

DARLING ASSOCIATES
ARCHITECTS

Living Roof

PLANNING CONDITION 13

Stephenson's Way

Land fronting Stephenson Way (to the rear of
222 Euston Road adjacent to 210 Euston Road)

London, NW1 2DA

Planning Permission Nr.: 2018/2316/P

March 2023

Revision A



Condition 13

Overview

Prior to commencement of development, full details in respect of the living roof in the area indicated on the approved roof plan shall be submitted to and approved by the local planning authority. The details shall include:

- i. A detailed scheme of maintenance
- ii. Sections at a scale of 1:20 with manufacturers details demonstrating the construction and materials used and showing a variation of substrate depth with peaks and troughs
- iii. Full details of planting species and density

Condition 13

Introduction

The scheme comprises of the Erection of a 7-storey building plus basement for student accommodation use with rooms of accommodation on the upper floors including shared amenity space at ground and sixth floor level and terrace at 6th floor level fronting Stephenson Way (Sui Generis). Retention of the vehicular easement from Stephenson Way to the rear of 222 Euston Road.

The scheme provides a living roof at 7th floor, which is intended to work in unison with a PV system in order to achieve the required outputs in line with the energy strategy.

Bauder BioSOLAR for Green and Blue Roofs with Vegetation

Bauder BioSOLAR is a unified solution for mounting solar PV arrays where the substrate and vegetation provide the ballast to secure the array.

The combination of systems and the height at which the panels are positioned allow for vegetation to establish across the entire roof area helping the building achieve enhanced BREEAM ratings and meet planning targets for both the green roof and solar PV requirements.

1 A Detailed Scheme of Maintenance

1.1 Stephenson's Way Living Roof Maintenance Plan

General Maintenance

Maintenance is necessary to keep biodiverse green roof systems in good condition. After installation, regular watering and minor upkeep will be needed until the planting has rooted into the growing medium and adapted to its location.

Bauder biodiverse green roofs include a selected species mix to provide a balanced plant community on the roof. They are currently installed to meet BREEAM / Biodiversity Net Gain targets and require maintenance to remain sustainable.

1. Review of the Management Plan

The flora and fauna on the roofs is likely to evolve over time. It is therefore highly likely that the plan be required to change and along with it the maintenance requirements. To facilitate this the plan calls for monitoring in the second summer with a review of the plan and maintenance for years three to five. This process to be repeated again after five years.

2. Maintenance Programme

2 visits per year in Spring/summer and autumn for five years, with additional monitoring visit in summer of second and fifth year.

On each visit the PVs are also to be checked to ensure they are balasted safely by the planting and cleaned if required.

Work to be carried out by Bauder Green Roof Maintenance.

Additional watering is required during times of drought, i.e. when there has been no rainfall for more than two weeks.

Note: Designated biodiverse areas should be disturbed as little as possible during maintenance to minimise the upset of any micro-habitats that may have colonised.

Initial 10 weeks (directly after installation)

The green roofs, both sedum and biodiverse are designed to need a minimum of maintenance. However, some intimal watering will be required during the first 10 weeks after installation if there is insufficient rain fall.

- Watering of seeded areas (after the seed has germinated) will be regular (every day) when there are periods without rainfall, this can be reduced as the planting become more established.
- Watering will be carried out with a fine mist sprinkler or rose. Care will be taken not to wash out the seed with excessive water or pressure.
- Efforts will be made to not to traffic the roof during watering.

Monitoring:

Assess the % failure of plugs 10 weeks after seeding any areas showing no sign of germination will be over-seeded in the following spring or autumn.

Establishment Period (Yrs 1-2)

Maintenance. During the first 2 years maintenance visits will be twice yearly (spring/summer and autumn)

Maintenance Works

All Areas, every visit work required:

- Pebble Border: remove all vegetation from Pebble borders
- Outlets: check outlets are clear and free from slit and detritus

Biodiverse Roofs work required:

- Remove unwanted and invasive weeds.
- Wildflower areas: Cut and remove flower seed heads and taller grasses above 150mm. if required (during autumn visit only).

Sedum roof work required:

Sedum is not tolerant of foot traffic. Access to the sedum areas will be restricted to essential maintenance only.

Work Required:

- Remove unwanted and invasive weeds.
- Fertilise blanket in spring/summer visit as per Bauder Specification
- Remove grass and weed from sedum areas
- Patch any open joints or bare areas with substrate and sedum cuttings

1.2 Stephenson's Way Living Roof Maintenance Plan

Monitoring Summer of year 2

- Assessment of the number of original plant species still present on site, plus additional species which may have colonised the roofs
- Assessment of the success of the log piles. Stone and sand areas with details of what species are flourishing in these area.
- Assess the % failure of seeding. If failed area larger than 10m² should be over seeded in the following spring or autumn.

From these assessments the management plan for the following 3 yrs can be adjusted.

Maintenance Period (Yrs 3-5)

Maintenance. During the years three to five maintenance visits will be twice yearly (spring/summer and autumn)

Maintenance works all areas every visit:

- Pebble Border: remove all vegetation from Pebble borders
- Outlets: check outlets are clear and free from slit and detritus

Biodiverse Roofs work required:

- Remove unwanted and invasive weeds.
- Wildflower: Assess the percentage coverage of wildflowers
- Cut and remove flower seed heads and taller grasses (above 150mm) if required during Autumn visit only

Sedum roof work required:

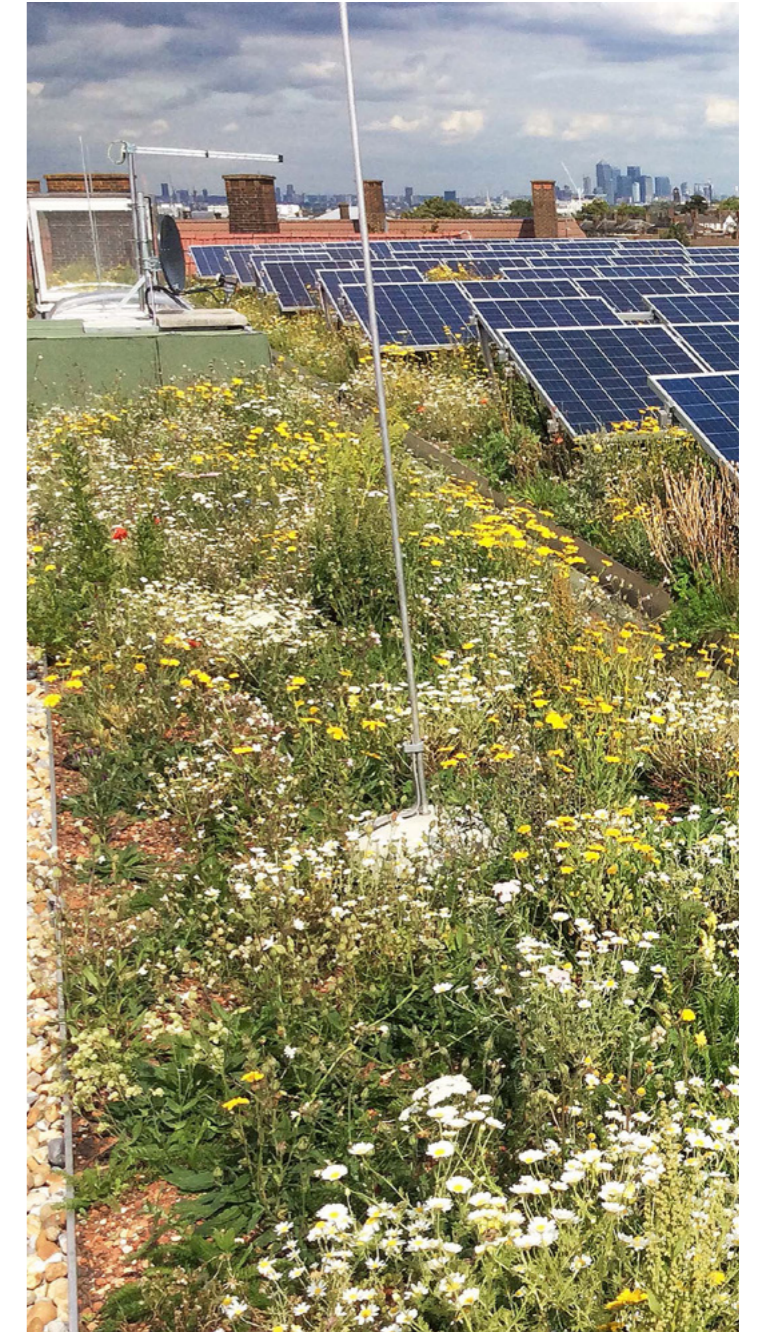
Access to the sedum areas will be restricted to essential maintenance only

- Remove unwanted and invasive weeds.
- Fertilise blanket in spring/summer visit as per Bauder Specification
- Remove grass and weed from sedum areas
- Patch any open joints or bare areas with substrate and sedum cuttings.

Monitoring Summer of year 5

- Assessment of the number of original plant species still present on site, plus additional species which may have colonised the roofs.
- Assessment of the success of the wet area, log piles. Stone and sand areas with details of what species are flourishing in these area.

From these assessments and the management plan for the following 5 yrs can be adjusted.






