

Marriott Marquis Schematic Design LEED Review Submission 08/01/08



Leadership in Energy
and Environmental Design



ENVIRONMENTAL & ENERGY CONSULTING

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ZONING COMMISSION
District of Columbia
CASE NO.08-13
EXHIBIT NO.17B

LEED Scorecard



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LEED NCv2.2 Scorecard

Project: Marriott Marquis Convention Center
Project Status: Schematic Design



Sustainable Sites					Summarized Description of Action Required	Status	Next Step
Y	Y	Y	Y	Y	Construction Activity Pollution Prevention Incorporate erosion and sedimentation control measures into site construction.	Civil dwgs indicate ESC plan and details and specs are included and meets reqs. SDK template spec for ESC is also included.	Integrate specs to include ESC spec section under Div 1. SDK to compile online documentation when credit is complete.
1	1	1	1	1	Site Selection Do not develop flood prone sites, farmland, wetland, or endangered species refuge.	Site is not located within 100yr flood zone or in any preserved land for farm or wildlife. Meets credit reqs.	SDK to compile online documentation when credit is complete.
1	1	1	1	1	Development Density & Community Connectivity Develop on a previously developed with within an area with min density of 60,000sqft/acre OR develop within 1/2 mile of residential area and within 1/2 mile of 10 community services.	Site is located with a high density neighborhood and is within 10 basic community services. Meets credit reqs.	SDK to compile online documentation when credit is complete.
1	0	0	0	0	Brownfield Redevelopment Develop EPA or State designated Brownfield site.	Credit not achievable since site does not qualify.	Not applicable.
1	1	1	1	1	Alt. Transportation, Public Transportation Access Develop site within 1/4 of two bus lines or within 1/2 mile of rail station.	Project site is located within 0.2 miles from Mt. Vernon/Convention Center metro station. Meets credit reqs.	SDK to compile online documentation when credit is complete.
1	1	0	1	1	Alt Transportation, Bicycle Storage & Changing Rooms For residential projects provide secure covered bike storage for 15% of occupants.	Bike racks are not indicated in the parking plan. Bike racks reqd. = 65 Showers for FTE employees are indicated in the Arch dwgs. Showers reqd. = 4 no.	Indicate covered bike storage space with 65 bike racks. Provide 4 Showers for use by employees. SDK to support team with meeting credit reqs.
1	1	0	1	1	Alt Transportation, Low Emitting & Fuel Efficient Vehicles Provide low-emitting/ fuel-efficient vehicles for: -3% FTE occupants and preferred parking for these vehicles OR - provide 5% of total parking as preferred parking for fuel efficient vehicles OR - install alternative-fuel refueling stations for 3% of total parking (Zipcar spaces may be used for credit compliance, 1 zipcar serves 8 FTE).	Parking plan does not indicate any preferred pkg spots for low emitting/FaV. Preferred spots reqd. = 19, OR Zipcars reqd. = 2	Determine if credit is being pursued. To qualify, provide - Free/ discounted zip car memberships, OR - Preferred pkg for low emitting / fuel efficient fleet vehicles
1	1	0	1	1	Alt Transportation, Parking Capacity Do not exceed code/zone allowed minimum parking capacity and provide infrastructure and support programs to facilitate shared vehicle usage.	Parking allowed = 383 Parking provided = 400 (valet pkg and zoning pkg no.s differ) Carpool/vanpool preferred pkg spots not indicated in parking plan. Carpool/vanpool preferred pkg reqd. = 19 Credit may not be achievable if parking exceeds zoning.	Determine actually parking number and confirm if project does not exceed zoning parking limit. Indicate 19 carpool/vanpool preferred spaces on pkg plan.
1	0	0	0	1	Site Development, Protect or Restore Open Space Conserve natural areas by limiting site disturbance to 40' from building, 10' beyond walkways, 15' beyond roadways and 25' beyond permeable surfaces	Project does not qualify for credit since building is built to lot line.	Not applicable.
1	0	0	0	1	Site Development, Maximize Open Space Exceed zone open space requirement by 25% or if no open space requirements exist, provide open space equal to building footprint.	Open space or green roof options are not being pursued on the project. Credit not achievable.	Not applicable.

