

# LEED Self Assessment Report

Schematic Design Phase

12/19/2005



## Mary Lowell Center



Prepared for:

**National Park Service, US Forest Service & City of Seward**

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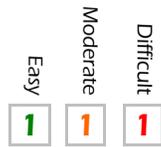
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In cooperation with:

**U S Green Building Council's**

LEED Green Building Rating System™  
[www.usgbc.org](http://www.usgbc.org)

## How to interpret this report



This report is a summary of the current project status measured according to the LEED Green Building Rating System. This report is organized by the six LEED categories of Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation in Design. The categories are then subdivided into the established LEED prerequisites and credits, which are based on desired performance goals within each category. Prerequisites must be achieved.

An assessment of whether the prerequisite or credit is considered easy, moderate, or difficult to achieve is indicated in the format shown in the margin. A "P" designates that a prerequisite has not been fully documented. All prerequisites must be met to attain any LEED certification. Comments are also provided describing the status of the prerequisite or credit.



At the right of each prerequisite and credit appears a grid indicating the current project phase (in green) and showing the phase(s) where the prerequisite or credit should be considered. The standard project phases include the following: Pre-Design (PD), Schematic Design (SD), Design Development (DD), Construction Documents (CD), Build Out (BO) and Occupancy (OC).

This project will be using the USGBC's recently released LEED for New Construction Version 2.2. This upgrade modifies nearly every credit that was included in Version 2.1, but does not change the credit categories, total potential points, or points levels needed for Certified, Silver, Gold or Platinum ratings.

Easy	Moderate	Difficult	<b>Preliminary LEED Status is Certified</b>	Easy Only	Easy + Moderate	All Points
<b>32</b>	<b>16</b>	<b>11</b>		<b>32</b>	<b>48</b>	<b>59</b>

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

Easy  
Moderate  
Difficult

<b>4</b>	<b>2</b>	<b>3</b>	<b>Sustainable Sites</b>	Possible Points 14
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The project sits adjacent to Resurrection Bay which is known for its pristine waters and diverse marine habitat. All City of Seward generated stormwater (rain and snow) is typically drained into Resurrection Bay. Design consideration will be given to reduce the stormwater impacts that the building and parking sites will have on the habitat of the bay. Stormwater generated on the parking site will be collected and infiltrated into the ground via bio-swales. All stormwater that is generated at this site will be treated for Total Suspended Solids (TSS) prior to leaving the site. For the building site, if insufficient area is available to infiltrate water, a treatment vault may be used, which can be located below the entry plaza.

Light pollution will be reduced through the reduction of exterior lighting and the use of full cut-off luminaries. Up-lighting will not be used to protect the night sky from light pollution.

<b>Y</b>			<b>Construction Activity Pollution Prevention</b>	<b>SD</b>				
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SS Prerequisite 1 What are we missing?

<b>1</b>			<b>Site Selection</b>	<b>PD</b>				
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SS Credit 1 The project site qualifies for this credit as it:

1. is not prime farmland
2. is not a greenfield site that is located below the flood plain
3. does not contain habitat for endangered species
4. is not within 50' of water
5. is not currently a park

		<b>1</b>	<b>Development Density &amp; Community Connectivity</b>	<b>PD SD</b>				
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SS Credit 2 The project would need a residential area with 10 units per acre within a 1/2 mile radius of the project to earn this credit. Although no study has been conducted, it is assumed that this is not likely for downtown Seward.

Not Attempting			<b>Brownfield Redevelopment</b>	<b>PD</b>				
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SS Credit 3 Not Attempting: The project site does not qualify for this credit.

		<b>1</b>	<b>Alternative Transportation, Public Transportation Access</b>	<b>PD SD</b>				
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SS Credit 4.1 To earn this credit, the project must have access to at least two bus lines from within 1/4 mile of the entrance. There is a seasonal trolley that operates from May-September, but as it is not operational for the entire year, it will not qualify for credit consideration. Local bus service will be re-evaluated during the DD phase of the project.

<b>1</b>			<b>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</b>	<b>SD</b>				
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SS Credit 4.2 The project has showers and changing rooms located in the basement of the building. Although the number of showers is not identified, the space provided should be adequate space for required showers. Bicycle racks are not indicated on the plans, but these can be accommodated at the public entry or at the parking facility located across 5th Ave. Both of these items will be coordinated during the DD phase of the project.

Not Attempting			<b>Low Emitting &amp; Fuel Efficient Vehicles</b>	<b>SD</b>				
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SS Credit 4.3 Not Attempting: Unless the NPS or USFS has a fleet of Hybrid or other alternative fuel vehicles, this credit cannot be achieved.