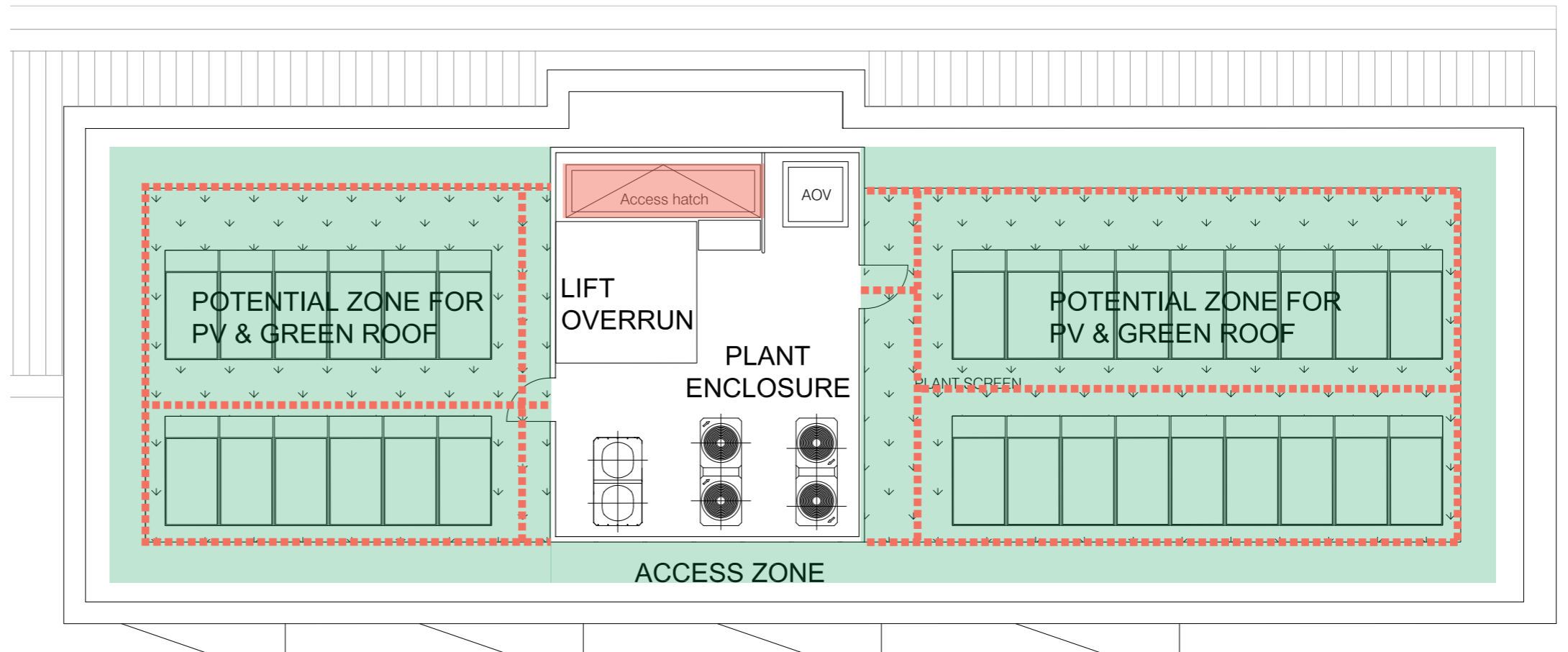
1.3 Access and Maintenance

As per the previous pages maintenance to the living roof is to be done Bi-Annually.

Access to the roof is provided by the access hatch from the main stairwell. From this point operative will be inside a safe plant area from which a specialist designed Mansafe/ Latchway system will provide maintenance personnel safe access to the roof to perform maintenance outlined on previous pages.

Key:

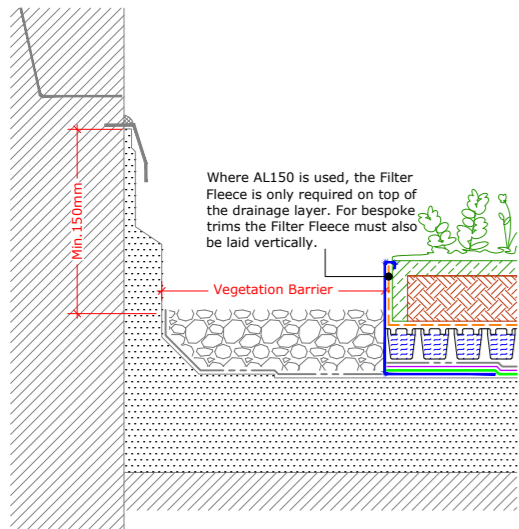
-  Mansafe/ Latchways System
-  Access Hatch
-  Living Roof



2 Sections and Details

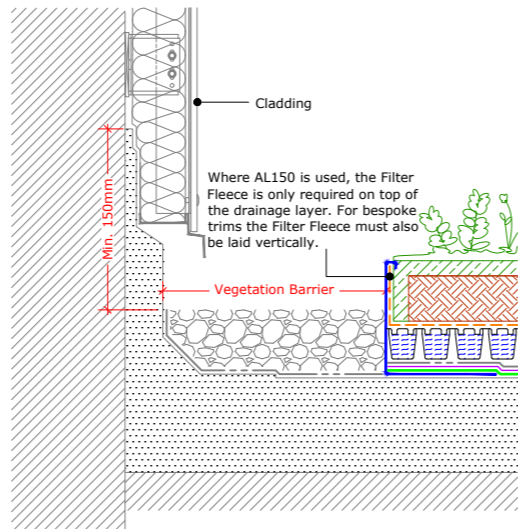
Sections and Details

2.1 Bauder Typical Details 1:10



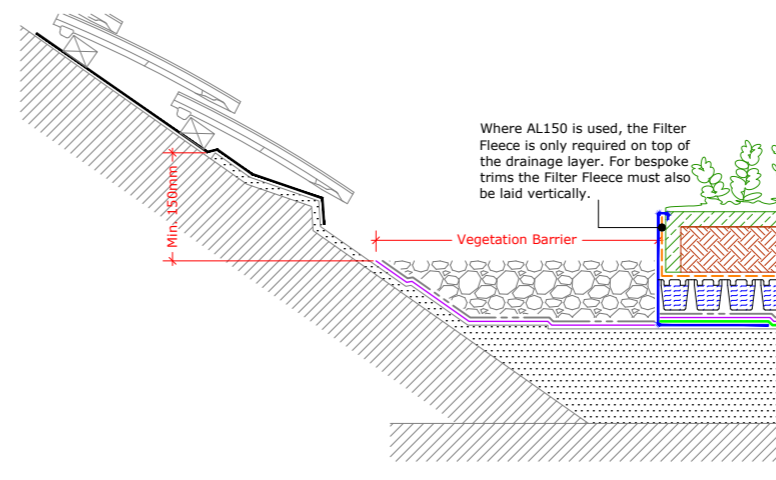
Upstand

(Drg.No: D0901/03-00W_0-4Deg_201-ExtInt-S-DB_001)



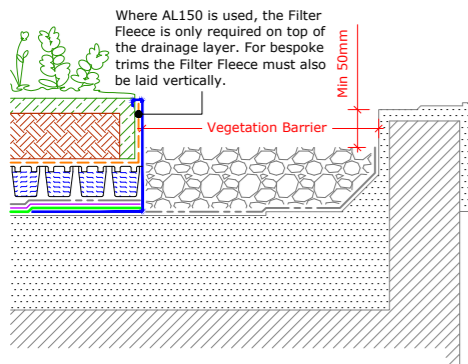
Upstand to Vertical Cladding or Slates/Tiles

(Drg.No: D0901/03-00W_0-4Deg_201-ExtInt-S-DB_002)



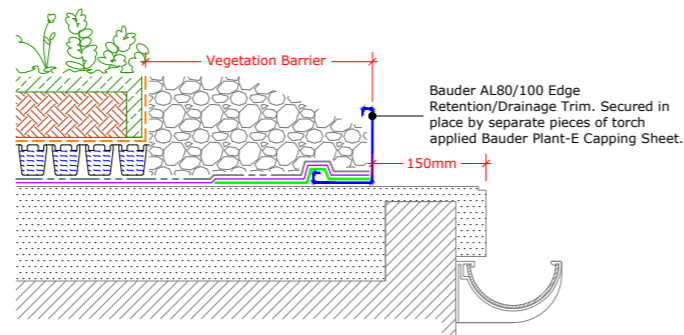
Upstand to Pitched Roof

(Drg.No: D0901/03-00W_0-4Deg_001-ExtInt-S-DB_004)



Perimeter Kerb

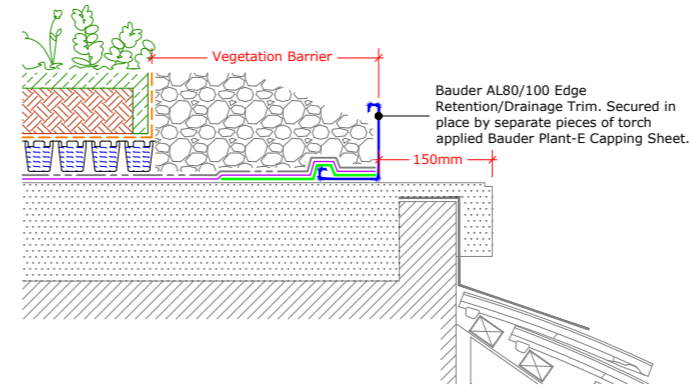
(Drg.No: D0901/03-00W_0-4Deg_002-ExtInt-S-DB_001)



External Gutter

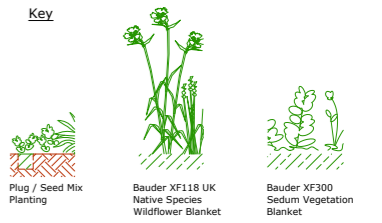
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For Sedum XF300 Blanket or Wildflower XF118 Blanket
See Alternative Detail Shown

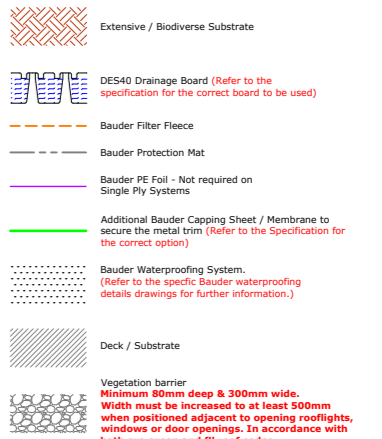


Detail to Mansard Roof - Extensive Only

(Drg.No: D0901/03-00W_0-4Deg_006-ExtInt-S-DB_006)



(Vegetation type is indicative only. Refer to the specification for the correct vegetation to be used)



AL150 Edge / Drainage trim. Secured in place by separate pieces of torch applied Bauder Plant-E Capping Sheet.
For vegetation/substrate build-up depths greater than 150mm, a bespoke perforated edge/drainage trim is required.

