



# LEED-NC

## 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 & Atmosphere, Materials & 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** 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.

39

**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+

Earned	Denied	Sustainable Sites		Possible Points
10	0			14
0	0	<b>Construction Activity Pollution Prevention</b>		Prerequisite 1-Version 2.2
		<b>Construction Application</b>		1/5/2009
		<p>The signed LEED Submittal Template declares that the Erosion and Sedimentation Control Plan (ESC) conforms to the 2003 EPA Construction General Permit, which outlines the provisions necessary to comply with Phase I and Phase II of the National Pollutant Discharge Elimination System (NPDES) program. Supporting documentation includes a copy of the Storm Water Pollution Prevention Plan (SWPP) and site plans highlighting the implemented erosion and sedimentation control measures.</p>		
1	0	<b>Site Selection</b>		Credit 1-Version 2.2
		<b>Design Application</b>		1/30/2008
		<p>The signed LEED Submittal Template confirms that the site does not meet any of the prohibited criteria.</p>		
1	0	<b>Development Density &amp; Community Connectivity</b>		Credit 2-Version 2.2
		<b>Design Application</b>		1/30/2008
		<p>The signed LEED Submittal Template indicates that the project building is on a previously developed site, within 1/2 mile of a residential zone, and within 1/2 mile and pedestrian access to 10 basic services. Additional documentation includes two site vicinity drawings showing the project site, the 1/2 mile community radius, and locations of the community services nearby.</p>		
		<b>Brownfield Redevelopment</b>		Credit 3-Version 2.2
1	0	<b>Alternative Transportation: Public Transportation Access</b>		Credit 4.1-Version 2.2
		<b>Design Application</b>		1/30/2008
		<p>The signed LEED Submittal Template states that there are 2 bus lines within 1/4 mile of the project. A scaled site map and transit maps for VTA bus routes 57 &amp; 58 have been provided.</p>		

6/11/2009

Construction Application Review

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**Alternative Transportation: Bicycle Storage & Changing Rooms** Credit 4.2-Version 2.2**Design Application**

1/30/2008

The signed LEED Submittal Template declares that the building site provides 24 secure bicycle storage spaces for 5% of the building's 462 peak non-residential users and provides 4 shower and changing facilities for the 22 FTE building users within 200 yards of the building entrance. Supporting documentation includes a site plan drawing illustrating the location of the project's bike racks and shower/changing facilities.

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**Alternative Transportation: Low-Emitting & Fuel Efficient Vehicles** Credit 4.3-Version 2.2**Design Application**

1/30/2008

The signed LEED Submittal Template declares that preferred parking for low-emitting and fuel-efficient vehicles is provided for 5% of the total vehicle parking capacity; however, there is a discrepancy within the submittal. The Template and site plan list the total on-site parking capacity of the site as 110, while the general project summary indicates that the project has a parking capacity of 273. Also, on the site plan it appears as if the preferred parking spaces are the farthest parking spaces from the building entrance.

**TECHNICAL ADVICE:**

Please clarify the discrepancy regarding the building parking capacity. As stated in the LEED-NC v2.2 Reference Guide, preferred parking must be provided for 5% of the total vehicle parking capacity (this includes any existing parking that will service building occupants). Also, please include a narrative providing justification of the HEV parking spaces as "preferred parking" for the occupants of the project building.

**Design Application**

4/28/2008

Additional documentation includes a narrative describing that preferred parking has been provided for 9% of the total vehicle parking capacity allocated to the Science and Technology Building, 110 spaces. The narrative further addresses the discrepancy in parking capacity by clarifying that the overall property has a parking capacity of 273. A site plan has been included illustrating the preferred parking spaces.

1	0
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**Alternative Transportation: Parking Capacity**

Credit 4.4-Version 2.2

**Design Application**

1/30/2008

The signed LEED Submittal Template declares that the total on-site vehicle parking capacity of 110 spaces meets but does not exceed the minimum local zoning requirements of 110 spaces, and that 41 preferred parking spaces for car/vanpools have been provided, which equates to 37.3% of the total parking capacity. Supporting documentation includes a site plan highlighting the location of the preferred parking spaces. However, there is a discrepancy in the listed on-site vehicle parking capacity. The Template and site plan list the parking capacity of the site as 110, while the general project summary indicates that the project has a parking capacity of 273. The project has provided enough preferred parking spaces for car/vanpools to meet the credit requirement of either total on-site vehicle parking capacity; however, it is unclear whether the minimum local zoning requirements would be exceeded if the project's parking capacity is 273.

