

On-site Requirements

A water supply at roof top level is required during the installation of plug plants. Once an area of installation is completed the area is heavily watered to ensure that the plants and substrate are saturated before moving on to the next area.

The plug plants in their trays are saturated prior to the commencement of planting out. Plugs are placed in groups of 5-13 of the same species, dependent upon the overall roof size, at the density per m2 as specified.

The completed area is watered to saturation point before moving on to the next section.

Upon completion of the installation Bauder organic slow release fertiliser is applied at a rate of 80g/m2 and watered in.

Vegetation Barriers

Vegetation barriers are created and installed by using 20-40mm round washed pebbles at the perimeters, upstands and abutments and provide protection against wind uplift at the perimeter as well as rapid surface drainage during heavy rainfall.

Post Installation Watering Requirements

After completion of the installation it will be necessary to keep the substrate and plants damp for a period of at least 4 weeks immediately afterwards for traditional plugs and 10 weeks for native species plugs, and it may be necessary to irrigate for longer than this if installation is followed by a warm, dry spell of weather. To encourage the plants to survive without topical irrigation and harden them ready to survive the winter it is important to start cutting back watering from early September.

The anticipated period of establishment to provide good vegetated cover is at least two full years. The maintenance requirement over this period will depend to a large extent upon the weather experienced through the winter and early spring of each year and should follow our standard extensive and biodiverse green roof maintenance guidelines, excepting where weather conditions have caused significant damage to the vegetation.

Establishment

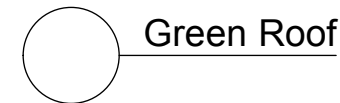
Due to the components incorporated within the seed mix there is no requirement for establishment maintenance. It is advisable to ensure that the roof surface is not trafficked other than for essential roof maintenance for the first 12 months after sowing. Bare patches can be over-sown if considered necessary, but will develop vegetative cover over time in any case. The anticipated period of establishment to provide a good vegetated cover is at least two years.

The XF300 Sedum Blanket utilises the vegetation support layer and is installed over a substrate base of around 80mm depth which allows for increased rainwater attenuation capacity, thus reducing the level of rainwater entering the drainage system.

Sedum acre
 Sedum album - 'bella d' Inverno
 Sedum album - coral carpet
 Sedum ewersie
 Sedum Kamtschaticum - ellacombianum
 Sedum Kamtschaticum - weinstephaner gold
 Sedum montanum orientale
 Sedum pulchellum
 Sedum rupestri (reflexum)
 Sedum sexangulare
 Sedum spurium - mesemlanthemum = Delosferma
 Sedum spurium - mesemlanthemum = hallii
 Sedum verticillatam

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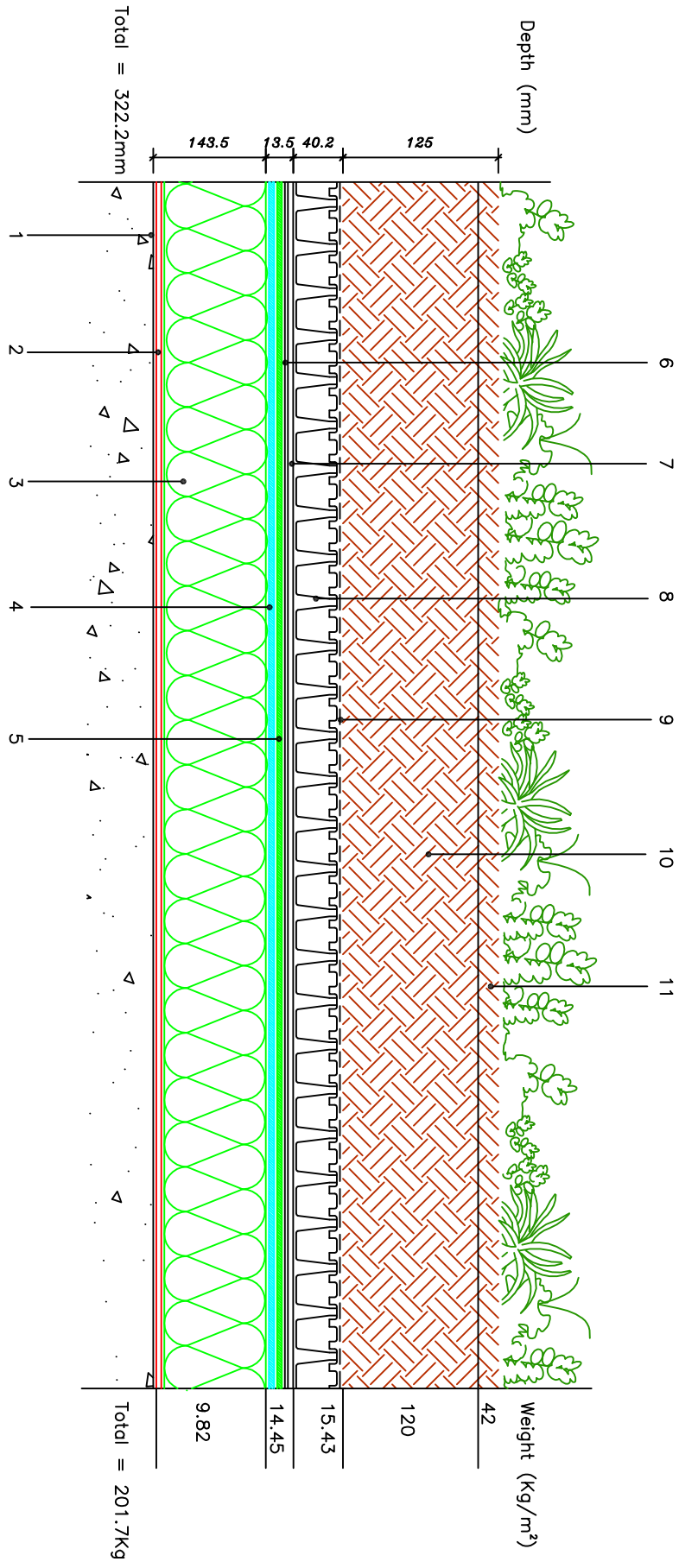