Possible	DC PIE Commitment	Asks On in the Design at this Phase	Anticipated	Difficult but Possible
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69 33 9 36 52

						Summarized Description of Action Required	Status	Next Step	
1	1	0	1	1	Credit 1	Stormwater Design, Quantity Control Employ storm retention ponds/tanks OR pervious paving AND/OR veg. roof reducing run-off so post development rate and quantity is less than or equal to predevelopment. Feed cooling tower with captured storm water or use as irrigation water make-up	Civil dwgs are not included in the set. SW calcs showing pre and post development runoff for 2yr,24hr period are not indicated. Arch and MEP dwgs indicate SW cistern for capture and reuse of SW for Cooling tower and irrigation. Location and capacity of cisterns are conflicting in both Arch and MEP dwgs.	Indicate atleast 25% of pre development runoff is reduced for 2yr,24hr storm event and provide calcs. Coordinate SW cistern capacity between Arch and MEP to match location and capacity. SDK to support team with meeting credit reqs.	
1	0	0	0	1	Credit 2	Stormwater Design, Quality Control Employ storm retention ponds/tanks OR pervious paving AND/OR veg. roof. & filtration for ALL site runoff	Civil dwgs are not included. Plumbing dwg indicate sand filtration system. SW treatment details and efficiency are not indicated. Credit maybe difficult to achieve due to difficulty in capturing sidewalk and street runoff within site limit.	Determine if credit is being pursued. To qualify, 90% of site area (=1 inch rain) should be treated for 80% removal of TSS.	
1	1	1	1	1	Credit 1	Heat Island Effect, Non-Roof Shade parking OR 50% under cover and utilize high reflective materials for hardscape.	Arch dwgs indicate 100% underground parking and will meet credit reqs.	SDK to compile online documentation when credit is complete.	
1	1	0	1	1	Credit 2	Heat Island Effect, Roof Specify high albedo roofing type for 75% of the total roof area OR 50% of roof as vegetated are or a combination of both.	Roofing type is not indicated. Specs indicate TPO roofing to be used.	Specify 100% of roof area excluding atrium to be roofing type with SRI>79. Include product specs and submittal reqs in specification.	
1	0	0	0	1	Credit 3	Light Pollution Reduction Design muted exterior lighting (< 1.5 fc) with cut off fixtures and no up lighting. Exterior lighting must not exceed ASHRAE 90.1-2004 lpd limits.	Credit not being pursued by the project due to security and brand design requirements for lighting.	Not applicable.	
Water Efficiency									
1	1	0	1	1	Credit 1	Water Efficient Landscaping, Reduce by 50% Specify drip irrigation AND/OR use captured storm water for irrigation.	Landscape dwgs are not included in the set. Permanent irrigation is intended using captured SW. Irrigation system type and controls are not indicated.	Determine %age of irrigation demand to be satisfied with SW reuse. Specify high efficient irrigation system such as drip with moisture and rain gauge sensors and include details and specs. SDK to work with Civil/Landscape to determine capacity and meet credit intent.	
1	1	0	1	1	Credit 2	Water Efficient Landscaping, No Potable Use or No Irrigation Install no irrigation OR use captured storm water (tanks or pond) for ALL irrigation.	Landscape dwgs are not included in the set. Irrigation system type and controls are not indicated. Permanent irrigation is intended using captured SW to meet 100% irrigation demand.	Determine %age of irrigation demand to be satisfied with SW reuse. Include details of irrigation to SW cistern connection and controls in dwgs/specs. SDK to work with Civil/Landscape to determine capacity and meet credit intent.	
1	0	0	0	0	Credit 1	Innovative Wastewater Technologies Re-use stormwater in plumbing fixtures and/or gray water system	Credit not being pursued by the project. Design provisions (segrated gray/black waste water lines and aux gray water supply riser) to accomodate future implementation will be considered.	Not applicable.	
1	1	0	1	1	Credit 1	Water Use Reduction, 20% Reduction Specify dual flush toilets (1.6/1.1 or less) and low flow lavs (0.5 gpm).	Dwg P000 and Spec section 15410 do not include fixture performance details. Fixture selection is based on Marriott std and will not meet reqs. SDK provided plumbing fixture option matrix to achieve 20% wateruse reduction.	Specify 1.6gpf or less toilets, 2.2gpm or less lavs, 2.0gpm or less showers to meet 20% water use reduction. Include fixture performance and flow rates in specs.	



