

LEED Guidance Information

BioPod™ advanced biofiltration system

BioPod™ is a high-performance biofiltration system that supports water quality and runoff reduction stormwater management objectives.

The following information is intended to assist in planning and preparing submissions in support of earning LEED credits under the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) rating system.

The information provided here is generic, and will enable engineers, contractors and other relevant parties to determine what LEED credits a BioPod™ system might contribute to.

A full LEED submission will require more detailed and project-specific information, however; we would be happy to assist you in compiling such a submission.

Should you require our help, please don't hesitate to contact us—call **888-965-3227** or e-mail us at **contactstormwater@oldcastle.com**.

Yours,

Christian Hennessy

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Rainwater Management

LEED Points Available

- LEED 5, SSc3 **1-3 points** are available for New Construction and Core & Shell.
- LEED 4.1 **1-3 points** are available for New Construction, Core & Shell, Schools, Retail, Data Centers, Warehouses & Distribution Centers and Hospitality.
- 1-2 points** are available for Healthcare.

Requirements

- LEED 5, SSc3 In a manner best replicating natural site hydrology processes, retain the runoff from the associated percentile of regional or local rainfall events on site. The percentile event volume must be retained (e.g., infiltrated, evapotranspired, or collected and reused) using LID and GI practices. GI and LID strategies can be either structural or nonstructural.
- LEED 4.1 In a manner best replicating natural site hydrology processes, retain on site the runoff from the associated percentile of regional or local rainfall events. The percentile event volume must be retained (i.e. infiltrated, evapotranspired, or collected and reused) using low-impact development (LID) and green infrastructure (GI) practices. GI and LID strategies can be either structural or non-structural.

BioPod™ LEED Contribution

BioPod™ has been certified for 80% TSS removal as a GI MTD by the New Jersey Department of Environmental Protection under its *Green Infrastructure Guidance for MTDs* as issued in April 2020, namely to “infiltrate into the subsoil; and/or...treat stormwater runoff through filtration by vegetation or soil”.

The “boxless” BioPod™ variant is available with an open base to allow both biofiltration and infiltration of surface water into subsoil on site.

BioPod™ is available in a range of different sizes, from 4 x 4 ft to 8 x 16 ft, and its drainage area and hydraulic performance vary based on the size of the unit and the site-specific climate conditions.

The table below shows the Maximum Treatment Flow Rate (MTFR) and drainage areas of each size of BioPod™ system, as calculated using the New Jersey Treatment Capacities.

Dimensions (ft)	MTFR (cfs)	Drainage area (ac)
4 x 4	0.064	0.31
4 x 6	0.096	0.47
4 x 8	0.128	0.63
4 x 12	0.192	0.94
6 x 6	0.144	0.70
6 x 8	0.192	0.94
6 x 12	0.288	1.41
8 x 16	0.512	2.50

As long as the MTFR is not exceeded, a single BioPod™ system can collect, filter and infiltrate surface water from the drainage areas shown.

Site runoff may be calculated using the formula $Q = CiA$, in which i = storm intensity in inches per hour, C = runoff coefficient, and A = drainage area in acres.

Using this formula we can demonstrate that, on a surface of 0.31 acres with a runoff coefficient of 0.9, one 4 x 4 ft BioPod™ system can collect, treat and infiltrate on site the surface water generated by a storm event with an intensity of up to 0.23 in/hr.

Note that where shallow stormwater infiltration is required, underground storage options such as [CUDO®](#) and [StormCapture®](#) may also be considered.

Accessible Outdoor Space / Open Space

LEED Points Available

- LEED 5, SSc2 **1 point** is available for New Construction and Core & Shell.
- LEED 4.1 **1 point** is available for New Construction, Core & Shell, Schools, Retail, Data Centers, Warehouses & Distribution Centers, Hospitality and Healthcare.

Requirements

- LEED 5, SSc2 Provide barrier-free and physically accessible outdoor space for people with limited mobility—space that is greater than or equal to 30% of the total site area (including building footprint). At least 25% of the required outdoor space must be vegetated and planted with two or more types of vegetation or have an overhead vegetative canopy.
- LEED 4.1 Provide outdoor space greater than or equal to 30% of the total site area (including building footprint). At least 25% of the required outdoor open space must be vegetated space planted with two or more types of vegetation or have overhead vegetated canopy.

BioPod™ LEED Contribution

BioPod™ systems are installed at grade and flush to the surface, meaning that they present no obstacle or impediment to people with limited mobility as part of a barrier-free and physically accessible outdoor space.

The use of ADA-compliant covers and tree grates also supports access for those with limited mobility.

BioPod™ systems are available with options for planters and trees in the engineered biofiltration soil media. Either of these configurations would contribute to the 25% total outdoor space that is either vegetated or has an overhead canopy.

Heat Island Reduction

LEED Points Available

- LEED 5, SSc5 **1-2 points** are available for New Construction and Core & Shell.
- LEED 4.1 **1-2 points** are available for New Construction, Core & Shell, Schools, Retail, Data Centers, Warehouses & Distribution Centers and Hospitality.
- 1 point** is available for Healthcare.

Requirements

- LEED 5, SSc2 Nonroof Measures: Shade over pavement areas, measured in plain view at noon, with existing or new plants, assuming 10-year canopy width, or vegetated structures. Planting or vegetated structures must be in place at the time of occupancy permit.
- LEED 4.1 Nonroof Measures: Use the existing plant material or install plants that provide shade over paving areas (including playgrounds) on the site within 10 years of planting. Install vegetated planters. Plants must be in place at the time of occupancy permit and cannot include artificial turf...Provide shade with vegetated structures.

BioPod™ LEED Contribution

BioPod™ systems are available with options for planters and trees in the engineered biofiltration soil media, and are installed in paved areas.

Either of these configurations would contribute to provision of shade over pavement areas as part of nonroof heat island reduction measures.

Water Efficiency / Outdoor Water Use Reduction

LEED Points Available

- LEED 5, WEp2 **Required** for New Construction and Core & Shell.
- LEED 5, WEc2 **1-8 points** available for New Construction.
1-7 points available for Core & Shell.
- LEED 4.1 **Prerequisite** for New Construction, Core & Shell, Schools, Retail, Data Centers, Warehouses & Distribution Centers, Hospitality and Healthcare.

Requirements

- LEED 5 WEp2, Minimum Outdoor Water Efficiency, Option 1, No Irrigation: Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.
- WEc2, Option 4, Outdoor Water Use, Path 1, No Irrigation: Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.
- LEED 4.1 Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.

BioPod™ LEED Contribution

BioPod™ systems are designed to collect, filter and infiltrate surface water runoff based on the current and projected precipitation levels of each site on which they are installed.

As such, planters and trees incorporated into the design are appropriate to the local climate and require no irrigation.

BioPod™ systems contribute to the **2 points** available as part of **Option 4, Outdoor Water Use, Path 1: No Irrigation** under the LEED 5 WEc2 Enhanced Water Efficiency credit.

Further Information

Product page:

[View BioPod™ product page](#)

Online Design Tool:

[Launch Online Design Tool](#)

NJCAT Technology Verification Report:

[View report](#) (PDF)

WADOE TAPE GULD:

[View use designation](#) (PDF)

If you or your colleagues would like to learn more about BioPod™, our experts would be happy to visit you and provide a lunch and learn. If you would be interested in this, please use our online form to [Request A Lunch & Learn](#).