



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

---

## Operations and Maintenance Manual: SGV01 Wildflower Blanket System

---

Live material must be irrigated immediately following installation and regularly thereafter! We stress this irrigation must continue in the first 4 months following installation, this is especially critical during hot and dry periods.

We accept no responsibility for failure to comply with this notice.

**Please refer to our full terms and conditions for further information.**

### Contents

Cover Page.....	1
Irrigation.....	1
Contents Page.....	1
Introduction.....	2
System Overview.....	2
Product Specification.....	3-5
- Drainage Layer.....	3
- Filter Fleece .....	3
- Substrate.....	3
- Vegetation .....	4
- River-stone Border .....	5
Installation Procedure.....	6
Installation Notes.....	7
Maintenance.....	8-9



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

## Introduction

This manual has been produced to benefit you, the owner of a Sky Garden living roof. It provides you with the documentation required to understand how your roof was installed and a breakdown of Sky Garden specifications. This manual also offers you advice regarding your warranty and how to maintain your roof.

## System Overview

Layer (Bottom to Top)	Brief Description
<b>Drainage Layer</b>	Sky Garden Drainage Layer Perforated cusped HDPE (High Density Polyethylene) core with a geotextile filter thermally bonded on both sides. Roll Size 1100mm x 50m Weight 1.14kg/m <sup>2</sup>
<b>Filter Fleece</b>	Attached to the above
<b>Substrate (growing medium)</b>	Biodiverse aggregate 100mm depth Grading: 11mm to 2mm Density: 750-900kg/m <sup>3</sup>
<b>Vegetation</b>	Verdant Wildflower Blanket consist of 80 wild flower species Dimensions 1 x 2 m roll Depth 35mm
<b>River stone Border</b>	Rounded quartzite and granite river stone Giving a sharp presentation border. Grade: 20 – 40 mm



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

## **Product Specifications**

### **Sky Garden Drainage Layer**

Sky Garden's drainage layer consists of a perforated cusped HDPE (High Density Polyethylene) core with a geotextile filter thermally bonded on both sides. The core is perforated to allow the excess rainwater to flow into the underside and away along the roof drain to the outlets.

- Material: Polypropylene
- Roll size: 920mm x 50m
- Depth of drainage: 20mm
- Weight: 1.14 kg/m<sup>2</sup>
- Tensile strength: >19 kPa
- Water storage capacity: 1.5 l/m<sup>2</sup>

### **Filter Fleece**

- Attached to the above

### **Sky Garden Biodiverse Substrate**

Sky Garden Biodiverse substrate offers an ideal environment for plant colonization. Composed of a mix of virgin crushed brick and organic material, Sky Garden Biodiverse mix meets strict soil association standards, and certification can be acquired upon request.

- Material: Fine grade 10 - 20 mm organic material 20%. Fine grade topsoil - 20% and 14/5 mm virgin crushed brick 60%.
- Bulk density: 1.5 Tonnes/m<sup>3</sup>(dry), 1.6 Tonnes /m<sup>3</sup> (wet)
- Compaction: 25%
- PH value: Range (6.8 – 8.2)
- Consignment size: 25Kg bags / bulk bags (1 m<sup>3</sup>) / loose bulk
- Grading: 14mm > 1mm



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

### **Sky-Garden Wildflower Blanket**

Verdant Blanket consists entirely of species of native provenance, with 80 species sown, to create a diverse and unique vegetation that will withstand the rigors of any green roof application.

The provenance and mix of species has been prepared in consultation with leading ecologists who are members of the Institute of Ecology and Environmental Management and Chartered Environmentalists. The blanket supports a species assemblage that can be tailored to meet project requirements and ensure that BREEAM ECO ratings are maximised, Biodiversity Action Plan species are supported and that there is an overall gain in biodiversity, in accordance with Planning Policy Statement 9.

Grown at sites in the UK for next day delivery from farm to site in 12 hours.

**Roll Size:** 1.2m x 2m x 25mm

**Weight:** (Dry) 15kg/m<sup>2</sup>  
(Wet) 25 kg / m<sup>2</sup>

### **River-stone Border**

The river stone is for use with in our green roof borders, providing free drainage and an astatically pleasing finish.

- Materials : Mixed rounded quartzite and granites
- Colours: Grays, browns and reds.
- Size : 20 – 40 mm
- Delivered as: 25kg bags.
- Standard border dimensions: 300mm width by 30mm height.



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

## Installation Procedure

- The Roof was initially checked to ensure that a safe working environment was in place i.e. edge protection/scaffold or mansafe system was present. Sky Garden or the contractor ensured lifting equipment was ready to lift materials to the roof. Ensuring all other trades had finished working on the roof before work commences.
- The drainage layer was placed onto the roof ensuring a continuous drainage layer was formed. Drainage was cut at perimeters of the roof leaving a neat edge. Where protruding skylights etc came through the roof the drainage layer was butted to the protrusion and in a similar method to that of the roof perimeter the drainage was cut leaving a neat edge.
- If required a filter fleece was rolled onto the drainage layer to protect the layer from being blocked by fines. The fleece was overlapped by 100mm to again prevent any blockage of the drainage layer.
- River stone borders were constructed through the use of 25kg bags placed at the green roof perimeter (1 bag per 800mm). Bags were split open and pebbles were hand places evenly along boarder at a width of 300mm and height of 30mm (site specific).
- Substrate is spread on to the roof via two methods:
  - Either 25kg substrate bags were placed onto the roof over fleece at 1.6 bags per m<sup>2</sup>. Bags were then cut bags at and spilled evenly over fleece. The substrate is then raked to ensure an even layer over roof.
  - If tonne bags were used the bags were raised onto the roof using lifting equipment then shovelled from the bag onto the roof evenly ensuring a 100mm layer.
- For the live material, the matting was laid over the substrate ensuring each piece was butted up to the previous with an overlap of 20 mm in to allow for shrinkage. Rolls were cut at roof perimeters and extra pieces were used to cover any bare patches.
- Sky-Garden / the roof contractor made all possible arrangements to ensure no other trades were allowed to access roof prior to installation. This cannot obviously always be the case. Following the installation of live material thorough watering of the system took place at an initial rate of 10-15 litres/m<sup>2</sup> and all steps were taken to ensure the owner / contactor of the roof understood this watering must continue if periods of drought coincide with the installation period.



