

Grassroof

the environmental rooftop innovation



GrassConcrete

Reaching the heights



Grass Concrete Limited has become a world leader in the development of construction products that embrace both sound engineering practice and essential environmental principles.

Established in 1970, our vision from the start was to challenge traditional thinking, in an era dictated by system-build and modular conformity, and where the path towards environmental enlightenment wasn't without its obstacles. The use of re-cycled materials had yet to become a specification preference and indeed the use of what was seen as "second-hand" materials was often prohibited in construction contracts at that time. Fortunately we are now better placed to realise the benefits of engaging with our environmental needs and this has opened up many new possibilities within construction.

With many years of expertise developed at ground level we then turned our attention to roof tops, with the introduction of Grassroof, a system that draws heavily on decades of expertise and perception. We are now updating this range to enable Grassroof to become the system of choice across a wider range of applications and budgetary considerations.



Why green roof?

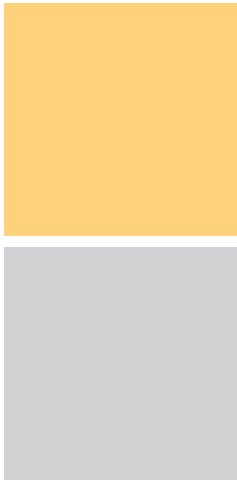
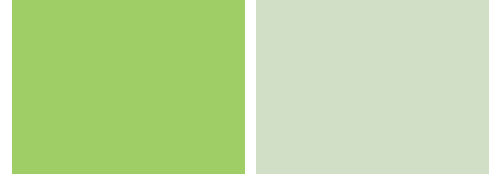
Without an appropriate intervention, every constructed build-form results in the loss of an equivalent area of naturally draining ground. With this comes the inevitability of a shifting balance in our eco-system. With rainfall intensity rising and areas of permeability reducing the logical consequence can only be increased surface water run-off and flooding. That we will always need to build is undoubted, that we need to now be smarter in how we build is a now a major factor.

With a growing greenroof range of product options now available, we thought that it might be useful to take a look at our check list of benefits that were used to benchmark our **Grassroof** system:

- Slowing the flow of surface water from roof tops into the drainage network. Helping to reduce peak demand and incidence of flooding by source control
- Natural filtration of surface water run-off
- Develop greater levels of natural evapotranspiration by increasing levels of vegetation
- To be a component in the reduction of the Urban Heat Island Effect for towns and cities
- Noise reduction
- Improved thermal insulation against both gain and loss
- Sequestration of CO² by photosynthesis
- Protection of roof membranes from UV degradation and weathering
- Improved levels of bio-diversity to include replication of natural habitats for creatures such as honey bees
- Promotion of urban green space and a feel good factor gained from this
- A green roof system, which in addition to new-build projects can be retro-fitted to any flat roof
- A positive contribution for Environmental Assessment schemes such as BREEAM, LEED and BASIX



Design focus



A developing awareness of the benefits of installing green roofs now sees this form of construction being widely specified for a wide range of projects. As the awareness of these benefits grows, then greater is the need to clearly benchmark appropriate forms of construction.

