

Section 7 | Sustainable Design

UNIVERSITY of
HOUSTON

FACILITIES PLANNING AND CONSTRUCTION

January 2020

Section 7

Sustainable Design

- Comply with energy and water conservation standards for state-funded higher education institutions as required by the Texas State Energy Conservation Office (SECO). Refer to <https://comptroller.texas.gov/programs/seco/code/state-funded.php>
- Demonstrate SECO compliance to Facilities Planning & Construction (FPC) at the end of Design Development. Submit final compliance certification directly to SECO, with copies to FPC, at the completion of Construction Documents.
- For construction of new academic, research and other campus buildings, design and certify to LEED Silver or better, using the latest version of LEED v4.
- For construction of new parking garages, use the ParkSmart sustainable design rating system. Design and certify to ParkSmart Silver or better standards.
- Conduct sustainable design workshops at key intervals during design. Engage University stakeholders, design team members, the construction manager, and others as appropriate.
- Submit fully annotated LEED or ParkSmart scorecards at the end of Schematic Design, Design Development, 50% Construction Documents, and Final Construction Documents. Identify the responsible party for each credit and the status of the project in meeting LEED goals.
- Refer to the accompanying example of a design phase LEED v4 scorecard submittal for a typical new building at the central campus.
- Submit all required, final documentation for LEED or ParkSmart certification in a single submittal to the Green Building Certification Institute promptly after completion of construction.



Cougar Woods Dining Hall | LEED Silver



Cougar Woods Dining Hall | LEED Silver

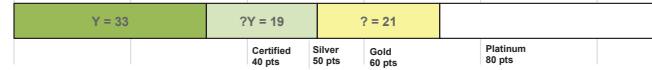
Section

Sustainable Design



University of Houston
 Typical Project
 LEEDv4 New Construction Checklist
 Date: October 4, 2018
 Phase:

Y = Credit requirements are included in design and strong confidence points will be achieved
 ?Y = Credit compliance is likely but more investigation or calculations are needed
 ? = Credit compliance is still to be determined, requires a change to design, or affects budget
 N = Credit is not feasible or will not be pursued



