GREEN ROOF SYSTEM

Design:

The green roof is to be manufactured by Bauder or equivalent. It is designed for British native species plug planting on an extensive bio diverse substrate. It is to be a fully irrigated system. The build up and details are based on the Bauder native species system and the typical system build-up is described below:

British native species vegetation on biodiverse substrate with DSE40:

Plug plants:

The 'plugs' are varieties of wildflower, herbs and perennials and are planted by hand to the required density. The substrate depth is to be adequate to support the plants and water storage sufficient to maintain plant life. This is achieved with the DSE40 water storage board and at least 100mm of substrate which conforms to FLL / GRO guidelines, as shown on the detail drawings.

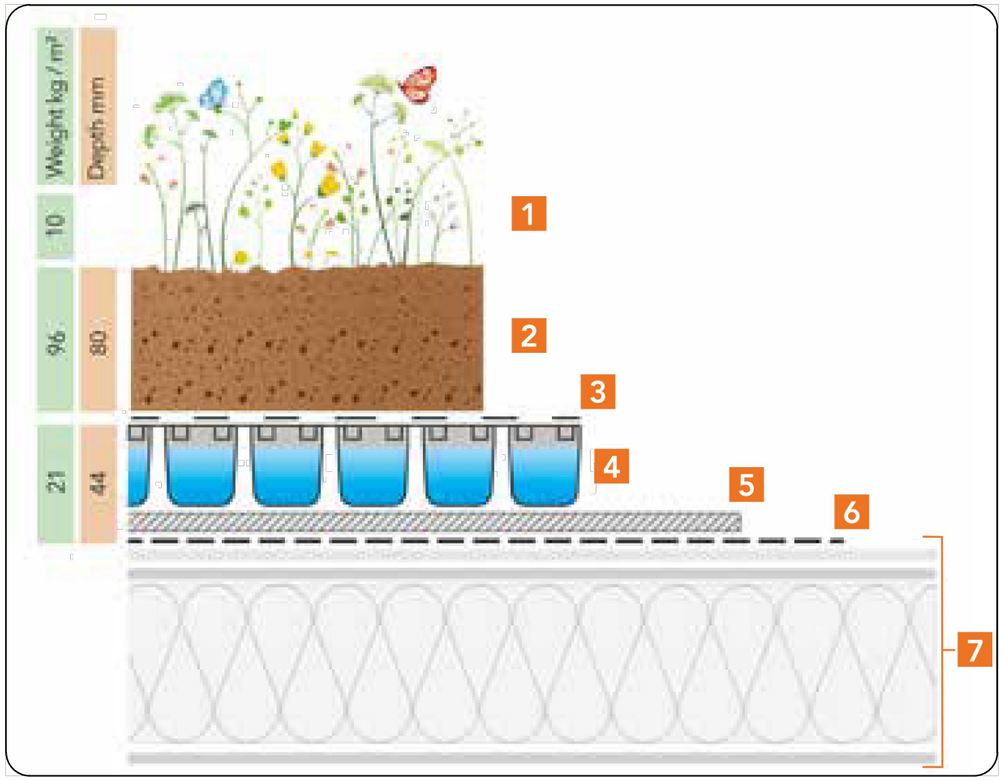
PLANTING SCHEDULE

The plug plants are derived from British native species, suitable to attract butterflies and bees and other insect pollinators, and to adapt well to the sunlit and shaded environment. The schedule will contain a selection of at least 9 different species drawn from either of the following two lists, or from similar native ranges, and planted to a minimum density of 6 plugs per sqm:

- Common Knapweed, Greater knapweed, Birdsfoot trefoil, Red clover, Self heal, Cowslip, Kidney vetch, Wild marjoram, Field scabious, Meadow vetchling, Cuckoo flower, Agrimony, Viper's bugloss, Greater stitchwort, Teasel, Rock rose, Primrose, Wild wallflower, Toadflax, Spiked speedwell, Evening primrose, Small scabious, Field poppy

Plug plants best suited for shade:

- Nettle leaved bellflower, Wood sage, Woodruff, Foxglove, Wild strawberry, Red campion, Primrose, Golden rod, Giant bellflower, Water avens, Hemp agrimony, Snakeshead fritillary, Opposite leaved golden saxifrage, Dog violet, Greater stitchwort, Hedge bedstraw, Tansy, Garlic mustard, Wild garlic



Typical Build-up of Proposed Green Roof System: not to scale

MAINTENANCE SCHEDULE

The installed system comes with a manufacturers guarantee and the proposed maintenance strategy is to be carried out in accordance with the manufacturers recommendations.