Easy  
Moderate  
Difficult

**Alternative Transportation, Parking Capacity**

SS Credit 4.4 With the number of occupants shown in the program and the current parking space count (~ 40), it is assumed that the project has not exceeded local code minimums. Carpool parking will be designated for the employee parking lot (that is located across 5th Ave.) during the DD phase of the project.

**Protect or Restore Habitat**

SS Credit 5.1 Not Attempting: As the project is developing most of the building site, the parking lot area would be the only location for opportunities to restore to native conditions. It is unlikely that the swale located at the south edge of the project is sufficient to earn this credit.

**Maximize Open Space**

SS Credit 5.2 Not Attempting: See comments under SS credit 5.1 as the same lot coverage issue applies to this credit.

**Stormwater Design: Quantity Control**

SS Credit 6.1 The current plan is to treat rainwater from the parking lot and not from rain that falls on a roof. The parking lot features a drainage swale which should be sufficient to nearly eliminate runoff from the parking lot. This will significantly reduce the impact to ecology of Resurrection Bay from existing conditions.

Calculations will be performed during DD to determine if the proposed plans reduce stormwater rate and quantity from existing conditions.

**Stormwater Design: Quality Control**

SS Credit 6.2 Currently, only the parking lot is being treated for suspended solids. All runoff from the roof is not treated. As the roof of the building is not a source for suspended solids, the roof may not need filtration to meet the requirements of this credit. Further review of this credit during DD will reveal if a below grade filtration structure is needed in order to earn this credit.

**Heat Island Effect: Non-Roof**

SS Credit 7.1 Not Attempting: Current plans call for the parking lot to be paved with asphalt, which will not meet the requirements of this credit.

**Heat Island Effect: Roof**

SS Credit 7.2 Current plans call for EDPM roofing, which can meet the requirements of this credit. As the climate of Seward is dominated by winter conditions, a white reflective roof that is needed to earn this credit may not be a suitable sustainable solution for the building. Further review during DD will determine whether or not to specify a black or white roof.

**Light Pollution Reduction**

SS Credit 8 The project will be designed to provide a safe and pedestrian friendly experience by mitigating glare and not using up-lights. Light will be limited to down lights to protect the night sky from light pollution. Flagpole uplighting is permitted per credit rulings issued by the USGBC.

Easy  
Moderate  
Difficult

<b>4</b>		<b>Water Efficiency</b>	Possible Points 5
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The goal is to reduce overall potable water consumption by 40% or more. This target will be achieved primarily through use of low-flow fixtures. Options to explore include, but are not limited to, waterless urinals, dual-flush toilets, dual-flush valves and low-flow lavatories. Landscaping water use reduction will occur through the installation of native or drought tolerant plants, with no permanent irrigation being used to maintain the landscape. A temporary watering strategy will be used to establish plants for the first year after planting.

<b>1</b>		<b>Water Efficient Landscaping, Reduce by 50%</b>	SD DD CD
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WE Credit 1.1 The current plans are to provide native species that will not require irrigation. This strategy will not only provide a natural landscape, but will earn the project both WE credit 1 points.

<b>1</b>		<b>Water Efficient Landscaping, No Potable Use or No Irrigation</b>	SD DD CD
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WE Credit 1.2 See WE credit 1.1 for comments.

Not Attempting		<b>Innovative Wastewater Technologies</b>	PD SD DD CD
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WE Credit 2 Not Attempting: The project is not planning on attempting this credit.

<b>1</b>		<b>Water Use Reduction, 20% Reduction</b>	PD SD DD CD
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WE Credit 3.1 The project will install water conserving fixtures and toilets to earn this credit. Current plans include:

- 1.) Dual flush toilets or dual flush valves
- 2.) Waterless urinals
- 3.) 0.5 gpm lavatories
- 4.) 1.8 gpm kitchen sinks
- 5.) 1.8 gpm showerheads

<b>1</b>		<b>Water Use Reduction, 30% Reduction</b>	PD SD DD CD
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WE Credit 3.2 See WE credit 3.1 for comments.



Easy	1	Moderate
		Difficult

**On-Site Renewable Energy, 2.5%**

PD	SD	DD			
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EA Credit 2.1 The project is considering a wood chip boiler in lieu of a standard propane or fuel oil fired boiler. In order for this system to qualify for EA credit 2 consideration, the wood must be sustainably harvested. Per the LEED 2.2 Reference Guide, waste wood from "Forestry" practices is not an acceptable source. It is not clear if the wood identified by the US Forest Service would be considered "Forestry" wood or "Untreated Waste Wood" from forest management practices. Direction can be gained by asking for a Credit Interpretation Ruling (CIR), but may only be submitted after the project is registered with the USGBC.

