

USGBC LEED® Considerations

The LEED V 4 rating system has the following main categories of prerequisites and credits. Hydrotech's products and assemblies have direct qualities that can be used in the **highlighted** categories listed below.



- **IP - Integrative Process**
- LT - Location and Transportation
- **SS - Sustainable Sites**
- **WE - Water Efficiency**
- **EA - Energy and Atmosphere**
- **MR - Materials and Resources**
- EQ - Indoor Environmental Quality
- **IN - Innovation**
- RP - Regional Priority

IP - Integrative Process



Credit Intent: To support high-performance, cost-effective project outcomes through an early analysis of the interrelationships among systems.

Hydrotech's staff is available early in the design process to help increase the performance of the project through the use of the Garden Roof® and Ultimate assemblies that may be applicable to other LEED credits.

SS - Sustainable Sites: Site Development - Protect or Restore Habitat



Credit Intent: To conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Projects that achieve a density of 1.5 FAR (floor area ratio) can include Hydrotech's Garden Roof® assemblies in these calculations. The wide variety of plant materials offered in Hydrotech's plant program can address a broad range of environmental, climatic and biodiversity conditions.

SS - Sustainable Sites: Open Space



Credit Intent: To create exterior open space that encourages interaction with the environment, social interaction, passive recreation, and physical therapy.

In projects that achieve the minimum 1.5 FAR threshold, the Garden Roof® assembly with native or adaptive vegetation used in roof top applications or on grade can contribute to adding back vegetated open space on the site. In addition, pedestrian accessible hardscape features created by the Ultimate Assembly® can also be used toward this credit.

SS - Sustainable Sites: Rainwater Management



Credit Intent: To reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region.

The Garden Roof® assembly decreases site imperviousness and stormwater runoff. The Garden Roof® assembly can:

- **reduce** the amount of storm water that can enter the sewers
- **delay** the storm water from entering the sewers
- **clean** the storm water via the filtering processes in the medias

SS - Sustainable Sites: Heat Island Reduction



Credit Intent: To minimize effects on microclimates and human and wildlife habitats by reducing heat islands

Hydrotech's Garden Roof® assembly is one of the prime BMPs that addresses this credit. Plants within the Garden Roof® assembly are particularly beneficial because they cool the air immediately around them.

In this credit, LEED treats vegetated roofs and high reflectance roofs with the same weight. Hydrotech's Cool Roof assemblies that include Hydroguard® and Glacier White architectural pavers can also contribute to this credit.

SS - Sustainable Sites: Places of Respite (LEED-Healthcare only)



Credit Intent: To provide patients, staff, and visitors with the health benefits of the natural environment by creating outdoor places of respite on the healthcare campus.

Hydrotech's Garden Roof and Ultimate assemblies can be used to achieve this credit. Seating elements can easily be incorporated into the vegetation and paving components in these assemblies. Trees planted within the Intensive Garden Roof® assembly can provide the required shade in these areas. Paved surfaces created using the Ultimate assemblies can provide access and accommodations in these places of respite.

SS - Sustainable Sites: Direct Exterior Access (LEED-Healthcare only)



Credit Intent: To provide patients and staff with the health benefits associated with direct access to the natural environment.

Hydrotech's Garden Roof and Ultimate assemblies can be used to achieve this credit. Paved areas created by the Ultimate Assembly developed in combination with landscaped areas created by extensive and intensive Garden Roof assemblies can satisfy this direct exterior access credit.

WE - Water Efficiency: Outdoor Water Use Reduction



Credit Intent: To reduce outdoor water consumption by showing that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period **OR** reduced irrigation usage (50% reduction from baseline for project's peak watering month).

Many of the plants that are included in Hydrotech's Extensive plant program are well adapted to dry conditions and limited water availability after establishment. Once the extensive plants become established only supplemental irrigation may be needed during times of high heat or drought.

EA - Energy and Atmosphere: Optimize Energy Performance



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

Depending on the design of the project, Dow STYROFOAM™, Brand Insulation Ultimate Assembly® and the Garden Roof® Assembly can help achieve high energy efficiencies within the building energy modeling. When combined with the Garden Roof® assembly, solar photovoltaic arrays perform at a higher efficiency due to the cooling effects of the plant materials and media within this assembly.

Materials and Resources: Building Life Cycle Impact Reduction



Credit Intent: To encourage adaptive reuse and optimize the environmental performance of products and materials.

Hydrotech’s Protected Membrane Roofing (PMR) Assembly greatly extends the life of a roof. In the PMR Assembly, Dow STYROFOAM™ and the Garden Roof® Assembly are installed on top of the waterproofing membrane. This arrangement protects the waterproofing from physical damage and UV degradation which are the two greatest factors in weakening a roofing system. In a 3rd party study, the LCA concluded Hydrotech’s MM6125® PMR is expected to have the same useful lifetime as the structure. The LCA stages include raw material supply, raw material transport, manufacturing, transport to site, installation and end-of-life management.

Materials and Resources: Building Product Disclosure and Optimization – Environmental Product Declarations



Credit Intent: To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts.

Hydrotech’s MM6125® has an Environmental Product Declaration (EPD) conforming to ISO 14025 and ISO 21930. Through the manufacture of its products, Hydrotech contributes to the diversion of materials from landfills.

MR - Materials & Resources: BPDO - Sourcing of Raw Materials



Credit Intent: To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts.

Hydrotech’s LiteTop® growing media installed in the Garden Roof® Assembly use locally sourced raw materials extracted from as close to the project site as possible. Raw material sources are available to project teams upon request.

Hydrotech has a wide range of products offering post-consumer and post-industrial recycled content including MM6125® with up to 40% post consumer content.

Materials and Resources: Building Product Disclosure and Optimization – Material Ingredients



Credit Intent: To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology, and for selecting products verified to minimize the use and generation of harmful substances.

Hydrotech can provide Health Product Declarations (HPD's) and Environmental Product Declarations (EPD's) upon request.

IN - Innovation: Exemplary Performance



Credit Intent: To encourage projects to achieve exceptional or innovative performance.

Hydrotech's Garden Roof® and Blue Roof Assemblies can both contribute to LEED credits for exemplary performance in rainwater management, heat island reduction and protection and restoration of habitats.

Contact Hydrotech for further information on specific products for your project.

Hydrotech Roofing, Waterproofing, Ultimate and Garden Roof Assemblies - Possible LEED V. 4 points

| | Protect or Restore Habitat SS | Open Space SS | Rainwater Management SS | Heat Island Reduction SS | Places of Respite SS | Direct Exterior Access SS | Outdoor Water Use Reduction WE | Optimize Energy Performance** EA | Building Life Cycle Impact Reduction MR | Environmental Product Declarations MR | Sourcing of Raw Materials MR | Material Ingredients MR | Integrative Process IP | Innovation IN |
|-----------------------------|----------------------------------|------------------|----------------------------|-----------------------------|-------------------------|------------------------------|-----------------------------------|-------------------------------------|--|--|---------------------------------|----------------------------|---------------------------|------------------|
| PMR Assembly | - | - | - | - | - | - | - | 1-18 | 1-3 | 1-2 | 1-2 | 1-2 | 1 | 1-2 |
| Ultimate Assembly | - | 1 | - | 1-2 | 1* | 1* | - | 1-18 | 1-3 | 1-2 | 1-2 | 1-2 | 1 | 1-2 |
| Garden Roof Assembly | 2 | 1 | 2-3 | 1-2 | 1* | 1* | 1-2 | 1-18 | 1-3 | 1-2 | 1-2 | 1-2 | 1 | 1-2 |

* Healthcare projects only

**Energy performance influenced by many factors