NOTES:

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JUB STUDIO architecture and design

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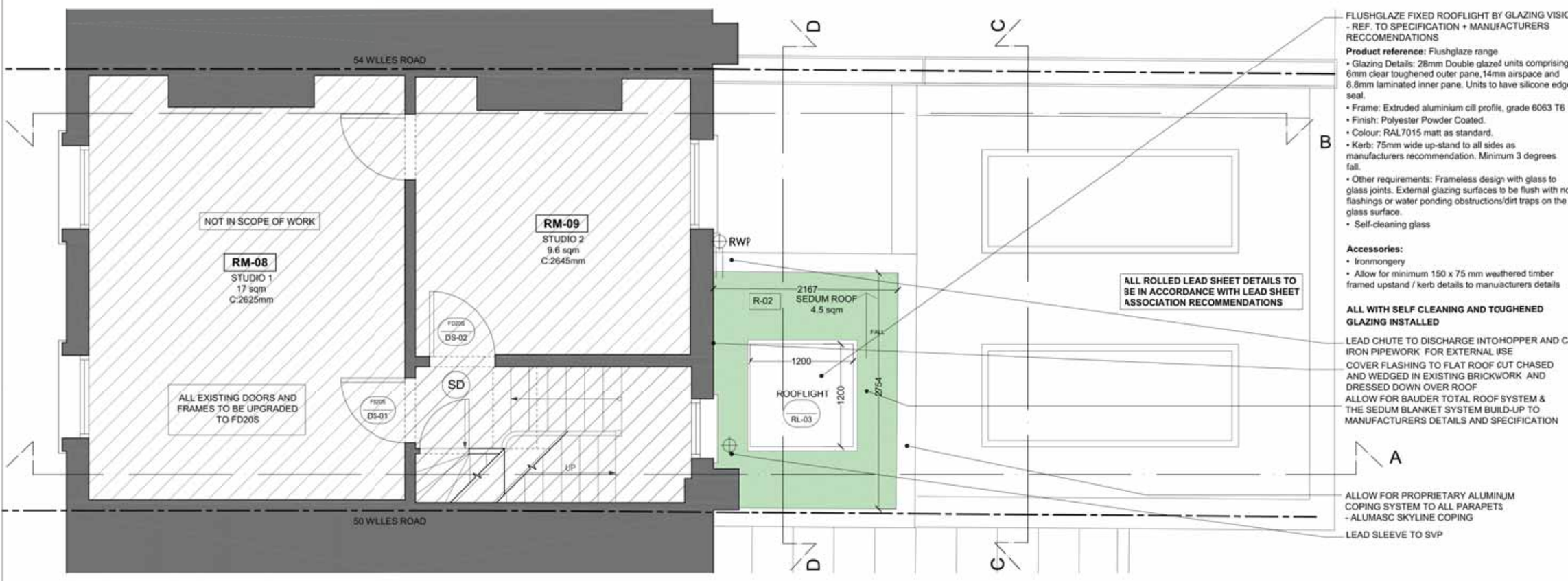


R-02 : WARM DECK FLAT (SEDUM BLANKET) ROOF

Location: Ground and first floor roof
Performance: to achieve U-value 0.18 W/m²K
Specification reference:
Timber joists to SE Details
Laid to falls plywood deck
Vapour control layer
120 mm rigid insulation boards Celotex XR4000
Reinforced bitumen membrane roof covering BTGRS Capping sheet
Bauder XF301 Sedum Blanket with SDF Drainage Mat
Cover flashings to bitumen sheet flat roof cut chased and wedged into existing brickwork and dressed down over roof
Accessories:
Allow for sump to be formed inside parapet edge to drain to falls
Bauder AL40 Edge. Retention/Drainage Trim
Vegetation barrier Minimum 80mm deep & 300mm wide.Width must be increased to at least 500mm when positioned adjacent to opening rooflights, windows or door openings. In accordance with both gro green and fll roof codes.