33	19	21	37	TOTAL	110	Certified: 40-49 points	Silver: 50-59 points	Gold: 60-79 points	Platinum: 80+ points				
Y	?Y	?	No		Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
PROJECT INFORMATION													
Required					Form 1 Project Summary Details				Square Footages, Site Characteristics, Energy/Water Sources, Budget				
INTEGRATED PROCESS													
1					IPc1	1		D	Perform the following analysis before the completion of SD and use the results to inform OPR/BOD: - "Simple box" energy model assessing at least 2 potential strategies. - Water budget analysis to explore potable water load reduction.	Projects are required to investigate rainwater collection per SECO requirements and therefore will conduct a water balance analysis. Simple box model can be conducted by architecture team to evaluate load reduction strategies.		Architect	Civil Plumbing Landscape MEP
LOCATION + TRANSPORTATION													
1					LTc2	1		D	Opt 1: Previously Developed Site Opt 2: Sensitive Land Criteria	All projects on campus should be considered for Opt:1 and therefore meet credit criteria.		Civil	
			2		LTc3	2		D	Opt 1: Historic District (1pt) Opt 2: Site Priority (1pt) - Locate project on one of the designed federally funded site priorities. Opt 3: Brownfield (2pts)	Projects on campus would most likely not meet high priority site criteria.		Civil	Architect
	2			3	LTc4	5		D	Opt 1: Density (3pts) Density within 1/4 mi of project is 22,000 sf/acre (2pts) or 35,000 sf/acre (4pts) Opt 2: Diverse Uses (2pts) Access within 1/4 mi to 4-7 services (1pt) or at least 8 services (2pts)	Some campus locations would meet Opt 2: Diverse uses requirements but most places on campus would most likely not meet the density requirements.		Architect	
			5		LTc5	5		D	Access: Locate any functional entry of the project within a 1/4-mi of existing/planned bus, streetcar or within a 1/2-mi of existing /planned bus rapid transit stops, rail stations, or ferry terminals. Frequency: The transit service at those stops and stations in aggregate must meet the minimums for buses: 1 pt = 72 weekday / 40 weekend, 3 pts = 144 weekday / 108 weekend, 5 pts = 360 weekday / 216 weekend	Public transportation is integrated into UH campus. Frequency of access would need to be confirmed for each project.		Architect	
				1	LTc6	1		D	Storage: Provide short term storage for at least 2.5% of all peak visitors, AND provide long term for at least 5% of all regular building occupants (min 4/building of each). Network: Design or locate the project such that entry or bicycle storage is within a 200-yd from a bicycle network that connects to 10 diverse uses, school/employment center, OR public transportation. Shower: Provide at least one on-site shower with changing facility for the first 100 regular building occupants and 1 additional shower for every 150 regular building occupants thereafter.	While bicycling is encouraged on campus, may need to investigate campus improvements to bicycle network to meet requirements. Showers would need to be provided in buildings or in shared facilities. Storage for bicycles is required for short-term parking (outside) and regular building occupants (covered).	Bicycle network improvements+ Shower + Covered bike storage	Architect	Civil Landscape
				1	LTc7	1		D	Capacity: Do not exceed the minimum local code requirements for parking capacity. Provide parking capacity that is a percentage reduction below the base ratios recommended (Case 1: 20% reduction, Case 2: 40% reduction). Carpool: Provide preferred parking for 5% of total parking	Credit best achieved when a campus approach is considered. Would need to evaluate capacity for all of campus and allocate 5% to preferred parking for carpooling.		Civil UH Parking	Architect
				1	LTc8	1		D	Parking: Provide preferred parking for green vehicle for 5% of total parking. Refueling: Provide 2% parking capacity for electric charging stations.	Credit best achieved when a campus approach is considered. Allocate 5% parking to preferred parking for low-emitting vehicles and 2% of parking to electric vehicle charging stations.	Charging stations	Civil UH Parking	Electrical