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

- IMPORTANT NOTES:**
- This detail is suitable for the following Bauder Systems:
Bauder Total Green Roof System
Bauderflex Green
Thermoflex and Thermoplan (Excluding Intensive)
 - This Drawing Shows Alternative Options. For the Correct Solution to be Used, Refer to the Project Specific Specification.
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 - Refer to the Bauder Specification for the product description and method of application. For clarity the method of attachment has not been shown.
 - Provision should be made by the installer for mechanically fixing the top

Rev	Date	Description	Drawn By

BAUDER

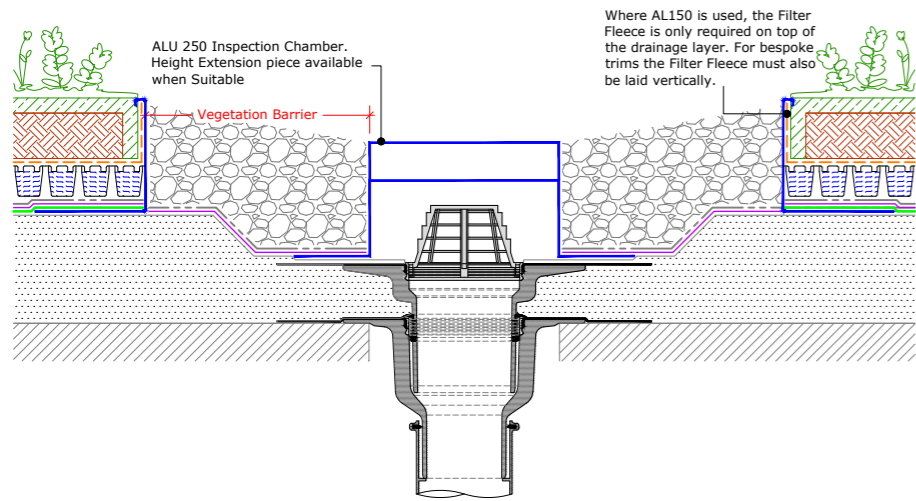
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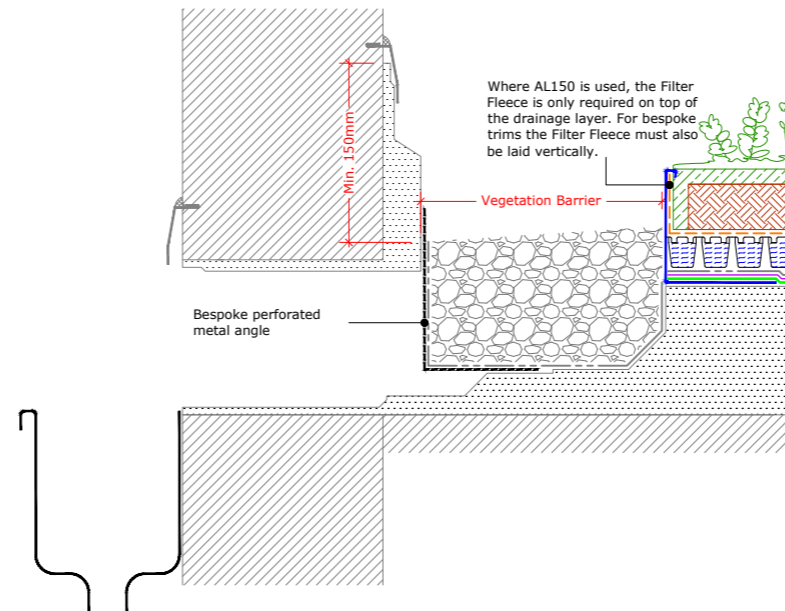
Extensive/Intensive Green Roof System (0°-4° Slope)

Sections and Details

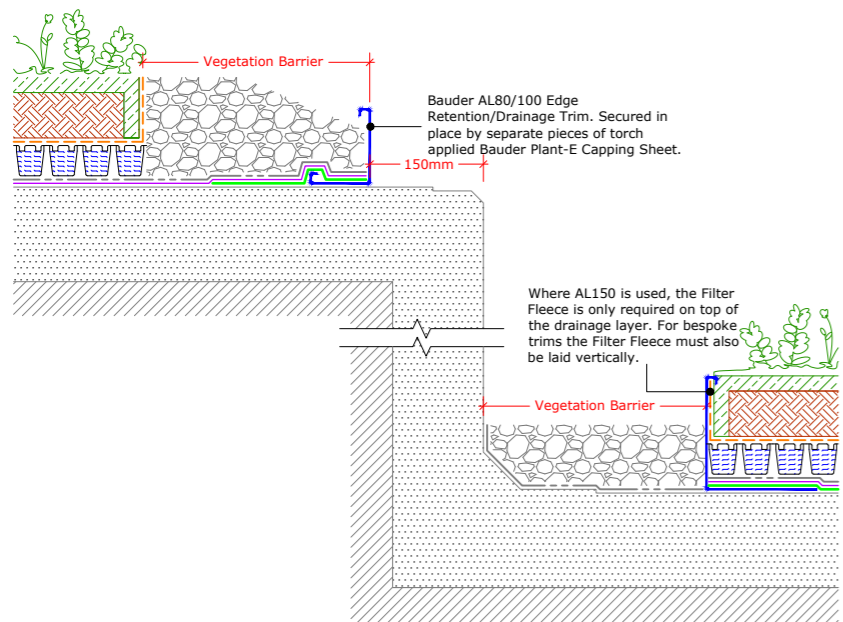
2.2 Bauder Typical Details 1:10



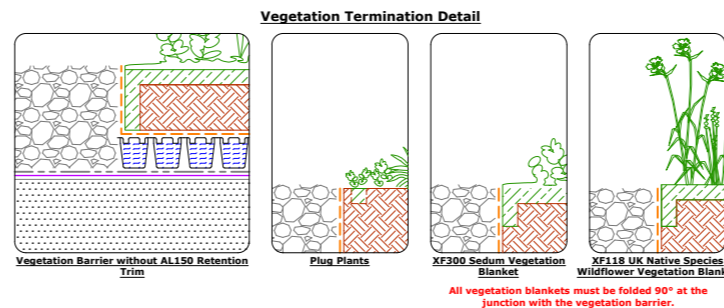
Bauder Outlet - Compact
(Drg.No: D0901/03-00W_0-4Deg_006-ExtInt-S-DB_001)



Upstand - Lead Chute
(Drg.No: D0901/03-00W_0-4Deg_206-ExtInt-S-DB_002)



Change In Levels
(Drg.No: D0901/03-00W_0-4Deg_210-ExtInt_001)



Key

- Plug / Seed Mix Planting
- Bauder XF118 UK Native Species Wildflower Blanket
- Bauder XF300 Sedum Vegetation Blanket

(Vegetation type is indicative only. Refer to the specification for the correct vegetation to be used)

- Extensive / Biodiverse Substrate
- DES40 Drainage Board (Refer to the specification for the correct board to be used)
- Bauder Filter Fleece
- Bauder Protection Mat
- Bauder PE Foli - Not required on Single Ply Systems
- Additional Bauder Capping Sheet / Membrane to secure the metal trim (Refer to the Specification for the correct option)
- Bauder Waterproofing System. (Refer to the specific Bauder waterproofing details drawings for further information.)
- Deck / Substrate
- Vegetation barrier. Minimum 50mm 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 green and fire codes.
- AL150 Edge / Drainage trim. Secured in place by separate pieces of torch applied Bauder Plant-E Capping Sheet. For vegetation/substrate build-up depths greater than 150mm, a bespoke perforated edge/drainage trim is required.

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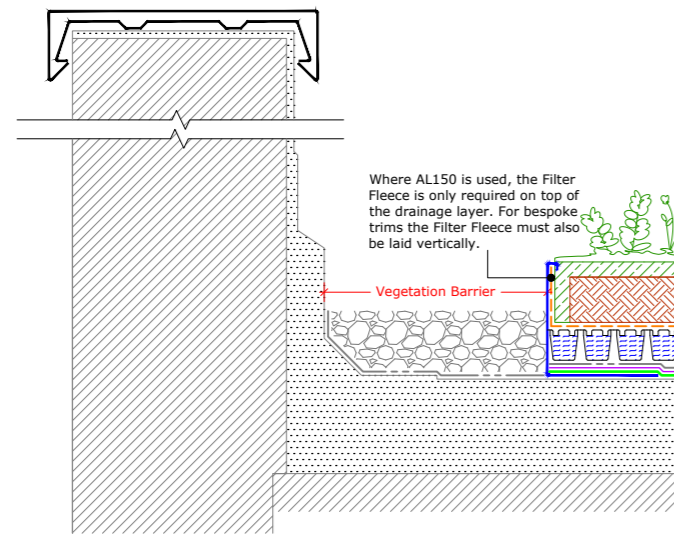
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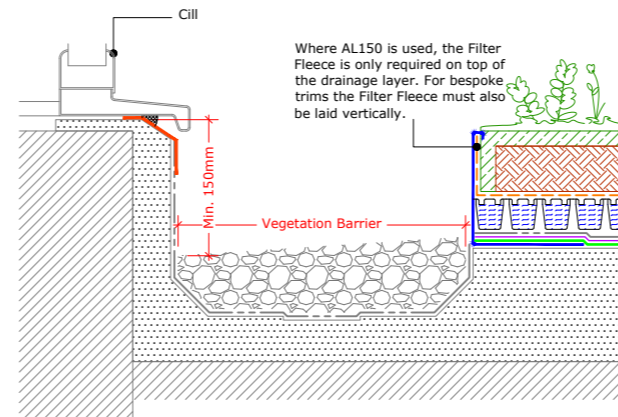
Extensive/Intensive Green Roof System (0°-4° Slope)