**TECHNICAL ADVICE:**

Please clarify the discrepancy regarding the building parking capacity. As stated in the LEED-NC v2.2 Reference Guide, parking capacity must meet, but not exceed local zoning requirements.

**Design Application**

4/28/2008

Additional documentation includes a narrative describing the discrepancy in parking capacity by clarifying that the overall property has a parking capacity of 273, however the parking capacity for the Science and Technology Building is 110 spaces. Therefore the credit has been earned.

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**Site Development: Protect or Restore Habitat**

Credit 5.1-Version 2.2

1	0
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**Site Development: Maximize Open Space**

Credit 5.2-Version 2.2

**Design Application**

1/30/2008

A signed LEED Submittal Template declares that the local zoning has no open space requirement and that vegetated open space has been provided which is equal to at least 20% of the site area. Supporting documentation includes a plan highlighting the open space, planting plan and email correspondence regarding credit requirements. However, it appears on the site plan that a swimming pool, classroom area and tennis court have been included in the open space calculations.

**TECHNICAL ADVICE:**

Please clarify the areas included in the open space calculations. If initial calculations include the swimming pool, classroom area and tennis court, please submit revised calculations to include only vegetated open space, vegetated roof areas, and pedestrian oriented hardscape.

**Design Application**

4/28/2008

Additional documentation includes a narrative as well as various landscaping and site plans. The submittal clarifies that the existing swimming pool, classroom area and tennis court will be replaced with open turf and foliage such that open space will be provided for 31.7% of the total site area.

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**Stormwater Management: Quantity Control**

Credit 6.1-Version 2.2

1	0	<b>Stormwater Management: Quality Control</b>	Credit 6.2-Version 2.2
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**Design Application** 1/30/2008

The LEED Submittal Template declares that stormwater runoff from at least 90% of the average annual rainfall is treated by vegetated bio-swales/dry swales such that 80% of the average annual post-development Total Suspended Solids (TSS) is removed. A highlighted stormwater plan, bio-swale detail, and pollutant removal information from the California stormwater manual have also been submitted.

0	0	<b>Heat Island Effect: Non-Roof</b>	Credit 7.1-Version 2.2
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1	0	<b>Heat Island Effect: Roof</b>	Credit 7.2-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template declares that a combined reflective roofing material and vegetated roof system has been installed which meets the specific criteria of Option 3 of this credit. Supporting documentation includes a detail of the green roof, a roof plan and TPO and BUR roofing product cut sheets.

1	0	<b>Light Pollution Reduction</b>	Credit 8-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template declares that the project's interior lighting has been designed with automatic shut off controls. The Template also indicates that the project's exterior lighting power density does not exceed 80% of the recommended levels as defined in ASHRAE/IESNA Standard 90.1-2004. Supporting documentation includes interior and exterior lighting plans and schedules.

Earned	Denied		
2	0	<b>Water Efficiency</b>	Possible Points 5

		<b>Water Efficient Landscaping</b>	Credit 1.1-1.2-Version 2.2
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		<b>Innovative Wastewater Technologies</b>	Credit 2-Version 2.2
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2	0
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**Water Use Reduction**

Credit 3.1-3.2-Version 2.2

**Design Application**

1/30/2008

The signed LEED Submittal Template and calculations have been provided demonstrating that water efficiency has been maximized to reduce water use by 44.6%. A narrative has been provided describing the use of dual flush toilets, low-flow urinals and low-flow lavatories as part of the project's water reduction strategy.

Earned	Denied
8	0
0	0

Energy & Atmosphere	Possible Points	17
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**Fundamental Commissioning of the Building Energy Systems** Prerequisite 1-Version 2.2

**Construction Application**

1/5/2009

The signed LEED Submittal Template declares that the required commissioning (Cx) activities have been completed.

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**Minimum Energy Performance**

Prerequisite 2-Version 2.2

**Design Application**

1/30/2008

The signed LEED Submittal Template declares that the project complies with the local energy code, Title 24-2005, which is more stringent than ASHRAE 90.1-2004. Title 24 compliance forms have been provided.

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**Fundamental Refrigerant Management**

Prerequisite 3-Version 2.2

**Design Application**

1/30/2008

The signed LEED Submittal Template declares that the project's HVAC&R systems do not contain CFC-based refrigerants.