Sample LEED scorecard submittal

Section 7

Sustainable Design

Y	?Y	? 2	? 3	No	Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
5					SUSTAINABLE SITES	10							
				Required	SSp1 Construction Activity Pollution Prevention			C	Create and implement an erosion and sedimentation control (ESC) plan for all construction activities associated with the project.	A ESC plan is standard and code required.		Civil	Contractor
1					SSc1 Site Assessment	1		D	Complete and document a site survey or assessment that includes: topography, hydrology, climate, vegetation, soils, human use, human health effects.	Site analysis should be conducted on every project by design team.		Civil	Architect Landscape
				2	SSc2 Protect/Restore Habitat	2		D	<u>Developed</u> - Opt 1: On-Site Restoration (2pts) - Opt 2: Financial Support (1pt)	Credit is difficult to achieve since 30% of site needs to be devoted to native/adaptive plants (non-turf).		Landscape	
1					SSc3 Open Space	1		D	<u>Area</u> : ≥ 30% of total site (a min of 25% vegetated or shaded) <u>Accessibility</u> : must be accessible to two or more amenities	Credit best achieved when a campus approach is considered. Dependent on project boundary, 25% of open space needs to be vegetated (non-turf) and there must be at least 2 amenities provided.	Amenities in site space	Architect	Landscape
				2 1	SSc4 Rainwater Management	3		D	<u>Opt 1: Percentage Rainfall</u> - Path 1 - 95% (2pts) - Path 2 - 98% (3pts) - Path 3 - 85% (3pts) Zero Lot line projects only <u>Opt 2: Natural Land Cover Conditions (3pts)</u> Manage on site the annual increase in runoff volume from the natural land cover condition to the post-developed condition.	Credit should be evaluated within a larger campus strategy for rainwater management. May be difficult to achieve on most projects as management of rainwater currently requires a minimum of 95th percentile of storms to be managed on site (or on campus) and not released into stormwater system outside of campus.	Comprehensive rainwater management system	Civil	
2					SSc5 Heat Island Reduction	2		D	<u>Opt 1: Non-roof / Roof (2pts)</u> Area non-roof / (0.5) + Reflectant roof / (0.75) ≥ total site paving area <u>Opt 2: Parking Undercover (1pt)</u>	Projects can most likely meet requirements with high SRI roof and new concrete. Colored surfaces would need to be evaluated within the weighted area calculation.		Architect	Landscape
1					SSc6 Light Pollution Reduction	1		D	<u>Uplight</u> - Opt 1: BUG Rating Method <u>Light Trespass Requirements</u> - Opt 1: BUG Rating Method <u>Internally Illuminated Exterior Signage</u> Meet the internally illuminated signage requirement.	Backlight, uplight and glare requirements should easily be met but should be evaluated against campus standards. Credit no longer requires photometric and light to stay within project boundary which benefits campus projects.		Electrical	
4					WATER EFFICIENCY	11							
				Required	WEp1 Outdoor Water Use Reduction			D	<u>Opt 1: No Irrigation Required</u> <u>Opt 2: Reduced Irrigation by 30%</u>	Opt 2 requirements should be met through efficient fixtures and native/adaptive plants.		Landscape	Civil
				Required	WEp2 Indoor Water Use Reduction			D	<u>Building Water Use</u> Reduce potable water consumption by 20%, all toilets, urinals, and private lavatories must be Water Sense. <u>Appliance & Process Water Use</u> Install appliances, equipment, heat rejection cooling, cooling towers, and evaporative condensers to meet requirements.	Projects must follow IECC 2015 and UPC 2012, which should easily reach 20% reduction.		Plumbing	Architect
				Required	WEp3 Building-Level Metering			D	Install permanent water meters that measure the total potable water use for the building and associated grounds. Meter data must be compiled into monthly and annual summaries; commit to share usage to USGBC for five year period.	Meters will be provided in accordance with the requirements and connected to the BAS.		Plumbing	Civil
1				1	WEc1 Outdoor Water Use Reduction	2		D	<u>Opt 1: No Irrigation Required (2pts)</u> <u>Opt 2: Reduced Irrigation (50%-1pt, 100%-2pts)</u>	50% requirement could be met through efficient fixtures and native/adaptive plants. Rainwater reuse for irrigation may be a strategy to consider where rain detention is feasible.	Rainwater reuse	Landscape	Civil
2				4	WEc2 Indoor Water Use Reduction	6		D	<u>Flow/Flush Fixtures</u> Further reduce fixture and fitting water use from the calculated baseline in WE Prerequisite Indoor Water Use Reduction (25%-1pt, 30%-2pts, 35%-3pts, 40%-4pts, 45%-5pts, 50%-6pts)	25% reduction should be met with UH standard. 30% may require water closets be reduced from 1.28 gpf to 1.1 gpf, and lavatories be reduced from 0.5 gpm to 0.35 gpm.		Plumbing	Architect
				2	WEc3 Water Cooling Tower Water Use	2		D	For cooling towers and evaporative condensers, conduct a one-time potable water analysis, in order to optimize cooling tower cycles. <u>Opt 1: Max Cycles (1pt)</u> <u>Opt 2: Min 10 Cycles (2pts)</u> <u>Opt 3: Max Cycles + 20% Recycled Water (2pts)</u>	If cooling towers are used, credit should be evaluated and local water sources should be analyzed for water make up concentrations.		Mechanical	Plumbing
1					WEc4 Water Metering	1		D	Install permanent water meters for 2 or more water subsystems: Irrigation, indoor plumbing fixtures, domestic hot water, boiler, reclaimed water, other process water.	Sub meters should be provided for irrigation and one other water sub-system (as determined by UH) in buildings in order to provide comparable operational data for campus tracking/improvement.	Water sub-meters	Plumbing	Civil

