



*AWE Aldermaston - HYDRUS*

**Q37 GREEN ROOF SPECIFICATION**

MER-110-022502

*STATUS: FOR PLANNING*

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**Paving/Planting/Fencing/Site furniture**

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## Q37 Green roofs

### To be read with Preliminaries/General conditions

#### GENERAL

#### 130 EXTENSIVE GREEN ROOFTO SUPPORT BUILDING AND SUBSTATION

- Roof type: Warm.
  - Substrate: Profiled metal deck to architects detail.
  - Slope: 1:40.
- Waterproofing: To architects specification.
- Thermal insulation: To architects specification.
- Protection: Combined layers.
- Moisture control layers: Moisture retention mat as clause 355.
- Growing medium: As clause 390.
  - Depth: 100mm to areas of plug planting and 80mm below sedum mat - Refer RPS Planting Plan 501.
- Vegetation: Plug planting and Sedum mat as section Q31.
- Accessories: To architects detail.

#### PRODUCTS

#### 355 COMBINED LAYERSFOR EXTENSIVE GREEN ROOF

- Manufacturer: Blackdown Horticultural Consultants Tel: 01460 234582 or similar approved
  - Product reference: ECO Roof Reservoir with pre-applied fleeces.
- Type: Moisture Retention Mat; 5m non rotting polypropylene mat to DIN18195, Drainage reservoir; 25mm Aquadrain and integral Filter Sheet; Polyethylene 0.6mm thick .
- Material: As specified.
  - Depth: 25 mm.
- Other requirements: Submit details of all Green roof elements to the CA for approval PRIOR to placing an order.

#### 390 EXTENSIVE GROWING MEDIUM TO SEDUM PLANTING

- Manufacturer: Blackdown Horticultural Consultants Tel: 01460 234582 or similar approved
  - Product reference: -.
- Material: Blackdown Horticultural Consultants lightweight environment specific volcanic material base extensive green roof substrate, consisting of organic, inorganic and mineral components pH 6.5-8 or similar approved.
- Ameliorant/ conditioner: Slow release green roof fertiliser to manufacturers specification.
  - Coverage: 100 grams per sq. metre.
- Declaration of analysis: Submit.
  - Parameters: Organic content.

#### 400A VEGETATION BLANKET IN ACCORDANCE WITH RPS PLANTING PLAN

- Manufacturer: Blackdown Horticultural Consultants Tel: 01460 234582 or similar approved
  - Product reference: 'Nature Mat' .
- Planting mix: 6-8 Sedum species .
  - Thickness: 20-25 mm .
- Vegetation coverage (minimum): 90%.

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400B PLUG PLANTS IN ACCORDANCE WITH RPS PLANTING PLAN

- Manufacturer: Blackdown Horticultural Consultants Tel: 01460 234582 or similar approved
  - Product reference: Plug plants as specified .
- Vegetation coverage (minimum): 90%.

440 VEGETATION BARRIER TO ROOF PERIMETER AND ROOF PENETRATIONS

- Material: 20-40 mm Washed rounded pebble in fill .
- Depth: 120 mm .
- Width: 300 mm .

**EXECUTION**

710A INSTALLATION GENERALLY

- Proposals: Submit detailed proposals to the CA for approval for the installation of the green roof, including method statements.
- Preparation: Clear all surfaces of debris.
  - Timing: After certification of waterproof membrane integrity.
  - Surface condition: Visually inspect waterproof membrane, report any damage.
- Faults in waterproof membrane: Report.
- Contamination: Do not use materials detrimental to healthy plant growth.
- Storage: Do not overload.
  - Point loads: Avoid.
- Outlets: Do not block.
  - Outlet grilles: Installed.

720 ADVERSE WEATHER

- Unfinished work: Secure from damage and wind uplift.
- Conditions: Do not install or work with frozen materials.

760 MOISTURE RETENTION MAT INSTALLATION

- Joints: Minimize.
  - Overlaps (minimum): 100 mm .
- Upstands: Fit closely around penetrations and outlets.

770 DRAINAGE LAYER INSTALLATION

- Extent: Continuous over entire roof area.
- Fitting: Butt joints .
- Upstands: Fit closely around penetrations and outlets.

780 FILTER MEMBRANE INSTALLATION

- Joints: Minimize.
  - Overlaps (minimum): 200 mm .
- Fitting: Adhered to drainage layer as supplied .
- Upstands: Extend to top of growing medium.

790A GROWING MEDIUM INSTALLATION

- Installation: To be installed by Blackdown Horticultural Consultants Tel: 01460 234582 or similar approved. Method statement to be submitted to CA for approval with allowance for any temporary support to roof structure made.
- Handling: Minimize.
  - Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
- Layers:
  - Depth: 80mm to Vegetation Blanket and 100 mm to areas of Plug Planting.
  - Sequence: Gently firm each layer before spreading the next. Ensure all hard landscaping is complete prior to installing the growing medium.