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**Optimize Energy Performance**

Credit 1-Version 2.2

**Design Application**

1/30/2008

The signed LEED Submittal Template, a comparative table, and the Title 24-2005 compliance report indicate a 28.5% savings between the proposed design case and the baseline case based on Title 24. Energy efficiency measures include improved thermal envelope, high efficiency windows, reduced lighting power density, occupancy sensors, and high efficiency HVAC. However, additional details are needed to evaluate the modeling results.

**TECHNICAL ADVICE:**

1. Table 1.3 indicates there are no warning messages for either the baseline or proposed models; however, the Title 24 Compliance documents contain reports showing 33 warning messages for the baseline model and 33 warning messages for the proposed model. Please review the warning messages and provide a narrative describing the probable cause of these warnings and the impact of ignoring them.
2. Table 1.4 indicates the Fan Power in the proposed building is less than that for the baseline; however, Table 1.8.2 reports an increase in interior fan power consumption in the proposed building as compared to the baseline. This is unexpected. Please review the input for both models, make any revisions necessary and update the information reported on the Submittal Template.
3. Table 1.4 indicates a pump for the IDEC water was modeled in the proposed building but not in the baseline building. This pump is a process load and as such must be modeled identically for both buildings. Please revise the baseline model to include this load and make any necessary revisions to the Submittal Template.
4. Table 1.6 indicates the cost for the 7,229 kWh generated on-site is \$1,200.00, but the PV Watts calculations indicate the value for this energy is \$903.62. The virtual electric rate listed on the ECON-1 report is what should be used for all on-site energy production cost calculations. Please make any changes necessary to the PV Watts calculations, both models, and the information reported in Table 1.6 of the Template for consistency.
5. Tables 1.8.1 and 1.8.2 report energy consumptions for process space cooling and interior fans. Space cooling and ventilation fans are regulated loads in both ASHRAE 90.1 and Title 24 and as such cannot be considered process loads. Please revise the Submittal Template to remove these from the process load category. Keep in mind that LEED-NC v2.2 has a default process cost of 25% of the baseline performance cost and, if the resulting process cost is less than this default, a narrative justifying the use of this reduced process cost must also be provided. The note under Table 1.8.1 reports the percent process cost.
6. Tables 1.4, 1.8.1, and 1.8.2 appear to omit information relating to the elevator energy consumption. There is a "Source Uses" electric consumption listed for both buildings in Tables 1.8.1 and 1.8.2, but it is unclear what this load represents. Please provide a description of the elevator equipment in Table 1.4 and a table summarizing the equipment and other end-use components included in this category.
7. The BEPS and BEPU reports for both buildings list energy consumptions for pumps and miscellaneous equipment, but it is unclear what end-uses are represented in this category. Additionally, these reports indicate an increase in pump energy consumption for the proposed building as compared to the baseline building, which is unexpected. Please expand Tables 1.8.1 and 1.8.2 to include this end-use, verify the inputs for both buildings, make any necessary revisions to the models, and update the information reported on the Submittal Template. Also, please provide a narrative detailing the loads included in this category and justifying any difference in the pump energy consumption of the two buildings.
8. Table 1.4 indicates the proposed building uses evaporative cooling, but the energy consumption for this heat rejection appears to be omitted from Table 1.8.2. Since Tables 1.8.1 and 1.8.2 are linked for comparative purposes, all loads represented in either building must be listed in both tables even if the value is zero in one model. Please add evaporative cooling to Tables 1.8.1 and 1.8.2 and include the associated load for the proposed building.
9. The Documentation Description Log on the Submittal Template indicates that "uploaded documents should

1	0	<b>On-Site Renewable Energy</b>	Credit 2-Version 2.2
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**Construction Application** 1/5/2009

The signed LEED Submittal Template has been submitted claiming that 2.68% of the project's energy cost is being offset by renewable, site generated energy and that the project has used a computer model simulation to document improved building energy performance under EA Credit 1. Supporting calculations have been provided to confirm this claim.

0	0	<b>Enhanced Commissioning</b>	Credit 3-Version 2.2
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1	0	<b>Enhanced Refrigerant Management</b>	Credit 4-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template and calculations demonstrate that the total refrigerant impact per ton for this project meets the requirement of this credit.

0	0	<b>Measurement &amp; Verification</b>	Credit 5-Version 2.2
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		<b>Green Power</b>	Credit 6-Version 2.2
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Earned	Denied		
4	0	<b>Materials &amp; Resources</b>	<b>Possible Points 13</b>

0	0	<b>Storage &amp; Collection of Recyclables</b>	Prerequisite 1-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template indicates that appropriate facilities for recycling have been provided. A floor plan locating the recycling area has also been included.