0 2.5 5 m

Rev	Description	Date	Drn	Chk
		11.06.2020	JH	JH

Purpose of issue

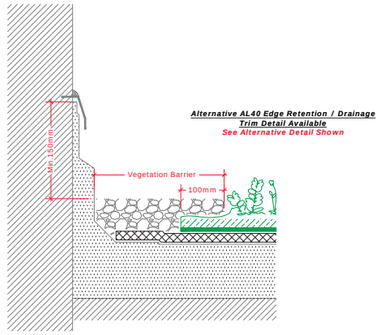
Project

52 WILLES ROAD
LONDON
NW5 3DL

Drawing Title

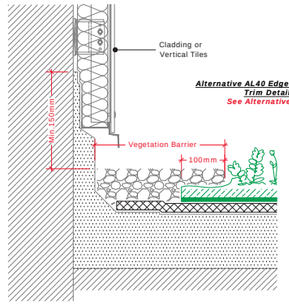
PROPOSED 2F PLAN

Scale	Drawn By	
1:50@A3	JH	
Project No.	Drawing No.	Revision
0200	A-GA-202	-



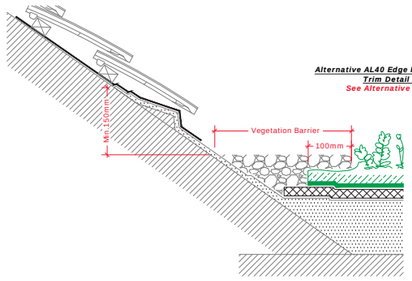
Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

Upstand
(Drg.No: D0901-00W_1-2Deg_201-Ext-XF301-SM_001)



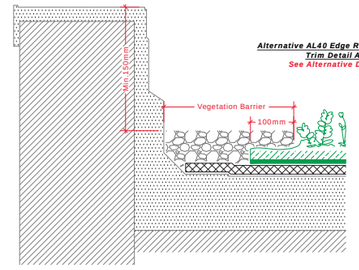
Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

Upstand to Vertical Cladding or Slates / Tiles
(Drg.No: D0901-00W_1-2Deg_201-Ext-XF301-SM_002)



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

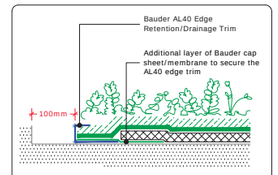
Upstand to Pitched Roof
(Drg.No: D0901-00W_1-2Deg_001-Ext-XF301-SM_004)



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

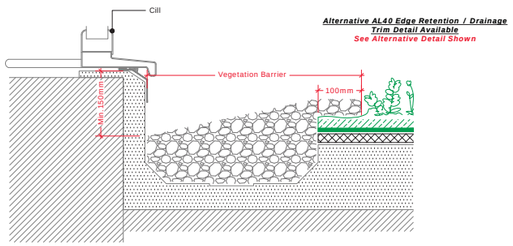
Parapet Upstand
(Drg.No: D0901-00W_1-2Deg_203-Ext-XF301-SM_001)

Alternative Details



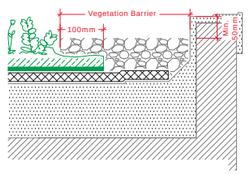
AL40 Edge Retention / Drainage Trim Option To Upstands

This detail provides an alternative option where the vegetation barrier is undesirable.
AL40 edge retention / drainage trim can be applied where the XF301 sedum vegetation blanket terminates.



