

MARKIM HALL
INNOVATION IN DESIGN CATEGORY
LEED FOR NEW CONSTRUCTION V2.2

5	Innovation & Design Process	Possible Points:	5
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1	Credit 1.1	Innovation in Design	1
1	Credit 1.2	Innovation in Design	1
1	Credit 1.3	Innovation in Design	1
1	Credit 1.4	Innovation in Design	1
1	Credit 2	LEED® Accredited Professional	1

INNOVATION AND DESIGN CREDIT 1.1: INNOVATION & DESIGN PROCESS: PUBLIC EDUCATION

1 Point

Innovation and Design Intent

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

Innovation and Design Requirements

In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

Public Education Credit Intent

To create an ongoing education program associated with the green building strategies of the Institute for Global Citizenship at Macalester College.

Public Education Credit Requirements

Per CIR dated 9/24/2001, two of the following three criteria must be met:

- 1) A comprehensive signage program built into the building's spaces to educate the occupants and visitors of 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 the 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.

Project's Approach to Public Education Credit

This building will consist of 16,000 gross square feet of space and house the Institute for Global Citizenship (IGC), which includes the Internship Program, the Civic engagement Center (CEC), and the International Center (IC). The IGC building consists of offices, conference rooms, workrooms, a large function space, and a kitchen and lounge. The building is designed to operate at a very high level of performance and efficiency. The project will actively incorporate Requirements #1 and #3, while the College as a whole has adopted numerous sustainable education measures.

The comprehensive signage program will be met through the use of a "Green Touchscreen". Green Touchscreen is a web-based kiosk, which will be permanently installed in the building's lobby. The Green Touchscreen will be accessible to all who enter the building, as well as anyone in the Macalester community, from anywhere on campus, via on-line access.

The Green Touchscreen will provide the following information modules:

- 1) **Green Building Information** (i.e., Answers the questions, What is sustainability? What is LEED?)

- 2) **Live Building Data.** The system will be tied into the building automation system and will show live data for water and energy use, amount of carbon saved, and outdoor air conditions. Historical data will also be shown by day, week, month, or year.
- 3) **Animated Educational Graphics** will be overlaid with live building data (e.g., schematic of HVAC system and water pumps, with actual energy or water usage.
- 4) **Green Features Map.** A map of the building will highlight the locations of “green” features and describe, and compare the “green” feature to standard features, including the “intent/solution” of the green feature.
- 5) **Interactive LEED Checklist.** The user can select a LEED credit to see information on the intent of each credit, how the credit was achieved, and the occupant/environmental benefit.
- 6) **Green Calculators.** Interactive calculators will show resource and monetary savings (e.g., light bulb savings, water savings, ect.). Users can experience via the calculator how even small changes can make a difference.

The guided building tour will include highlights of the interior and exterior green features of the project, including the mechanical and ventilation systems; water-saving features; low-emitting, recycled, and local materials; site orientation and daylighting; envelope construction; native landscaping; permeable pavers; ect. The tour will be given to students and the Macalester community, as well as visitors to the campus, and by appointment to interested groups.

Green Touchscreen information and tour narrative can be found in the appendix.

INNOVATION AND DESIGN CREDIT 1.2: WATER USE REDUCTION, 40%

1 Point

Innovation and Design Intent

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Innovation and Design Requirements

In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

Water Use Reduction Credit Intent

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Water Use Reduction Credit Requirements

Employ strategies that in aggregate use 40% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements. Calculations are based on estimated occupant usage and shall include only the following fixtures (as applicable to the building): water closets, urinals, lavatory faucets, showers, and kitchen sinks.

Project's Approach to Water Use Reduction Credit

This project is achieving a 44% overall reduction in water consumption by utilizing several technologies, and is therefore eligible for an innovation credit.

Dual-Flush water closets are to be utilized for both male and female restrooms. Urinals have been excluded from this project altogether. Water closets are designed to utilize either 0.8 GPF (half flush) or 1.6 GPF (full flush).

The showers provided reduce water consumption in two ways. The first of which is the valve itself. The shower valve is a push button actuated limiting valve. The valve is designed to run for 45 seconds before shutting off automatically. The valve is model #4-427 as manufactured by Symmons Industries. The showerhead uses only 1.6 gallons per minute. Showerhead model #RP46384 as manufactured by Delta faucet Co.

The kitchen sink faucets (Chicago faucet model #786-GN2FC) are to use a maximum 1.6 gallons per minute. The lavatory faucets are 0.5 GPM, self-generating hydroelectric powered, and sensor operated. Zurn Industries model #Z6915-GEN-F-MT

INNOVATION AND DESIGN CREDIT 1.3: GREEN CLEANING

1 Point

Innovation and Design Intent

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Innovation and Design Requirements

In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

Green Cleaning Credit Intent

To reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical contaminants that adversely impact air quality, occupant well-being, and the environment.

Green Cleaning Credit Requirements

- Statement of purpose
- Contractual or procedural requirement with operations staff.
- Clear set of acceptable performance level standards.
- Documentation of the program's housekeeping policies and environmental cleaning solution specifications, including a list of approved and prohibited chemicals and practices.

Project's Approach to Water Use Reduction Credit

The Macalester College IGC project incorporates a comprehensive Green Cleaning program, including training, performance standards, and a list of approved chemicals and practices.

The Macalester College Facility Services Green Cleaning Procedures can be found in the appendix.

INNOVATION AND DESIGN CREDIT 1.4: EXEMPLARY PERFORMANCE: OPTIMIZE ENERGY PERFORMANCE

1 Point

Innovation and Design Intent

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Innovation and Design Requirements

In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance, and the design approach (strategies) that might be used to meet the requirements.

Exemplary Performance: Optimize Energy Intent

Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Exemplary Performance: Optimize Energy Intent Credit Requirements

Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. Demonstrate a percent improvement in the proposed building performance rating by a minimum of 45.5% for New Buildings.

Project's Approach to Optimize Energy

The project has exceeded the requirements for an Exemplary Performance Innovation Credit point by achieving an improvement over the baseline of 53.3%. Please see EAc1 for additional information.

INNOVATION AND DESIGN CREDIT 2: LEED ACCREDITED PROFESSIONAL

1 Point

Intent

To support and encourage the design integration required by a LEED for New Construction green building project and to streamline the application and certification process.

Requirements

At least one principal participant of the project team shall be a LEED Accredited Professional (AP).

Potential Technologies & Strategies

Educate the project team members about green building design & construction and application of the LEED Rating System early in the life of the project. Consider assigning the LEED AP as a facilitator of an integrated design & construction process.

Credit Compliance

Erica Downs of Bruner/Cott & Associates was the project Sustainability Program Manager.

A copy of the LEED AP certificate can be found in the appendix.