



Sustainable Green Roofing Systems

Breathing New Life into Urban Spaces



As part of the Greenwood Group, Greenwood Urban benefits from over 30 years industry experience. Greenwood Urban combines this wealth of horticultural expertise and professionalism with a keen awareness of the future needs of the landscaping industry.

Our range of All in One ANS Green Roofing modules provide a complete solution to actively enhance biodiversity through improved design, development and management within the built environment. All of our systems can be either integrated into a new build project or retro fit to existing buildings to dramatically transform an environment.



Serving all Sectors

Our skilled horticultural and design experts work with you through each stage of a project

Consultants

Architects, planning consultants, building engineers, interior designers, landscape architects, sustainability, environmental & ecological consultants.

Developers

Private sector & infrastructure developers, local authorities, MoD, NHS, NetworkRail, Highways Agency & Educational Bodies.

Owners & Landlords

Commercial & domestic property owners, property fund managers and property & facilities managers.

Contractors

Construction contractors and sub contractors working for both public and private sectors.

ANS Modular Green Roofing Systems



Greenwood Urban modular roofing solutions offer a versatile and flexible solution for consultants, architects and designers nationwide.

Environmentally it ticks all the boxes, providing a sustainable urban environment that enhances both the aesthetics and thermal efficiency of a building.



Green Roofing Benefits to the Urban Environment

Green roofing provide many environmental, aesthetic and financial benefits, these include:

BIODIVERSITY Ecological habitats are provided and enhanced, even with non-native species

AIR PURIFICATION Gas exchange by plants releases oxygen into the air reducing Co2 and other noxious gas emissions

STORM WATER ATTENUATION The planted modules absorb storm water

ACOUSTIC ABSORPTION Provides effective sound and noise absorption

THERMAL LOADING REDUCTION Achieves lower heating and cooling costs through its thermal insulating properties

HEAT ISLAND EFFECT REDUCTION Less reflected heat is caused by buildings and structures, providing a fresher urban environment

VISUAL ENHANCEMENT Employing design and creativity enhances the often barren urban landscape

RAINWATER RECYCLING Irrigation of the system can provide a beneficial use for this collected resource



An aluminium edge restraint has a dual purpose, providing a restraint for the green roofing materials, but it can also be in-filled with pebbles, to provide an attractive feature to the installation.

The Module is comprised of a water retention reservoir, drainage filter, 60 – 70mm extensive roof media (recommended depth for long term sustainability), and established planting.



Successful Green Roofing

An effective roof system, traditionally, requires the component layers to be individually installed for the build up of the green roof. This is time consuming, and renders any roof inspection, after installation, difficult to address.

The ANS All in one Green Roof Module or Vegetation Carrier is a unique 4 in 1 modular system. Each module measures 1 metre x 0.5 metre with a 100mm lip on the bottom layer which enables it to interlock with adjoining modules.

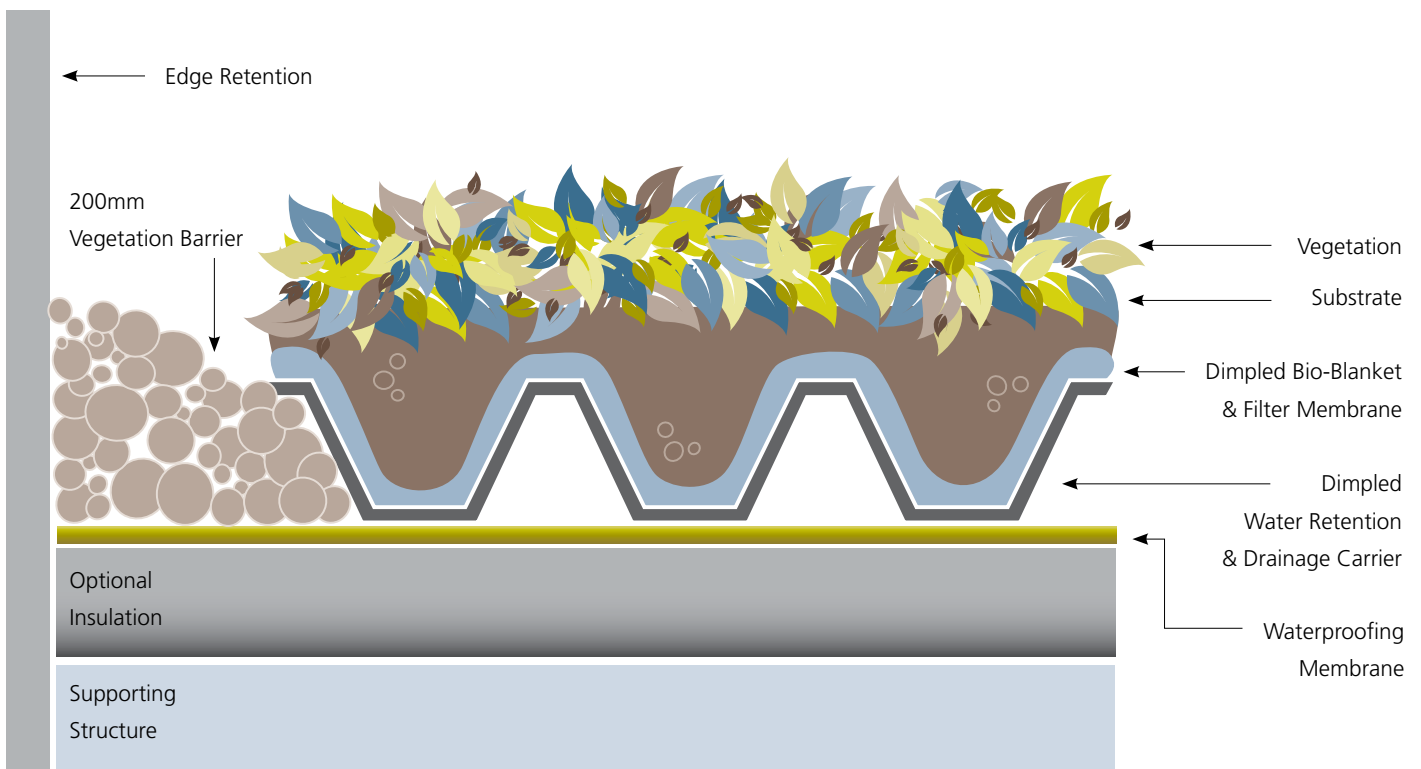
The Greenwood Urban ANS All in one Green Roof Module is a cost effective, simple solution to any green roofing project.