		<b>Building Reuse</b>	Credit 1.1-1.2-Version 2.2
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		<b>Building Reuse, Non-Structural</b>	Credit 1.3-Version 2.2
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2	0	<b>Construction Waste Management</b>	Credit 2-Version 2.2
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**Construction Application** 1/5/2009

A signed LEED Submittal Template declares that 95.09% of project construction waste was diverted from the landfill. A list of materials and where they were diverted has been included.

		<b>Resource Reuse</b>	Credit 3-Version 2.2
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2	0	<b>Recycled Content</b>	Credit 4-Version 2.2
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**Construction Application** 1/5/2009

The signed LEED Submittal Template and supporting calculations have been provided declaring that the project has achieved a combined recycled content value of 27.040% of the total materials by cost.

0	0	<b>Regional Materials</b>	Credit 5-Version 2.2
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0	0	<b>Rapidly Renewable Materials</b>	Credit 6-Version 2.2
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		<b>Certified Wood</b>	Credit 7-Version 2.2
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Earned	Denied		
11	0	<b>Indoor Environmental Quality</b>	Possible Points 15
1	0	<b>Minimum IAQ Performance</b>	Prerequisite 1-Version 2.2

**Design Application** 1/30/2008

The signed LEED Submittal Template has been provided stating that the requirements of ASHRAE 62.1-2004 have been met. Also provided is a narrative describing the project as having three 100% OSA air handling units.

0	0	<b>Environmental Tobacco Smoke (ETS) Control</b>	Prerequisite 2-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template has been provided stating that no smoking is allowed in the building and outdoor smoking areas are located away from operable windows and entryways. A floor plan locating the designated smoking area has been included.

1	0	<b>Outdoor Air Delivery Monitoring</b>	Credit 1-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template declares that a permanent CO2 monitoring system providing feedback on ventilation system performance to ensure that ventilation systems maintain design minimum ventilation requirements has been installed. A narrative describing the project's ventilation design and CO2 monitoring system has been included as well as drawings showing the location of installed sensors.

1	0	<b>Increased Ventilation</b>	Credit 2-Version 2.2
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**Design Application** 1/30/2008

The signed LEED Submittal Template declares that the design achieves at least a 30% increase, above the minimum required by ASHRAE Standard 62.1-2004, in breathing zone outdoor air ventilation rates to all occupied spaces. Also provided is a narrative describing the project as having 100% OSA air handling units and the typical classroom population and sq ft.

1	0	<b>Construction IAQ Management Plan: During Construction</b>	Credit 3.1-Version 2.2
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**Construction Application** 1/5/2009

The signed LEED Submittal Template has been provided stating that a construction indoor air quality (IAQ) plan was followed and implemented. A copy of the project's Construction IAQ Management Plan as well as photographs highlighting the IAQ practices have been included.

1	0	<b>Construction IAQ Management Plan: Before Occupancy</b>	Credit 3.2-Version 2.2
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**Construction Application** 1/5/2009

The signed LEED Submittal Template declares that a building flush-out was performed by supplying a total air volume of 14,000 cu.ft. of outdoor air per sq.ft. of floor area while maintaining an internal temperature of at least 60 degrees F and relative humidity no higher than 60%.

1	0	<b>Low-Emitting Materials: Adhesives &amp; Sealants</b>	Credit 4.1-Version 2.2
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**Construction Application** 1/5/2009

A signed LEED Submittal Template declares the use of compliant adhesives, sealants, sealant primers and aerosol adhesive products. A list of products with associated VOC levels has been provided.

