

# Innovation & Design Process

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Overview					

Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace and up-to-date scientific research influences building design strategies. The purpose of this LEED™ category is to recognize projects for innovative building features and sustainable building knowledge.

Occasionally, a strategy results in building performance that greatly exceeds those required in an existing LEED credit. Other strategies may not be addressed by any LEED prerequisite or credit but warrant consideration for their sustainability benefits. Finally, expertise in sustainable building is essential to the design and construction process. All of these issues are rewarded in this category.

## Overview of LEED™ Credits

**ID Credit 1**  
Innovation in Design

**ID Credit 2**  
LEED™ Accredited Professional

There are 5 points available in the Design Excellence category.

## Innovation in Design

### Intent

To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.

1–4 points

### Requirements

- Credit 1.1 (1 point) Identify the **intent** of the proposed innovation credit, the proposed **requirements** for compliance, the proposed **submittals** to demonstrate compliance, and the **design approach** (strategies) that might be used to meet the requirements.
- Credit 1.2 (1 point) Same as Credit 1.1
- Credit 1.3 (1 point) Same as Credit 1.1
- Credit 1.4 (1 point) Same as Credit 1.1

### Submittals

- Provide the proposal(s) within the LEED Letter Template (including intent, requirements, submittals and possible strategies) and relevant evidence of performance achieved.

### Summary of Referenced Standard

There is no standard referenced for this credit.

## Green Building Concerns

The LEED Green Building Rating System was devised to address current sustainable issues involved in commercial building design. However, the building industry is constantly evolving and introducing new sustainable strategies and measures. It is important to stay abreast of current developments in sustainable building and incorporate those strategies and products that optimize built spaces. Innovation credits are the vehicle by which LEED recognizes and awards such accomplishments.

Additionally, innovation in design may be awarded if a project achieves exemplary performance under an existing LEED credit. Points for exemplary performance are available only for those credits where the outcome provides substantial benefits.

### Environmental Issues

With all sustainable design strategies and products, it is important to consider the re-

lated impacts to the environment and occupant well-being, and to assure that other building aspects are not adversely impacted.

### Economic Issues

Innovative strategies and measures have variable first costs and operating costs, depending on the degree of complexity, materials incorporated, and the novelty of the technology. Initial costs can range from free to prohibitively expensive. To understand the implications of design features, a life cycle analysis can be applied to determine if the strategy or product is cost-effective over the lifetime of the building.

### Community Issues

Community issues are those that affect others in close proximity to the project, as well as members of regional and world communities. Local actions can have dramatic effects on the world when considered in aggregate.

## Case Study

### Phillip Merrill Environmental Center Headquarters Annapolis, Maryland

The Phillip Merrill Environmental Center Headquarters is a LEED Version 1.0 Platinum project housing the Chesapeake Bay Foundation. The project is located on 31 acres of diverse habitat on the Chesapeake Bay and functions as an office building as well as an education and training facility. A rigorous water efficiency program was instituted to minimize potable water use in the building. A water recovery system collects roof runoff and filters these volumes before reuse in non-potable applications such as hand washing, mop sinks, desiccant makeup, and laundry. The stored water is also used as supply for the fire suppression system. Potable water volumes are only used for showers and kitchen sinks. Composting toilets are used to further reduce potable water use and greatly reduce sewage volume. In aggregate, these measures result in water savings that exceed the Energy Policy Act (EPACT) of 1992 by over 90%, greatly exceeding the requirements of Water Efficiency Credit 3: Water Use Reduction.



Courtesy of U.S. Green Building Council

Owner  
Chesapeake Bay Foundation

## Design Approach

### Strategies

There are two types of innovation strategies that qualify under this credit. The first type includes those strategies that greatly exceed the requirements of existing LEED credits. For instance, a project that incorporates energy or water efficiency measures that provide extraordinary savings and greatly exceed the requirements of their respective LEED credits would be appropriate for this credit. Points for exemplary performance are available only for those credits where the outcome provides outstanding, measurable benefits to the environment and/or building occupants.

The second type of innovation strategies are those that are not addressed by any existing LEED credits. Only those strategies that have significant environmental and occupant benefits are applicable.

