 7 – Thermal Comfort													
		1	7.1 - Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone. For naturally ventilated buildings, utilize the adaptive control temperature boundaries, using the 90% acceptibility limits as defined in the California High Performance Schools (CHPS) Best Practices Manual, Appendix C: A Field Based Thermal Comfort Standard for Naturally Ventilated Buildings, Figure 2.		Deliverable: For mechanically ventilated spaces: provide the LEED Letter Template, signed by the engineer or responsible party, declaring that the project complies with ASHRAE Standard 55-1992, Addenda 1995. Include a table that identifies each thermally controlled zone, and that summarizes for each zone the temperature and humidity control ranges and the method of control used. OR For naturally ventilated spaces: provide the LEED Letter Template, signed by the engineer or responsible party declaring that the project complies with the 90% acceptability limits of the adaptive comfort temperature boundaries in the California High Performance Schools (CHPS) Best Practices Manual Appendix C – A Field Based Thermal Comfort Standard for Naturally Ventilated Buildings, Figure 2											
		1	7.2 - Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building.		Deliverable: Provide the LEED Letter Template, signed by the engineer or responsible party, declaring that a permanent temperature and humidity monitoring system will operate throughout all seasons to permit control of the building zones within the seasonal thermal comfort ranges defined in ASHRAE 55-1992, Addenda 1995. Confirm that the temperature and humidity controls were (or will be) tested as part of the scope of work for Energy and Atmosphere Prerequisite 1, Fundamental Building Systems Commissioning. Include the document name and section number where the commissioning work is listed.											
			IEQ Credit 8 - Lighting and Views													
	1		8.1- Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks. Spaces excluded from this requirement include copy rooms, storage areas, mechanical plant rooms, laundry and other low occupancy support areas. Other exceptions for spaces where tasks would be hindered by the use of daylight will be considered on their merits.	none	Strategy: Calculate %. Deliverable: Provide the LEED Letter Template signed by the architect or responsible party. Provide area calculations that define the daylight zone and provide prediction calculations or daylight simulation.							X	X		
1			8.2- Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. Other exceptions for spaces where tasks would be hindered by the use of daylight will be considered on their merits.	none	Strategy: Calculate %. Deliverable: Provide the LEED Letter Template and calculations describing, demonstrating and declaring that the building occupants in 90% of regularly occupied spaces will have direct lines of site to perimeter glazing. Provide drawings highlighting the direct line of sight zones.							X	X		
8	2		**Black typeface: Probable Points** Gray Typeface: Possible Points													

Black typeface: Probable Points
Gray Typeface: Possible Points
Red and Italicized Typeface: No Points Likely

POINTS Y	POINTS ?	POINTS N	CREDIT REQUIREMENTS	PRELIM. COST DATA	ACTION ITEMS / COMMENTS	Owner	x	LEED	M. E. P.	Civil	Landscape	Structural	OTHER	Architect	GC	DUE
		5	*Red and Italicized Typeface: No Points Likely*													

DESIGN PROCESS AND INNOVATION POINTS - 5 possible points

Innovation Credits

			In writing, identify the INTENT of the proposed innovation credit, the proposed REQUIREMENT for compliance, the proposed DOCUMENTATION to demonstrate compliance, and the DESIGN APPROACH (strategies) that might be used to meet the requirements.		Deliverable: Provide the proposal(s) within the LEED Letter Template (including intent, requirement, submittals and possible strategies) and relevant evidence of performance achieved.											
	1		1.1 Prairie Trail (potential dev't of RR wetland)													
	1		1.2 Refrigeration refrigerants													
	1		1.3 Food composting													
	1		1.4 Backyard Habitat, recycling landscape nutrients,													

LEED Accredited Professional

1			2 - At least one principal participant of the project team that has successfully completed the LEED Accredited Professional exam.		Deliverable: Provide the LEED Letter Template stating the LEED Accredited Professional's name, title, company and contact information. Include a copy of this person's LEED Accredited Professional Certificate.			X								

1		Black typeface: Probable Points
	4	Gray Typeface: Possible Points
	0	*Red and Italicized Typeface: No points*

GRAND TOTAL - 69 possible points

30		Black typeface: Probable Points
	20	Gray Typeface: Possible Points
	19	*Red and Italicized Typeface: No Points Likely*

CERTIFICATION LEVELS

26 - 32
33 - 38
39 - 51
52 - 64+