



97 Camden Mews, London NW1 9BU.

12 Month Maintenance Plan – Biodiverse Green Roof System.

Following the installation of the Sky Garden Biodiverse Green Roof we recommend the following **Managed Maintenance Programme** to ensure establishment, development and sustainability of the living roof system at 97 Camden Mews, London.

1. Maintenance & Aftercare.

1.1 **Timing:** A planned Maintenance and Aftercare programme will be implemented following handover of the completed roofs to the client. The contract will be 12 months duration and comprise 2 visits per calendar year, one visit in Spring, one visit in Autumn. The Biodiverse Roof must be maintained on an on-going basis from handover so that the system does not deteriorate due to neglect, which may allow unwanted species to colonise the roof and reduce Biodiversity and/or interfere with drainage, waterproofing and PV cells. A schedule of maintenance for a 5 year term is shown on the table on page 4 of this document.

1.2 **Scope Of Work:** Sky-Garden will carry out the following tasks per visit;

- 1.2.1 Remove invasive weeds such as Buddleia, Dandelion, Fat Hen, Dock, Common Thistle, Couch Grass, Groudsel, Bittercress. These plants will dominate the desired species and reduce biodiversity. Some of these plant's also have aggressive root systems which could compromise waterproofing and drainage functions if left unchecked.
- 1.2.2 Remove dead and excess plant material to avoid a build up of thatched material which will inhibit seed germination and regrowth.
- 1.2.3 Flowers will be cut in the Autumn after the flowering season has finished and seed has dispersed from spent flower-heads, to allow the seed bank to develop.
- 1.2.4 Grasses will be removed on each visit to avoid colonisation.
- 1.2.5 Leaves and excess material will be removed to ensure drainage outlets are in full working order, on each visit.
- 1.2.6 Invertebrate habitats (stone piles, sand lenses, log piles) will be cleared of unwanted plants and checked for stability and realigned if necessary.

1.3 Species Management

Six of the following Sedum species will be plug-planted into the 80mm lower contoured areas of the Biodiverse Roof at 97 Camden Mews and will not be removed during maintenance visits.

Unwanted plants will be removed from site to the benefit of the desired species and help them to become established.

- 6 species of Stonecrop will be plug-planted into the non-contoured areas. The species will be selected by Sky Garden from the following list, according to seasonal availability;
 - o Sedum acre
 - o Sedum album
 - o Sedum reflexum
 - o Sedum sexangulare
 - o Sedum ellacombianum
 - o Sedum floriferum
 - o Sedum forsterianum
 - o Sedum hybridum
 - o Sedum kamtschaticum
 - o Sedum montanum
 - o Sedum selskianum
 - o Sedum spirium

The list of Wildflower Plants in the seed mix is shown below and these plants will not be intentionally removed during the maintenance visits;

Agrimony (*Agrimonia eupatoria*), Bird's Foot Trefoil (*Lotus corniculatus*), Bladder Campion (*Silene vulgaris*), Common Toadflax (*Linaria vulgaris*), Cowslip (*Primula veris*), Hoary Plantain (*Plantago media*), Kidney Vetch (*Anthyllis vulneraria*), Lady's Bedstraw (*Galium verum*), Ox-Eye Daisy (*Leucanthemum vulgare*), Perforate St John's Wort (*Hypericum perforatum*), Salad Burnett (*Sanguisorba minor*), Self Heal (*Prunella vulgaris*), Vipers Bugloss (*Echium vulgare*), Common Poppy (*Papaver rhoeas*), Clustered Bellflower (*Campanula glomerata*), Common Knapweed (*Centaurea nigra*), Field Scabious (*Knautia arvensis*), Corn Buttercup (*Ranunculus arvensis*), Cornflower (*Centaurea cyanus*), Corn Marigold (*Chrysanthemum segetum*), Horseshoe Vetch (*Hippocrepis comosa*), Wild Majoram (*Origanum vulgare*), Bulbous Buttercup (*Ranunculus bulbosus*), Autumn Hawkbit (*Leontodon autumnalis*), Musk Mallow (*Malva moschata*), Meadow Buttercup (*Ranunculus acris*), Wild Mignonette (*Reseda lutea*), Red Valerian (*Centranthus ruber*), Pheasant's Eye (*Adonis annua*), Corn Cockle (*Agrostemma githago*), Scarlet Pimpernel (*Anagallis arvensis*), Corn Chamomile (*Anthemis arvensis*), Corn Mayweed (*Matricaria recutita*), Common Forget-me-not (*Mysotis arvensis*).

Note that species sown may vary due to seasonal availability.

1.4 Weeding

Within both the Spring and Autumn visit any invasive species i.e flora that is present on the roof that was not part of the above species lists, will be identified and removed through hand weeding. Where hand weeding is not practical or effective a localised weed killer can be applied

1.5 Vegetation Cutting

In order to keep the roof in optimum condition the flora will be cut by hand tools or strimmed in the late Autumn maintenance visit to reduce the level of vegetation and promote new growth in the Spring.

Cutting will not commence until the desired flowers have distributed the seed formed as part of the flowering process.

Some plant material may be left in situ over Winter, for invertebrates to hibernate/shelter under natural conditions. The excess material can then be removed from the roof in Spring to avoid any build-up of dry material that could pose a fire risk.

1.6 Feeding.

The Biodiverse roof and related species list requires a low nitrogen fertiliser to be applied in the Spring visit once every 1-2 years, to replenish lost nutrients at a managed and low level. This will be applied by hand and the amount applied is carefully limited to the minimum necessary to support the plants but not disturb the balance of a low-nutrient growing medium.

1.7 Seeding

Over-sowing of seed containing the approved species will be carried out once per year to re-establish growth in areas that may suffer die back or fail due to lack of water if no irrigation system is installed, or localised factors such as adverse weather, bird damage, disturbance by people, etc.

1.8 Habitat Management

Due to the biodiversity scope of the Camden Mews roof and presence of specific habitat features such as log piles, rock piles, bare aggregate, etc., it will be necessary to monitor these areas to ensure success. These works will be carried out during each visit as scheduled above. The works will be carried out by trained engineers to avoid unnecessary disturbance to invertebrate habitats.

1.9 Drainage Management

Outlets, gulleys, stone borders and inspection chambers will be checked and cleared where necessary to ensure water is draining as per the intended system design and function.

1.10 Irrigation commissioning / decommissioning

The irrigation system, if present, will be checked and commissioned in Spring and decommissioned (i.e. drained-down of water, disconnected and controllers switched off and removed if necessary) in Autumn.

1.11 Schedule Of Works.

See table on next page below. No contract is yet in place however our schedule shows planned Maintenance for a 5 year period;

	Year 1		Year 2		Year 3		Year 4		Year 5		
Works undertaken	Spring	Autumn	Spring	Autumn	Spring	Autumn	Spring	Autumn	Spring	Autumn	
	Visual Inspection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weeding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Fertilising	✓				✓				✓		
Drainage maintenance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Irrigation commissioning (if installed)	✓		✓		✓		✓		✓		
Irrigation decommissioning (if installed)		✓		✓		✓		✓		✓	
	Year 1		Year 2		Year 3		Year 4		Year 5		