Construction Application Review



How to Interpret this Report

Purpose The Leadership in Energy and Environmental Design (LEED) Rating System was designed by the US Green Building Council to encourage and facilitate the development of more sustainable buildings.

Environmental Categories

The report is organized into five environmental categories as defined by LEED including:

Sustainable Sites, Water Efficiency, Energy & Samp; Atmosphere, Materials & Samp; Resources, Indoor Enviro

LEED Prerequisites

Prerequisites must be achieved. Non-compliant prerequisites must be resolved before a certification can be awarded.

LEED Credits

The environmental categories are subdivided into the established LEED credits, which are based on desired performance goals within each category. An assessment of whether the credit is earned or denied is made and a narrative describes the basis for the assessment.

Achieved

42

The applicant has provided the mandatory documentation which supports the achievements of the credit requirements, achieving the associated points. Currently the project has scored the adjacent points in this category.

Denied

The applicant has applied for a point in a particular credit, but has misinterpreted the credit intent or cannot substantiate meeting the requirements. Currently the project has the adjacent points in this category.

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Rating This Project has achieved enough points for Gold Rating.

Official Scores

Official LEED v2 Scores: Certified: 26-32 Silver Rating: 33-38 Gold Rating: 39-51 Platinum Rating: 52+

Construction Application Review

Earned 9 0

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Erosion & Erosion & Erosi

Prerequisite 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has followed an erosion and sedimentation control plan that complies with the local erosion and sedimentation control standards. The standards are equal to or more stringent than the referenced EPA standard. Additionally the project team has provided a list of the measures implemented on-site.

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Site Selection

Credit 1-Version 2.1

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Urban Redevelopment

Credit 2-Version 2.1

Design Application

7/28/2009

A LEED-NC v2.2 Submittal Template has been provided stating that the project site is located within 14 community services and a residential district, with a minimum density of 10 units per acre. Additionally, a listing of the neighborhood services has been provided on the Template. The required site map showing the 0.5 mile radius and the locations of the community services and residential district has also been provided.

For future applications, please note that per the LEED-NC v2.2 Reference Guide only 2 restaurants can be counted for this credit.

1 0

Brownfield Redevelopment

Credit 3-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has been developed on a site that is documented as contaminated by a Phase II Environmental Site Assessment.

Pertinent sections of the project's Phase II Environmental Site Assessment have been provided documenting site contamination.

Construction Application Review

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Alternative Transportation, Public Transportation Access

Credit 4.1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has constructed a new bus stop within 1/4 mile of the site and is currently attempting to re-route buses through the campus to serve the new stop. However, per the Application Guide for Multiple Buildings and On-Campus Building Projects, bus service to newly constructed stops must be in place by the completion of construction in order to be counted toward this credit. Therefore, this credit has been denied.

Construction Application

10/16/2009

No additional documentation has been provided for the final review.

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Alternative Transportation, Bicycle Storage & Danging Rooms Credit 4.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has provided covered bicycle storage for 26.9% of the building occupants.

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Alternative Transportation, Alternative Fuel Refueling Stations

Credit 4.3-Version 2.1

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Alternative Transportation, Parking Capacity

Credit 4.4-Version 2.1

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Reduced Site Disturbance, Protect or Restore Open Space

Credit 5.1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the site has been previously developed and that 62% of the site area that does not fall within the building footprint has been restored with native planting. A site drawing and calculations have been provided claiming that 853,607 s.f. of the site area (excluding the building footprint) has been restored.

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Reduced Site Disturbance, Development Footprint

Credit 5.2-Version 2.1

Design Application

7/28/2009

A LEED-NC v2.2 Submittal Template has been provided stating that the project has been developed in an area with no minimum code requirements for open space, and that dedicated open space, greater than or equal in size to the building footprint, has been provided adjacent to the building. A letter from the building owner stating that the open space will be conserved for the life of the building, as well as calculations illustrating the development footprint, have been provided.

Construction Application Review

1 0

Stormwater Management, Rate or Quantity

Credit 6.1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has implemented a stormwater management plan that results in no net increase in runoff rate from calculated pre-project conditions, for a 1.5 year, 24 hour peak discharge. However, the runoff calculation for post-developed conditions provided by the project team uses a combined runoff coefficient for all developed portions of the site, rather than individual runoff coefficients for roofs, paved areas, turf areas, etc. as outlined in the LEED Reference Guide.