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

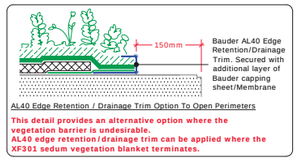
Internal Gutter to Clerestory Window
(Drg.No: D0901-00W_1-2Deg_206-Ext-XF301-SM_003)



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

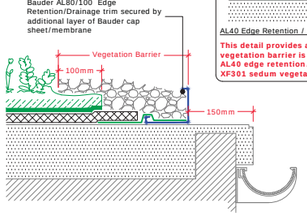
Perimeter Kerb
(Drg.No: D0901-00W_1-2Deg_002-Ext-XF301-SM_001)

Alternative Details

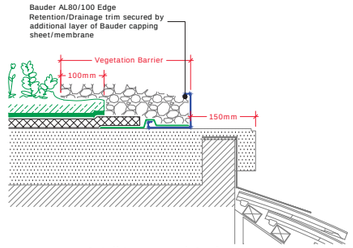


AL40 Edge Retention / Drainage Trim Option To Open Perimeters

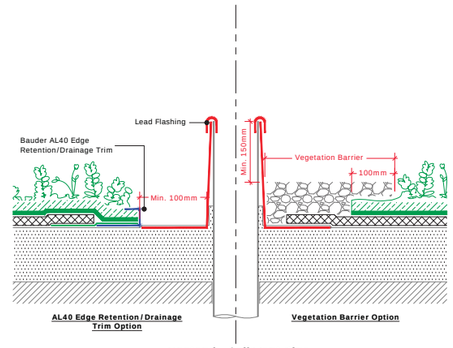
This detail provides an alternative option where the vegetation barrier is undesirable.
AL40 edge retention / drainage trim can be applied where the XF301 sedum vegetation blanket terminates.



External Gutter
(Drg.No: D0901-00W_1-2Deg_006-Ext-XF301-SM_005)



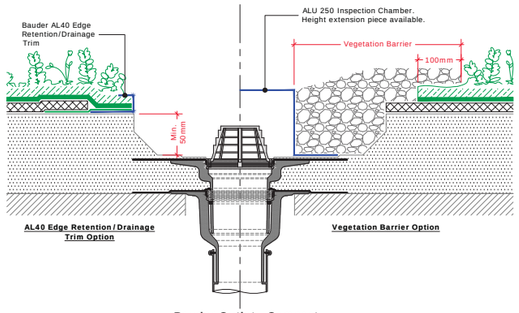
Detail to Mansard Roof
(Drg.No: D0901-00W_1-2Deg_006-Ext-XF301-SM_006)



AL40 Edge Retention / Drainage Trim Option

Vegetation Barrier Option

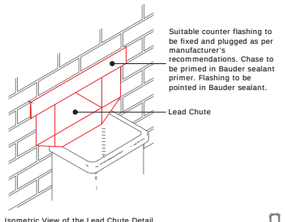
Upstand - Soil Vent Pipe
(Drg.No: D0901-00W_1-2Deg_007-Ext-XF301-SM_001)



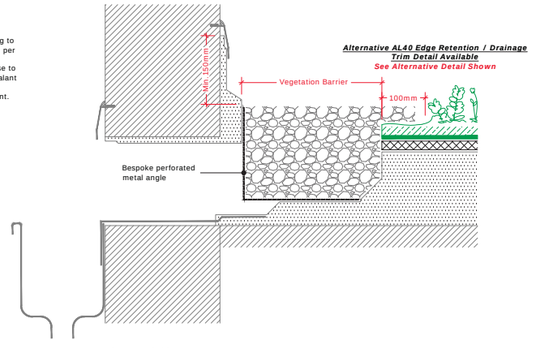
AL40 Edge Retention / Drainage Trim Option

Vegetation Barrier Option

Bauder Outlet - Compact
(Drg.No: D0901-00W_1-2Deg_006-Ext-XF301-SM_001)

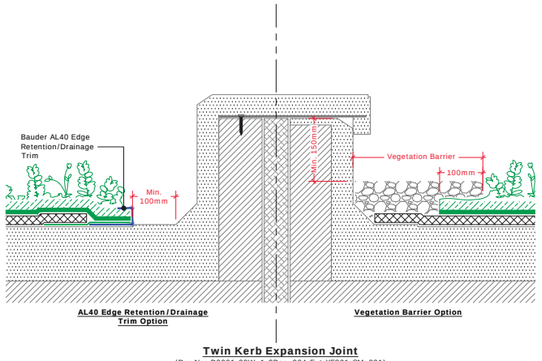


Isometric View of the Lead Chute Detail
(As Seen From the Hopper) NOT TO SCALE



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

Upstand - Lead Chute
(Drg.No: D0901-00W_1-2Deg_206-Ext-XF301-SM_002)