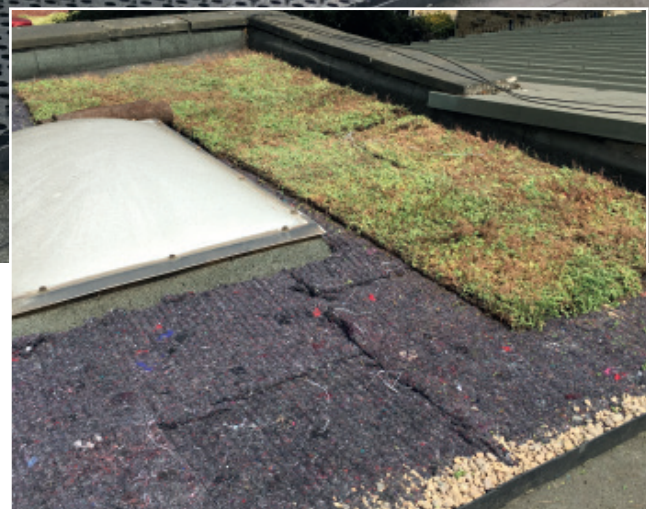
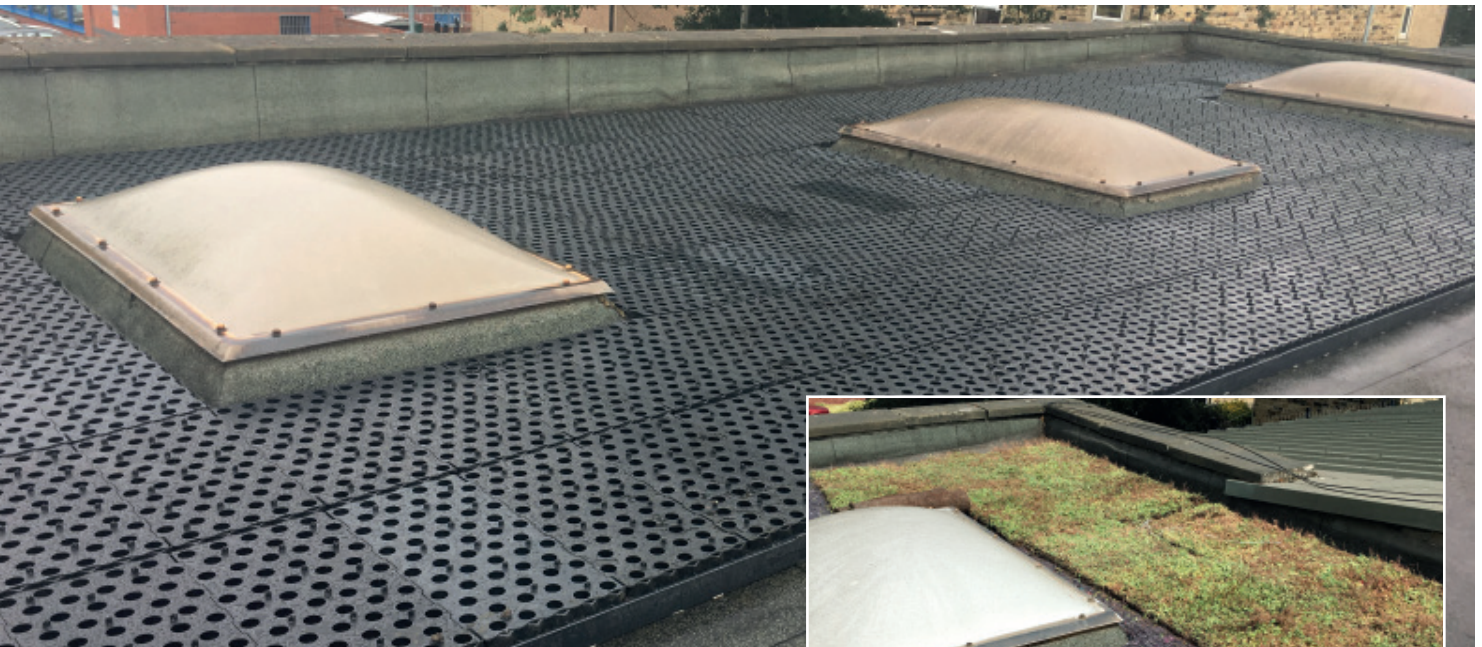
The **Grassroof focus** begins with a flat roof or shallow pitched roof membrane already in place, be this newly laid, or of some age. The membrane type can be; traditional built up felt roofing, EPDM rubber, GAP fibreglass, single ply plastics or polymers and poured in place asphalt.

The **Grassroof focus** continues with a consideration of the intended use of the roof area. Here the options begin with a simple **'lay and leave it'** format commonly referred to as an **'Extensive'** roof. This assumes a layer requiring little or no maintenance in a situation where regular footfall isn't a feature. Such examples would normally see the introduction of sedum turf as the vegetation layer. These succulent plants are able to store moisture and thrive on a limited supply of nutrients.

Where a more formal rooftop lawn is required, for low levels of footfall, attention moves to a **'simple intensive'** form of construction that sees a thin layer of rooting medium being introduced beneath either a seeded or turf applied grass layer.

The final option is to create an **'intensive'** structure where greater depths of rooting or fill materials are incorporated to enable the introduction of a fully landscaped roof garden with regular footfall.

For **'Extensive'** and **'Simple Intensive'** applications the **Grassroof** units are used as the decking layer and for **'Intensive'** applications the **Grassroof** units become the base-layer to create a drainage waterway.



Components

Grassroof paver

Overall: 635 x 330 x 32mm
Module: 622 x 311 x 32mm
Number per m²: 5.17
Weight each: 0.85kg
Weight per m²: 4.39kg
Material: Polypropylene (recycled)
Colour: Carbon black

Grassroof units interlock together and can be laid either directly onto the roof membrane or via a foil backed polystyrene underlay where the roof membrane might be susceptible to indentations.

The cellular core structure of the **Grassroof** units enables the surface to be foot trafficked during installation.



Regarm Moisture retaining blanket

2.0m x 10.00m x 8mm compressed thickness
Weight per m²: 0.72kg

A key element in simplifying construction sits with our **Regarm** moisture retaining blanket. Formed from 100% re-cycled shredded garment waste* and bonded to a woven fabric layer, **Regarm** is fire tested to BS5852 Part2:1982. It enables the retention and attenuation of moisture to both feed roots or to source control roof top run-off.

For extensive roof applications, the specification of **Regarm** will enable the omission of a soil layer. For high-rise buildings, this reduces the volume of bulk materials to be transported up through the building during installation.

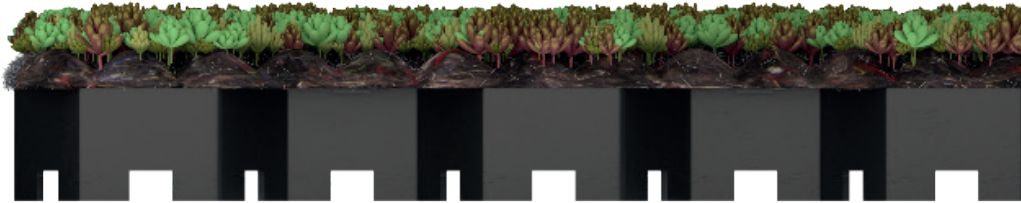
*In the UK 100,000 tonnes of clothing is removed to landfill each year.