TECHNICAL ADVICE:

Please provide revised calculations for post-developed conditions using specific runoff coefficients for the various types of surfaces found in the developed areas of the site.

Construction Application

10/16/2009

Revised calculations have been provided demonstrating that the project has achieved no net increase in runoff rate from calculated pre-project conditions, for a 2 year, 24 hour peak discharge.

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Stormwater Management, Treatment

Credit 6.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has been designed in accordance with the referenced EPA Standard's best management practices for removal of TSS and TP, and that the EPA standards are more stringent than the local standards. The project is reporting 85% TSS and 67% TP removal based on estimated loading from a 2-year, 24-hour storm event.

A narrative describing the design, including assumptions and calculations necessary to support TP and TSS removal efficiencies, has been provided.

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Landscape & Design to Reduce Heat Islands, Non-Roof Credit 7.1-Version 2.1

Design Application 7/28/2009

The LEED Submittal Template has been provided stating that 80.3% of the on-site parking stalls are located underground. A site plan has been provided to support this claim.

Landscape & Design to Reduce Heat Islands, Roof

Credit 7.2-Version 2.1

Construction Application Review

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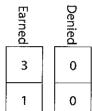
Light Pollution Reduction

Credit 8-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project's exterior lighting has been designed in accordance with the referenced IESNA guidelines. A site illumination plan, with summary calculations, has been provided to support achievement of this credit.



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Carried Stations

Water Efficient Landscaping, reduce by 50%

Credit 1.1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that no permanent irrigation system has been installed; however, the narrative provided indicates that 53,200 square feet of the site is permanently irrigated. Therefore, the project team must demonstrate compliance using option 1, comparison of the design with a calculated baseline case.

TECHNICAL ADVICE:

Please provide calculations per the LEED-NC v2.1 Reference Guide demonstrating that the installed irrigation systems reduce potable water consumption by 50% from a calculated baseline case.

Construction Application

10/16/2009

The project team has provided design case and baseline case irrigation calculations indicating a 64% reduction in irrigation water use. Please note that the calculation provided does not follow the methodology outlined in the LEED-NC v2.1 Reference Guide, which states that landscape areas must be identical between the design and baseline case. However, per the LEED-NC v2.1 CIR ruling dated 7/6/05, irrigating only a small portion of the landscaped area while using native landscaping for the remainder meets the intent of this credit.

	Water Efficient Landscaping, No Potable Use or No Irrigation	Credit 1.2-Version 2.1
	Innovative Wastewater Technologies	Credit 2-Version 2.1

Construction Application Review

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Water Use Reduction

Credit 3.1-3.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template and water use calculations have been provided stating that the project has reduced potable water use by 32.67% from a calculated baseline design through the installation of low-flow lavatory faucets, showers and kitchen sinks. However, the occupancy numbers for water use calculations are inconsistent between flush fixtures and flow fixtures. In addition, the water use calculations include fixture usage rates that differ from the standard calculation methodology presented in the LEED NCv2.1 Reference Guide (an average of 3 fixture uses per day).

TECHNICAL ADVICE:

Please provide a revised Submittal Template with consistent occupant numbers for flush and flow fixtures and fixture usage rates per the LEED-NC Reference Guide. In addition, please provide a detailed narrative confirming the occupancy for the project and any special occupancy considerations. Since the project is residential but also includes staff, the project team may wish to either:

- 1) calculate FTE-equivalent occupancy using the methodology outlined for SSc4.2 in the LEED-NCv2.1 Reference Guide, or
- 2) use a v2.2 compliance path for this credit, which assigns different daily usage rates for different occupant categories.

Construction Application

10/16/2009

The project team has provided an additional narrative to clarify occupancy numbers and a revised Submittal Template demonstrating that the design achieves a 32.19% reduction in potable water use versus a calculated baseline case.

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Fundamental Building Systems Commissioning

Prerequisite 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the fundamental commissioning requirements have been completed or is under contract.

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Minimum Energy Performance

Prerequisite 2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project complies with the minimum energy performance requirements of local energy codes and that these codes are equal to or more stringent than ASHRAE 90.1-1999.

Title 24 compliance documentation has been provided.

Construction Application Review

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CFC Reduction in HVAC&R Equipment

Prerequisite 3-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that base building HVAC& amp;R systems use no CFC-based refrigerants.