69	33	9	36	52		Summarized Description of Action Required	Status	Next Step	
1	0	0	0	1	Count 2	Water Use Reduction, 30% Reduction Specify dual flush toilets (1.6/1.1 or less), low flow lavs (0.5 gpm) and low flow showers (1.8 or less).	Not being pursued by the project since achieving 30% reduction in hotel occupancy is very difficult. Design provisions (segregated gray/black waste water lines and aux. gray water supply riser) to accommodate future implementation will be considered.	Not applicable.	
Energy & Atmosphere									
	Y	Y	Y	Y	Phase 1	Fundamental Commissioning of the Building Energy Systems Engage a 3rd party commissioning authority.	SDK has Fundamental Cx in scope. Section 01810 is included and meets reqs. Section 15951 and 17003 - HVAC Cx specs are included.	SDK will coordinate with GHT on Cx specs. Develop and deliver Cx Plan. Identify design Cx Team Members.	
	Y	Y	Y	Y	Phase 1	Minimum Energy Performance Design envelop, HVAC, and lighting at or below ASHRAE 90.1-2004	SD level Energy Model by SDK/EMO indicated project meets and exceeds 90.1-2004. Reference to ASHRAE 90.1-2004 std as applicable std is not indicated in Mech dwgs.	SDK to confirm bidg compliance with ASHRAE 90.1-2004 std during CD's.	
	Y	Y	Y	Y	Phase 1	Fundamental Refrigerant Management Specify HCFC or HFC refrigerants in chillers.	Dwg M601 indicates 3 York centrifugal chillers using R-134a, ERUs, 1 ACU, and one split system. Refrigerant details and submittal reqs are not included in specs. Project should meet the requirements.	Include refrigerant details and submittal reqs in the specs. SDK to review calcs in CD's to confirm credit status.	
10	3	4	5	6	Count 1	Optimize Energy Performance Design envelop, HVAC, and lighting below ASHRAE 90.1-2004 by 10-45%	SD level Energy Model by SDK/EMO indicates project meets and exceeds ASHRAE 90.1-2004 with a possible total of (5) points.	SDK/EMO to run final E model in CD stage including final LPDs, system details and confirm credit status.	
3	0	0	0	1	Count 1	On-Site Renewable Energy, 2.5%, 7.5%, 12.5% Employ renewable energy such as photovoltaic or solar thermal, to offset building energy costs (2.5-12%)	Dwg P504 shows schematic of Solar HW pre-heating system. Capacity and connection to main systems are not indicated.	SDK work with MEP and EMO to determine % of total energy cost contribution from system based on E-model estimate. SDK to support MEP with implementing solar water heating system. If system does not meet renewable load requirement, it will contribute to EAc1 Energy Performance.	
1	1	0	1	1	Count 1	Enhanced Commissioning Engage a 3rd party commissioning authority with scope to cover LEED enhanced commissioning items.	SDK is contracted for Enhanced Cx services. Section 01810 is included. Section 15951 and 17003 - HVAC Cx specs are included.	Integrate specs to include Bidg Cx under Div 1 and correct HVAC Cx spec in specs. SDK will perform a full design review per the Enhanced Cx scope at approx. 100% DD or 50% CD and report to team.	
1	1	0	1	1	Count 1	Enhanced Refrigerant Management Do not use refrigerants OR use refrigerants with low ozone depleting and global warming potential.	Refrigerant details for all HVAC and Food Service equipment are not included.	To determine credit status, provide refrigerant info (total cooling capacity, refrigerant type, refrigerant charge amount) for HVAC and Food service eqp containing over 0.50 lbs of refrigerant. SDK to support MEP to meet credit reqs.	
1	1	0	1	1	Count 1	Measurement & Verification Incorporate enhanced BAS energy use monitoring and reporting services.	Spec section 15900 indicates main electric meter interface, recording, trending, and automatic monthly reporting and satisfied credit intent. Gas meter interface to BAS for recording, trending, and auto monthly reporting of gas energy use is not included.	Indicate gas meter interface to BAS with capacity to trend, record and report gas energy use. Detail reporting/trending requirements for all meters. SDK to verify CD's to confirm credit compliance.	