Sections and Details

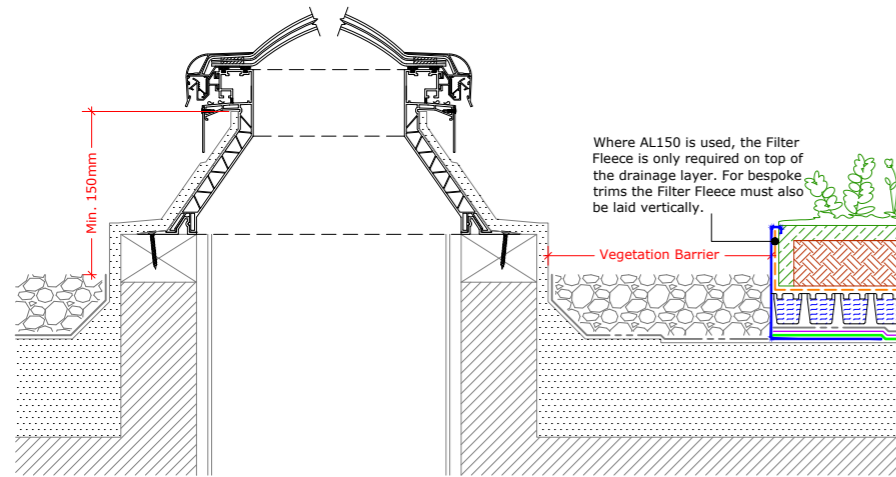
2.3 Bauder Typical Details 1:10



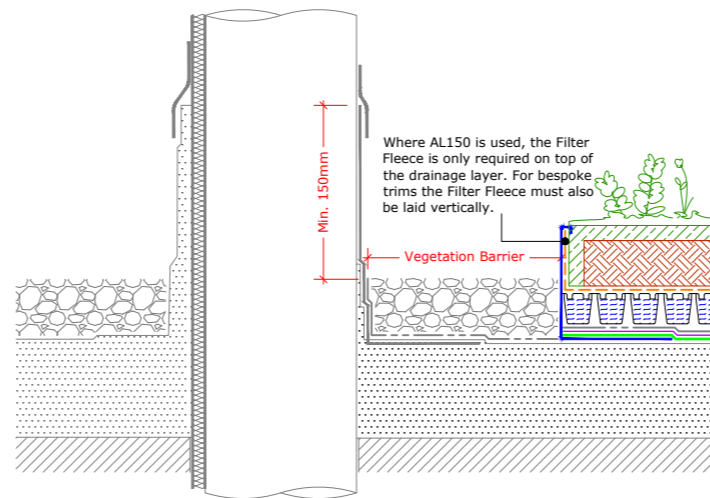
Upstand to Parapet
(Drg.No: D0901/03-00W_0-4Deg_203-ExtInt-S-DB_001)



Internal Gutter to Clerestory Window
(Drg.No: D0901/03-00W_0-4Deg_206-ExtInt-S-DB_003)



Upstand to Bauder Rooflight - Euroglaze
(Drg.No: D0901/03-00W_0-4Deg_008-ExtInt-S-DB_001)



Upstand to Hot Flue or Cold Pipe
(Drg.No: D0901/03-00W_0-4Deg_007-ExtInt-S-DB_002)

Key

Plug / Seed Mix Planting

Bauder XF118 UK Native Species Wildflower Blanket

Bauder XF300 Sedum Vegetation Blanket

(Vegetation type is indicative only. Refer to the specification for the correct vegetation to be used)

Extensive / Biodiverse Substrate

DES40 Drainage Board (Refer to the specification for the correct board to be used)

Bauder Filter Fleece

Bauder Protection Mat

Bauder PE Foil - Not required on Single Ply Systems

Additional Bauder Capping Sheet / Membrane to secure the metal trim (Refer to the Specification for the correct option)

Bauder Waterproofing System. (Refer to the specific Bauder waterproofing details drawings for further information.)

Deck / Substrate

Vegetation barrier
Minimum 50mm 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 green and fire codes.

AL150 Edge / Drainage trim. Secured in place by separate pieces of torch applied Bauder Plant-E Capping Sheet.
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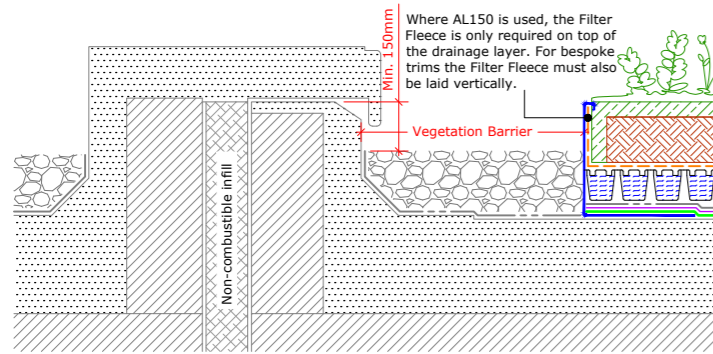
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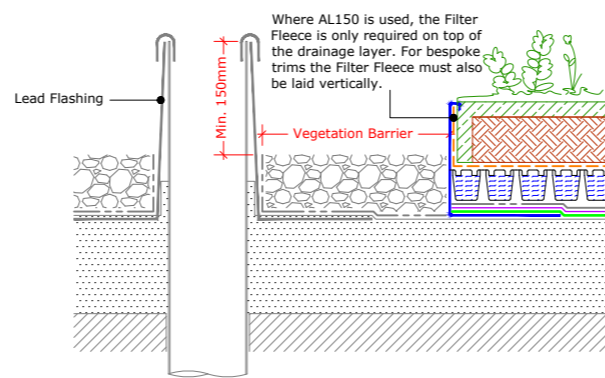
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**Extensive/Intensive Green Roof System
(0°-4° Slope)**

2.4 Bauder Typical Details 1:10



Twin Kerb Expansion Joint
(Drg.No: D0901/03-00W_0-4Deg_204-ExtInt-S-DB_001)



Soil Vent Pipe
(Drg.No: D0901/03-00W_0-4Deg_007-ExtInt-S-DB_001)

XF300 Sedum Vegetation Blanket or Sedum & Wildflower Plug Planting
(DSE20 Drainage Layer)
Alternative drainage board options available

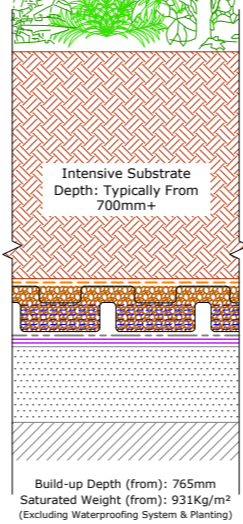
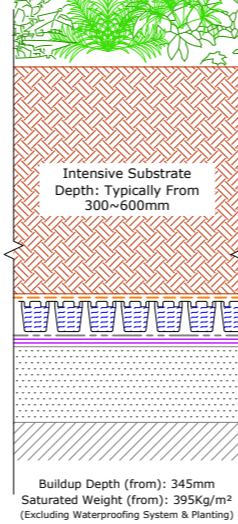
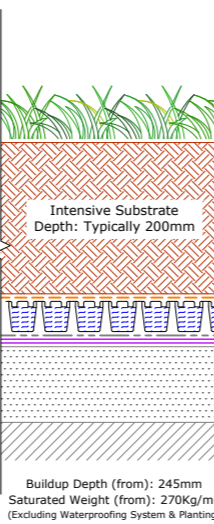
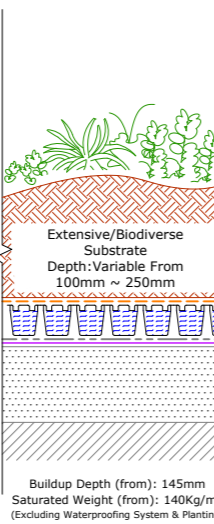
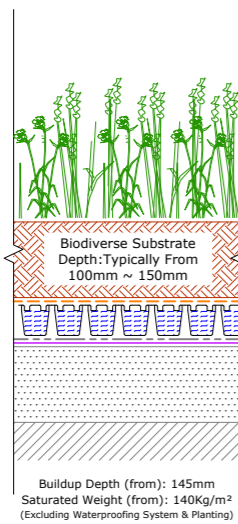
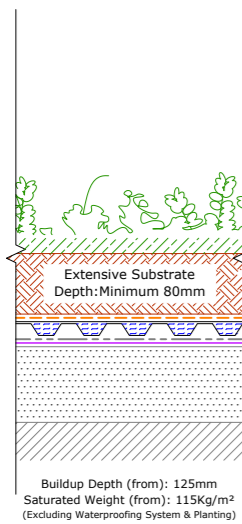
XF118 UK Native Species Wildflower Vegetation Blanket or Wildflower Plug/Seed Mix Planting
(DSE40 Drainage Layer)

Plug or Seed Mix Planting for Biodiversity Landscaping
(DSE40 Drainage Layer)

Grass/Turf
(DSE40 Drainage Layer)
Alternative drainage board options available

Planting (Medium Sized Mix Planting)
(DSE40 Drainage Layer)
Alternative drainage board options available

Planting (Large Sized Shrubs/Trees)
(DSE60 Drainage Layer)
Alternative drainage board options available



Extensive Soft Landscaping

Substrate Based Landscape Options

(Heights and weight loadings may vary, allowance must be made for any fully established planting / vegetation and landscaping)

Intensive Soft Landscaping

Key

(Vegetation type is indicative only. Refer to the specification for the correct vegetation to be used)

- Extensive / Biodiverse Substrate
- DES40 Drainage Board (Refer to the specification for the correct board to be used)
- Bauder Filter Fleece
- Bauder Protection Mat
- Bauder PE Foli - Not required on Single Ply Systems
- Additional Bauder Capping Sheet / Membrane to secure the metal trim (Refer to the Specification for the correct option)
- Bauder Waterproofing System. (Refer to the specific Bauder waterproofing details drawings for further information.)
- 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 green and fire codes.
- AL150 Edge / Drainage trim. Secured in place by separate pieces of torch applied Bauder Plant-E Capping Sheet. For vegetation/substrate build-up depths greater than 150mm, a bespoke perforated edge/drainage trim is required.