AL40 Edge Retention / Drainage Trim Option

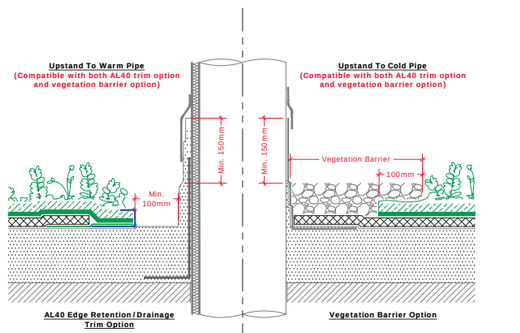
Vegetation Barrier Option

Twin Kerb Expansion Joint
(Drg.No: D0901-00W_1-2Deg_204-Ext-XF301-SM_001)

Key

- Bauder XF301 Sedum Vegetation Blanket 28mm
- Bauder SDF Drainage Mat 20mm
- Additional Bauder Capping Sheet / Membrane to Secure the Metal Trim (Refer to Specification for Correct Option)
- Bauder Waterproofing System. (Refer to Specific Bauder Waterproofing Details Drawings.)
- Deck / Substrate
- Vegetation Barrier
  Minimum 80mm deep & 300mm wide. Width must be increased to at least 500mm when positioned adjacent to opening rooflights, windows or door openings. In accordance with both gro green and fll roof codes.
- Bauder AL40 Edge Retention/Drainage Trim

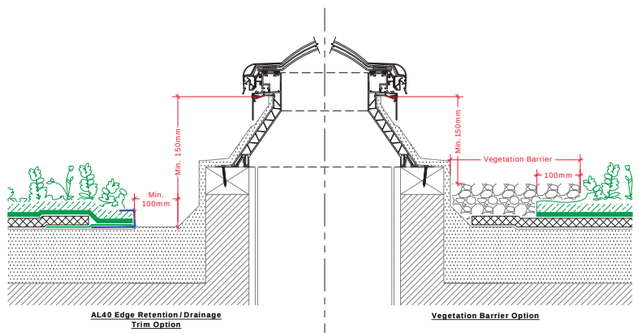
Important note:
This drawing shows alternative details. For the correct solution to be used, refer to the project specific specification.



AL40 Edge Retention / Drainage Trim Option

Vegetation Barrier Option

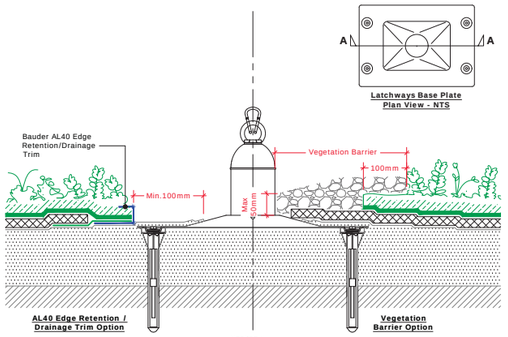
Upstand to Hot Flue Or Cold Pipe
(Drg.No: D0901-00W_1-2Deg_007-Ext-XF301-SM_002)



AL40 Edge Retention / Drainage Trim Option

Vegetation Barrier Option

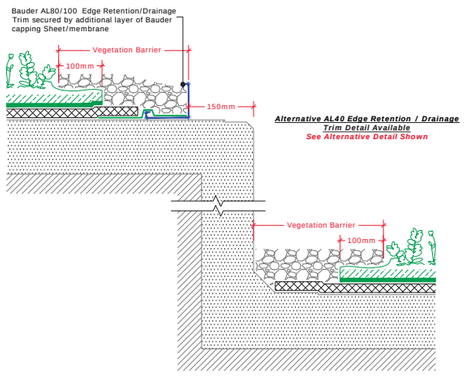
Upstand to Bauder Rooflight - Euroglaze
(Drg.No: D0901-00W_1-2Deg_008-Ext-XF301-SM_001)



