Part One: Overview of LEED v4 and Outdoor Water Efficiency Credits

The **Leadership in Energy and Environmental Design (LEED) Green Building Rating System™** is a point rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building over its life cycle and to encourage market transformation towards sustainable design. This voluntary system is credit-based, allowing projects to earn points for environmentally-friendly construction of a building and its site.

LEED v4

LEED was launched in 1999 in an effort to develop a "consensus-based, market driven rating system to accelerate the development and implementation of green building practices." In 2013, LEED v4 was launched after a significant comment period from 2010-2013 and beta program.

LEED v4 increases the technical rigor and focuses on increased performance thresholds, established rating system alignment, streamlined services, improved project team experience and improved documentation. LEED v4 focuses on how the building can create a positive impact in these areas: climate change, human health, biodiversity, water, sustainable materials, community and economy.

Overview of Credit Categories, Rating Systems and Project Types

Since LEED v4 covers a wide-range of building types and credit categories, for the purposes of this article the focus is on the changes to the Water Efficiency Credit Category only. To understand how LEED v4 works, here is a brief description of the credit categories, rating system and project types.

Credit Categories LEED v4

Points can be earned in the following nine credit categories. In LEED v4 there was one new addition to the credit categories.

Category1: Location and Transportation **<NEW>**

Category 2: Sustainable Sites

Category 3: Water Efficiency

Category 4: Energy & Atmosphere

Category 5: Material & Resources

Category 6: Indoor Environmental Quality

Category 7: Innovation in Design

Category 8: Regional Priority

LEED Rating Levels

Based on the number of points earned in these credit categories, LEED projects earn one of four LEED rating levels. There was no change to rating levels under LEED v4.

LEED Certified

LEED Silver

LEED Gold

LEED Platinum

Project Types

The LEED rating systems can be applied to the following phases of building development. The number of building types has been expanded in LEED v4. For a complete list of building types go to **http://leed.usgbc.org/** and look under the specific project type.

LEED for Building Design + Construction (BD+C)

LEED for Interior Design + Construction (ID+C)

LEED for Building Operations + Maintenance (O+M)

LEED for Neighborhood Development (ND)

LEED for Homes

LEED v4 Water Efficiency Credit Category

The prerequisites and credit requirements for the Water Efficiency Credit Category have changed in LEED v4. This credit category has been expanded in scope to include utilizing the buildings process water and includes changes to the Outdoor Water Efficiency Credit. There are a total of 11 points that can be earned in this credit category.

Water Efficiency Credit Category for BD+C

Here are the prerequisites for the Outdoor Water Efficiency Credits

Prerequisite 1: Outdoor Water Use Reduction

Intent of the prerequisite is reduce outdoor water consumption by either:

Option 1: No irrigation required after two year establishment period

Option 2: Reduce Irrigation by at least 30% from the calculated baseline for the sites peak watering month

This reduction must be achieved through plant species selection and irrigation system efficiency. This prerequisite applies to all BD+C projects with outdoor vegetated space of over 1,000 sq. ft.

The irrigation system efficiency is calculated using the reference calculator: Environmental Protection Agency (EPA) WaterSense Water Budget Tool
http://www.epa.gov/watersense/water_budget/

Required Documentation

Option 1: No irrigation required after two-year establishment period.

- Site plan showing vegetated area
- Narrative for plant species and water requirements

Option 2: Reduce Irrigation by at least 30% from the calculated baseline for the site's peak watering month.

- Site plan showing location and size of landscape zones
- Water Budget Tool Report

Prerequisite 2: Indoor Water Use Reduction (Not covered in the scope of this article)

Prerequisite 3: Building Level Water Metering

This prerequisite requires permanent whole building water metering. This information will be shared with USBGC to accurately record the building's water usage. Sub-metering landscape irrigation is recommended to gain an accurate recording of irrigation water usage and the reduction needed to earn the credits.

Credits for Outdoor Water Efficiency BD+C Projects

Credit 1: Outdoor Water Use Reduction (2 points)

Option 1: No irrigation required over the maximum two-year establishment period earns 2 points

Option 2: Reduce irrigation by 50% earns 1 point OR Reduce irrigation by 100% earns 2 points

Required Documentation

Option 2: Alternative water source and control calculations are required.

Water Efficiency Credit Category for O+M

For O+M projects there are no prerequisites for Outdoor Water Efficiency credits.

Credits for Outdoor Water Efficiency O+M Existing Buildings Projects

This is a new credit for LEED v4.

Credit 1: Outdoor Water Use Reduction

Option 1: No irrigation required over the maximum two-year establishment period earns 2 points

Option 2: No irrigation meter installed and 30% reduction earns 1 point and 40% reduction earns 2 points. Water use reduction is calculated using the reference calculator: Environmental Protection Agency (EPA) WaterSense Water Budget Tool **http://www.epa.gov/watersense/water_budget/**

Option 3: Irrigation meter is installed and 30% reduction earns 1 point and 40% reduction earns 2 points.

Required Documentation

Option 1: No irrigation

- Narrative for plant species and water requirements

Option 2: No irrigation meter installed

- Site plan
- Alternative water supply calculations
- Water budget tool report

Option 3: Irrigation meter is installed

- Alternative water supply calculations
- Irrigation meter reports (monthly summaries)

In future articles we will take a deeper dive into the Outdoor Water Efficiency credits for BD+C and O+M , the Integrative Process prerequisite related to water efficiency, and new credits for under Sustainable Sites Rainwater Management.

Rain Bird Corporation • www.rainbird.com
6991 E. Southpoint Road • Tucson, AZ 85756 • Phone: (520) 741-6100 • Fax: (520) 741-6522