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Optimize Energy Performance

Credit 1.1-1.10-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template and supporting documentation have been provided stating that the project performs 52.9% better than ASHRAE 90.1-1999 requirements using the LEED ECB method. However, further documentation is required to confirm the projected level of savings:

- 1. A summary printout from the simulation software has not been provided as required by the LEED-NC v2.1 Reference Guide and LEED Submittal Template.
- 2. Energy savings were reported for lighting in residential units. Per the LEED-NC v2.1 CIR ruling dated 4/19/04, this is an unregulated load, and no credit is allowed for this measure under EAc1. Please remove all unregulated costs from both models during post-processing.
- 3. Lighting power density for the budget case appears to have been modeled using Building Area values, while design case values are reported by type of space. Per ASHRAE 90.1-1999 Section 11.4.5, lighting power in the budget building design shall be determined using the same categorization procedure (building area or space function) and categories as the proposed design.
- 4. A U-value of 0.034 has been used for the budget model roof, which is inconsistent with the value provided in Table B-9 of ASHRAE 90.1-1999.

TECHNICAL ADVICE:

- 1. Please provide the following DOE-2 simulation output files: ES-d, BEPU, and BEPS.
- 2. Please remove residential unit lighting costs from both models during post-processing. You may document an innovation point for energy savings achieved by lighting in the residential units if you can document that the savings from this measure account for more than 5% of the regulated energy costs. Both base and proposed case assumptions must be fully documented, and calculations must be submitted proving that the additional cost savings achieved by this measure are at least 5% of the regulated energy cost reported in EAc1.
- 3. Please revise the budget model to reflect the ASHRAE 90.1-1999 space-by-space values for lighting power allowance (Table 9.3.1.2).
- 4. Please revise the budget model roof to use a U-value of 0.063 per ASHRAE 90.1-1999, Table B-9.

Please note that some EAc1 points have been awarded based on the estimated savings remaining after residential unit lighting is removed from the energy cost for the design and budget case models.

Construction Application

10/16/2009

The project team has provided ES-d, BEPU and BEPS reports for the nine buildings included in the LEED application, as well as a revised energy simulation report indicating that items 2-4 above have been corrected. The updated model indicates that the project performs 42.7% better than ASHRAE 90.1-1999 requirements using the LEED ECB method.

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Renewable Energy

Credit 2.1-2.3-Version 2.1

			Construction Application Review
		Additional Commissioning	Credit 3-Version 2.1
1	0	Ozone Depletion	Credit 4-Version 2.1
		Design Application The LEED Submittal Template has been provided stating that base by based refrigerants or Halons.	7/28/2009 uilding HVAC&R systems use no HCFC-
		Measurement & Derification	Credit 5-Version 2.1
		Green Power	Credit 6-Version 2.1
Earned	Denied		
6	0	Material Caramy Research	Rossible Paint 1991
0	0	Storage & Description of Recyclables	Prerequisite 1-Version 2.1
		Design Application The LEED Submittal Template has been provided stating that the production and storage of recycling materials, and metals. Plans have been provided highlighting the location of respectively.	including cardboard, paper, plastic, glass,
		Building Reuse	Credit 1.1-1.3-Version 2.1
2	0	Construction Waste Management	Credit 2.1-2.2-Version 2.1
1		Design Application The LEED Submittal Template has been provided stating that the proon-site generated construction waste from landfill. Calculations have types and receiving agencies for recycled materials.	•
		Resource Reuse	Credit 3.1-3.2-Version 2.1

Construction Application Review

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Recycled Content

Credit 4.1-4.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template and calculations have been provided stating that 15.74% of the total building materials content, by value, have been manufactured using recycled materials.

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Local/Regional Materials

Credit 5.1-5.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template and calculation have been provided stating that 45.36% of the total building materials have been manufactured within 500 miles of the project site and 23.1% of the total building materials value (51.12% of the locally manufactured materials) have been manufactured using raw materials that were harvested, extracted, or recovered within 500 miles of the project site.

Rapidly Renewable Materials

Credit 6-Version 2.1

Certified Wood

Credit 7-Version 2.1

Earned

Denied

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Construction Application Review

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Minimum IAQ Performance

Prerequisite 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project complies with the minimum IAQ performance requirements of ASHRAE 62-1999 and all approved Addenda. Summary calculations have been provided to document the project's compliance with the Ventilation Rate Procedure methods.

