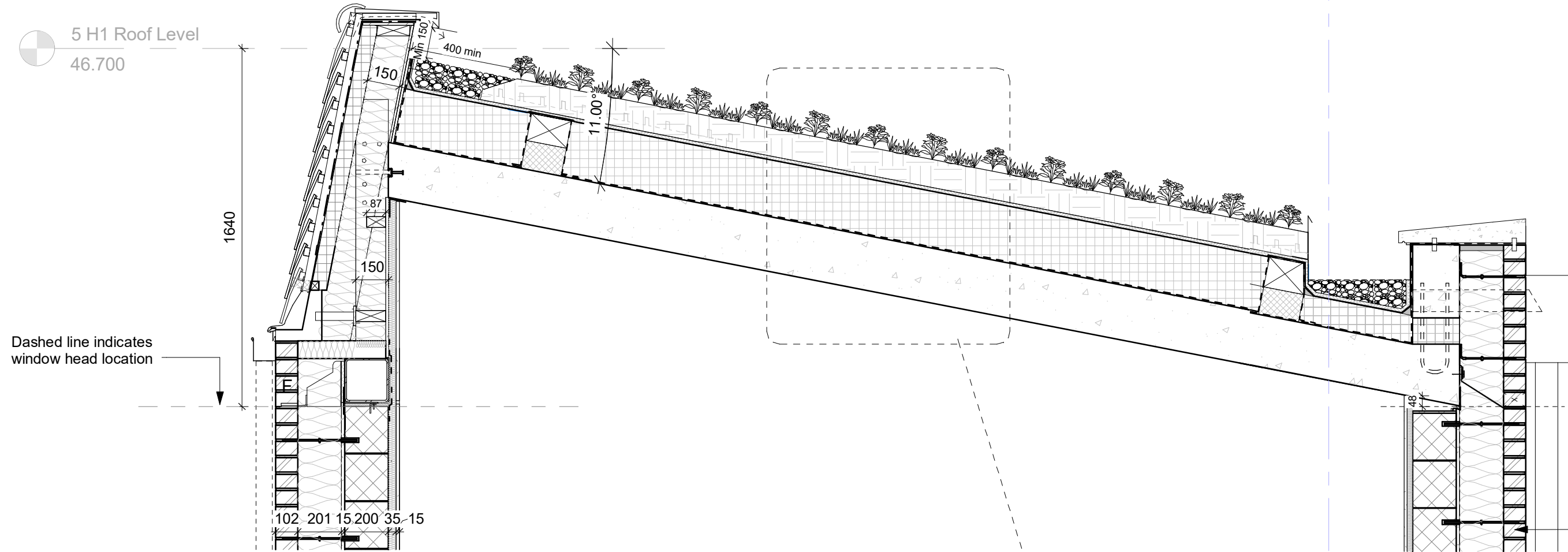


5 H1 Roof Level  
46.700



### 1 Biodiverse green roof build up (Native British Seed mix with 30% plug plants)

1 : 20

#### Site Specific Habitat Management Plan for Agar Grove Block F and H Intensive planted roof.

1. Landscape Management Objectives
2. Background to the Management Plan
3. Review of the Management Plan
4. Maintenance Programme
5. Maintenance and Monitoring

Initial 10 weeks  
Establishment Period 1-2 yrs  
Maintenance Period 3-5 yrs

To be read in conjunction with Archtype's drawings & specification

#### 1. Landscape Management Objectives

The landscape and habitat management plan for Agar Grove is based on the initial Ecology report and subsequent biodiversity specification for the roof areas. The key components of which are:

- A broad variety of sustainable habitat such as: planted areas and unplanted areas with re-used crush and fill, to create a bio-diverse spaces.
- An increasing number of flora and fora species present on the site.

The Plan is detailed in the Design & Access Statement - Landscape Section 7.9  
To be read in conjunction with the roof plan of the green / brown roof areas.

#### 2. Back ground Information

Extract from Camden BAP:

Planting:

- Planting should consider the climate, microclimate, plant attributes and objectives.
- Vegetation can establish either through natural colonisation or planting
- Colonisation can produce habitat of high value but can also create problems with undesirable species.
- The sowing of annuals or plug planting combined with seeding can be beneficial as it provides a resource for species for the first few years during establishment
- **Sedum** has less biodiversity value but can still deliver drainage benefits etc. and can be combined with other plantings and substrates (on biodiverse roofs should be less than 30%).
- **Wildflowers** provide a habitat for beetles, bees, butterflies and moths. Planting density should be 15-20 species/m2. In addition to constituting the main planting for biodiverse green roofs, they can be incorporated into extensive brown roofs and sedum roofs. Mosses, succulents and grasses can provide additional variation.
- **Shrubs and cover** can be provided depending on structural considerations and substrate depth and can provide cover for wildlife, perches and winter food for birds, and windbreaks.

