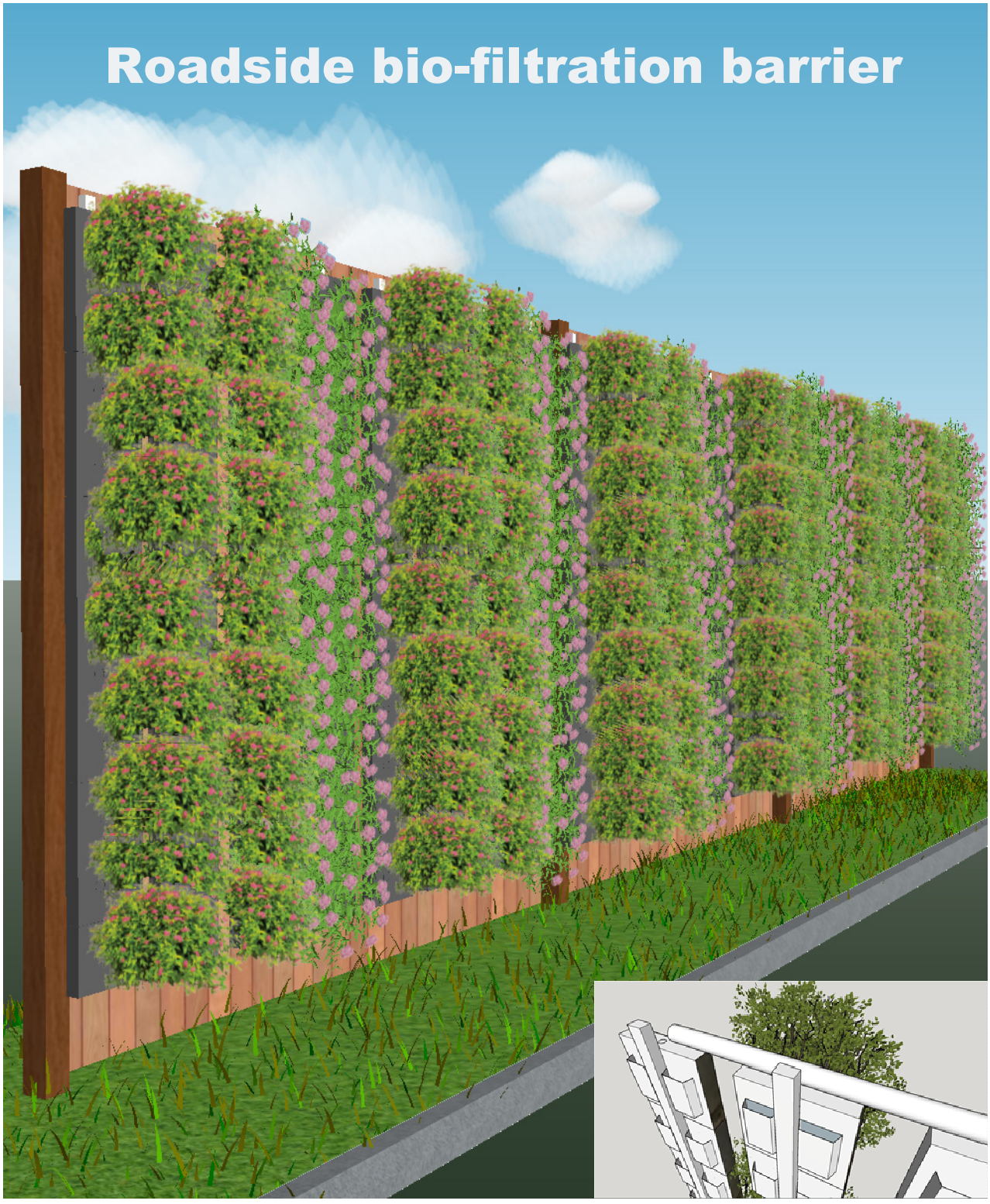
Vertical Greening

Urban Air Quality System

Technologies for soils, plants and the environment



- ✓ Versatile modular greening system- easy to install and maintain
- ✓ Optimised plant growth with zero irrigation waste
- ✓ Monitoring and controls accessible via the internet
- ✓ Management controls to maximise bio-filtration and minimise pruning maintenance
- ✓ Scope for artistic expression, visual impact and increasing biodiversity

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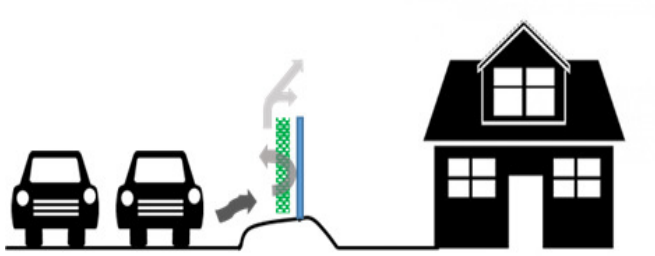
Living walls are ideal for densely populated urban areas where there is limited access to conventional green spaces. They provide opportunities for artistic expression and promote biodiversity by providing wildlife habitats, which can be configured to protect local priority species. The **Urban Air Quality System** described in this brochure has been developed as a unique barrier to disperse and filter traffic emission plumes in air quality management areas.

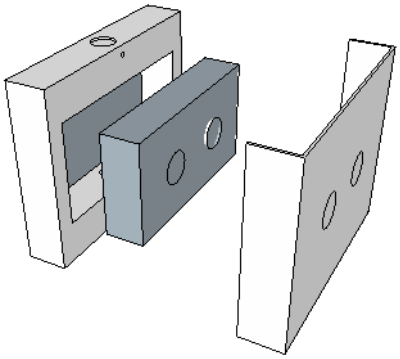


Self-managing planting module

The novel hydroponic greening system consists of lightweight self -managing plant modules that are stacked in columns. A single fixing bolt for each module enables rapid installation and interchangeability.

Plants are irrigated automatically with a balanced nutrient solution, which is adjusted intrinsically to meet plant requirements, maintaining optimum root moisture conditions and achieving zero waste of irrigation water.

The system can be remotely monitored and managed over the internet to provide extra assurance, reduce maintenance visits and provide capabilities for evaluating air quality and other functions



Unique Biofilter system

Motor vehicle exhausts emissions contain microscopic particles and toxic gases, such as nitrogen dioxide (NO_2), which pollute the air and can rise to levels which cause serious respiratory illness in heavily trafficked or built-up urban areas. Nearly 600 hundreds air quality management areas (AQMAs) are currently declared in the UK in which NO_2 exceeds the statutory limits.

Roadside physical barriers for dispersing exhaust plumes are a potential means of protecting these vulnerable communities but the effects vary greatly with local topography and meteorological conditions. Vegetation canopies improve dispersion and also capture microscopic particles on their leaf surfaces and absorb and metabolise NO_2 in the leaf pores. Significant improvement of air quality has been found under conditions of low wind speeds and in street canyons where the processes act on a small volume of air.

Uniquely, the **Urban Air Quality System** more than doubles the bio-filtration processes by including the effects of plant roots, growing media and the irrigation system for removing particles and NO_2 gas, which can greatly increase the filtration efficiency. In addition, the irrigation management system allows precise control of plant growth conditions which enables reduction in maintenance and meeting the varying requirements of different plant taxa, providing greater scope for creating a spectacular visual impact.

Dimensions (mm)

H,W,D	220, 280, 85
Spacing	140
Saturated weight	2.75 kg

Example panel (3 x 2.5m)

Modules/column	11
Modules/panel	66
Total load	181 kg

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