However, documentation provided for EAc1 and EQc6.2 indicates that some AHUs serve multiple spaces, but the required calculations for such systems (per ASHRAE 62-1999 Section 6.1.3.1) have not been provided.

In addition, per the LEED-NC v2.1 CIR ruling dated 6/28/02, projects must demonstrate compliance with the reference standard for naturally ventilated portions of the building. Although EQc6.2 documentation indicates compliance for some portions of the naturally ventilated residential units, no compliance calculations are provided for the kitchens in the units, study rooms or lounges.

TECHNICAL ADVICE:

Please provide revised calculations for all AHUs that serve multiple zones, following the methodology outlined in Section 6.1.3.1 of ASHRAE 62-1999. In addition, please provide additional documentation to demonstrate compliance with the standard for all naturally ventilated spaces in the buildings, as outlined in the 6/28/02 CIR ruling.

Construction Application

10/16/2009

The project team has provided Ventilation Rate Procedure calculations and an additional narrative demonstrating that ASHRAE 62-1999 requirements are met in both mechanically and naturally ventilated spaces.

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Environmental Tobacco Smoke (ETS) Control

Prerequisite 2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that smoking is prohibited inside buildings within the project and that designated smoking areas have been located at least 25 feet from building openings and air intakes.

Carbon Dioxide (CO2) Monitoring

Credit 1-Version 2.1

Increase Ventilation Effectiveness

Credit 2-Version 2.1

Construction Application Review

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Construction IAQ Management Plan, During Construction

Credit 3.1-Version 2.1

Design Application

7/28/2009

A LEED-NC v2.2 Submittal Template has been provided stating that the project developed and implemented a construction IAQ Management Plan that followed the referenced SMACNA Guidelines, and that air handling units were not operated during construction. A copy of the project's IAQ Management Plan and photos highlighting the implemented IAQ measures has been provided.

However, the LEED-NC credit substitution guide (http://www.usgbc.org/ShowFile.aspx?DocumentID=1704) states that EQc3.1, EQc3.2 and EQc5 must all be earned under the same rating system. The project team has used a v2.2 compliance path for this credit, but a v2.1 compliance path for EQc5. Therefore, this credit is denied pending resolution of the discrepancy.

Construction Application

10/16/2009

The project team has provided a narrative indicating that the project cannot meet all of the requirements of EQc3.1 and EQc5 under the same rating system (v2.1 or v2.2) since MERV-13 filtration was not provided. Therefore, this credit is denied, but EQc5 has been awarded.

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Construction IAQ Management Plan, Before Occupancy

Credit 3.2-Version 2.1

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Low-Emitting Materials

Credit 4.1-4.4-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that all adhesive and sealant products and all indoor paints comply with the VOC limits of the referenced standards for this credit. A summary of all interior adhesive and sealant products and interior paints has been provided along with VOC data for each product confirming that they comply with the referenced VOC limits and chemical component limits.

The LEED Submittal Template also indicates that installed carpet systems comply with the VOC limits of the Carpet and Rug Institute's Green Label Air Quality Testing Program. The submittal lists Collins & Carpet systems as the installed product.

In addition, the LEED Submittal Template states that all indoor composite wood and agrifiber products used on the project contain no added urea-formaldehyde. A summary of all interior composite wood products has also been provided.

Construction Application Review

1 0

Indoor Chemical & Dollutant Source Control

Credit 5-Version 2.1

Design Application

7/28/2009

A LEED-NC v2.1 Submittal Template has been provided stating that the project has installed the required entryway systems, physically separated chemical use areas and copy rooms with deck-to-deck partitions, installed independent exhaust ventilation at 0.50 cfm/square foot, maintained negative pressure differential of 7 PA, and in spaces where water and chemical concentrate mixing occurs, has established environmentally appropriate drains for disposal of liquid waste.

However, the LEED-NC credit substitution guide (http://www.usgbc.org/ShowFile.aspx?DocumentID=1704) states that EQc3.1, EQc3.2 and EQc5 must all be earned under the same rating system. The project team has used a v2.1 compliance path for this credit, but a v2.2 compliance path for EQc5.

TECHNICAL ADVICE:

Please provide a LEED-NC v2.2 Submittal Template and supporting documentation to demonstrate that v2.2 requirements for this credit have been met.

Construction Application

10/16/2009

The project team has provided a narrative indicating that the project cannot meet all of the requirements of EQc3.1 and EQc5 under the same rating system (v2.1 or v2.2) since MERV-13 filtration was not provided. Therefore, this credit has been awarded, but EQc3.1 has been denied.

