



Sustainable Living Wall 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 construction and landscaping industries.

Our range of ANS modular living wall systems 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 fitted 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.

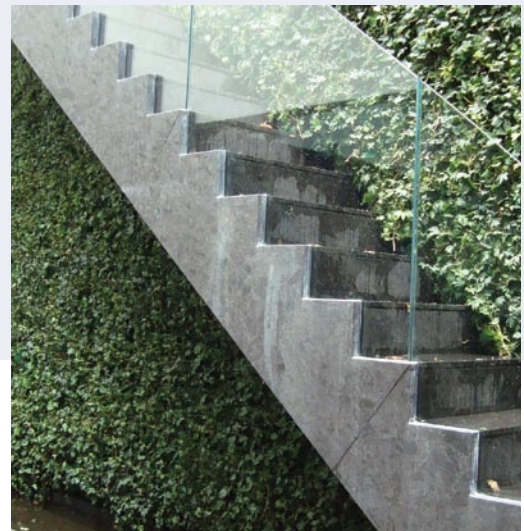
ANS Modular Living Wall Systems



Greenwood Urban modular living wall 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 efficiency of a building.

Corporate applications allow large companies and blue chip organizations to show a positive attitude to a 'Green Approach' incorporating Logo Designs and Corporate Branding.



Benefits to the Urban Environment

Outdoor living walls 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

White City, November 2008

Offsetting Ecological Impact

To meet stringent planning legislation, Westfield required an extensive 'green' element at their White City development, to counteract the ecological impact of such a huge retail project.

Their living wall, completed in November 2008, is currently the longest vertical wall planting in the world. It is comprised entirely of modules with vertically growing foliage. Over 200,000 plants, of mixed variety, in 5,000 modules, all supplied with established planting, built using the ANS modular living wall system.

Our skilled team of Horticulturists, Designers & Installers, worked closely with the Westfield Team to ensure the project remained on schedule at every stage. The successful installation of the Living Wall at Westfield opens up a new chapter in Landscape Design, and is living proof that it suits both very large and very small projects.



NEC, June 2009

Aesthetic Screen and Sound Barrier

The request from the project team at the NEC was to provide screening, and a natural sound barrier.

As with the Westfields project, a bespoke support structure was installed, upon which the modules were suspended. Although the purpose of this living wall is similar to that of Westfields, the design and planting selection gives the project a completely different feel.

The uniformed strips of colour and texture, result in a visually stunning spectacle, that uses planting to enhance the architectural design and aesthetics.



The Design & Installation Process

From conception through to design and implementation, Greenwood Urban provides a unique solution to each and every project. Our service includes the following aspects and will be tailored to specific individual requirements:

- Consultation
- Design – interior or exterior
- Material specification and documentation
- Plant selection and horticultural guidance
- Installation
- Irrigation schematics and installation
- Lighting specification and installation
- Maintenance
- Growing and tendering walls



Living Walls Internal Solutions

The HG1 Module, with its large planting cell is ideally suited to interior planting. The HG1 is very flexible in terms of planting including specimen planting, providing feature and interest throughout the year.

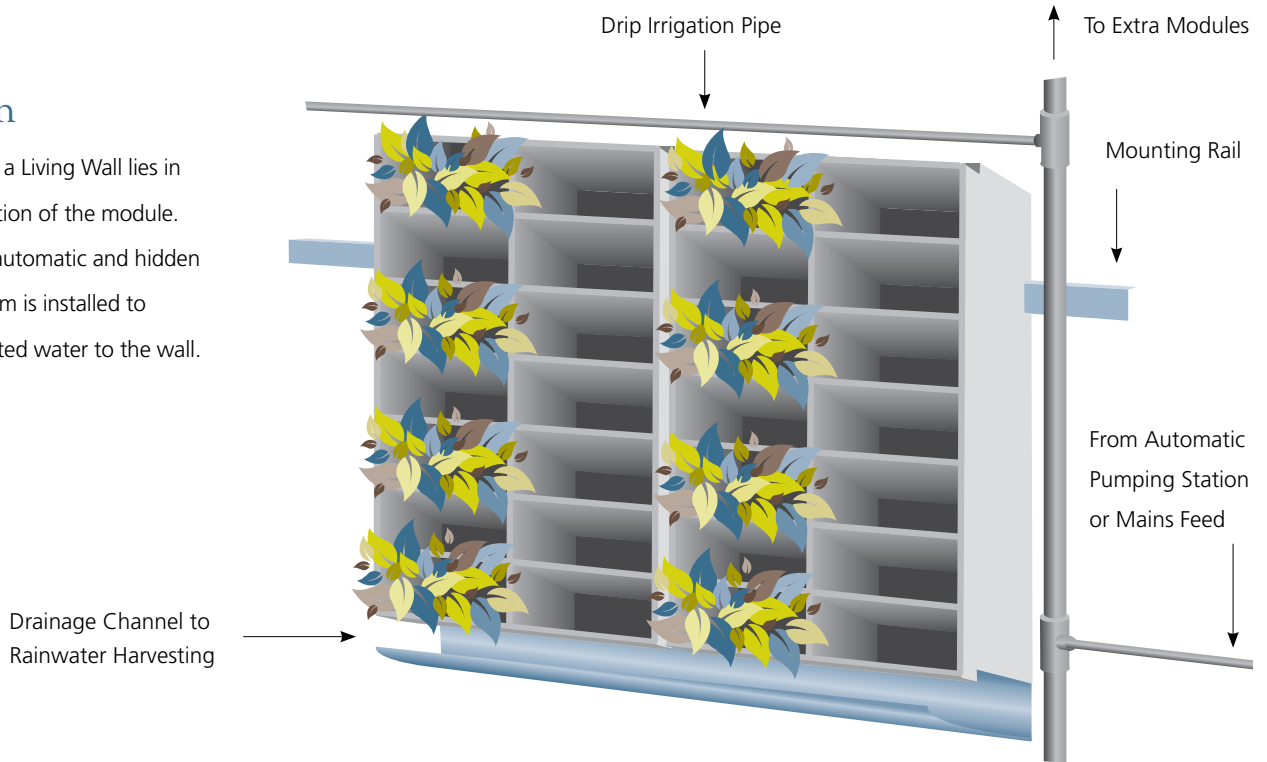
Greenwood Urban working with interior landscapers opens up the opportunity and benefits for projects that bring variety, colour and texture, to interior decoration.