1. Sedum Blanket with integrated water retention and filter layer

2. SDF Matt - drainage layer for shallow pitch roofs

Typical Build-up Section Through XF118 Wildflower Blanket

1. ROOF DECK
2. BAUDER 3.5mm VAPOUR BARRIER
3. BAUDER 140mm PIR INSULATION
4. BAUDER G4E UNDERLAYER 4mm
5. BAUDER PLANT-E CAPPING SHEET 5mm
6. BAUDER P.E. FOIL
7. BAUDER FSM600 MAT 4mm
8. BAUDER DSE40 DRAINAGE BOARD
9. BAUDER FILTER FLEECE
10. BAUDER 100mm EXTENSIVE SUBSTRATE
11. BAUDER XF118 WILDFLOWER BLANKET



REF: M/R/GR/002
DATE: 27/07/2016

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Bauder Xero Flor XF118 UK Native Species Wildflower Blanket

| Latin name / Sp. | Common name | Height / mm | Blossom | Flowering season |
|-------------------------------|----------------------|-------------|--------------|------------------|
| <i>Achillea millefolium</i> | Yarrow | 80-400 | White | June - August |
| <i>Armeria maritima</i> | Thrift | 50-300 | Pink | April - October |
| <i>Bellis perennis</i> | Daisy | 30-120 | White/Yellow | March - October |
| <i>Campanula glomerata</i> | Clustered bellflower | 30-300 | Blue | June - October |
| <i>Campanula rotundifolia</i> | Harebell | 150-400 | Blue | June - September |
| <i>Centaurea cyanus</i> | Cornflower | 200-500 | Blue | June - August |
| <i>Centaureum erythraea</i> | Maiden pink | 150-300 | Pink | April - October |
| <i>Dianthus deltoides</i> | Common centaury | 100-400 | Pink | July - August |
| <i>Echium vulgare</i> | Viper's bugloss | 500-800 | Blue | June - September |
| <i>Galium verum</i> | Lady's bedstraw | 150-600 | Yellow | July - August |
| <i>Geum rivale</i> | Water avens | 300-600 | Purple/Pink | April - August |
| <i>Lotus corniculatus</i> | Small scabious | 150-700 | Blue | July - October |
| <i>Lychnis flos-cuculi</i> | Bird's foot trefoil | 100-400 | Yellow | June - September |
| <i>Papaver rhoeas</i> | Ragged robin | 500-800 | Pink | May - August |
| <i>Pilosella aurantiaca</i> | Common or Corn poppy | 200-600 | Red | June - August |
| <i>Prunella vulgaris</i> | Selfheal | 50-200 | Purple | June - October |
| <i>Rhinanthus minor</i> | Yellow rattle | 300-500 | Yellow | May - August |
| <i>Saponaria officinalis</i> | Common soapwort | 300-900 | Light pink | July - September |
| <i>Scabiosa columbaria</i> | Yellow toadflax | 300-800 | Yellow | July - September |
| <i>Sedum acre</i> | Biting stonecrop | 10-100 | White/Yellow | July - August |
| <i>Silene uniflora</i> | Bladder campion | 250-900 | White | June - August |
| <i>Silene vulgaris</i> | Sea campion | 80-250 | White | June - August |
| <i>Thymus polytrichus</i> | Wild thyme | 40-100 | Light purple | May - August |

REF: M/R/GR/003
DATE:27/07/2016

GREEN ROOF MAINTENANCE SYSTEM

XF118 Wildflower Blanket, KS Plus seed mix and wildflower plug plants

The following is the maintenance procedure that will be adopted on the site Land to the Rear of 62 Mansfield Road, London after one full growing season.