Possible	DC PDB Commitment	As-is Or in the Design at this Phase	Anticipated	Difficult but Possible	
69	33	9	36	52	
1	1	0	0	1	Cover 1
1	0	0	0	0	Cover 2
1	1	0	1	1	Cover 3.1
1	0	0	0	1	Cover 3.2
1	0	0	0	1	Cover 4.1
1	1	0	1	1	Cover 4.2
1	1	0	1	1	Cover 4.3
1	1	0	0	1	Cover 4.4
1	0	0	0	0	Cover 5
1	1	0	1	1	Cover 6.1

Summarized Description of Action Required	Status	Next Step
Outdoor Air Delivery Method Implement CO2 monitoring and CO2 based ventilation control in all densely populated spaces (lobbies, meeting rooms, restaurants, etc.). Provide air flow monitoring stations on all HVAC units supplying OA to regularly occupied areas.	Dwg M000 indicates CO2 sensors will be provided in all AHU's. No OA AFMS currently shown or specified for ventilation AHUs, and no space CO2s shown or specified for areas with high occupant density.	To qualify, provide AFMS in OA riser and CO2 sensors in all high occupant areas such as ballroom, conference room, meeting rooms. SDK to support MEP to implement reqs to meet credit.
Increased Ventilation Increase ventilation rates to at least 30% above that as required by ASHRAE 62.1-2004	OA calcs as per ASHRAE 62.1-2004 std is not available. Credit difficult to achieve as unusual for hotel guest rooms have OA amount 30% or more over ASHRAE 62.1-04 std.	SDK to obtain ASH 62.1-04 VRP table from MEP and verify for credit compliance.
Construction IAQ Management Plan, During Construction Protect HVAC system during construction and properly store absorptive materials. Specify and use MERV 8 filters during construction.	Construction IAQ spec is included in the set and meets reqs. Section is not integrated into Div 1. Material storage requirement specs included. Construction scheduling, HVAC protection, source control and housekeeping requirements not addressed in specs. Air filter spec section 15861 does not specify MERV 8 filters.	Integrate Const IAQ spec under Div 1. Include MERV 8 filter req. at return air in permanently installed equipment during construction.
Construction IAQ Management Plan, Before Occupancy Flush building w/100% OA for 2 wks OR conduct post construction, pre occupancy air testing.	Air testing specs are included in the set.	Determine if credit is being pursued. Pre-occupancy air quality testing on all units would be \$\$ but can be considered as bid-alternate.
Low-Emitting Materials, Adhesives & Sealants Specify low VOC adhesives and sealants in all trades (Arch, MEP)	Credit not being pursued since Low VOC adhesive for all applications difficult to specify and performance of some is questionable.	Not applicable.
Low-Emitting Materials, Paints & Coatings Specify low VOC interior paints, stains, varnishes, and coatings.	Arch outline specs are included but do not include VOC information for paints and coatings.	Specify low VOC interior paints, stains, varnishes, and coatings compliant with Green Seal standards. Refer Addspec Paints & Coatings matrix for permissible VOC limits.
Low-Emitting Materials, Carpet Systems Specify only CRI IAQ Green Label Plus certified carpets for ALL carpets. Specify low VOC carpet adhesive.	Arch outline specs are included but do not include CRI information for carpets, backing and adhesive. Credit may not be achievable if standard Marriott carpets are used which do not comply with LEED reqs.	Specify only CRI IAQ Air Test certified carpets for ALL carpets and carpet adhesive with less than 50g/L VOC content.
Low-Emitting Materials, Composite Wood & Agrifiber Products Specify low composite wood and agrifiber products containing no-urea formaldehyde resins. (Arch, MEP)	Arch outline specs are included but do not include composite wood details.	Specify agrifiber core board or composite wood with non-urea formaldehyde resins.
Indoor Chemical & Pollutant Source Control Install permanent entryway walk off systems, direct exhaust janitor/copy/fax areas and employ deck to deck partitions. Use MERV 13 filtration (or greater) for all areas.	Credit not achievable due to difficulty of using MERV-13 filters in guest room units. Dedicated exhausts for JCs, housekeeping areas with self closing doors and full ht partitions, walk off mats at all main entrances are recommended as good practice.	Not applicable.
Controllability of Systems, Lighting Provide lighting controls for 90% of building occupants and for all shared use spaces.	Drawings indicate that individual lighting control switches are provided in all hotel rooms and multi-user spaces such as ballroom, meeting rm, conference rm etc.	Individual lighting controls in units will qualify for the credit. Include electrical specs for lighting controls.

