



**Blackdown Greenroofs**

**Street Ash Nursery, Lisieux Way, Combe St Nicholas,  
Chard, Somerset, TA20 3HZ**

Part of the AEBP Group.

Greenroof Maintenance

for

**Great Ormond Street Hospital iMRI**

01Nov18

Version 1.0

Blackdown Greenroofs was established in 1999 at our nurseries in the Blackdown Hills - designated an area of outstanding natural beauty - in Somerset.

Specialising in the supply, installation and maintenance of roof planting systems, Blackdown's horticultural expertise and green roof experience enables us to tailor solutions that:

Blackdown offers a single source green roof solution, comprising cost-efficient, high quality green roofs:

With a wide range of plant-related skills and experience, Blackdown advises on an array of roof planting issues, devising project-specific specifications and providing supporting technical information.

### **Supply**

Blackdown Green Roof systems are competitively tendered and installed to the highest quality – whether by our in-house Contracts Division or by our Partner Contractors, who have been trained by Blackdown in the design, logistics and installation of green roofs.

### **Install**

Blackdown has a proven track record of installing quality green roofs since 1999. The accumulated experience, building upon our horticultural expertise, has enabled us to fine-tune our installation methodologies so as to maximize value to the supply chain.

### **Maintain**

Maintenance planning is essential to achieving a healthy plant community and a green roof that delivers its long-term objectives. With an increasing tendency for buildings to be procured on a life cycle basis, Blackdown offers a single source, whole-life green roof solution: designed, grown, installed and maintained by Blackdown

### **Grow**

Our plants are grown at our nurseries in the beautiful Blackdown Hills in Somerset, using a combination of open field and controlled environment areas.

## **GREENROOF MAINTENANCE REQUIREMENTS EXTENSIVE SEDUM NATUREMAT.**

### **What level of maintenance is required?**

By their nature, extensive type green roofs are **low** maintenance. Once established they will not require supplementary irrigation and will continue to develop to create a self-sustaining plant community on the roof that will also provide habitat for invertebrate and bird species. Certain procedures are recommended, particularly in the first year, to ensure the long-term success of the plants. Procedures carried during maintenance would include:

- Removal of unwanted plant material i.e. invasive species (if required).
- Correction of any localised plant system problems that may have occurred post installation.
- Replacement of any failed plants exceeding 5% of total plants installed.
- Application of nutrient source.
- Removal of dead flower heads (if required).
- Inspection of rainwater outlet chambers and surrounding vegetation breaks.
- Replenishment of any areas of settled substrate.

### **Frequency of visits**

3 visits in year 1 and 2 in subsequent years: These visits are typically undertaken in the Spring & Autumn, however, the initial visit will be dictated by the month the roof was planted.

### **Who will be responsible**

Blackdown operatives will carry out the required greenroof maintenance tasks. Health & safety requirements and provision of safe access to and while the operatives are on the roof will be the responsibility of the contracting party or their agents.

### **Approach to undesirable plants**

Sedums are well adapted to life on the roof and quickly become established, however, a few other species may intrude. Some people welcome the colonisation of so-called 'weeds' to promote biodiversity. However, to retain the original planting composition these can, if required, be removed by hand.

### **Approach to pests and disease.**

Sedums are generally pest and disease free but, like many plants, can suffer from aphids or vine weevil. The care we take in production of our plants and the formulation of our Nature Mat® product discourages such problems but, if they occur, they can be controlled by environmentally friendly means. This is carried out on a location by location basis.

### **Approach to drainage - Checking of gutters and outlets**

This will be carried out routinely during any maintenance check to ensure drainage is not impeded.

We do not expect leakage of growing medium into gutter-ways; however, foot trafficking by other site services can result in material being kicked into drainage ways. As part of the maintenance procedures Blackdown Greenroof personnel will check for and remove any debris.

### **Trafficking of the plant layer**

Trafficking of the planted roof on the basis of 2-3 times a year will have no detrimental effect on the plant layer.

If works are to be carried out on the roof surface or to adjacent structures care should be taken to minimise damage to the plant layer resulting from repeated trafficking. In this case we would advise that access routes to the works are tightly defined to ensure damage is minimised.

If the plant material is damaged regrowth normally occurs; however, the speed of recovery will be dependent upon the level of damage, duration of the trafficking period and time of year.