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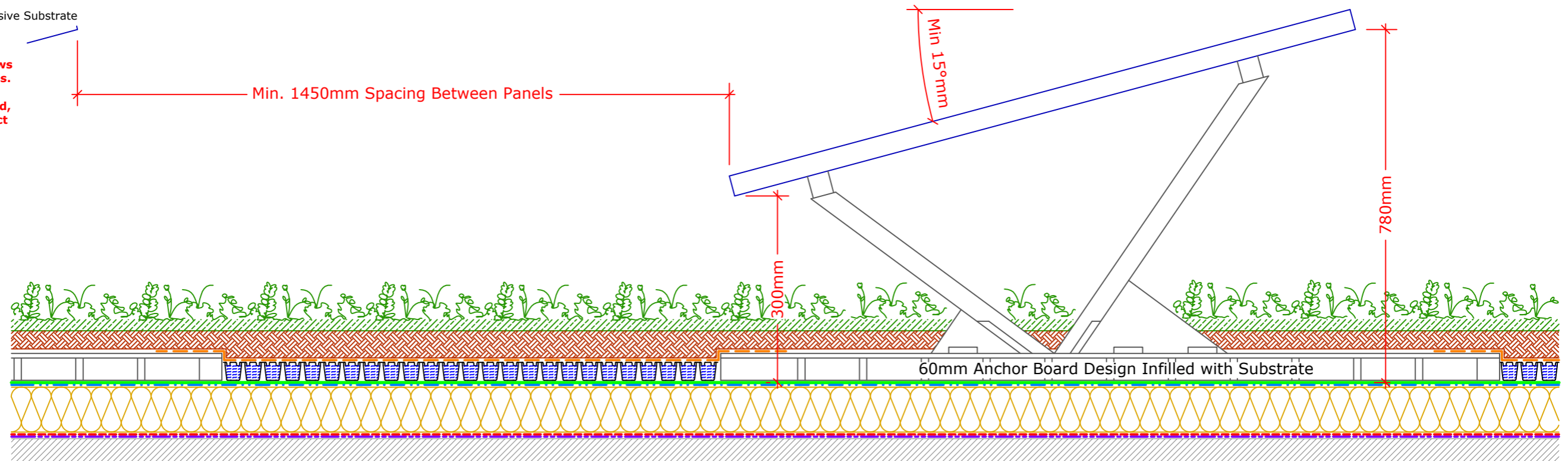
Extensive/Intensive Green Roof System
(0°-4° Slope)

2.5 Bauder Typical Details

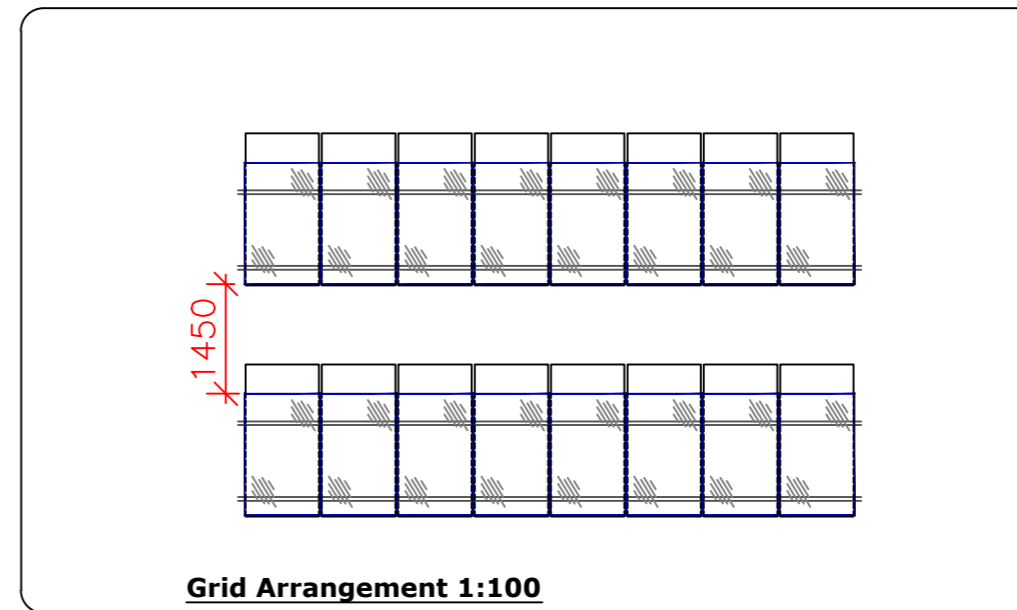
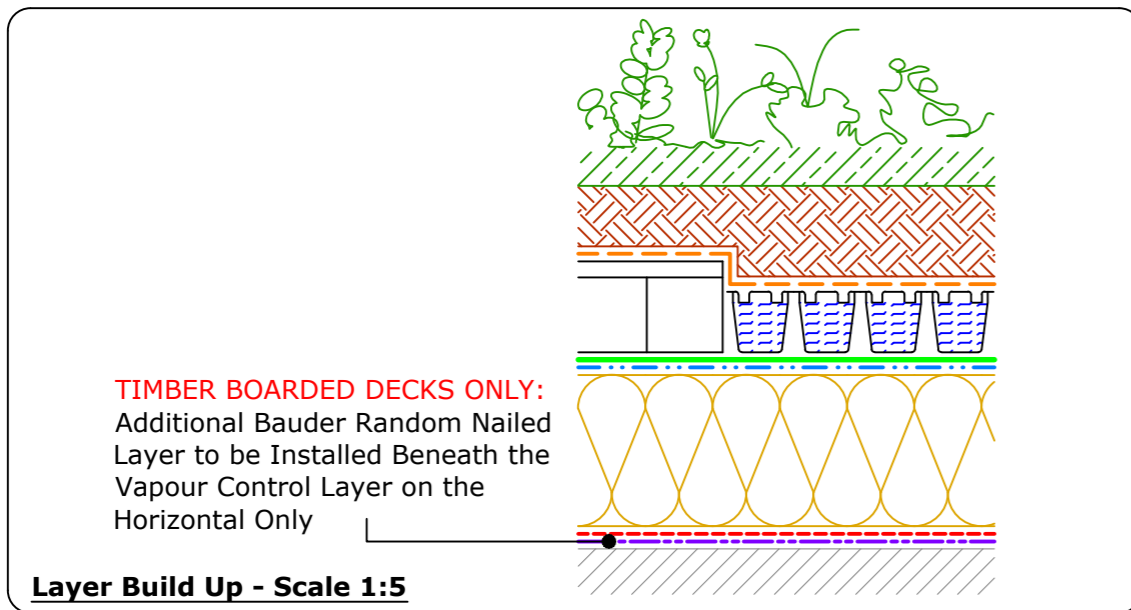
Key

-  Bauder Capping Sheet
-  Bauder Underlayer
-  Bauder Insulation
-  Bauder Vapour Control Layer
-  Bauder Random Nailed Layer used on **TIMBER BOARDED DECKS ONLY**
-  Bauder Filter Fleece
-  Unknown Deck / Substrate
-  Extensive Substrate

IMPORTANT NOTE:
 This Drawing Shows Alternative Options. For the Correct Solution to be Used, Refer to the Project Specific Specification.



Bauder BioSolar Module Section - Scale 1:10



PV - BioSolar

IMPORTANT NOTES:

1. This detail is suitable for the following Bauder Systems: **Bauder Total Roof System, Bauderflex, Airtech**
2. Do not scale to ascertain dimensions.
3. All dimensions are in Millimetres and are to be checked and verified on site prior to commencement of work.
4. This drawing is to be read in conjunction with the specification and associated drawings.
5. 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.
6. **Refer to the Bauder Specification for the deck type, product description and method of application. For clarity the method of attachment has not been shown.**
7. 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.