Whether it is for a commercial or residential property, a Living Wall will not only deliver the eco-benefits of greening, but a bespoke design that will evolve through time.

The Greenwood Urban ANS Modular Living Wall System

Irrigation

The success of a Living Wall lies in effective irrigation of the module. A completely automatic and hidden irrigation system is installed to provide regulated water to the wall.



The HGI Module

ANS Living Wall Functionality

Drainage

Drainage slot in the bottom of each Module allows excess water to drain away.

Water Retention

Water is retained in the Module by means of the capillary matting, and a reservoir at the base of the Module. The growing media we use also has good water retention properties.

Erosion Control

Erosion is controlled in a number of ways, firstly, by the Module being divided up into 14 cells, secondly, by the cells sloping back at a 30o angle, thirdly, by the roots of the vegetation.

Growing Medium

The media has to be carefully formulated to conserve moisture and nutrients, and encourage good root growth of the vegetation.

Vegetation

Selected to provide evergreen cover, low maintenance, as well as being aesthetically pleasing.

Root Anchorage

Plant roots anchor themselves into the capillary mat at the back of the Module.

Filtration of Water

The capillary mat at the back of the Module also acts as filter for water that passes through the Module.

Distribution

This mat also gives even distribution of water throughout the Module.



Planting Specification

A selection of the most common plant species used in our living wall projects include:

PERENNIALS

Aubretia Blue Whale
 Chamomile nobile Treneague
 Heuchera Fireworks
 Heuchera Strawberry Candy
 Pachysandra terminalis
 Pachysandra terminalis Variegata
 Phlox subulata Emerald Cushion
 Sedum acre
 Sedum album Coral Carpet
 Sedum kamtschaticum
 Salene schafta
 Sisyrinchium striatum
 Stachys lanata Silver Carpet
 Teucrium chamaedrys

GRASSES

Carex Frosted Curls
 Carex oshimensis Ever Gold
 Deschampsia flexuosa 'Tetra Gold'
 Uncinia uncinata Rubra

SHRUBS

Convolvulus cnoerum
 Erica carnea Myretown Ruby
 Euonymus Emerald Gaiety
 Lavendula angustifolia Hidcote
 Lavendula stoechs

SHADE/TRAILING PLANTS

Vinca minor
 Vinca minor Alba

SHADE

Ajuga reptans Atropurpurea
 Bergenia cordifolia
 Hosta Halcyon
 Liriope muscari Variegata
 Pratia pedunculata
 Saxifraga X urbrum
 Viola Columbine
 Viola Martin
 Viola Queen Charlotte

HERBS

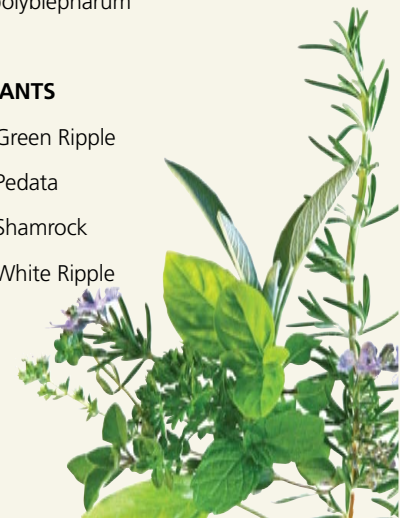
Allium schoenoprasum (Chives)
 Origanum vulgare
 Rosemarinus officinalis Prostratus
 Salvia officinalis (Sage)
 Thymus vulgaris

FERNS

Asplenium scolopendrium
 Asplenium trichomanes
 Blechnum spicant
 Cyrtomium fortunei
 Dryopteris affinis
 Polystichum polyblepharum

TRAILING PLANTS

Hedera helix Green Ripple
 Hedera helix Pedata
 Hedera helix Shamrock
 Hedera helix White Ripple



Please email us at technical@greenwood-urban.co.uk for a full list of compatible species.


Living Wall Modules


Technical Specification

- Made of High Density Polyethylene (HDPE)
- BS 476: Part 7: 1997, Class 1
- UV Resistant
- Temperature range -40°C (-40°F) to 80°C (176°F)
- Saturated weight is 18kg per Module, or 72kg per m2
- It is made of 80% post industrial recycled material
- Is guaranteed by Greenwood Urban for 15 years
- Measures 500mm x 250mm overall, no overlap
- Module depth of 100mm, planting depth 150mm
- Vegetated area measures 500mm x 250mm
- 14 planting cells set at 30° angle
- Integrated irrigation system with collection chambers at the top of each panel to collect water from the irrigation emitter line and notches at the bottom of cells to allow for drainage

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