Watering and Irrigation:

The green roof will require water during prolonged periods of dry weather. The native wildflowers will benefit from a prolonged soaking (not little and often) to prevent them from fully drying out.

General Maintenance:

General maintenance is normally carried out annually during springtime. However, certain tasks which will be dependent upon the location of the roof, such as the removal of weeds, and seedlings may also need to be done during the autumn. The following procedures are to be carried out as indicated below, in order to ensure that the roof is maintained in good condition and to protect the validity of the guarantee.

Preliminary Maintenance Procedures:

- Safe access is provided to the roof and the relevant Health and Safety procedures can be 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.
- Remove all dead vegetation and debris from the roof surface, taking particular care to ensure that all chute outlets, gutters and downpipes are clear. Where the species mix incorporates wild flowers and grasses it is recommended that all dead vegetation is strimmed off and the waste lowered to the ground and carted away.
- Ensure that all rainwater outlets and downpipes are free from blockages and that water can flow freely away.
- Ensure that any protective metal flashings and termination bars remain securely fixed in place. Advice 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.
- Ensure that any new items of plant/equipment that may have been introduced to 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 the manufacturer for further advice.
- The Building owner should keep a record of all inspections and maintenance carried out on the roof.
- Any signs of damage, contamination or degradation to the waterproofing should be reported to the manufacturer 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.
- When carrying out maintenance to adjoining areas, care must be taken not to damage either the landscaping or the waterproofing system. If it is considered that either has been affected, the manufacturer should be contacted for advice. Any waterproofing damage caused after completion of the original installation may invalidate the guarantee.
- Any unauthorised alterations to the waterproofing system will invalidate the guarantee. If such a situation should arise, then manufacturer should be contacted so that we may advise on the alteration and how it should be incorporated without affecting the guarantee.

Vegetation Maintenance Tasks:

The following tasks should be carried out annually:

- Application of Fertiliser to the vegetation: Biodiverse and Wildflowers system often do not need annual fertiliser as this may allow weed species to out compete them.
- Plant encroachment: Any vegetation which has encroached into drainage outlets, walkways and the vegetation barriers (pebbles) should be removed. The vegetation removed may be set aside and used to repair any bare patches if required (see below). If movement/settlement of the pebble vegetation barrier has occurred, additional washed stone pebbles similar to the existing are to be added.
- Monitor the colour and rate of growth: The colour and rate of growth of the vegetation should be reviewed to establish the health of the plants. It should be noted that many factors can affect the growth and colour of the vegetation and that plants tend to be greener in wetter, mild conditions (springtime) and where the roof pitch is shallow.

Native Wildflower/Biodiverse Roofs:

Extensive substrate green roof systems vary greatly in the amount of water they require. Sedum is very drought tolerant, wildflowers much less so. The watering requirements will depend on the following factors:

- The Pitch of the roof
- The amount of rainfall it receives.
- The exposure of the roof.
- The vegetation growing on the roof.
- The depth of the substrate and drainage board.

The roof is to be watered during times of dry weather. The water supply will be provided from a point adjacent to the green roof and there will be an automatic irrigation system. Continuous daily watering is not recommended and will only promote weeds and other unwanted plant species.

TYPICAL DETAIL KEY

1. British native species plug plants
2. Extensive or Biodiverse Substrate Light weight growing medium. Manufactured and used in accordance with FLL / GRO guidelines
3. Filter Fleece filtration layer prevents substrate fines from washing into the drainage layer
4. Water storage and drainage DSE40, capacity to suit the vegetation and project
5. FSM600 4mm thick protection layer.
6. PE Foil A polyethylene foil separation and slip layer manufactured from recycled granules required on some project specifications
7. Waterproofing System High performance waterproofing membranes suitable for green roof systems

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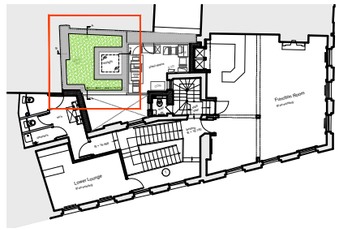

Key Plan

Rev	Description	Date	Drn	Chk
P01	Planning Issue	19.11.20	AMe	APa

Status
PLANNING

Client
Bohemia Club

Project
The Apple Tree Public House
45 Mount Pleasant
London WC1X 0AE

Drawing
Living Roof
As Proposed
SHEET 1 OF 2

Project No.	Drawing No.	Revision
18003	BHM-A-P-300	P01
Scale @ A3	Drawn By	
NTS	AMe	

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