If the Partners elect not to use a wood chip boiler, then the project will not earn any EA credit 2 points. If the project does install a wood chip boiler, then the project will earn all three EA credit 2 points and qualify for at least an additional two EA credit 1 points.

	1	

**On-Site Renewable Energy, 7.5%**

PD	SD	DD			
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EA Credit 2.2 See EA credit 2.1 for comments.

	1	

**On-Site Renewable Energy, 12.5%**

PD	SD	DD			
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EA Credit 2.3 See EA credit 2.1 for comments.

	1	

**Enhanced Commissioning**

		DD	CD	BO	OC
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EA Credit 3 The additional cost increase to go from standard commissioning (EA prerequisite 1) to enhanced commissioning (EA credit 3) is not significant. Enhanced commissioning requires that two design reviews are conducted prior to completion of 100% CDs. As the project is currently completing SD, attempting this credit is still an option.

1		

**Enhanced Refrigerant Management**

		DD	CD		
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EA Credit 4 The project will not be installing a chiller and therefore will meet the requirements of this prerequisite.

	1	

**Measurement & Verification**

		DD	CD	BO	OC
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EA Credit 5 The project will be installing a DDC energy management system that will be capable of meeting the monitoring requirements for this credit. To meet the remaining credit requirements, an M&V plan would have to be written by the Facilities Manager that describes who is responsible for monitoring performance, how all energy and water systems are managed, how often data is reviewed and a process by which problems are identified and resolved. The requirements of an M&V plan will be coordinated with the Partners during the DD phase of the project.

		1

**Green Power**

		SD			
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EA Credit 6 Currently, the Partners have not indicated a preference to purchase Green Power for the project. While Green Power may not be available through local utilities, the Partners may still achieve this credit through Green Tag purchases. Green Tags may be purchased through brokers, thus allowing any project to achieve this credit. The added cost of Green Power is 2-3 cents per kWh.

Easy  
Moderate  
Difficult

**1 3 5** **Materials & Resources** Possible Points 13

Product criteria for building materials shall be influenced by the availability of locally manufactured or extracted materials and recycled content. This will be a challenge as the definition of "local" basically restricts the products to resources available in Anchorage. Materials that need to be shipped through waterways or by rail shall be selected based on availability of the departure city for such transport. Interior systems shall be specified based on the consideration of program flexibility, functional adaptability and future replacement or disposal.

**Storage & Collection of Recyclables**

MR Prerequisite 1 An exterior recycling collection area is located off the alley. Recycling bins must also be located throughout the building for occupant use. It is currently not known if the City of Seward collects recyclables, or if an outside vendor will need to be contracted with to meet the requirements of this prerequisite.

**Building Reuse, Maintain 75% of Existing Shell**

MR Credit 1.1 Not Attempting: Current plans call for the demolition of existing buildings located on both sites.

**Building Reuse, 95% of Existing Shell**

MR Credit 1.2 Not Attempting

**Building Reuse, 50% Int. Non-Structural Elements**

MR Credit 1.3 Not Attempting

**Construction Waste Management, Divert 50%**

MR Credit 2.1 The current construction waste recycling facilities that are located in and around Seward are currently unknown. All demolished structures will be included in CWM procedures and calculations for this credit. Additional research is needed in order to assess the potential to meet the thresholds of this credit.

**Construction Waste Management, Divert 75%**

MR Credit 2.2 See MR credit 2.1 for comments.

**Resource Reuse, Specify 5%**

MR Credit 3.1 There are not many opportunities to specify materials to meet the thresholds of this credit. Reclaimed lumber will be considered for floors, stairs and other finishes. Large beams and siding from the demolition of Old Solley's will be investigated for use in the building.

**Resource Reuse, Specify 10%**

MR Credit 3.2 Not Attempting

**Recycled Content: 10%**

MR Credit 4.1 As the project will be using a significant amount of steel and rebar, this credit should be easy to achieve provided that steel is purchased from the US and not from abroad. Other finish materials, such as ceiling tile, carpet, cotton insulation and others will be specified with recycled content.

**Recycled Content: 20%**

MR Credit 4.2 See MR credit 4.1 for additional comments.