Sample LEED scorecard submittal

Section

Sustainable Design

Y	?Y	?	No	Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
5	5	7	16	ENERGY & ATMOSPHERE	33							
				Required	EAp1		C	Fundamental Commissioning of Building Energy Systems <i>Commissioning Activities</i> Complete a commissioning process activities for mechanical, electrical, plumbing, renewable energy systems, and exterior enclosure. <i>O&M Plan</i> Prepare and maintain a current facilities requirements and operations and maintenance plan that contains the information necessary to operate the building efficiently.	Commissioning is required as part of IECC 2015. Additional information needs to be provided including exterior enclosure requirements listed in the OPR / BOD and a O&M plan needs to be prepared.		Cx Agent	Owner
				Required	EAp2		D	Minimum Energy Performance <i>Whole Building Simulation, 5% (2% of it must come from building power/cooling infrastructure) energy savings. Demonstrate an improvement of at least 5% energy savings above the baseline building performance according to ASHRAE Standard 90.1-2010, App. G.</i>	IECC 2015 / SECO require projects to meet more aggressive energy targets. However, ASHRAE requires 50% of plug loads to be regulated in offices, classrooms, and conference rooms.	Controlled receptacles	Mechanical	All
				Required	EAp3		D	Building-Level Energy Metering <i>Install permanent energy meters that measure the total building energy consumption. Meter data must be compiled into monthly and annual summaries; commit to share usage to USGBC for five year period.</i>	Electrical will specify a switchboard that is equipped with multifunction metering equipment that will measure/monitor energy consumption.		Electrical	Owner
				Required	EAp4		D	Fundamental Refrigerant Management <i>Do not use chlorofluorocarbon (CFC)-based refrigerants in new HVAC&R systems.</i>	No equipment will utilize CFC based refrigerants.		Mechanical	Owner
3			3	Enhanced Commissioning	EAc1	6	C	<i>Opt 1: Enhanced Cx (3pts) Opt 2: Enhanced Cx + Monitoring (4pts) Opt 2: Enhanced Envelope Cx (2pts)</i>	Enhanced Cx Opt 1 is already conducted by UH and provides oversight during the design process for alignment with campus standards and review of equipment before warranty ends. Additional investigation is required into Monitoring Based Commissioning (1pt) and Envelope Commissioning (2pts).	Monitoring & Envelope Commissioning	Cx Agent	Owner
2	2	2	12	Optimize Energy Performance	EAc2	18	D	<i>Demonstrate an improvement in the proposed building performance rating compared with the baseline building performance rating.</i>	Savings are compared to IECC 2015 / SECO requirements. An estimated 8-12% savings above ASHRAE 90.1-2010 could be achievable.	Energy Conserving measures TBD	Mechanical	All
	1			Advanced Energy Metering	EAc3	1	D	<i>Install advanced energy metering for all whole building energy sources used by the building and any individual energy uses that represent 10% or more of the total annual consumption of the building. Meet metering characteristic requirements.</i>	Sub-meters are required for 10% of energy use systems which would most likely include lighting, plug loads, HVAC systems, and hot water systems. A comprehensive approach to metering should be considered in buildings in order to provide comparable operational data for campus tracking/improvement.	Energy sub-meters	Electrical	Mechanical
		1	1	Demand Response	EAc4	2	C	<i>Design building and equipment for participation in demand response programs through load shedding or shifting. - Opt 1 - DR Available (2pts) - Opt 2 - DR Not Available (1pt)</i>	Demand response program most likely not available but plan for Opt 2 could be set up to shed 10% of load in event of a potential brown out. Further investigation into controls systems and management of plan is required.	BAS load shedding capability	Electrical	Owner
			3	Renewable Energy Production	EAc5	3	D	<i>Use renewable energy systems to offset building energy costs (1%-1pt, 5%-2pts, 10%-3pts).</i>	Not typical for campus projects.	PV Systems	Electrical	Owner
	1			Enhanced Refrigerant Management	EAc6	1	C	<i>Opt 1: No or Low Impact Refrigerants Opt 2: Impact Calculations</i>	Could be achievable on projects with centralized cooling systems.		Mechanical	Owner
	1	1		Green Power + Carbon Offsets	EAc7	2	C	<i>Engage a contract for a minimum of five years, to be delivered at least annually (50%-1pt, 100%-2pts).</i>	Green power and carbon offsets could be purchased by owner which UH is currently considering.	Offsets	Owner	Energy Modeler