BITUMINOUS STANDARD DETAIL




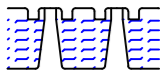



Scale:	Drawing Number	Issue:
1:5 @ A3	D0100-00W_011-002	01
Drawn By: KM	Checked By: PCH	Approved By: Date:



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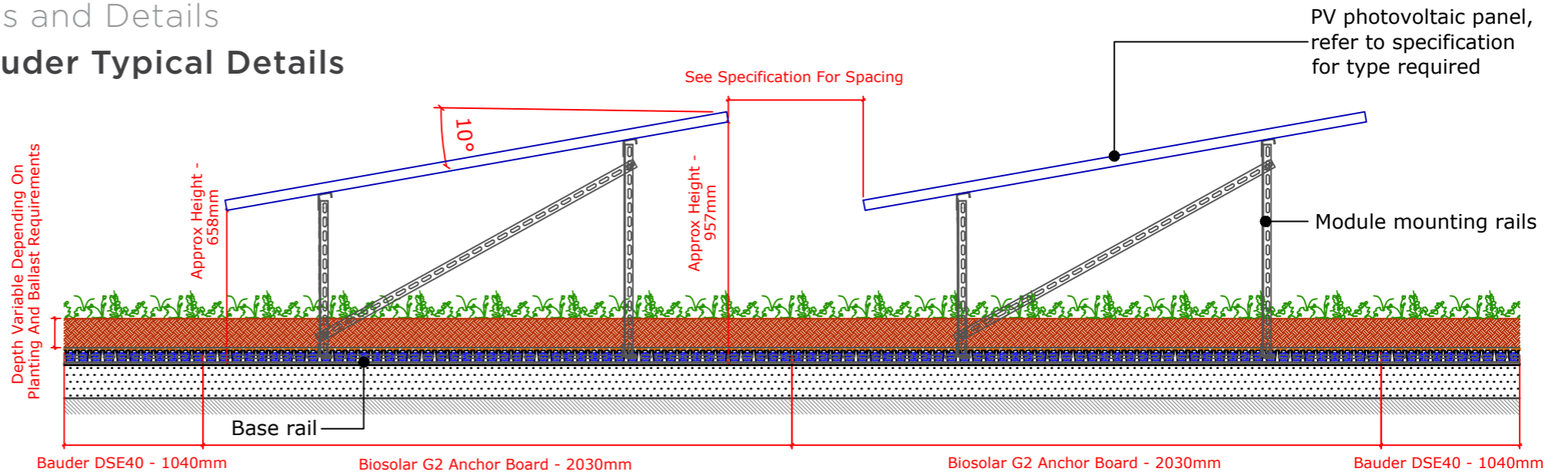
Key

-  Bauder Flora 3 Seed Mix
(Vegetation type is indicative only. Refer to the specification for the correct vegetation to be Used)
-  Biodiverse Substrate
-  Bauder Filter Fleece
-  Bauder Biosolar G2 Anchor Board Or DSE40 Drainage Board As Required *(Refer to the specification for the correct board to be used)*
-  Bauder Protection Mat
-  Bauder Waterproofing System. *(Refer to the specific Bauder waterproofing details drawings for further information.)*
-  Deck / Substrate

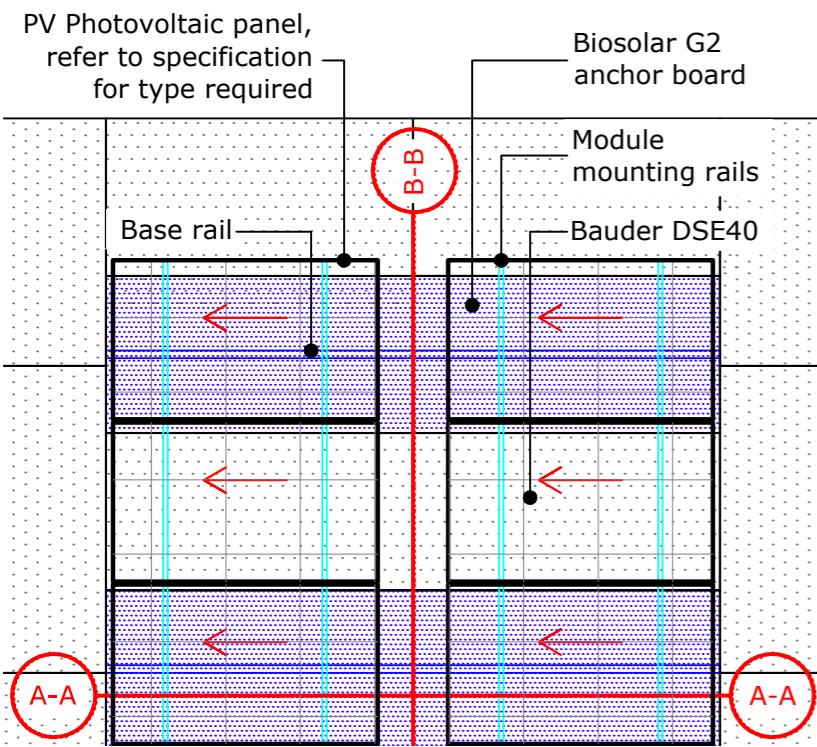
IMPORTANT NOTE:
 This drawing shows alternative details. For the correct solution to be used, refer to the project specific specification.

Sections and Details

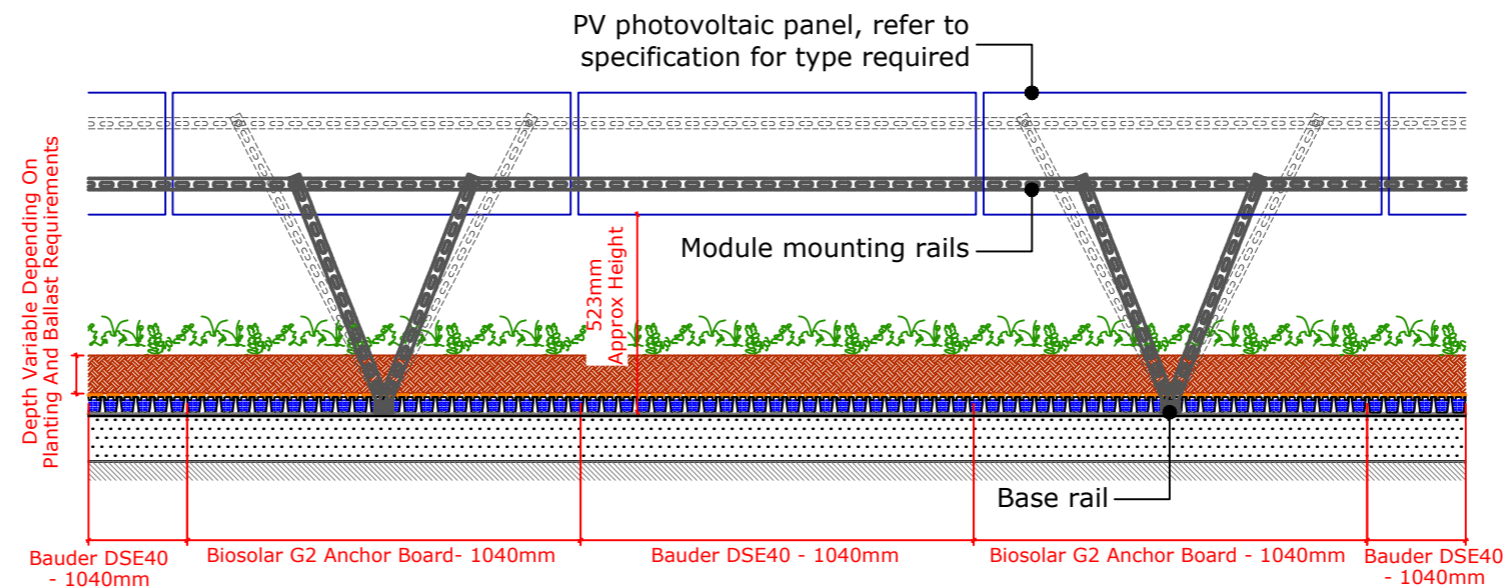
2.6 Bauder Typical Details



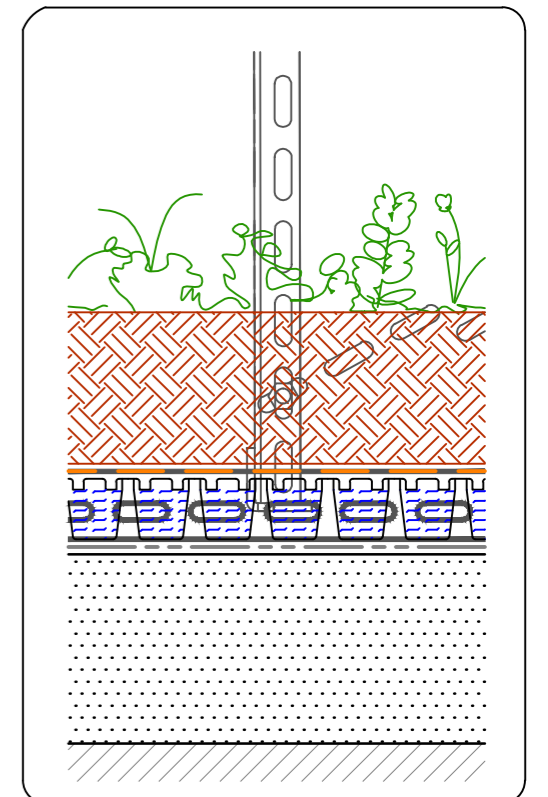
Bauder Biosolar Module Section - Cross Section A-A - Scale 1:20



Bauder Biosolar Module Section - Top Elevation - Scale 1:50



Bauder Biosolar Module Section - Cross Section B-B - Scale 1:20



Layer Build-up - Scale 1:5

PV - Biosolar - Two System South

IMPORTANT NOTES:

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4. This drawing is to be read in conjunction with the specification and associated drawings.
5. 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.
6. **Refer to the Bauder Specification for the deck type, product description and method of application. For clarity the method of attachment has not been shown.**
7. 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.