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Controllability of Systems

Credit 6.1-6.2-Version 2.1

Design Application

7/28/2009

LEED-NC v2.2 EQc6.1 and EQc6.2 Submittal Templates have been provided stating that a sufficient quantity of lighting and thermal controls are provided for individual workstations, and states appropriate lighting and thermal controls are available for shared multi-occupant spaces. A narrative has also been provided describing the project's lighting and thermal control strategies with a description of the type and location of the controls.

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Thermal Comfort, Comply with ASHRAE 55-1992

Credit 7.1-Version 2.1

Design Application

7/28/2009

A LEED-NCv2.2 Submittal Template has been provided stating that the HVAC systems and building envelope have been designed to meet the requirements of the ASHRAE Standard 55-2004. The project team has provided a narrative describing the method used to establish thermal comfort criteria for the project and how the systems address the design criteria. Data has also been provided regarding the specific seasonal temperature and humidity design criteria.

Construction Application Review

1 0

Thermal Comfort, Permanent Monitoring System

Credit 7.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that a thermal comfort survey that will be distributed to building occupants within the first 6 to 18 months of occupancy. The narrative includes a corrective action plan if the survey results indicate that 20% of the building occupants are dissatisfied with thermal comfort based on the environmental variables outlined in ASHRAE 55-2004. However, the survey provided does not meet the requirements of this credit. Per the LEED-NC v2.2 Reference Guide, the survey must include follow-up questions that are asked if the respondent indicates dissatisfaction, to identify the nature and cause of the problem.

TECHNICAL ADVICE:

Please provide a revised thermal comfort survey with additional follow-up questions as required for this credit.

Construction Application

10/16/2009

The project team has provided a revised thermal comfort survey that includes questions designed to identify the nature and cause of thermal discomfort as required.

1

Daylight & Daylight 75% of Spaces

Credit 8.1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has achieved a minimum 2% daylight factor in 75.41% of all space occupied for critical visual tasks. Calculations and highlighted drawings to support this claim have also been provided.

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Daylight & Daylight &

Credit 8.2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project has provided direct line of sight views from 97.76% of all space occupied for critical visual tasks. Floor plans highlighting the direct line of sight and supporting calculations have also been provided.

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Denied

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Construction Application Review

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Innovation in Design 1.1

Credit 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that an education program has been developed to present the project's sustainable design practices to occupants and visitors to the facility. Per-posted CIR rulings, "To take advantage of the educational value of the green building features of a project and to earn a LEED point, any approach should be ACTIVELY instructional. Two of the following three elements must be included in the educational program:

- 1) A comprehensive signage program built into the building's spaces to educate the occupants and visitors of the benefits of green buildings.
- 2) The development of a manual, guideline or case study to inform the design of other buildings based on the successes of this project. This manual will be made available to the USGBC for sharing with other projects.
- 3) An educational outreach program or guided tour could be developed to focus on sustainable living, using the project as an example."

The submitted documentation provides information of only one applicable educational component (case study). The university course listing provided by the project team do not fall under 1-3 above, since they are not available to the public and/or visitors and do not demonstrate the required emphasis on the project facilities.

TECHNICAL ADVICE:

Please provide a revised narrative describing the components of the implemented educational program. A minimum of two distinct components must be documented. Additionally, please provide examples of the individual elements (i.e. photos/drawings of installed signage, published case study, website screen shots, etc.)

Construction Application

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The project team has provided an additional narrative indicating that guided and self-guided tours of the project facility will be offered throughout the year both by request and scheduled concurrent to various campus events. The team has also provided a brochure that will be distributed during tours of the facility. The combination of tours and the case study/website documentation provided with the initial LEED submission meets the requirement of the credit.

1

Innovation in Design 1.2

Credit 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for SSc5.2 as specified in posted NCv2.1 CIR rulings.

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Innovation in Design 1.3

Credit 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for MRc4 as specified in posted NCv2.1 CIR rulings.

Construction Application Review

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Innovation in Design 1.4

Credit 1-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for MRc5.1 as specified in posted NCv2.1 CIR rulings.

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LEED Accredited Professional

Credit 2-Version 2.1

Design Application

7/28/2009

The LEED Submittal Template has been provided declaring that a LEED AP has been a participant on the project development team. A copy of the LEED AP award certification for Samuel Samuelson has been included as required.

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