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Section 7

Sustainable Design

Y	?Y	?	No	Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
3	4	1	5	MATERIALS & RESOURCES	13							
				MRp1 Storage and Collection of Recyclables			D	Provide dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building. Recycling must also include at least 2 of the following: batteries, mercury-containing lamps, electronic waste.	Basic recycling infrastructure should be provided. Owner needs to ensure infrastructure is also in place to recycle alternative materials such as batteries, mercury lamps, and electronic waste on campus.		Owner	Architect
				MRp2 Construction + Demo Waste Management Plan			D	Develop and implement a construction and demolition waste management plan. Provide a final report detailing all major waste streams generated, including disposal and diversion rates.	Construction waste plan should be provided by contractor and tracked during the construction process.		Contractor	
	3		2	MRc1 Building Life Cycle Impact Reduction	5		C	Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment. Opt 1: Historic Building Reuse (5pts) Opt 2: Abandoned Building Reuse (5pts) Opt 3: Building + Material Reuse (4pts) Opt 4: Whole Building LCA (3pts)	Opt 4 is most likely achievable for many projects. Structural to specify concrete mix design that reduces carbon footprint based on best practices as full life-cycle assessment. Other carbon reduction solutions in the envelope and structure should be considered in early design.		Architect	Structural
1			1	MRc2 Environmental Product Declarations	2		C	Opt1: EPDs (1pt) Use at least 20 different permanently installed products sourced from at least five different manufacturers with cradle to gate scope, industry-wide EPD, or product specific EPD. Opt 2: Multi-Attributes (1pt) Use products that comply with criteria for 50%, by cost, of the total value of permanently installed products in the project.	Opt 1 is most likely achievable as EPDs are becoming more available but showing a reduction below industry average for Opt 2 is not likely. UH specifications should be evaluated to support products with EPDs where available.		Architect	Contractor MEP Landscape
		1	1	MRc3 Sourcing of Raw Materials	2		C	Opt1: Raw Material Source + Extraction Reporting (1pt) Use at least 20 different permanently installed products sourced from at least five different manufacturers that have publicly released a report from their raw material supplier. Opt 2: Leadership Extraction Practices (1pt) Use products that meet at least one of the responsible extraction criteria for at least 25%, by cost, of the total value of permanently installed building products in the project.	Construction team to track materials that are regional and recycled which could potentially earn the project 1 point for Opt 2.		Architect	Contractor MEP Landscape
	1		1	MRc4 Material Ingredients	2		C	Opt1: Material Ingredients Reporting (1pt) Use at least 20 different permanently installed products sourced from at least five different manufacturers that use programs to demonstrate the chemical inventory of the products at least 0.1%. Opt 2: Multi-Attributes (1pt) Use products that comply with criteria for 25%, by cost, of the total value of permanently installed products in the project.	Opt 1 is most likely achievable as HPDs/Cradle to Cradle/Declare are becoming more available but meeting the multi-attributes of Opt 2 are not likely. UH specifications should be evaluated to support products with material ingredient disclosure where available.		Architect	Contractor MEP Landscape
2				MRc5 Construction + Demo Waste Management	2		C	Opt 1: Waste Diversion Recycle and/or salvage nonhazardous construction/demolition materials (50%+3 material streams-1pt, 75%+4 material streams-2pts). Opt 2: Reduction of Total Waste Material Do not generate more than 2.5 lbs of construction waste / SF of the building's floor area.	Projects should be able to track 75% diversion from 4 material streams. Construction waste to be managed and tracked by GC.	Construction waste contractor	Contractor	