AL40 Edge Retention / Drainage Trim Option

Vegetation Barrier Option

Latchways Constant Force Post
(Drg.No: D0901-00W_1-2Deg_009-Ext-XF301-SM_001)



Alternative AL40 Edge Retention / Drainage Trim Detail Available
See Alternative Detail Shown

Change In Level
(Drg.No: D0901-00W_1-2Deg_210-Ext-XF301-SM_001)

IMPORTANT NOTES:

1. These details are suitable for use on the following Bauder Systems:
   Bauder Total Green Roof System
   Bauderflex Green
   Thermofol and Thermoplan
2. **This Drawing Shows Alternative Options. For the Correct Solution to be Used, Refer to the Project Specific Specification.**
3. Do not scale to ascertain dimensions.
4. All dimensions to be checked and verified on site prior to commencement of work.
5. This drawing is to be read in conjunction with the specification and associated drawings.
6. This detail is a guideline only, representing typical detailing conditions and illustrate the correct application of the above Bauder System. It may be necessary to modify this detail to suit specific project design constraints and conditions.
7. Refer to the Bauder Specification for the product description and method of application. For clarity the method of attachment has not been shown.
8. Provision should be made by the installer for mechanically fixing the top leading edge of all upstand details in excess of 250mm in height using appropriate fasteners.

Rev	Date	Description	Drawn By
..	..	.....	..

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Extensive Green Roof System
XF301 Sedum Blanket 1°-2° Slope