**Mary Lowell Center**

National Park Service, US Forest Service & City of Seward

**LEED Self Assessment**  
Schematic Design Phase

Easy	Moderate	Difficult							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Regional Materials: 10% Extracted &amp; Manufactured</b>	<input type="checkbox"/>	<input type="checkbox"/>	DD	CD	<input type="checkbox"/>	<input type="checkbox"/>
			MR Credit 5.1	This credit will be difficult to achieve with the materials that are locally harvested and manufactured near Seward. Materials to target include concrete aggregate, wood and steel.					
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Regional Materials: 20% Extracted &amp; Manufactured</b>	<input type="checkbox"/>	<input type="checkbox"/>	DD	CD	<input type="checkbox"/>	<input type="checkbox"/>
			MR Credit 5.2	See MR credit 5.1 for additional comments.					
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Rapidly Renewable Materials, 2.5%</b>	<input type="checkbox"/>	<input type="checkbox"/>	DD	CD	<input type="checkbox"/>	<input type="checkbox"/>
			MR Credit 6	The project will consider the use of linoleum, cotton fiber insulation, wheatboard and other rapidly renewable products. However, these materials may not be sufficient to meet the threshold needed to earn this credit.					
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Certified Wood</b>	<input type="checkbox"/>	<input type="checkbox"/>	DD	CD	<input type="checkbox"/>	<input type="checkbox"/>
			MR Credit 7	The design team will consider the use of FSC wood doors, glu-lam beams, interior framing and sheathing for use in constructing the building. The amount of wood, availability of wood and potential incremental increases in the cost for FSC wood makes this credit hard to achieve.					

Easy  
Moderate  
Difficult

**12** **3** **Indoor Environmental Quality** Possible Points 15

The ventilation design will provide a healthy and energy efficient delivery of fresh air. To achieve this goal, the project team will explore options such as Under Floor Air Delivery, use of CO2 demand control ventilation and careful design of ductwork & diffuser selection. Minimum ventilation rates will be maintained to help mitigate any potential for Sick Building Syndrome.

All interior finishes and furniture systems will be selected based on their impact to Indoor Air Quality (IAQ). Careful specification of low Volatile Organic Compound (VOC) paints, adhesives, coatings and primers will also help ensure good IAQ. Urea Formaldehyde (UF) will not be used in any composite wood or adhesives.

During construction, the project will develop and implement an Indoor Air Quality plan based on ASHRAE, SMACNA, and LEED standards. The plan shall indicate how the design will mitigate construction impacts on indoor air quality.

**Minimum IAQ Performance**

EO Prerequisite 1 The project ventilation system will meet the requirements of this credit. Please review EO credit 2 for more information.

**Environmental Tobacco Smoke (ETS) Control**

EO Prerequisite 2 No smoking will be permitted in the building or within 25' of operable windows, doors or fresh-air intake. The corner of Railway and 5th Ave. appears to be the only allowable smoking area location near the building that can meet these requirements. The alleyways to the North and West of the project are not acceptable locations. An alternate location may be the parking lot located across 5th Ave.

**Outdoor Air Delivery**

EO Credit 1 All spaces that have an occupancy of 25 persons per 1,000 SF will feature a CO2 alarm that will be located 3-6' AFF. The alarm may either alert occupants, alert facilities staff or control ventilation rates to earn this credit. Please refer to EO credit 2 for information on how this system may control ventilation rates.

**Increased Ventilation**

EO Credit 2 The strict interpretation of this credit requires that 30% more fresh air above ASHRAE 55-2004 must be provided to all occupied spaces at all times. If the system were sized to provide this, the project would suffer a hit to energy performance due to the extreme winter temperatures of Seward.

The design team suggests that the ventilation system be sized to provide 30% more outside air should a CO2 alarm signal that more fresh air is needed. While this will accomplish the intent of the credit and meet energy efficiency goals, it is unclear if this strategy will earn the project this credit. As the project moves into DD, this credit will be re-evaluated with Credit Rulings issued by the USGBC.

**Construction IAQ Management Plan, During Construction**

EO Credit 3.1 The contractor will be required to follow construction activities that will meet the requirements of this credit.



Easy  
Moderate  
Difficult

1

**Controllability of Systems: Thermal Comfort**

SD  DD  CD

EO Credit 6.2 The building currently features two different measures that allow occupants to control their thermal environment:

1. Operable windows for the office space
2. Under Floor Air Distribution for the visitor's/conference areas

Both features would be required to earn a point for this credit.

1

**Thermal Comfort: Design**

SD  DD  CD

EO Credit 7.1 The design of the project should meet the requirements of ASHRAE 55-2004. During the winter months, the mechanical system should be able to meet the criteria of 55-2004. During the summer months, the project can demonstrate compliance through the use of the Optional Method for Determining Acceptable Thermal Conditions in Naturally Conditioned Spaces (Section 5.3 of 55-2004) that describes an expanded comfort zone for naturally ventilated spaces.