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Section

Sustainable Design

Y	??	?	No	Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
6	4	5	1	INDOOR ENVIRONMENTAL QUALITY 16								
				Required	IEQp1		D	Minimum Indoor Air Quality Performance <i>Ventilation</i> Design to ASHRAE 62-1-2010 <i>Monitoring</i> + VAV - Provide direct outdoor airflow measurement device + Constant - Balance outdoor air flow to the design minimum. Install a current transducer.	Projects should be designed to meet ASHRAE 62-2010. Outdoor airflow measurement device are required and are recommended to connect to BAS system.		Mechanical	
				Required	IEQp2		D	Environmental Tobacco Smoke (ETS) Control <i>Prohibit smoking inside the building and outside except for smoking areas (at least 25'). Provide permanent signage within 10' of building entrances.</i>	UH is a tobacco-free campus and does not allow smoking on campus. Signage communicating this policy should be provided for buildings and should be consistent with campus strategy.		Architect	Owner
2					IEQc1	2	D	Enhanced IAQ Strategies <i>Opt 1: Enhanced IAQ Strategies (1pt)</i> <i>Opt 2: Additional Enhanced IAQ Strategies (1pt)</i>	Opt 1 should easily be achieved with 10' walk off mats, MERV 13 filters on outside air intakes, and air contamination strategies could be incorporated into other design for chemical rooms. Opt 2 can be achieved by providing CO2 sensors in densely occupied areas. If they are tied to air supply systems, additional energy savings can be realized.		Mechanical	Architect
1	1	1			IEQc2	3	D	Low-Emitting Materials <i>Opt 1: Product Category</i> <i>Opt 2: Budget Calculation Method</i>	Wet applied adhesives, sealants, paints, coatings, as well as walls, insulation, ceilings, and composite wood can be specified to meet low-VOC and CDPH testing procedures.		Contractor	Architect MEP
1					IEQc3	1	C	Construction IAQ Management Plan <i>Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupation phases of the building.</i>	IAQ to be managed and tracked by GC; smoking is not allowed within the building or 25' from the project.		Contractor	
	1		1		IEQc4	2	C	IAQ Assessment <i>Opt1: Flush Out (1pt)</i> <i>Opt 2: Air Testing (2pts)</i>	Flush out could be performed at minimal cost but frequently is affected by schedule or humidity levels. IAQ testing could be performed for shorter schedules but there are cost implications and should be avoided.		Contractor	Owner
		1			IEQc5	1	D	Thermal Comfort <i>Design</i> Design heating, ventilating, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55-2010. <i>Controls</i> Provide thermal comfort controls for at least 50% of individual occupant spaces and 100% of multi-occupant spaces.	Thermal comfort design criteria can be met and thermal comfort controls could be provided in shared spaces. But it is unlikely the project will be able to provide 50% of individual spaces/workstations with thermal comfort controls. Individual spaces would require desk fans, underfloor air distribution, or thermal zoning to provide 50% of individual spaces w/ thermostat.	Thermal controls	Mechanical	Owner
1		1			IEQc6	2	D	Interior Lighting <i>Opt 1: Lighting Control (1pt)</i> <i>Opt 2: Lighting Quality (1pt)</i>	For Opt 1, Electrical can provide wall mounted dimming controls for individual occupant and multi-occupant spaces. Opt 2 requires more investigation into lighting quality and lighting standards.	Multi-level lighting controls + Lighting quality	Electrical	Architect
2	1				IEQc7	3	D	Daylight <i>Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces AND</i> <i>Opt 1 - Simulation, Spatial Daylight Autonomy (3pts)</i> <i>Opt 2 - Simulation, Illuminance Calculations (2pts)</i> <i>Opt 3 - Measurement (3pts)</i>	While most projects should be able to meet SDA criteria, special attention should be paid to glare. Areas with 10% or more of glare (ASE) are required to have automatic shades.	Automatic shades	Architect	Electrical
1					IEQc8	1	D	Quality Views <i>Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area. Type of views must meet prescriptive requirements:</i> <i>- multiple lines of site</i> <i>- views of flora, fauna, sky, movement, objects 25' away</i> <i>- unobstructed views 3 times head height</i> <i>- views with a view factor of 3.</i>	Most projects should be able to provide views for 75% of regularly occupied spaces except for projects with labs or classrooms without views to the outdoors.		Architect	
		1			IEQc9	1	C	Acoustic Performance <i>For all occupied spaces, meet the prescriptive requirements, as applicable, for HVAC background noise, sound transmission, reverberation time, and sound reinforcement and masking.</i>	Credit can be costly to meet STC and NC values in wall separations / equipment.	Acoustic criteria	Acoustic consultant	Architect Mechanical