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

## Installation notes

- All materials were supplied to and delivered directly to the site. The live material was unloaded immediately and installed within 48 hours of delivery to site.
- The supporting build up of drainage layers, filter sheet, substrate and any hard landscaping was completed before the live material was delivered to site, minimizing the vegetation stand time.
- The optimum period to install Biodiverse system is late September/early October, and late March/early April. Extra care must be taken during the months of June, July and August to ensure the blanket is not overheated – refrigerated delivery vehicles and off-loading within 24 hours are recommended. Extra irrigation requirements may be required during summer months, these are discussed below.
- In high wind conditions it may be necessary to temporarily pin matting down through to the drainage board or wire tie each blanket.

As per your quotation.

**Live product must be unloaded and watered immediately upon installation. If watering is not implemented immediately and for the first 12 weeks in situ, Sky Garden cannot take responsibility for the growth and success of the vegetation. This is especially important during the period 01/05 - 30/09 each year. For pitched roofs over 7.5 degrees we would recommend the installation of a permanent irrigation system.**

- Irrigation should take the form of complete system saturation at least once a week, in the first 12 weeks following installation. These same steps should be taken during prolonged periods of hot and dry weather.
- Should temporary irrigation in place we recommend the following:
  - Regularly check that the sprinklers are correctly positioned, prevailing wind may affect coverage.
  - Regularly check that the tank water is suitable for the roof irrigation.
  - In the event that the water becomes contaminated, turn off the irrigation immediately and drain the system.
  - Regularly check that the submersible pump remains submerged in the tank
  - Do not operate the pump out of the tank, this will cause the pump to fail
  - With the onset of winter, the system will need to be drained and decommissioned



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

## **Maintenance**

Following the installation of your Sky Garden living roof, a maintenance schedule should be organised to ensure you're getting the best from your roof. It is important to recognise that although our systems are generally low maintenance; this does not mean they require no maintenance. We recommend some basic care and attention should be paid to your roof once or twice per year and particularly in the following few months after initial installation.

### **The Vegetation**

Please note that the plants will not be 'green' all year around. It is quite common for the plants to change colour at different times of the year, particularly when under stress from lack of water or in frosty conditions. In the spring and summer the plants will flower and it is quite common for some of the varieties of plant in the blanket to die back in the winter. The requirements in the first year are to control weeds to reduce too much competition from the grasses and establish a diverse range of species. The sward should be cut annually in autumn to encourage the spread of seed. Remove all cuttings from site to avoid smothering and rot of the vegetation. Where persistent weeds are a problem, spot treat with glyphosate or remove completely.

### **Irrigation**

During the first two months following installation the blanket recovers from being moved and agitated during the transportation and installation. Should the weather be particularly dry during this period then watering is essential to ensure the green roof establishes itself as quickly as possible. This should be administered once every two to three days via hose or sprinkler system until system is at full saturation. If you want it to remain 'green and luscious' in dry conditions, you should consider the installation of an irrigation system.

### **Weather**

Regular checks should be undertaken to ensure that high winds or heavy rainfall have not moved or dislodged any of the materials. This is essential during the first few months as the plants will not have fully rooted into the underlying layers and will be more vulnerable. The movement of products is unlikely but possible in extremes of weather. Should it move, providing it has not been damaged, simply move it back and water in well.



Sky Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington, Glos, GL54 5EB  
T: 01242 620905 F: 01242 620739  
[www.sky-garden.co.uk](http://www.sky-garden.co.uk)

### **Drainage**

Open drains should be checked for build up of dead vegetative material and cleaned as appropriate at each 6 month/annual inspection. This also applies to covered drainage outlets.

### **Fertilising**

Sky Garden recommend that fertiliser be applied twice annually for long-term healthy growth of the plants. Customers can purchase and apply our fertiliser by hand.

### **Our Maintenance Package**

Sky Garden do offer maintenance packages should you wish preserve the diversity and aesthetic performance of your green roof. Our package includes bi-annual visits: one in the spring / early summer and one autumnal visit, we also offer general roof inspections and assessments. All visits are carried out by our own registered living roof maintenance teams who are experienced with our systems and understand the key elements of long-term living roof success.

Any fertiliser and/or weed control treatments are included as part of the package and will be undertaken by certified employees only. Our fertiliser or weed killer applications come from a range of products developed specifically for Sky Garden roof systems and are natural organic or naturally derived. Herbicides are species specific, low impact and used only as a last resort to tackle invasive or widespread weed problems.

The standard maintenance package will run over a 12 month period from the date of contract and will contain two remedial visits to inspect and carry out the required works as detailed below. Costs of maintenance are based on our daily rate for our maintenance team, on the number of visits per year, the location, the accessibility of the roof area and provisions of man safe systems. We cannot access any roofs without a suitable man safe system in place.