Scale:	Drawing Number:	Rev:
1:5 @ A3	D0901-00W_1-2Deg_200-Ext-XF301-SM_001	-

Drawn By:	Checked By:	Approved By:	Date:
YOH	CN	NS	Aug 2017

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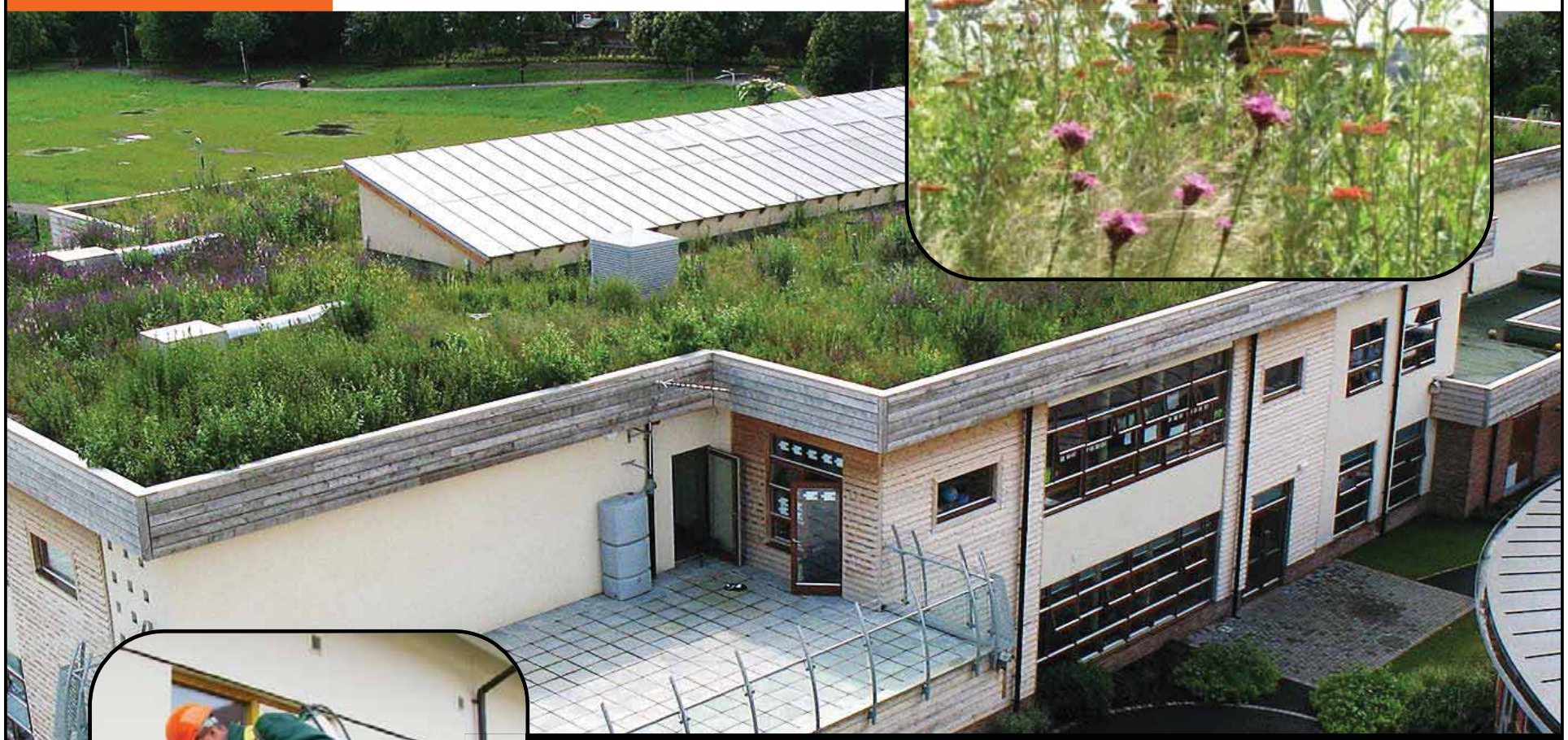

GREEN ROOFS

GENERAL MAINTENANCE INFORMATION

BAUDER BIODIVERSE SYSTEMS

XF118, KS Plus seed mix and wildflower planted substrate-based systems

BAUDER BIODIVERSITY GREEN ROOF SYSTEMS

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

The following is a guide to the maintenance necessary to keep a biodiverse green roof in a condition broadly similar to that in which it was first installed. The information relates to installations that have been completed for one full growing season and where establishment maintenance has been effective. For clarity, establishment maintenance relates to tasks continuing on after installation, where a defined period of regular watering and minor maintenance is required until the planting has rooted into the growing medium, adapted to its location and can be considered established.

What to Expect from a Bauder Biodiverse 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 is best 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 should 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 should be disturbed as little as possible during maintenance so as not to upset any micro-habitats that may have colonised.

Preliminary Maintenance Procedures

- Ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed when working at roof level. It is advised that the contractor should always seek proof of current maintenance for any man-safe roof access systems prior to proceeding with the work on site.
- In order to avoid a build-up of bio-mass on the roof it is recommended that all dead vegetation is removed with a strimmer and provision made for the debris to be safely lowered to the ground and disposed of.
- We recommend removing unwanted leaf litter that has fallen onto the roof surface from overhanging trees both in the spring and autumn, to ensure that this does not smother the vegetation beneath.
- Open the lids of all Inspection chambers, to inspect and ensure that all rainwater outlets and downpipes are free from any blockages and that water can flow away freely.
- Ensure 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.
- Examine all mastic sealant and mortar pointing for signs of degradation. Advise the client of the need to repair or renew as necessary.
- Check that all promenade tiles and paving slabs are securely fixed to the roof surface and in good condition.
- Ensure that any new items of plant/equipment on the roof are mounted on suitable isolated slabs and that any fixings used to secure the plant/equipment in place do not penetrate the waterproofing. If in doubt, please contact Bauder for further advice.
- The Building owner should keep a record of all inspections and maintenance carried out on the roof. Any signs of damage or degradation to the waterproofing should be reported to Bauder immediately, in order that arrangements can be made for remedial work to be carried out if necessary.
- Damage to the landscaping should be reported to the building owner. If this damage includes Bauder components, then Bauder may be contacted for remedial advice.
- Works to adjoining areas - When carrying out any maintenance to adjoining roof areas, care must 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 Bauder should be contacted for advice. Any waterproofing damage caused after completion of the original installation may invalidate the guarantee.
- Alterations - Any unauthorised alterations to the waterproofing system will invalidate the guarantee. If such a situation should arise, then Bauder should be contacted so that we may advise on the alteration and how it should be incorporated without affecting the guarantee.