**Green Roof
 STANDARD DETAIL**

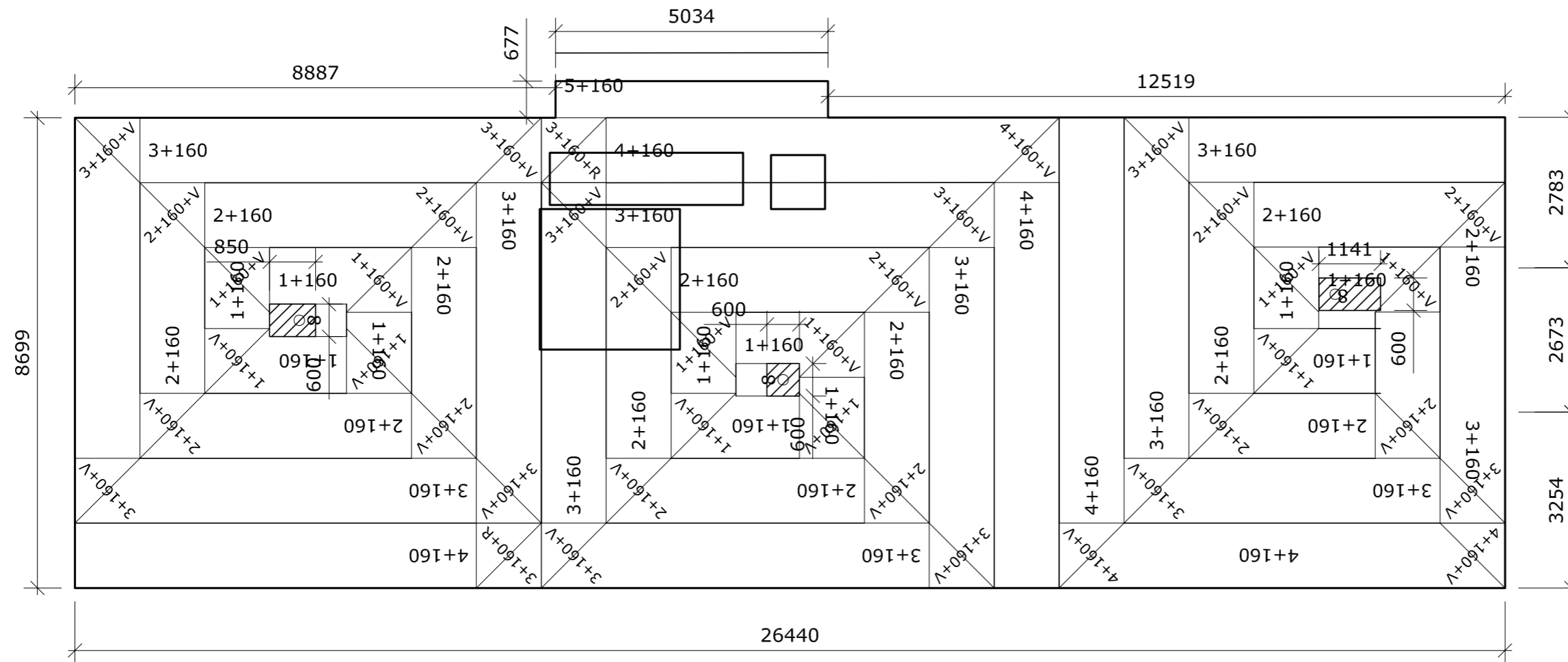
Scale:	Drawing Number	Rev:
1:20 @A3	D0100-00W_011-003	A
Drawn By: CD	Checked By: PH	Approved By: TR
	Date:	21.04.22





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2.7 Bauder Tapered insulation Scheme (1:100)





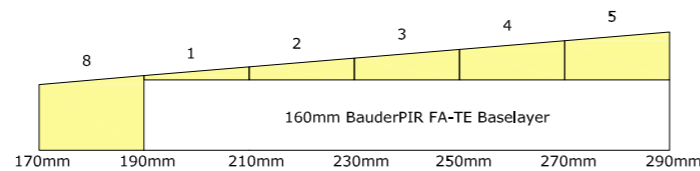
Key:

-  = 160mm BauderPIR FA-TE Flatboard - NO Baselayer
-  = 100mm + 160mm BauderPIR FA-TE Flatboard

1:60 BauderPIR FA G16 Tapered Boards (1200mm x 1200mm)

Start Laying Scheme at high point

-  BauderPIR KFS (Valley Filling)
-  BauderPIR GFS (Ridge Filling)

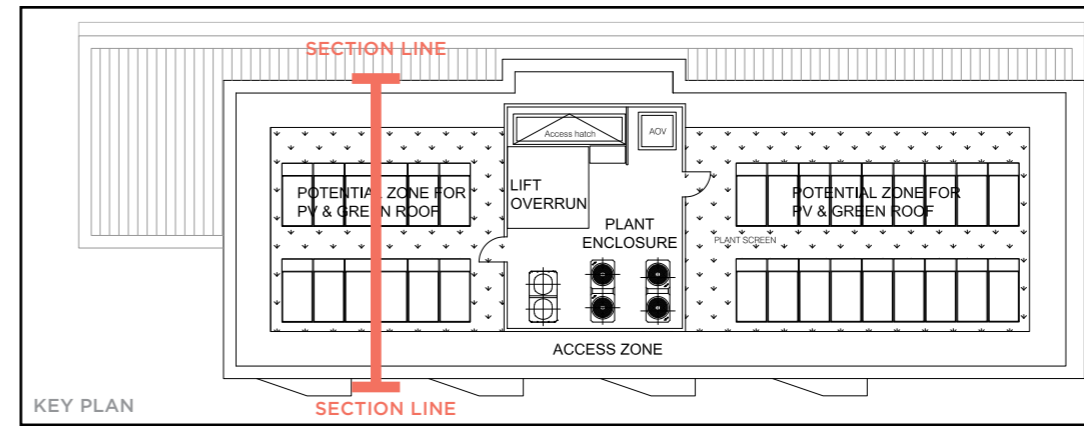


Sections and Details

2.8 1:20 Section Through Living Roof

MAIN ROOF LEGEND

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> 1 RC CONCRETE SLAB TO S.E.s DETAILS AND SPECIFICATION 2 BAUDER VAPOUR BARRIER 3 160MM BAUDER PIR FA-TE FLATBOARD LAID IN ACCORDANCE WITH BAUDERS DETAILS AND RECOMMENDATIONS 4 BAUDER PIR TAPERED INSULATION DESIGNED TO 1:60 FALLS LAID OVER 160MM BAUDER FLATBOARD TO ACHIEVE U-VALUE OF 0.009 WM²K WITH MAX INSULATION OF 270MM IN ACCORDANCE WITH BAUDERS DETAILS AND RECOMMENDATIONS 5 BAUDER UNDERLAY 6 BAUDER CAP SHEET 7 BAUDER PE FOIL 8 BAUDER PROTECTION MAT 9 BAUDER DSE BOARD 10 BAUDER FILTER FLEECE | <ul style="list-style-type: none"> 11 BAUDER SUBSTRATE 12 BAUDER FLORA 3 BIODIVERSE SEED MIX LAID IN ACCORDANCE WITH BAUDER DETAILS AND RECOMMENDATIONS 13 SFS UPSTAND – 100MM STEEL FRAME SYSTEM WITH 100MM ROCKWOOL NYROCK STEEL FRAME SLAB 032 MINERAL WOOL INSULATION FULLY PACKED BETWEEN STUDS. 14 18MM WBP EXTERIOR GRADE PLYWOOD FIXED TO FACE AND TOP OF SFS AND PROJECTING ACROSS THE TOP OF THE WALL TO PROVIDE FIXING ZONE FOR THE COPING 15 PPC ALUMINIUM PARAPET ALIFAB ARCHITECTURAL COPING WITH CONCEALED FIXINGS, SLEEVED JOINTS TO BE GASKET PROTECTED AND CLIPPED, FALL TOWARDS FLAT ROOF, APPROVED, BRACKETS / STRAPS FIXED TO WBP PLY FINISH; PPC RAL 9003 16 BAUDER MEMBRANES TO BE SEALED UP AND OVER UPSTAND IN ACCORDANCE WITH BAUDER DETAILS AND SPECIFICATION. 17 100X100X2MM CONTINUOUS STEEL ANGLE TO SUPPORT PLY AS REQUIRED | <ul style="list-style-type: none"> 18 BAUDER PIR ANGLE FILLET INSULATION TO PERIMETER AND UPSTANDS 19 BAUDER STONE VEGETATION BARRIER 300MM WIDE TO ENSURE 150MM UPSTANDS ARE ACHIEVED. 20 BAUDER L150 EDGE / DRAINAGE TRIM, SECURED IN PLACE BY SEPARATE PIECES OF TORCH APPLIED BAUDER PLANT-E CAPPING SHEET. 21 BAUDER BIOSOLAR PV PANEL MOUNTED AT 15 DEGREES ON A BAUDER SOLAR G LIGHT MOUNTING SYSTEM AND INSTALLED TO BAUDER'S DETAILS AND SPECIFICATION. 22 60MM ANCHOR BOARD INFILLED WITH BAUDER SUBSTRATE TO ACT AS BALLAST FOR PVS 23 BAUDER INSULATED OUTLET WITH EXTENSION UNIT TO BAUDER ALU 250 INSPECTION CHAMBER OVER INSULATED OUTLET AS REQUIRED 24 FACADE BUILD UP AS PER 21 SERIES DETAILS |
|--|---|---|



General Notes

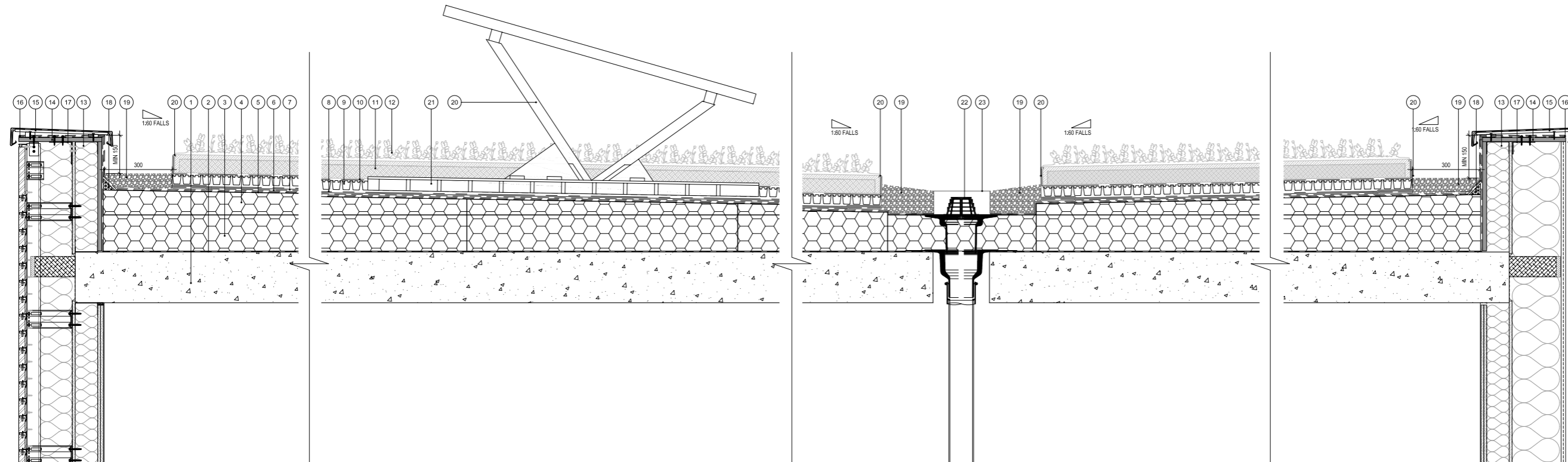
The drawing is copyright of Darling Associates. This drawing shall not be scaled. All dimensions are in mm unless otherwise stated. All dimensions shall be checked on site prior to commencing the works and any discrepancies to be reported to Darling Associates. All works shall conform to the current edition of the building regulations and other statutory requirements. All materials and workmanship shall conform with the relevant British Standard specifications and codes of practice. If this drawing forms part of an application for planning permission, it shall not be used for any other purpose without the express permission of Darling Associates. This drawing may incorporate information from other professionals. Darling Associates cannot accept responsibility for the integrity and accuracy of such information. Any clarification and/or additions that are required pertaining to such information should be sought from the relevant profession or their appointment representative.