### **Correction of system**

Over time, acidification of the growing medium can occur. This can happen particularly in built up areas where rainfall can be acidic. Acidified low nutrient growing mediums can encourage the establishment of moss. Low levels of moss are not a problem and indeed should be viewed as a significant part of the roofs biodiversity. However, if moss becomes too well established this can be at the expense of the plant layer.

### **Removal of flower heads after flowering**

Blackdown would not recommend the mechanical removal of flower heads etc due to the high levels of noise associated with the task and the possibility of materials being ejected beyond the boundaries of the greenroof.

If it is deemed necessary to remove dead flowering materials then this operation can be carried out manually by hand.

### **Removal of leaf litter**

The ideal position for a green roof is in full sun. In certain situations, adjacent trees could shed leaves onto the roof surface. Depending on quantity, these may need to be removed with a leaf-blowing machine. This would be a seasonal requirement.

### **Will fertilisers be used? If so what**

The correct level of nutrients in the growing medium is important. Levels of previously applied fertiliser, season and location together with the nature and condition of the plant material and growing medium determine the procedure to be carried out.

If required applications of Osmocote (12/14) will be applied at 25-50g per sqm as part of the spring visit.

### **Fire breaks (GRO & FLL recommendations)**

Non-vegetated strips, comprising shingle (20–40mm) or concrete paving stones, should be kept clear of encroaching plants (FLL 2008, 6.9);

Installation of 500mm wide (20-40mm shingle) strips to all openings of the roof (i.e. skylights, windows) or any vertical elements such as a wall with windows;

Installation of 1,000mm wide (20-40mm shingle) strips (or 300 mm heights) at 40 m intervals across the roof.

These areas will be kept clear of encroaching vegetation.

### **Approach to irrigation during establishment stage**

Blackdown strongly recommend that temporary irrigation is ordered out as part of the initial supply & installation order. Temporary irrigation would be for a period of 6-8 weeks only for extensive roof systems. Once the plant material has established then there should be not requirement for additional irrigation and should not form part of the maintenance package.

### **How the roof by will accessed**

Access and egress routes to/from the roof need to be carefully considered. Ideally these should be discussed and agreed between client/end user and Blackdown Greenroof before completion of the installation phase if a maintenance contract is required.

Safe access across the roof could take the form of perimeter balustrade, a post and wire fall prevention system or a collapsible roof perimeter hand rail.

A post and wire fall protection system set at the perimeter of the roof will allow maintenance procedures to be carried out safely once on the roof. This permanent system should be installed prior to the planted element. Safe maintenance access can then be gained to all roof areas by personnel equipped with harnesses and lanyards (Blackdown Greenroof personnel equipped with own harness and lanyard).

Care should be taken if the roof build up includes elements within the area of the roof that also have a fall risk. Typical of this would be roof lights. If the roof lights present a hazard then installed fall prevention system locally to the roof light may have to be included.

## **Construction Design and Management Regulations**

Under the Construction Design and Management Regulations (CDM) 2015, appropriate measures should be taken at both design and construction stages to ensure safe access and passage over the planted roof areas for maintenance personnel.

## **Health & safety and Greenroof Maintenance**

It is strictly the contractor's responsibility to ensure that all works are executed in accordance with current health and safety legislation. Guidance must be taken from relevant and current HSE publications.

## **Maintenance**

All inspections/and or maintenance actions carried out on the greenroof must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height.

Refer to current HSE publication 'The Working at Height Regulations' for further guidance.

Methods of access, working on the roof and egress will be agreed prior to the maintenance visit being required.

The following are procedures related to the planted element of the roof only. Not all the procedures will be appropriate to every roof.

## **Timing & Actions to Ensure Habitat Functionality**

Blackdown would recommend 3 visits in year 1 and 2 in subsequent years, these visits are typically undertaken in the Spring & Autumn.

One of the primary drivers for undertaking maintenance to the planted area is to ensure the timely removal of annual & perennial weeds.

Failure to removal undesirable plants, can lead to increased percentages of 'weed' within the sedum matrix.

Planted areas of greenroof that have been colonised by undesirable plant species can either be hand weeded or if the percentage of undesirable to desirable species is too great then the contaminated planting (& if necessary a proportion of the substrate) can be removed & replaced with fresh substrate and the desired plant species.

END



