

Roof Terrace / Garden Areas

Maintaining rooftop terraces and green walls is essential to ensure they provide ecological benefits while protecting the building's structural integrity (Lösken & Editorial Boars "Green Roofs," 2018). Because these systems are located in high-exposure areas, they require more rigorous care than standard ground-based landscapes (Yok & CUGE Standards Technical Committee, 2012). The maintenance scope generally depends on whether the greenery is intensive, which includes accessible roof gardens and terraces, or extensive, which consists of low-maintenance and usually non-accessible vegetation (Lösken & Editorial Boars "Green Roofs," 2018).

Maintenance Requirements

The most critical aspect of rooftop maintenance is the regular inspection of drainage facilities. All roof outlets, gutters, and emergency overflows must remain free of vegetation and debris to prevent water from ponding, which could exceed the roof's load capacity or lead to leaks (Lösken & Editorial Boars "Green Roofs," 2018). For intensive terraces, inspection chambers should be checked to ensure that roots or silt have not blocked the pipes, ideally every three months (Yok & CUGE Standards Technical Committee, 2012).

Plant health is managed through consistent pruning, weeding, and fertilization. Pruning is necessary to manage plant size, remove diseased branches, and reduce wind load on taller vegetation like trees or palms found on terraces (Yok & CUGE Standards Technical Committee, 2012). For lawns on rooftop terraces, mowing should occur frequently during the growing season to maintain a height between 20 to 40 mm (Crossan & Park Hood, 2022). Weeding is equally important because invasive woody seedlings can develop aggressive root systems that might penetrate the root barrier membrane (Lösken & Editorial Boars "Green Roofs," 2018).

Nutrient supply is typically handled using slow-release fertilizer pellets to ensure a steady delivery of nutrients without burning the plants (Yok & CUGE Standards Technical Committee, 2012). For intensive roof gardens, a common dosage is approximately 10 grams of nitrogen per square meter applied every three months, while extensive greening may only require 7 grams of nitrogen per square meter (Yok & CUGE Standards Technical Committee, 2012). While the provided sources focus primarily on rooftop greenery, they note that any greenery at height must be checked for stability, particularly in areas with high wind velocity (Yok & CUGE Standards Technical Committee, 2012).

Safety and Technical Inspections

Safety is a primary concern during maintenance since work often occurs near roof edges or at significant heights. For any work performed higher than 3 meters above the ground, fall protection measures like restraint-ropes and pre-installed anchors must be used (Yok & CUGE Standards Technical Committee, 2012; Lösken & Editorial Boars "Green Roofs," 2018). Maintenance crews should also verify the stability of any furniture, lighting, or playground equipment on the terrace to prevent hazards (Yok & CUGE Standards Technical Committee, 2012).

Occasional technical assessments are recommended, where a small area of the substrate is removed to inspect the underlying functional layers. This cut-and-cover exercise allows managers to check the integrity of the filter sheet, drainage layer, and root barrier to ensure no deterioration or root penetration is occurring (Yok & CUGE Standards Technical Committee, 2012). By following these practical steps and adhering to a strict schedule, rooftop terraces can remain functional and safe for the duration of the building's life.

Maintenance Schedule

The following table outlines the necessary maintenance tasks and their recommended intervals based on the type of greenery system installed.

Maintenance Task	Frequency for Intensive Terraces	Frequency for Extensive Greening
Visual Inspection of Drainage	Once every 3 months (Yok & CUGE Standards Technical Committee, 2012)	Once or twice per year (Lösken & Editorial Boars "Green Roofs," 2018)
Weeding and Debris Removal	Monthly during growing season (Crossan & Park Hood, 2022)	2 to 4 times per year (Lösken & Editorial Boars "Green Roofs," 2018)
Fertilizer Application	Once every 3 months (Yok & CUGE Standards Technical Committee, 2012)	Once per year or as needed (Lösken & Editorial Boars "Green Roofs," 2018)
Mowing (if turf is present)	Weekly or fortnightly (Yok & CUGE Standards Technical Committee, 2012)	Not applicable
Pruning of Shrubs and Trees	Once every 3 to 6 months (Yok & CUGE Standards Technical Committee, 2012)	Once or twice per year (Lösken & Editorial Boars "Green Roofs," 2018)

Irrigation System Test	Monthly (Lösken & Editorial Boars "Green Roofs," 2018)	As needed during drought (Lösken & Editorial Boars "Green Roofs," 2018)
Checking Anchors/Bracing	Once every 3 to 4 months (Yok & CUGE Standards Technical Committee, 2012)	Not applicable
Comprehensive Safety Check	Annually (Yok & CUGE Standards Technical Committee, 2012)	Annually (Lösken & Editorial Boars "Green Roofs," 2018)

References

- Crossan, O. & Park Hood. (2022). LANDSCAPE MANAGEMENT AND MAINTENANCE PLAN. In *Hartfield Place, Swords Road, Whitehall, Dublin 9* (pp. 1–6).
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