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Plant Related Maintenance Tasks

1. **Plant encroachment.**
   Any vegetation which has encroached into drainage outlets, Inspection chambers, walkways and the vegetation barriers (pebbles) should 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. **Plant maintenance**
   In the absence of specific instructions from the building owner or their designated consultant, advice should be sought from both the project landscape designer and the plant supplier and any maintenance carried out according to their specific recommendations.

3. **Maintenance of the Bauder XF118 Wildflower Blanket**.
   If the Bauder XF118 Wildflower Blanket has been installed the minimum recommended maintenance of the vegetation is 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 Bauder slow 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 should always be removed, weeds in a biodiverse green roof should be considered as a problem only of aesthetics, unless they are particularly invasive. If considered undesirable, they can be removed.

5. **Fertiliser**
   Where the vegetation has been provided by Bauder, our organic slow release fertilizer should be applied at a rate of 80g/m2 in the early spring. For all other vegetation it is recommended that advice be sought from the landscape designer and plant supplier and that any fertiliser required is to be applied according to their specific recommendations.

6. **Irrigation**
   The need for irrigation in a biodiverse green roof system is dependent upon the client requirement for the visual appearance of the vegetation. If it is intended that the roof should have colour and interest for the longest period through the growing season, then irrigation will significantly aid in achieving this. Should the requirement be only to deliver biodiversity, then the provision of sufficient watering points at roof level to allow for only occasional watering in periods of prolonged drought can be considered sufficient.

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bauder.ie

Support

Modern biodiversity green roof installations will normally require only minimal maintenance. Bauder is happy to offer advice on any issues concerning your green roof and enquiries should be forwarded to our Technical Department at the address below. We believe our products and systems are of the highest standard and are always prepared to discuss any queries or concerns that may arise. Providing photographs or drawings to accompany your queries will help speed our response.

Please note: In the event of any query arising which it is thought may affect the condition of the system, then Bauder should be contacted at the address below. We cannot accept responsibility for any problem or failure due to use outside those parameters for which the system was designed or 'acts of god' beyond our control e.g. extreme weather conditions or damage through pests.

BAUDER GREEN ROOF MAINTENANCE SERVICE

With over 30 years' experience in the design and supply of green roofs throughout the UK and Ireland Bauder can offer unparalleled experience and expertise in green roof maintenance including sedum, biodiverse and wildflower.

Having established the largest UK facility cultivating green roof vegetation blanket we have unique knowledge and horticultural expertise for roofscape vegetation. With national coverage of over 50 field personnel, you can be assured of a prompt reliable service to fully meet your requirements.

Our Service

Bauder's experienced team will provide you with a tailor-made maintenance programme for your green roof. A typical Bauder Maintenance Programme Includes:

- Full inspection and evaluation of your green roof
- Application of organic slow release granular fertilizer
- Removal of leaves and debris
- Removal of unwanted vegetation
- Inspection and clearance of outlets
- Examination and testing of irrigation

This work is undertaken by Bauder's experienced maintenance engineers who will carry out the necessary risk assessments and comply with all current health and safety legislation throughout the duration of the work. Finally, you will be provided with a bespoke report with photographic verification outlining the condition of the planting and any areas requiring on going treatment.