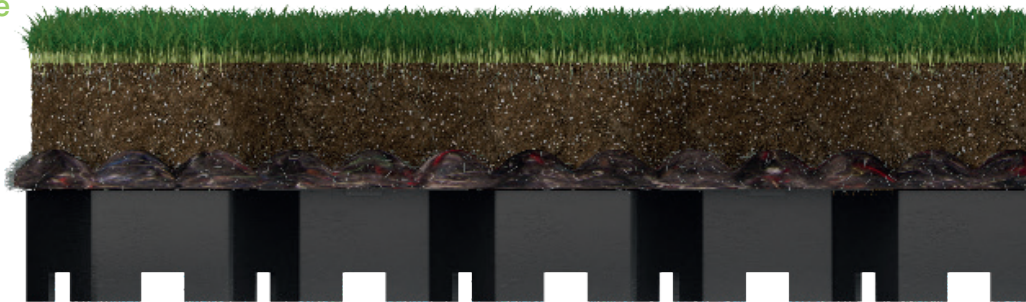


Grassroof formats

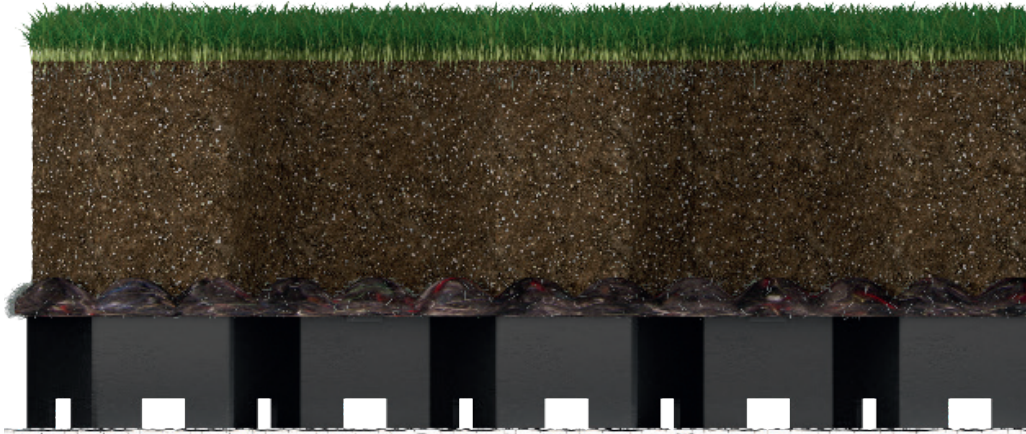
Extensive



Simple Intensive



Intensive



Grassroof specification

Format	Cover	Typical dry weight per m ² (excluding sedum or grass turf*)
Extensive	Sedum & Regarm	at 0mm cover 5.26kg
Simple intensive	Sedum, Regarm 1:1 soil and Perlite	at 50mm cover 30.26kg
Intensive	Grass, Regarm 1:1 soil and Perlite	at 100mm cover 55.26kg at 500mm cover 255.26kg

*The weight of Sedum is typically 20 to 25kg/m². Grass turf is typically 15 to 20kg/m²

Grassroof accessories

Regarm holding down pins

Polypropylene pins for securing the **Regarm** blanket to the underlying **Grassroof** units; for use in exposed locations.

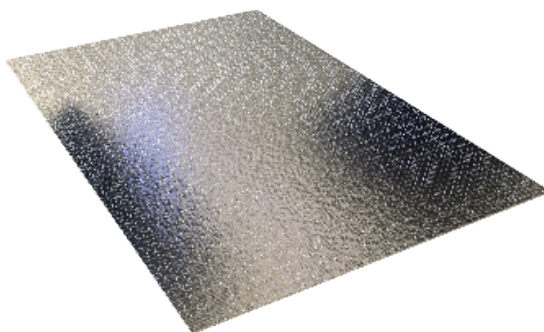
Head dia: 40mm
Length: 40mm
Approx fixing centres: 1200 x 1200mm



Foil backed polystyrene underlay

For positioning beneath the **Grassroof** units by default for '**Intensive**' roofs and where the roofing membrane, is susceptible to Impregnation for '**Extensive**' and '**Simple Intensive**' applications.

Thickness: 3.5mm
Roll size: 1200mm wide x 10m long
Weight: 0.20kg/m²



Edge restraint

Grasskerb GK60 units.

Length: 1000mm
Width: 80mm
Height: 60mm
Weight: 0.46kg each
Composition: Re-cycled HDPE
Colour: Carbon black



Grasskerb GKP/1 self adhesive fixing pad.

Length: 75mm
Width: 20mm
Thickness: 5mm
Application: 5No. per m



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Please note that information is given in good faith, without warranty and subject to alteration without prior notice.

A full range of brochures and technical guides are available upon request



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