AddSpec



	69	33	9	36	52		Summarized Description of Action Required	Status	Next Step
1	1	0	1	1		Goal 9: Controllability of Systems, Thermal Comfort	Provide comfort control for 50% of occupants and for all shared use spaces	Drawings indicate that individual thermostats are provided in all units. Mechanical specs show thermostat control specs.	Individual thermostat controls in units qualify for the credit. Include mechanical specs for thermostat controls. Include thermal adjustment controls for all multi-occupant spaces such as retail, office spaces and lobby areas.
1	1	0	1	1		Goal 11: Thermal Comfort, Design	Design HVAC system to meet ASHRAE 55-2004.	Thermal Comfort design criteria is indicated on dwg M000 but compliance with ASHRAE 55-2004 std is not specified.	Determine if project is designed to meet conditions as determined by ASHRAE 55-2004 Ensure if BAS system is implemented and is connected to HVAC controls.
1	0	0	0	1		Goal 12: Thermal Comfort, Verification	Develop thermal comfort survey for building occupants and corrective action procedure.	Management will consider Thermal Comfort guest survey.	If being pursued, SDK to develop thermal comfort survey for occupants and develop a plan for corrective action.
1	0	0	0	0		Goal 13: Daylight & Views, Daylight 75% of Spaces	Design envelop and interior spaces for 2% day lighting in 75% of occupied areas.	Guest room and common space geometry design and window geometry to meet daylighting requirement is unlikely.	SDK help architect verify that daylighting will reach 75% of regularly occupied building spaces.
1	0	0	0	0		Goal 14: Daylight & Views, Views for 90% of Spaces	Design envelop and interior spaces for views outside for 90% of occupied areas.	Guest room and common space geometry design and window geometry to meet views requirement is unlikely.	SDK help architect verify that views will reach 90% of regularly occupied building spaces.
Innovation & Design Process									
1	1	0	1	1		Goal 15: Innovation in Design: Education Program	Include signage throughout the building educating occupants on aspects of green building.	LEED education/outreach program using signages will be incorporated in the project.	SDK to provide credit details and templates for Owner review.
1	1	0	1	1		Goal 16: Innovation in Design 100% Underground parking	Specify Energy Star certified appliances and lighting.	Project has 100% underground parking and will meet credit req.	SDK to complete credit documentation for submission.
1	1	0	1	1		Goal 17: Innovation in Design Energy Star	Provide 100% underground parking to qualify.	Project will specify Energy Star certified appliances and lighting.	Include appliance and lighting specs indicating Energy compliant appliances and fixtures.
1	0	0	1	1		Goal 18: Innovation in Design: Low Mercury Lamps	Use low mercury lamps in all areas of the building.	Project will consider specifying low Hg mercury lamps for fixtures.	Include low Hg lamps specs with Hg content less than 80 picogram/lumen.
1	1	1	1	1		Goal 19: LEED™ Accredited Professional	Have LEED AP on design team OR as consultant.	SDK is qualifies as LEED AP consultant	SDK to complete credit documentation for submission.