Drawings, specifications and schedules are to be read in conjunction with the following where applicable: Employer's Requirements documents, Agreements to Lease, Structural Engineer's drawings and specifications, Civil Engineer's drawings and specifications, Survey Drawings, Party Wall Boundary Awards, Other specialist design consultant's requirements as appointed by the Main Contractor. Other specialist design sub-contractor's requirements as appointed by the Main Contractor.

0 100mm 500mm 1000mm 1200mm

Notes

1. DAA drawings are to be read in conjunction with relevant:
 - 1.1. Documents
 - 1.2. Detail Drawings
 - 1.3. Specifications
2. Roof designed to 1:60 falls. Details subject to review by Building Control on suitability of 0 falls approach.
3. U-value requirements:
 - Walls - 0.18W/m²K
 - Roof - 0.10W/m²K
 - Ground Floor - 0.15W/m²K
 - Windows - 1.2W/m²K (0.4 G Value)



1 ROOF PARAPET FRONT (STEPENSONS WAY) FACADE DETAIL
SCALE 1:20 @A3

2 LIVING ROOF PV DETAIL
SCALE 1:20 @A3

4 LIVING ROOF INSULATED OUTLET DETAIL
SCALE 1:20 @A3

4 ROOF PARAPET REAR FACADE DETAIL
SCALE 1:20 @A3

3 Details of planting Species and Density

3.1 Planting Specification

Vegetation for BioSOLAR systems Plants that will thrive on a Bauder BioSOLAR green roof must be low growing so as not to shade the PV panels, and shade tolerant if they are to grow under the panels.

Bauder's Flora 3 native seed mix has been specially designed to give a broad mixture of sun and shade tolerant species that are naturally low growing. This is the ideal mix for in front of and under the panels.

Name	Sub-Heading	Description	No. of Species	Wild Flowers	Annuals	Sedge & Grasses	Sedum	Coverage	RHS P for P	Laval Food
BauderGREEN Flora 3 Seed Mix GB 50120403	General - BioSOLAR	A broad mix of low growing and some shade tolerant species ideal, for most roof environments. It is also the mix Bauder Recommend for BioSOLAR installations.	49	31 (65%)	8 (20%)	8 (15%)	2	100g per m ²	35	12

BAUDER FLORA 3 SEED MIX

BioSOLAR

The Bauder Flora 3 Seed Mix is a blend of seed, tackifier and additives developed to maximise diversity of vegetation on green roofs. Bauder Flora 3 has all the components required to improve the germination and the successful establishment of vegetation for a variety of rooftop conditions: light and shade; exposed and sheltered. The varied mix of species

is designed to deliver the British native, biodiverse species required for BREEAM compliance.

Bauder Flora 3 contains a broad range of wildflowers chosen to give an extended flowering season providing nectar and pollen rich habitat for priority pollinators, larval food plants for butterflies and seed sources for birds.



Mix Details:

- **UK Native British Provenance Seed Mix** (certification on request)
- **49 Species**
 - 31 species of which eight are annuals
 - 8 Grasses/Sedge
 - 2 Sedum species
- **35 of the wildflowers are classed as RHS Perfect for Pollinators**
- 12 Butterfly and moth larval food plants.
- Shade tolerant species.
- Low growing to medium height.
- **Mix percentages; 65% perennial wildflowers, 20% annuals & 15% grasses.**



Key Specification Features

- Very broad spectrum of species ensuring a broad diversity of created habitats.
- Lengthy flowering season – April to October.
- High number of annuals to give excellent colour in first year.
- Shade tolerant species to give coverage in less sunny locations.
- Low growing plants with good wind tolerance suited to exposed locations.
- Ideal mix for BioSOLAR installations establishing quickly to provide substrate stabilisation.
- Designed to deliver British native, biodiverse species required for BREEAM compliance.

Ecological Value

This Flora 3 plant mix has a high ecological value providing a long flowering period and nectar sources for a wide variety of pollinators. Plants with long flower tubes such as Wild Red Clover and Vetch species will provide valuable nectar sources for Long-tongued Bumblebee species including the priority species Brown-banded Carder Bee.

Bird's-foot Trefoil and Kidney Vetch make up 20% of the mix, which are important larval food plants for ten butterfly and moth species, including common and small blue priority species. Plant seed heads provide refuge and overwintering sites for invertebrates and our mix includes Black Knapweed and Common Toadflax, which provide valuable seed sources for birds.

The yellow composite flowers such as Rough Hawkbit and Mouseear Hawkweed in this mix provide good nectar sources for generalist pollinators including hoverflies and beetles. The mix also contains native and or naturalised sedums that will provide evergreen ground cover in sunny areas and can support specialist invertebrates such as the notable bug species *Chlamydatius evanescens*.

BAUDER FLORA 3 SEED MIX

Establishment and Growth

Typically the mix will produce flowers from April to October starting with species Wild Strawberry and Cowslip, through the summer with Yarrow and Black Knapweed with Lady's Bedstraw flowering later into the autumn. The annuals, biennials and grasses will provide cover and colour in the first season allowing time for the slower growing perennials to establish in later years. The mix has been specified to be drought tolerant with sedum species and low growing perennials. Plants are chosen that do not exceed 40 cm in height to avoid problems with shading of solar panels when the vegetation is used in conjunction with Bauder BioSOLAR. Shade tolerant ground cover plants were specified that will occupy semi-shade microclimates under the panels.

Green roofs are exposed environments subject to wind erosion therefore the mix contains pioneer and ephemeral species such as annuals, biennials and short perennials, which establish quickly from seed and help to stabilise the substrate and prevent wind erosion prior to perennial root systems getting established. A small percentage (typically <15%) of the mix contains non-aggressive grass and sedge species, which will also help to establish and stabilise the substrate.

The seed source is British Provenance (with the exception of sedum species) and suppliers of the mix adopt the Flora Locale Code of Practice for collectors, growers and suppliers of native flora.

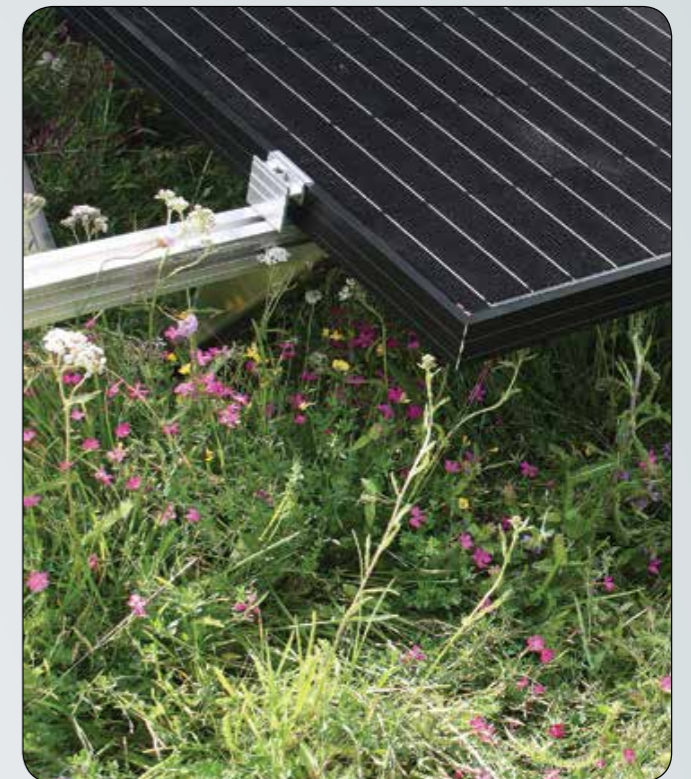


(Flora locale is an independent charity. Promoting and advancing the conservation and enhancement of native wild plant populations)

Bauder's Unique Additive Mix

Establishing seed at roof level is difficult, to maximise the germination and establishment of the diverse range of seed used, Bauder has developed a unique blend of seed adhesive, organic nutrients and mycorrhizal fungi to encourage water and nutrient uptake by the developing seedlings.

- The seed mix and additives are combined with a bulking agent which enable the correct sowing rate to be achieved, the adhesive binds the seed to the substrate preventing it from being blown away in windy conditions or washed deep into the substrate and failing to germinate.
- A small quantity of organic slow release fertiliser gives the seed a gentle boost as it establishes. Mycorrhizal fung increases the root surface area helping the transfer of water and nutrients from the substrate to the developing root system of the plant, enabling the plants to establish quickly.



BAUDER

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