1	0	<b>Low-Emitting Materials: Paints &amp; Coatings</b>	Credit 4.2-Version 2.2
		<b>Construction Application</b>	1/5/2009
A signed LEED Submittal Template declares that all paints and coatings meet the VOC requirements of the credit. A list of products with VOC content indicated has been provided.			
1	0	<b>Low-Emitting Materials: Carpet Systems</b>	Credit 4.3-Version 2.2
		<b>Construction Application</b>	1/5/2009
A signed LEED Submittal Template has been provided declaring that the project uses carpeting that complies with the CRI Green Label Plus Program, carpet cushion that complies with the CRI Green Label Program, and carpet adhesive that meets the requirements of EQc4.1.			
0	0	<b>Low-Emitting Materials: Composite Wood &amp; Agrifiber</b>	Credit 4.4-Version 2.2
		<b>Indoor Chemical &amp; Pollutant Source Control</b>	Credit 5-Version 2.2
1	0	<b>Controllability of Systems: Lighting</b>	Credit 6.1-Version 2.2
		<b>Design Application</b>	1/30/2008
The signed LEED Submittal Template declares that individual lighting controls have been provided for 100% of the building occupants and shared multi-occupant spaces have lighting system controllability to enable space lighting adjustment.			
1	0	<b>Controllability of Systems: Thermal Comfort</b>	Credit 6.2-Version 2.2
		<b>Design Application</b>	1/30/2008
The signed LEED Submittal Template declares that individual comfort controls have been provided for 60% of the building occupants and shared multi-occupant spaces have accessible thermal controls.			
1	0	<b>Thermal Comfort: Design</b>	Credit 7.1-Version 2.2
		<b>Design Application</b>	1/30/2008
The signed LEED Submittal Template declares that the project has been designed to maintain indoor comfort within the ranges established by ASHRAE 55-2004. Information on temperature and humidity control ranges has been provided along with a narrative describing the method used to establish the thermal comfort conditions for the project.			

1	0	<b>Thermal Comfort: Verification</b>	Credit 7.2-Version 2.2
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**Construction Application** 1/5/2009

The signed LEED Submittal Template has been provided declaring that an assessment of the building's thermal comfort will be implemented within six to 18 months after occupancy.

		<b>Daylighting &amp; Views: Daylight 75% of Spaces</b>	Credit 8.1-Version 2.2
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		<b>Daylighting &amp; Views: Views for 90% of Spaces</b>	Credit 8.2-Version 2.2
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Earned	Denied	Innovation & Design Process	Possible Points	5
4	0	<b>Innovation in Design</b>	Credit 1.1-Version 2.2	
1	0	<b>Design Application</b>	1/30/2008	

The project seeks an innovation credit for Exemplary Performance for WEC3. The documentation provided in WEC3 indicates that water efficiency has been maximized to reduce water use by 44.6%, which meets the threshold for exemplary performance.

6/11/2009

Construction Application Review

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**Innovation in Design**

Credit 1.2-Version 2.2

**Construction Application**

1/5/2009

The project team seeks an innovation credit for the development and implementation of a Green Building Education Program through an online case study highlighting the project's attempted LEED credits and a real time display of the Photo Voltaic (PV) system status close to the main entrance.

In order to achieve an innovation credit for Green Building Education a project must implement two of three requirements outlined in the IDC1.1 CIR Ruling dated 9/24/2001. The strategies include the following:

- 1) A comprehensive signage program built into the building's spaces to educate the occupants and visitors of the benefits of green buildings.
- 2) Make available a manual, guideline or case study to inform the design of other buildings based on the successes of this project.
- 3) Create an outreach program or guided tour focused on sustainable living, using the project as an example.

The website with the PV system status display is sufficient as a case study. However, it appears that the monitor near the main entrance displays the same information in the same format. While the monitor could contribute to a signage program within the building, its current function as described is not comprehensive enough to comply with strategy 1 above. A comprehensive signage program should educate occupants and visitors of the benefits of green buildings. This could include highlighting specific design features, materials, strategies, mechanical systems, etc.

**TECHNICAL ADVICE:**

Please provide a detailed narrative and documentation showing that the signage program provides a comprehensive, educational view of the green building attributes and strategies employed by the project.

**Construction Application**

2/26/2009

Additional documentation includes a narrative and display posters highlighting the benefits of the project's green building attributes. Overall, the submission demonstrates that the project has successfully implemented a Green Building Education program.

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**Innovation in Design**

Credit 1.3-Version 2.2

**Construction Application**

1/5/2009

The project team seeks an innovation credit for Exemplary Performance for MRc2. The documentation provided in MRc2 indicates that the project diverted 95.09% of total construction waste from landfills to be recycled. This achievement demonstrated in the related credit meets the threshold for exemplary performance.

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**Innovation in Design**

Credit 1.4-Version 2.2

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**LEED Accredited Professional**

Credit 2-Version 2.2

**Construction Application**

1/5/2009

The signed LEED Submittal Template has been provided declaring that a LEED Accredited Professional has been a participant on the project development team. A copy of the LEED Accredited Professional Award Certificate for Caspar Wagner has also been provided.

Earned	Denied
0	0

Administrative Inquiries	Possible Points	0
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