To discuss your specific requirements, please call our green roof service team for a no obligation quote.
T: 0845 271 8801 **E:** greenmaintenance@bauder.co.uk

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Sedum species in current blankets

Sedum acre
Sedum album 'Bella d' Inverno'
Sedum album 'Coral Carpet'
Sedum ewersii
Sedum kamtschaticum subsp. Ellacombianum
Sedum kamtschaticum var. floriferum 'Weihenstephaner Gold'
Sedum montanum subsp. orientale
Sedum pulchellum
Sedum rupestre (reflexum)
Sedum sexangulare
Sedum spurium mesemlanthemum = Delosferma
Sedum spurium mesemlanthemum = hallii
Sedum verticillatum

Ray Stephenson is one of the worlds leading authorities on sedum plants and is the chairman of the Sedum society. He was commissioned by Strodhoff & Behrens last year to produce a study report on sedum species particularly suited to the UK climate, including coastal and exposed sites. This is the basis of the plants currently used within our blankets (although many of these were already being used).

There are currently 13 varieties used (dependent upon seed availability – see above). The mix will vary from blanket to blanket, but we expect at least eight species present in each blanket. The percentage mix of each species is also variable.

Most species are self-propagating, but there are also some that naturally seed and then die afterwards, but will return the following year.

To date, we are the only company with a blanket produced in the UK that is compliant with FLL regulations and that has a BRE certified FAA fire rating. Part of this test is reliant upon a blanket that does not contain too much organic content and sedum species that does not produce too much dead vegetation after flowering. It is the volume of dead vegetation that creates a fire risk in dry weather conditions.

Species develop according to the location. Inevitably, some species will dominate a site more than others and it is to be expected that accordingly some species may not survive long-term. The key to maintaining variety is annual maintenance and fertiliser at the correct time, to keep all species happy.

Notes from Ray Stephensons visit

1. Location – more rainfall in the west of the country than in the east. Irrigation to be considered for east located sites on slopes over 3 degrees.
2. Sedums are salt tolerant (coastal sites)
3. South facing aspects – irrigation for 30 degree slopes and above.

Revision: January 2018

PRODUCT DATASHEET

Bauder XF301 Sedum System

Single layer, light weight, Sedum System.

Intended Use

Bauder XF301 Single Layer Sedum System is an ultra-light weight sedum system. The product can be laid directly onto the waterproofing without the need for a growing medium. XF301 also contains a moisture mat which retains up to 5 Ltr of water/m2. The vegetation is a mix of in excess of 14 sedum varieties.

PRODUCT INFORMATION AND TECHNICAL PERFORMANCE		
Characteristic	**Unit**	**XF300 Sedum Blanket**
Maximum Saturated Weight	Kg/m²	≤44
Thickness	mm	34 - 44
Sedum and Saxifrage Species	Nos	14 - 17 species
pH Value		6.5 - 7
Typical Supply Size	m	1 x 2
Sedum Species	14+	The species mix is adjusted from time to time. Please contact Bauder Technical for further information
Long Rolls (for use with crane attachment)	m	5 to 10m
Material		Substrate and sedum plants, embedded in a nylon mesh, with a moisture retention fleece

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CERTIFICATION AND ENVIRONMENTAL INFORMATION	
International Standards Organisation (ISO)	ISO 9001:2015 Quality Management Certificates EN1271 (UK) and 70499/03-15_e (Germany). ISO 14001:2015 Environmental Management Certificates A10552 (UK) and 70499/03-15_d (Germany). ISO 50001: 2011 Energy Management Certificate 70499/03-15_c
BS 476 Part 3: 2004	Ext. F. AA Ext. S. AA
Recycled content	≥ 80% recycled material

INSTALLATION GUIDANCE
Normally installed directly onto the waterproofing or on flat roofs onto SDF mat. Care should be taken not to traffic the sedum. XF301 should be layed by skilled operative. See Bauder's Green Roof Installation Guide for full details.

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