

Roof Garden Frequently Asked Questions

Carlisle SynTec Systems offers a diverse line of traditional and modular Roof Garden systems, as well as a wide variety of vegetation options to fit each project's individual requirements and design aesthetics. Roof Gardens offer a variety of benefits, including stormwater management, increased amenity space, improved aesthetics, reduced urban heat island effect, and extended roof service life.

ROOF GARDEN

Roofing Systems



Q: What is a Roof Garden?

A: By definition, a Roof Garden (also known as a green roof, vegetated roof, or living roof) is a contained green space on top of a manmade structure, above, below, or at grade. Roof Gardens are classified by system depth: extensive (shallow), semi-intensive (medium), and intensive (deep). Roof Garden assemblies fall into one of two categories: traditional layered (also called built-up) systems and modular tray systems.

Q: What are the essential components of a Roof Garden?

A: Both traditional layered and modular tray systems incorporate waterproofing membranes, drainage and water retention layers, engineered growth media, and vegetation. Carlisle offers a wide range of products in order to meet specification requirements for extensive, semi-intensive, and intensive systems.

Q: What is “growth media”? Why can't I use standard topsoil?

A: Growth media is a lightweight soil that has been engineered for maximum water holding capacity, quick drainage upon saturation, is structurally stable and conforms to strict FLL guidelines. Regular topsoil is heavy and contains insufficient water retention and drainage properties, and its high organic content shrinks over time, potentially leaving a 4-inch-deep Roof Garden with only 2 inches of soil after a few years.

Q: What kinds of plants can be grown on a Roof Garden?

A: Although sedum is the most commonly used Roof Garden plant, one could grow just about anything, provided the plants are suited to the building's USDA zone and the growth media on the roof is deep enough. Smaller alternate plants include herbaceous perennials such as sage and creeping thyme. Larger plants can include native shrubs and even full-sized trees in certain applications.



Q: What benefits do Roof Gardens offer?

A: Roof Garden benefits are numerous: greatly decreased stormwater runoff, additional usable building space, extended roof life, lowered cooling and heating bills, potential food production, improved aesthetics, and reduction of urban heat island effect.

Q: How can Roof Gardens be used for stormwater management? What is the typical retention value of a Roof Garden?

A: On a year-round average, 55%-80% of all stormwater that falls on a Roof Garden is retained and not released into the drains as runoff. All weights reported in Roof Garden assemblies reflect the saturated weight; if a growth medium weighs 35 pounds per cubic foot dry and 60 pounds per cubic foot saturated, a standard 4-inch-deep Roof Garden would hold up to 25 pounds of water per square foot (the equivalent of 1 gallon of water or 1.6 inches of rainfall). Building owners should consult a structural engineer to ensure that their structure is capable of sustaining the additional load of a saturated Roof Garden.

Q: How much load does a Roof Garden put on my roof?

A: The typical 4-inch roof garden weighs between 20-25 pounds per square foot. Weight can reach 100+ pounds per square foot for intensive gardens with shrubs and trees. In cases where weight is a concern, Carlisle Roof Gardens can be engineered to achieve a saturated weight of 15-17 pounds per square foot. Building owners should consult a structural engineer to ensure that their structure is capable of sustaining the load of the chosen Roof Garden design.

Q: What are the maintenance requirements for Roof Gardens?

A: Most Roof Gardens require some irrigation during the establishment period (60-90 days). Most extensive (shallow) Roof Gardens require minimal maintenance: fertilization and weeding in the spring and a checkup and removal of excess debris in the fall.

Intensive (deep) roof gardens could require as much maintenance as a typical estate garden, including regular pruning, weeding, irrigation, etc. At a minimum, there should be two maintenance events per year. In the spring, the Roof Garden should be weeded and fertilized and drains should be inspected. In the fall, debris clean-up and weeding should occur. If a permanent irrigation system is in use, it should be disconnected and drained in the fall, then reconnected and tested in the spring.

Q: What is the life expectancy of a roof garden?

A: While Carlisle offers up to 20-year warranties, Roof Gardens can extend the roof's lifespan by 100%. In Germany, there are several 50+ year-old Roof Gardens which have never been replaced and have never leaked. The waterproofing membrane beneath a Roof Garden is not exposed to ultraviolet light, massive temperature fluctuations, or physical damage which helps contribute to a long life span.

Q: What Roof Garden warranties are offered by Carlisle?

A: By offering complete Roof Garden system solutions, Carlisle can provide a single-source warranty that protects the Roof Garden components as well as the underlying roofing system. Vegetation warranties, as well as warranties that cover overburden removal, are also available. If an overburden warranty is purchased, Carlisle is responsible for locating the leak, overburden removal, leak repair, and overburden replacement.