Vegetation The Vegetation Carrier can be supplied with grasses, wild flowers, and a variety of Sedum, or plantings indigenous to the project location.

Substrate The planting medium is recycled compost which is certified PAS 100. Free draining, its specific mix is dependent on the species used in the vegetated layer.

Filter Layer The Bio blanket and filter layer is a recycled polyester and hemp mix which acts as a filtration and water transfer membrane, through capillary action.

Water Retention The modular carrier has 50mm dimples to act as a drainage and storm attenuation reservoir.



BREEAM Recognition

By utilizing recycled materials in the carrier construction and locally sourced recycled composts, the ANS all-in-one Green Roof module is capable of entitling any project with a positive BREEAM assessment for its environmental contribution.

Benefits of the ANS all in one System

- INSTANT RESULTS** The effects are instant as all vegetation is pre-grown and plants are established before installation
- SIMPLY INSTALLED** The modules are simply installed with no on-site fabrication or specialist equipment required
- REMOVABLE** Future roof works and inspections are easily facilitated by simple removable interlocking modules
- THICK COVERAGE** There is no visual exposure of the module, the entire frontage is a growing surface
- HARD WEARING** In extreme weather the module will expand externally without causing permanent damage
- COMPACT MODULES** Modules are 100mm deep, therefore the structure for installation is compact
- ECO FRIENDLY** The Module is manufactured with recyclable material, and is itself fully recyclable
- USES PEAT FREE & RECYCLED COMPOSTS** Green waste is collected and ecologically harvested for use in the medium.

The Design & Installation Process



Golders Green Station, May 2009

Installation for Tubelines

For the Installation of a new green roof at Golders Green Station in London, all of the required vegetation carriers were grown using the ANS system. Transported to the site via stacked pallets, the project saw the safe delivery and laying of over 150m² of green roofing modules.

The simple installation process provided instant results, all of our carriers contain pregrown vegetation that very quickly blends into its surroundings. The simplicity of this system advances green roof development, bringing the installation for the construction of a green roof into the domain of many. This is a cost efficient, simple solution to any green roofing project.

Sedum Vegetation like that of Golders Green Station will change colour through the seasons providing an attractive seasonal feature.



Planting Specification

The most common plant species used in our green roofing projects include:

WILDFLOWER VARIETIES

Agrimonia eupatoria, AGRIMONY
 Anthyllis vulneraria, KIDNEY VETCH
 Centaurea nigra, COMMON KNAPWEED
 Clinopodium vulgare, WILD BASIL
 Echium vulgare, VIPER'S-BUGLOSS
 Galium verum, LADY'S BEDSTRAW
 Hypericum perforatum, JOHN'S-WORT
 Knautia arvensis, FIELD SCABIOUS
 Leontodon hispidus, ROUGH HAWKBIT
 Leucanthemum vulgare, OXEYE DAISY
 Linaria vulgaris, COMMON TOADFLAX
 Lotus corniculatus, BIRDSFOOT TREFOIL
 Malva moschata, MUSK MALLOW
 Origanum vulgare, WILD MARJORAM
 Plantago media, HOARY PLANTAIN
 Primula veris, COWSLIP

Prunella vulgaris, SELFHEAL
 Ranunculus acris, MEADOW BUTTERCUP
 Ranunculus bulbosus, BULBOUS BUTTERCUP
 Reseda lutea, WILD MIGNONETTE
 Sanguisorba minor ssp minor, SALAD BURNET
 Silene vulgaris, BLADDER CAMPION

SEDUM VARIETIES

Sedum Album Minor
 Sedum Album Coral Carpet
 Sedum Lydium
 Sedum Acre
 Sedum Sexangulare
 Sedum Spirium
 Sedum Hybriden Innergrunchen
 Sedum Reflexum
 Sedum Hispanicum

Our expert horticulturists are able to provide further information on local/provincial native flora to work in conjunction with our modular green roofing systems.

Please email us at technical@greenwood-urban.co.uk for a full list of compatible species with pictures and flowering periods.




Vegetation Carriers


Technical Specification

- Class B Fire Rating
- Has compressive strength 150 Kn/m² (2,204lb/sq ft)
- Water holding capacity of 15 litres/m²
- Water flow rate of 26 litres/min/m² (0.64 Gal/min/ft²)
- Is UV resistant
- Can withstand temperature extremes of -500c to +800c
- Is made of 80% post industrial recycled material
- Is guaranteed by Greenwood Urban for 15 years
- Measures 1.1m x 0.5m overall
- Vegetated area measures 1m x 0.5m
- Bio-blanket Filter Layer is composed of 60% polyester and 40% hemp fibres. The polyester is 100% post consumer recycled

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