Sample LEED scorecard submittal

Section 7

Sustainable Design

Y	?Y	?	No	Credit	Pt	Phs	Status	Requirements	Notes	Cost	Champion	Support
2	4			INNOVATION IN DESIGN	6							
	1			IDc1.1 Green Building Education	1	C		Two of the following five elements must be included in the educational program: 1) A comprehensive signage program, 2) A case study document, 3) Guided tours focusing on sustainability, 4) An educational outreach program, 5) Website or electronic newsletter with project case study and green strategies that can be practiced at home. For more information: https://www.usgbc.org/node/4933013?return=/credits/new-construction/v4/innovation-catalog	Owner may have green education strategy in place for campus.		Owner	
	1			IDc1.2 Green Cleaning	1	C		Develop green cleaning policy in alignment with LEED O+M: Green Cleaning Policy. For more information: https://www.usgbc.org/node/2614211?return=/credits	Owner may have green housekeeping plan in place or can develop one in partnership with facilities.		Owner	
	1			IDc1.3 Lamp Purchasing	1	C		Implement the lighting purchasing plan that specifies an overall building average of 70 picograms of mercury per lumen-hour or less for all mercury-containing lamps purchased for the building and associated grounds within the project boundary. For more information: https://www.usgbc.org/node/7433230?return=/credits/new-construction/v4/innovation-catalog	Owner may have green power purchasing plan in place or can develop as a campus wide purchasing strategy.		Owner	Electrical
	1			IDc1.4 Bird Collision Design	1	C		Comply with the "Building façade and site structures," "Exterior lighting," and "Performance monitoring plan". For more information: https://www.usgbc.org/node/4561982?return=/pilotcredits/New-Construction/v4	Additional innovation credits can also be considered.		Architect	Electrical Owner
	1			IDc1.5 Triple Bottom Line Analysis	1	D		Use a Triple Bottom Line (financial, social, and environmental), benefit-cost analysis (BCA) on at least six LEED credits. This includes analyzing financial/economic, environmental, and social costs and benefits associated with the selected credits.	One Pilot credit must be selected for all 6 points to be achieved in innovation category. Triple bottom line analysis with the use of Autocase could be pursued for 2pts.		Architect	Owner MEP Landscape
	1			IDc2 LEED® Accredited Professional	1	C		At least one principal participant of the project team must be a LEED Accredited Professional (AP) with a specialty appropriate for the project.	Architecture teams should have at least one principal participant on the project team leading the LEED efforts as a LEED AP.		Architect	
1			3	REGIONAL PRIORITY	4			Regional credits for 77004				
			1	EAc2 Optimize Energy Performance	1	D		10 pts required threshold	See notes for Optimize Energy Performance, 10 pts must be earned.	Energy Conserving measures TBD	Mechanical	All
			1	LtC3 High Priority Site	1	D		2 pts required threshold	See notes for High Priority Sites.		Architect	
	1			LtC5 Access to Quality Transit	1	D		3 pts required threshold	See notes for Access to Quality Transit; credit is anticipated for UH projects.		Architect	
			1	MRc4 Material Ingredients	1	C		2 pts required threshold	See notes for Material Ingredients; not feasible credit for most projects.		Architect	Contractor MEP Landscape
		1		SSc4 Rainwater Management	1	D		2 pts required threshold	See notes for Rainwater Management.	Comprehensive rainwater management system	Civil	
		1		WEc1 Outdoor Water Use Reduction	1	D		2 pts required threshold	See notes for Outdoor Water Use Reduction.	Rainwater reuse	Landscape	Civil
33	19	21	37	TOTALS	110				Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points			

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