What to Expect from a Bio Diverse Green Roof System

There is a common misconception that extensive green roofs, and sedum plants in particular, are always green and that from ground level they resemble grass. This is misleading, as they consist mainly of low growing, drought tolerant sedum plants and may also include other species such as Saxifrage, wild flowers, grasses, moss and herbs.

General Maintenance

The level of maintenance of the horticultural element of this type of green roof will vary significantly, dependent upon the various species of vegetation incorporated and the purpose for which it was initially installed. Whilst the original intent may have been to allow the green roof to grow wild, the problems that this can create with the build-up of dead or unwanted vegetation and the impact that this has to the appearance and type of vegetation on the roof will often dictate the need for basic maintenance to be carried out.

The Bauder biodiversity green roofs which are currently being installed to meet either BREEAM or Sustainable Homes codes will include a species mix selected to provide a balanced plant community on the roof and will require basic maintenance if this is to be sustained in the long term.

Maintenance will be carried out annually, during springtime and additionally in late autumn should the particular roof location be affected by local trees that produce surface leaf litter. Some deposited leaf litter may be considered as contributory to the bio-diverse environment, which is acceptable so long as provision is made to ensure that this has no negative effect on other plants and the roof drainage performance.

The following procedures will be carried out in order to ensure the roof is maintained in good condition and to protect the validity of the waterproofing system guarantee.

Note - Specifically designated biodiversity areas will be disturbed as little as possible during maintenance so as not to upset any micro-habitats that may have colonised.

Preliminary Maintenance Procedures

Safe access will be gained to the roof and that relevant Health and Safety procedures are followed when working at roof level.

In order to avoid a build-up of bio-mass on the roof all dead vegetation will be removed with a strimmer and provision made for the debris to be safely lowered to the ground and disposed of.

Unwanted leaf litter that has fallen onto the roof surface from overhanging trees both in the spring and autumn will be removed, to ensure that this does not smother the vegetation beneath.

The lids of all Inspection chambers will be opened, to inspect and ensure that all rainwater outlets and downpipes are free from any blockages and that water can flow away freely.

It will be ensured that any protective metal flashings and termination bars remain securely fixed in place. Advise the client of the need to repair or renew as necessary.

All mastic sealant will be examined and mortar pointing for signs of degradation. If there is a need this will be repaired or renewed as necessary.

All promenade tiles and paving slabs will be checked to ensure they are securely fixed to the roof surface and in good condition.

Any new items of plant/equipment on the roof will be mounted on suitable isolated slabs and that any fixings used to secure the plant/equipment in place do not penetrate the waterproofing.

Any signs of damage or degradation to the waterproofing will be identified and dealt with immediately, in order that arrangements can be made for remedial work to be carried out if necessary.

Damage to the landscaping will be reported to the building owner and corrective remedial action will be taken.

Works to adjoining areas - When carrying out any maintenance to adjoining roof areas, care will be taken not to damage either the green roof landscaping or the waterproofing system. If it is considered that either element has been affected, then the supplier will be contacted for advice.

Plant Related Maintenance Tasks

1. Plant encroachment.

Any vegetation which has encroached into drainage outlets, Inspection chambers, walkways and the vegetation barriers (pebbles) will be removed. If

movement/settlement of the pebble vegetation barrier has occurred, additional washed stone pebbles similar to the existing are to be added.

2. **Maintenance of the XF118 Wildflower Blanket.**

The maintenance of the vegetation will be as follows:

In the late autumn the vegetation is to be strimmed back to a 50-70mm height and the unwanted waste matter removed and lowered to ground level for composting/disposal.

In late March/April apply an 80g/m² dressing of low release organic fertiliser to the vegetated surface.

Note - Should it be decided that the XF118 Wildflower Blanket is to be left unmaintained to naturalise, we would advise that this will lead to a substantial build-up of dead vegetation on the roof that will over time significantly reduce the number of vegetation species within the blanket.

4. **Weeding**

With the exception of saplings, which will always be removed, weeds in a biodiverse green roof will be considered as a problem only of aesthetics, unless they are particularly invasive. If considered undesirable, they can be removed.

5. **Fertiliser**

An organic slow release fertilizer should be applied at a rate of 80g/m² in the early spring.

6. **Irrigation**

The need for irrigation in a biodiverse green roof system will depend on requirement for the visual appearance of the vegetation. It is intended that the requirement be to deliver biodiversity. Therefore there will be provision of sufficient watering points at roof level to allow for only occasional watering in periods of prolonged drought.

Where required Bauder's maintenance team will be called in to provide maintenance support in the process.