Other Biodiversity Features:

- **Over-wintering** vegetation allows many invertebrates to complete their lifecycle;
- **Log piles** and **deadwood** can provide habitat and perches for invertebrates and birds;
- **Bee banks** are mounds of sand and provide valuable nesting sites;
- **Stones and mounds** of cleaned bricks can provide insect and spider habitat;
- **Ponds and wet areas** can provide a valuable resource for many species;
- **Bug hotels** and **habitat walls** for nesting and overwintering invertebrates.

#### 3. 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.

#### 4. Maintenance Programme

2 visits per year in Spring/summer and autumn for five years. Additional monitoring visit in summer of second and fifth year.  
Work to be carried out by Bauder Green Roof Maintenance.

Note: None of the green roof are designed to be trafficked in any way, the roofs should not be accessed by anyone except for repair or essential maintenance works, any damage to the surface finishes of the roofs should be reported to Bauder immediately.

#### Initial 10 weeks (directly after installation):

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

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

#### Monitoring:

Assess the % failure of plugs 10 weeks after planting. If failure rate are greater than 40% the failed plugs should be replaced. Any species with a >75% failure rate should be substituted.

#### Establishment Period (Yrs 1-2)

Maintenance. During the first 2 years maintenance visits should 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 silt and detritus

Biodiverse Roofs work required:

- Remove unwanted and invasive weeds.
- Log piles: check for movement caused by wind or animal activity
- Wet area: check the liner material is still buried and has not become exposed.
- Sand and stone piles: If required weed some areas of sand to insure bare ground is present in some locations
- Wildflower areas: Cut and remove flower seed heads and taller grasses above 150mm. if required (during autumn visit only).

#### 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. After an initial introduction of 27 Plus plant species onto the range of roof habitats
- Assessment of the success of the wet area, log piles. Stone and sand areas with details of what species are flourishing in these area.
- Assess the % failure of plugs. If failure rate are greater than 40% the plugs should be replaced. Any species with a >75% failure rate should be substituted.

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

#### Sedum Areas

Sedum is not tolerant of foot traffic. Access to the sedum areas should 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 Xeroflor and sedum cuttings

#### Maintenance Period (Yrs 3-5)

Maintenance. During the years three to five maintenance visits should 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 silt and detritus

Biodiverse Roofs work required:

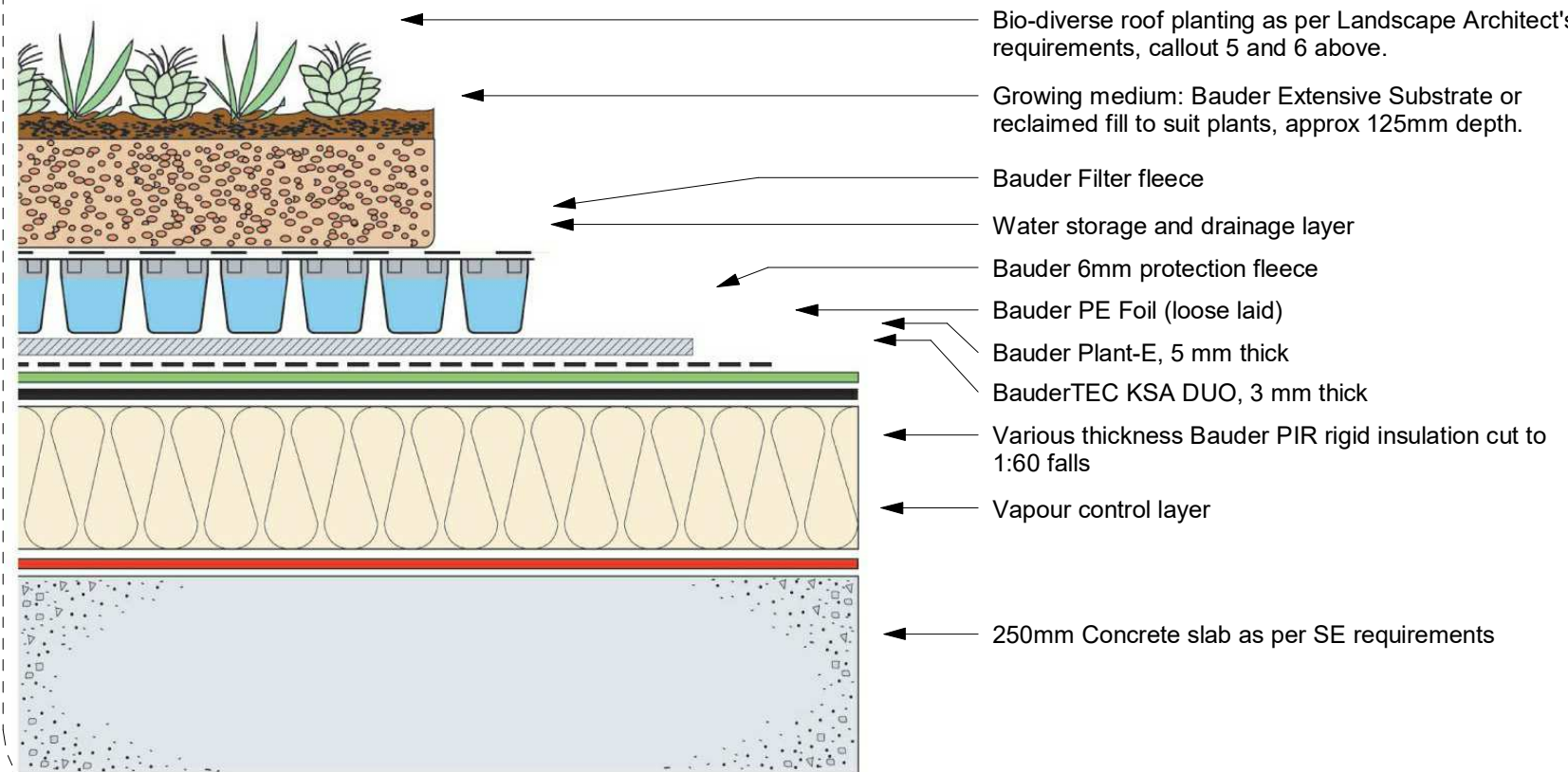
- Remove unwanted and invasive weeds.
- Log Piles: check for movement caused by wind or animal activity
- Wet area: check the liner material is still buried and has not become exposed.
- Sand and stone piles: If required weed some areas of sand to insure bare ground is present in some locations
- Wildflower: Assess the percentage coverage of wildflowers
- Cut and remove flower seed heads and taller grasses (above 150mm) if required during Autumn visit only



### 3D Sectional Diagram of Roof Build Up of Flora 3/UK Native British Provenance Seed Mix

#### Product

- 1 Vegetation - individually selected plants to meet desired finish
- 2 Biodiverse substrate - usually 80-150mm deep to support the selected plants
- 3 Filter Fleece
- 4 DSE 40 water retention and drainage layer
- 5 FSM 600 protection mat
- 6 PE Foil separation layer



4 H1 Fourth Floor  
42.650

### 2 Bauder XF301 Sedum blanket roof build up

1 : 20

#### 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 'Weihestephaner Gold'  
Sedum montanum subsp. orientale  
Sedum pulchellum  
Sedum rupestre (reflexum)  
Sedum sexangulare  
Sedum spurium mesemlanthemum = Delosferma  
Sedum spurium mesemlanthemum = hallii  
Sedum verticillatum

### 3 XF301 Sedum Blanket species list

70% seed mix for Extensive green roof build up for main roofs on block H and F (see 30% Plug plant species in separate list)

UK Native British Provenance Seed Mix  
Mix percentages 65% perennial wild flowers, 20% annuals and 15% grasses  
49 Species  
- 31 annual species including 8 Grasses/Sedge  
- 2 Sedum species  
- 12 Butterfly and moth larval food plants.  
Shade tolerant species.  
Low growing to medium height.

