

Staying Green

HOW TO FORM A PROPER MAINTENANCE PLAN FOR A HEALTHY GREEN ROOF.

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■ The Chicago Transit Authority headquarters building is subject to routine inspections and maintenance, which should always be completed by a trained professional. Photo courtesy of American Hydrotech.

Successful green roofs can be considered “low maintenance.” However, they should never be viewed as “no maintenance.” Not having a maintenance program in place will reduce the overall effectiveness of the initial investment made during installation.

All green roof systems should be accompanied by a detailed written maintenance procedures manual or guideline provided by the green roof installation company or system manufacturer. These should include elements

such as irrigation frequency, proper weeding and fertilization, as well as recommended methods for dealing with insect and weed infestations, bare and wet spots, and drainage inspection. Some companies also warrant plant coverage for a designated period of time after installation if the required maintenance is performed. Be sure to review and retain all documentation for a clear understanding on warranty and expectations on roof performance and development prior to installation.

A green roof should receive regular visits similar to traditional roofs. Specific maintenance requirements vary depending the time of installation and type the green roof. However, there are basic fundamentals that should be considered essential during a green roof’s typical two-year establishment period.

INSTALLATION PERIOD

During the installation of all green roof components, the following items should be con-

sidered top priorities for installation teams and followed up on by facility managers and building owners:

- Ensure all components are being installed as specified.
- Ensure that engineered growing media is at an equal and consistent depth.
- Inspect the placement of all plant material to maximize optimal growth.
- Test and re-test all irrigation systems for proper function. If no irrigation system is currently in place, all plant material should be “watered in.” It is also recommended that a water source be made available on every green roof, regardless of whether a full-time dedicated irrigation system is in place. Simply put, plants need water to thrive, especially in the first few months.

ESTABLISHMENT PERIOD

After installation is complete, a maintenance contract should be instituted between the facility manager or building owner and the maintenance contractor or, more ideally, the installation contractor. In addition to this contract, the following items will also need to be accomplished and repeated during the first 90 days:

- Conduct full a walk-through, with all parties present, before the project is deemed complete. Determine proper installation, and ensure that the contractor addresses any installation issues immediately with installing contractors before departing from jobsite.
- Remove and properly dispose of any excess materials or debris from the roof surface.
- Inspect all surface drains and scuppers to ensure each component is also clear of any debris. This element should become habit and second nature to anyone visiting the roof at any time.
- Dependent on various seasonal and regional aspects, the irrigation system may need to be winterized and/or calibrated on an annual basis. Each spring, all zones should be turned on and tested for proper function. It is common that plant material requires a greater amount of water the first 90 days than any other period to get the plants established. If no irrigation system is present, hand watering may be required to ensure that plants successfully move their roots into the growth media.
- Designate a plant manager or plant inspector who is responsible for continually monitoring the media levels, plant material and growth to ensure that any problems are quickly identified and resolved.



■ A certified green roof professional ensures all green roof components are installed properly. Some manufacturers also offer training programs for installation contractors about the proper use of materials. Photo courtesy of American Hydrotech.

GROWTH PERIOD

The first year is vital to the survival of any green roof installation. If the roof survives this stage, it likely has a great shot at meeting all establishment and warranty goals.

- Inspect all media and roof components for erosion issues and proper irrigation. Any issues should be delivered to the green roof manufacturer immediately. (Note: While some manufacturers are willing to assist their clients well into the “growth” stage of the green roof, others may not be so helpful.)
- In the spring after the first year of growth, a spring clean up is recommended to aid the growth of new plants. All plant mate-

rial that still has dead flowers or stalks must be deadheaded. All vegetation-free zones (drains, skylights, perimeters) should also be cleared of weeds or encroachment of desirable green roof plants. Any sedum material removed can be used as “cuttings” in the bare areas within the green roof.

- Any plant material that may have perished during the first winter should be replaced at this time. Some manufacturers offer warranties that include free plant replacement.
- Growing media that has eroded due to wind or water should also be replaced. It is critical that a comparable media is used for any replacements. Improper material can result



■ Like all roofs, garden roofs need maintenance and inspection to ensure their longevity.

in filter clogging due to high clay content or compaction, which is undesirable to plant roots.

- A final walk-through at the end of green roof warranty period should be conducted. Some green roof companies offer a final walk-through before the warranty expires.

LONG TERM

These steps are not always necessary but might be crucial to a project's long-term success:

- As-needed monitoring and testing of the growing media. Some companies have soil experts on staff to give long-term support long after installation.
- Although costly, consider fertilization applications to meet the requirements of certain plants based on their performance. It is advisable that a plant's fertilization needs are outlined during the design phase of any green roof project. No fertilizers should ever be used without the consent of a qualified green roof professional.
- On a rare occasion, pesticide applications might be required at this stage if there are any issues with insects on your green roof. Utilize an integrated pest management program (IPM), and consult a qualified professional.
- While mechanical weeding is always the most environmental and economical approach, herbicide applications are another possibility of green roof maintenance at this stage. Be sure to consult the local municipality or original design team for permission of use. **CR+**

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