

lindum green roofs

Green roofs are created when living plants are grown on a roof structure. A common feature in Europe, there is an increasing number of green roofs in the United Kingdom.

New construction techniques have created endless opportunities for many different types of green roofs. In particular, technology for the creation of 'extensive' green roofs has been developed, where the plants chosen require minimal maintenance are drought-tolerant and will flourish in lightweight substrate at relatively shallow depths.

"One of the most exciting aspects of green roofs is their potential to support life in situations that would otherwise be largely barren and sterile."

Professor Nigel Dunnnett, University of Sheffield



Benefits of Green Roofs

Green roofs address many of the key issues associated with climate change: extremes of weather resulting in unpredictable periods of excess rainfall, drought, heat and cold stress. They:

- Promote biodiversity and create a natural habitat, encouraging a wide range of insects, birds and butterflies, particularly in areas where the habitat has been 'lost'.
- Absorb rainfall that would normally run straight off hard surfaces and are therefore important to help with storm water attenuation and reducing urban flooding.
- Help to combat the effects of pollution – the green plants absorb noise, trap dust, recycle carbon dioxide, absorb and break down many gaseous pollutants.
- Reduce the 'urban heat island effect' and the energy costs associated with keeping buildings cool in hot weather.



Working closely with the University of Sheffield's Professor Nigel Dunnnett and the Green Roof Centre, Lindum has developed a range of biodiverse wildflower, sedum and herb mats specifically to provide a biodiverse, colourful and drought tolerant vegetation that will flourish in the often extreme or harsh conditions created on an extensive Green Roof.



Lindum Green Roof Mats

Sustainably grown in the UK and supplied as a ready-to-roll-out mat to create an instant vegetation layer, there are two main mixtures available:



Lindum Wildflower Mat

A mix of wildflowers, herbs, sedums and flowering perennials which give a prolonged flowering period to provide biodiversity and visual impact. For more information see: Lindum Wildflower Mat technical sheet.



Lindum SedumPlus™ Mat

Sown with sixteen colourful varieties for extended interest and colour throughout the flowering period. For more information see: Lindum SedumPlus Mat technical sheet.

Other products available

Lindum Low Maintenance Grass Mat.

For further details visit: www.lindumgreenroofs.co.uk

Why choose Lindum Green Roof Mats?

- **Sustainably grown in the UK** – products designed specifically for the UK climate.
- **Choice of sedum and wildflower mixtures** – chosen to thrive in green roof situations and attract pollinators.
- **Biodiversity** – the variety of plant species provides an important habitat for bees, butterflies and insects.
- **Visual impact** – mats contain a range of plants chosen for an extended flowering season and to create a visually pleasing effect.
- **Drought tolerant** – the plants are chosen to withstand periods of drought. After establishment there should be no need for irrigation except in prolonged drought or where aesthetic value in dry periods is important.
- **Lightweight** – mats are lightweight and designed to grow in minimal substrate depth.
- **Easy to install** – simply roll out like a carpet.
- **Low maintenance** – Lindum's green roof products only require one cut a year in autumn.
- **Rapid delivery** – grown in UK, delivery on site is rapid, meaning plants arrive fresher with a better chance of establishment.

Basic profile of an extensive green roof

Vegetation Layer

All Lindum's green roof vegetation mats are sustainably grown in the UK. Lightweight and easy to install, they are supplied ready to roll out as an instant vegetation layer, with the plants established and growing in a strong felt mat made from recycled British textiles.



Lightweight Substrate

Lindum's Green Roof Substrate is a blend of lightweight manufactured topsoil and lightweight aggregate.

The topsoil is manufactured from reclaimed sand and PAS 100 green waste compost and is certified to BS3882:2015 standards. The specially matured and graded recycled green waste compost provides optimal stability and minimal leaching of organic matter and nutrients. The topsoil is blended with carefully selected and graded lightweight expanded clay aggregate, sourced from the UK.

Lindum's Green Roof Substrate provides good aeration and water holding properties and controlled fertility levels. It is simple to work with, lightweight, and offers guaranteed consistency throughout the green roof installation.

Available in 1m³ tote bags, 20 litre heat-sealed sacks, or in bulk, Lindum's Green Roof Substrate provides a high quality green roof growing medium with green provenance: peat-free and derived from 100% UK-sourced materials.



PROFILE OF A LINDUM GREEN ROOF



Drainage Layer

Lindum's drainage layer product, Roofdrain, is ideal for extensive green roofs as it provides a lightweight drainage layer with a water reservoir to sustain plant growth. Roofdrain attenuates rainfall making it an important element of a SUDS system. Roofdrain consists of a perforated cusped recycled HDPE (high density polyethylene) core with selected geotextiles thermally bonded on each side. The core acts as a water reservoir holding 4.5-5.5 litres per square metre for plants to access in dry periods. The core is perforated to allow excess rainwater to flow into the underside and away to drainage outlets. The upper geotextile acts as a filter, preventing any fine particles from the substrate blocking the drainage layer. The upper geotextile also has a 'zero' breakthrough head to prevent over-saturation of the substrate. The lower geotextile has two key functions: it offers additional protection to the waterproof membrane and acts as an extra moisture retentive layer, holding an additional 1.0 litres per square metre. This further enhances the water holding capacity of the system and slows the rate of run-off. The Roofdrain is manufactured in the UK from up to 95% recycled material making it a sound environmental choice.

Waterproof Membrane

Please contact Lindum for information on waterproofing for both new build and retro-fit green roofs. Lindum can supply details of specialist waterproof membrane suppliers.

Rootbarrier Layer

When using waterproof membranes without a lifetime root penetration guarantee or for retro-fit green roofs where the waterproof material is

unknown, an additional root barrier layer should be used. Lindum suggests Rootbarrier BV: a nonwoven, 100% polypropylene geotextile, made from continuous heatbonded filaments with an extruded coating. Rootbarrier BV is impenetrable to roots, strong, flexible and lightweight. We can also recommend a supplier for this.

Vegetation Barrier

A 300-500mm wide layer of 20-40mm washed pebbles or gravel should be applied as a vegetation barrier around the perimeter of the roof and around any roof penetrations (drainage outlets) or roof openings (skylights).

Edging Details

Lindum Green Roof Edge can be used to retain or separate the green roof materials. Manufactured in the UK from high % recycled content aluminium, supplied pre-punched and profiled in 2.4m lengths in a choice of heights for quick installation.

Further information

For more information on vegetation layer options, or Lindum's green roof package, visit www.lindumgreenroofs.co.uk or contact us to request a specification sheet.

Advice on the construction of green roofs is available from many sources including:

www.thegreenroofcentre.co.uk
www.greenroofguide.co.uk

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