Simple signage in a building would not be considered a significant educational effort by itself. Conversely, a visitor's center and interactive display, coupled with a Web site and video would be an appropriate level of effort for earning an innovation credit. In other words, substantial efforts must be applied to innovation credits. A separate set of submittals is required for each point awarded and no strategy can achieve more than one point. Four independent sustainability measures may be applied to this credit.

### Case Study

#### Oquirrh Park Speed Skating Oval Salt Lake City, Utah

The Utah Olympic Speed Skating Oval is a LEED Version 1.0 Certified project that hosted skating events for the 2002 Olympic Winter Games. Several roof systems were analyzed for the project and a cable suspension roof was chosen over conventional truss and arch systems for two significant benefits. First, the cable suspension system reduced the enclosed volume of the building by 20% when compared with a parallel chord truss system. This resulted in a smaller HVAC system and lower air conditioning costs. The second benefit of the cable suspension system was substantial material use reduction. The weight of the chosen system is 18 lbs/sf, 25% less than the next lightest system (a tied arch roof). This resulted in an estimated savings of 600 tons of steel, equivalent to \$850,000. Overall, the choice of the cable suspension roof for the project reduced the amount of raw materials and processing for the roof, reduced construction cost, and reduced operating costs over the lifetime of the building.



*Courtesy of CSIS Architects.*

Owner  
Salt Lake Organizing Committee

## LEED™ Accredited Professional

### Intent

To support and encourage the design integration required by a LEED Green Building project and to streamline the application and certification process.

### Requirement

At least one principal participant of the project team that has successfully completed the LEED Accredited Professional exam

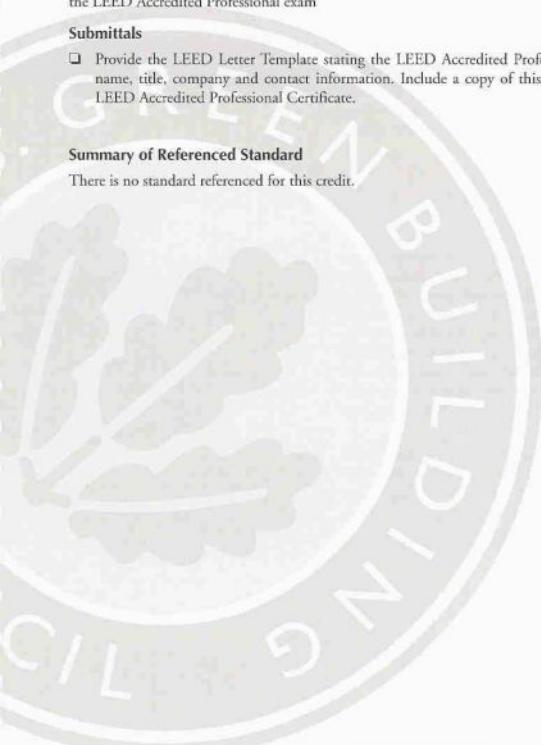
### Submittals

- Provide the LEED Letter Template stating the LEED Accredited Professional's name, title, company and contact information. Include a copy of this person's LEED Accredited Professional Certificate.

### Summary of Referenced Standard

There is no standard referenced for this credit.

1 point



## Green Building Concerns

LEED Accredited Professionals have the expertise required to design a building to LEED standards and to coordinate the documentation process that is necessary for LEED certification. The Accredited Professional understands the importance of integrated design and the need to consider interactions between the prerequisites and credits and their respective criteria. Architects, engineers, consultants, owners, and others who have a strong interest in sustainable building design are all appropriate candidates for accreditation. The Accredited Professional should be the champion for the project's LEED application and this person should be an integral member of the project design team.

## Design Approach

### Strategies

To become a LEED Accredited Professional, the LEED Accreditation Exam must be successfully passed. To prepare for the exam, it is helpful to attend a LEED Workshop offered by, or authorized by, the USGBC. Workshops include details on prerequisites and credits, calculation and documentation examples, and case studies from projects that have achieved certification.

For more information on workshops and the Accreditation Exam, visit the LEED section of the USGBC Web site: [www.leedbuilding.org](http://www.leedbuilding.org).