1

**Thermal Comfort: Verification**

SD  DD  CD

EO Credit 7.2 This credit requires that a post occupancy evaluation be made of the thermal performance of the building. This will involve the use of ASHRAE 55-2004 standard survey (Appendix E- Thermal Environment Survey) that can be distributed to all employees within 6-18 months after the building is occupied. A plan to issue the survey, to evaluate the responses and a plan of action to respond to the issues raised must be written. As this will happen after the design team has completed the project, the documentation of this credit will be the primary responsibility of the Partners.

1

**Daylight and Views, Daylight 75% of Spaces**

SD  DD  CD

EO Credit 8.1 The building features several daylighting features that should make this credit easy to achieve:

1. Large exterior windows should provide good daylight to all perimeter areas
2. A central glazed atrium should provide good daylight to most non-perimeter areas
3. Glazed skylights are located above the reception and grand staircases
5. The meeting rooms feature large windows to capture daylight and views

1

**Daylight and Views, Views for 90% of Spaces**

SD  DD  CD

EO Credit 8.2 There are only a few rooms which do not have a view to the exterior; rooms D13 & E06 are both located in the basement. The exhibit hall does have limited views to the exterior, but should be excluded from calculations of this credit.

Easy  
Moderate  
Difficult

**4** **1** **0** **Innovation & Design Process** Possible Points 5

The design of the Mary Lowell Center will incorporate several innovative strategies that will not fit within the standardized LEED credits. The Innovation & Design Process (ID) category offers the opportunity for these strategies to be recognized by the USGBC. Please review the preliminary list of potential ID Credits below:

**1** **0** **0** **Green Building Education** PD **0** **0** **0** **0** **0**

ID Credit 1.1 The intent of a Green Building Education program is to educate building occupants and visitors on the value of sustainable development, highlighting the green building features installed.

To meet the requirements of this credit, the project team must provide a comprehensive education approach that is actively instructional. Per the USGBC, 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 on the benefits of green buildings. This program may include windows to view energy-saving mechanical equipment or signs to call attention to water-conserving landscape features.
- 2) The development of a manual, guideline or case study to inform the design of other buildings based on the successes of this project.
- 3) An educational outreach program or guided tour to focus on sustainable living, using the project as an example.

**1** **0** **0** **Green Housekeeping** PD **0** **0** **0** **0** **0**

ID Credit 1.2 The intent of this credit is to reduce exposure of building occupants and maintenance personnel to potentially hazardous chemical contaminants that adversely impact air quality, occupant well-being, and the environment.

To receive an innovation point, the project team will need to demonstrate that a comprehensive green cleaning/ housekeeping program is in place with clear performance goals, including:

- 1. A statement of purpose describing what the policy is trying to achieve from a health and environmental standpoint, focusing on cleaning chemicals and custodial training at a minimum.
- 2. A contractual or procedural requirement for operations staff to comply with the guidelines, including a written program for training and implementation.
- 3. A clear set of acceptable performance level standards by which to measure progress or achievement, such as Green Seal standard GS-37 (see [www.greenseal.org](http://www.greenseal.org)) or California Code of Regulations, Title 17 Section 94509, VOC standards for cleaning products (go to [www.calregs.com](http://www.calregs.com), click on "California Code of Regulations" and perform a keyword search for "94509").
- 4. Documentation of the program's housekeeping policies and environmental cleaning solution specifications, including a list of approved and prohibited chemicals and practices. Demonstrate that the products used in the project are non-hazardous, have a low environmental impact, and meet the criteria set forth in #3 above. Concentrated cleaning products should be utilized when available.

**1** **0** **0** **Exemplary Performance in Water Efficiency** PD **0** **0** **0** **0** **0**

ID Credit 1.3 If the project is able to attain a 40% potable water savings, then the project will qualify for an ID point. To attain this, all measures called out under WE credit 3.1 must be implemented.

**Mary Lowell Center**

National Park Service, US Forest Service & City of Seward

**LEED Self Assessment**  
Schematic Design Phase

Easy	Moderate	Difficult
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Sustainable Wood Fuel Harvesting Program**

PD					
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ID Credit 1.4 If the project is successful in implementing a sustainable wood chip harvesting protocol, then it is likely that this would qualify for an ID point.

1	<input type="checkbox"/>	<input type="checkbox"/>
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**LEED™ Accredited Professional**

PD					
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ID Credit 2 All technical staff of Paladino & Company, Inc. are LEED Accredited Professionals.