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800A VEGETATION BLANKET INSTALLATION

- Installation: To be completed by Blackdown Horticultural Consultants or similar approved and only following the installation of supporting build up of drainage layers, filter sheet, substrate and hard landscaping. A water test must also be carried out before any planting is carried out to establish the water holding capacity of the substrate and drainage layers.
- Handling blankets:
  - Timing: Lay within 24 hours of lifting from growing position.
  - Excessive stacking: Not permitted.
  - Material loss (maximum): 3% of total surface area.
- Growing medium condition, drainage layer and moisture retention mat: Thoroughly watered.
- Laying blankets:
  - Dry, damaged, frosty or waterlogged blankets: Do not lay.
  - Orientation: Diagonal or perpendicular to slope of roof.
  - Joints: Stagger. Butt together or slightly overlap to prevent gaps. Do not stretch blankets.
  - Edges: Finish with whole blankets.
  - Consolidation: Firm as laying proceeds to ensure full contact with the growing medium. Do not use rollers.
  - Avoid installation during the months of June, July and August or during periods of prolonged dry weather.
  - The optimum period to install Sedum mats is late September / early October and late March / early April.
- Dressing: Coarse washed river sand with neutral pH .
  - Application: Brush in to fill joints.
- Watering: Thorough, immediately after laying and dressing and kept moist thereafter for 4-6 weeks or longer if necessary, to allow the Sedum to become established.

800B PLUG PLANT INSTALLATION

- Installation: To be completed by Blackdown Horticultural Consultants or similar approved and only following the installation of supporting build up of drainage layers, filter sheet, substrate and hard landscaping. A water test must also be carried out before any planting is carried out to establish the water holding capacity of the substrate and drainage layers. Growing medium condition: Thoroughly watered.
- Planting plugs:
  - Dry, damaged, or waterlogged plants: Do not use.
  - The plants must be pre-watered before planting.
  - Density: 20m<sup>2</sup> with equal spacings.
  - Consolidation: Firm around plant to ensure good contact the growing medium.
  - Avoid installation during the months of June, July and August or when the ambient temperature is below 5 degrees C.
  - The optimum period for planting Sedum plugs is late September/early October and late March/April.
- Watering: Thorough, immediately after planting taking care not to disturb the plants and keep moist for initial 4-6 weeks or longer if necessary, to allow the plants to become established.

805 TEMPORARY IRRIGATION

- Method: Method statement to be submitted to CA for approval prior to carrying any works, allowance to be made for temporary irrigation system fed by mains water supply, including sprinklers mounted on Sleds.
- Watering: Thorough, immediately after laying the vegetation blanket and planting taking care not to disturb the plants.
- Frequency: As required to keep plants moist for initial minimum 4-6 week period or longer if necessary, to allow the plants to become established.

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**COMPLETION**

910 INSPECTION

- Timing: Before handover.
  - Give notice (minimum): 3 days.

920A COMPLETION

- General: Leave the works in a clean, tidy condition.
- Surfaces: Clean immediately before handover.
- Outlets: Clean and clear of obstructions.
- Completed green roof: Protect from adjacent or high level working.
- Establishment: Vegetation Blanket and Plug Planting to have 90% establishment at time of Practical Completion.

930A DOCUMENTATION

- Timing: Submit at handover.
- Contents:
  - Growing medium declaration of analysis.
  - Manufacturers' guarantees and warranties.
  - Proposed programme for maintenance of the green roof until end of maintenance and defects period including details of all tasks to be undertaken and their frequency.
  - Record drawings showing the location of planting and associated features.
- Number of copies: 3 .

940 MAINTENANCE

- General: Maintain the Vegetative Blanket and Plug Planting for a minimum 24 month period from practical completion or for the duration of the maintenance and defects period, which ever is greatest.
- Frequency: Allow a minimum of 3-4 visits during year one and 2 per year thereafter.
- In early Spring and at the end of Autumn;
  - Strim the roof surface to remove all dead vegetation, rake off debris and dispose of arisings off site.
  - Inspect substrate surface and vegetation barrier, remove all unwanted grasses, weeds, saplings etc.
  - Remove any litter and debris.
  - Any failed areas of vegetation mat and/or plants to be replaced during the next available planting season as clause 800B to ensure 90% establishment prior to final handover.
  - Maintain roof perimeters and outlets free from weeds and other blockages.
- Access: via the building with allowance made to bag and cart away all arisings by hand.
- Post maintenance programme: This should consist of a minimum of two visits per year by the approved maintenance contractor.