### 4 Flora 3 Seedmix

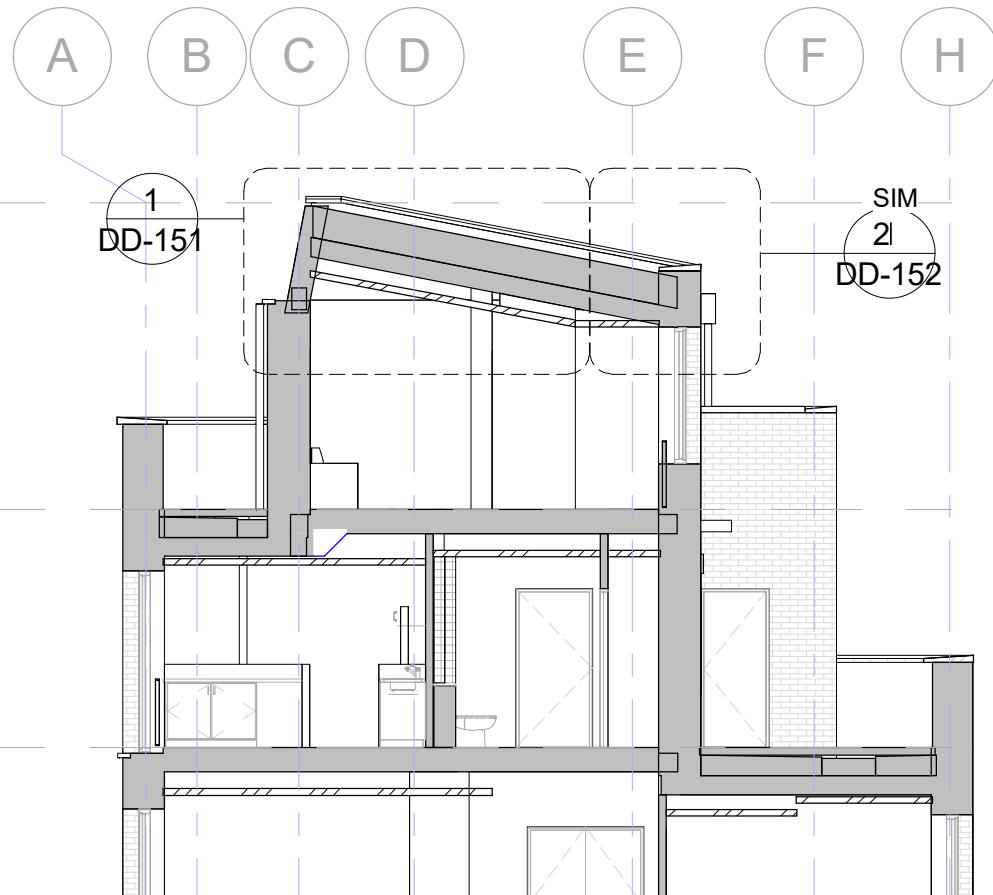
Achillea tomentosa  
Allium sphaerocephalon  
Campanula rotundifolia  
Dianthus deltoides  
Euphorbia cyparissias  
Hysopus officinalis  
Muscari  
Petrorhagia saxifraga  
Potentilla verena  
Prunella vulgaris  
Sempervivum  
Teucrium chamaedrys  
Teucrium serpyllum  
Veronica leucium

### 5 Plug Plants

5 H1 Roof Level  
46.700

4 H1 Fourth Floor  
42.650

3 H1 Third Floor  
39.500



### 6 Section 1-Roof Detail Reference

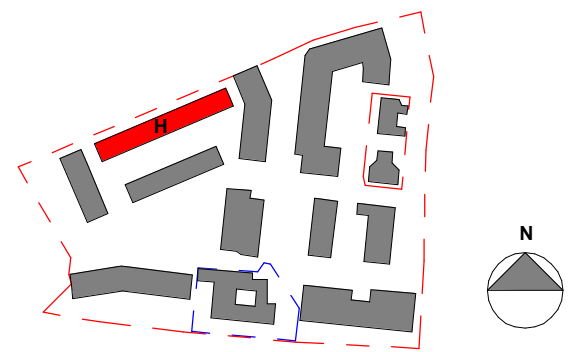
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#### Notes

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Rev	Date	Description	Drawn	Checked
2	04.09.18	Addition of species list and sedum detail build up.	CR	AMF
1	30.05.18	Condition Submission For Planning	SG	AMF

#### Revision Schedule



LONDON: 020 7403 0889      WWW.ARCHTYPE.CO.UK      HEREFORD: 0181 542 111

Client: Hill Partnership Ltd for Camden Council

Project: Agar Grove Block H

Drawing Title: Green roof typical section

Project: T14011    Originator: - ART    Type: - DR - A    Role: 1b H 00    Unique ID: - PL-405

Status: Issued For Information

Revision: PL2 Issued For Planning

Scale: As indicated @ A1    Date: 05/01/18

Drawn by: SG    Checked by: AMF

Internal Project Ref: 8575    Model Ref: AG-RAC2015-A-H