

Solutions for the future



Vertical planting

DRAINAGE AND DEWATERING SYSTEMS

HEAVY-DUTY SYSTEMS

ROOF AND WALL SYSTEMS

PLANTING SYSTEMS

BATHROOM AND KITCHEN SYSTEMS



The city of the future is green.

When it comes to urban planting, it is well worth exploring unfamiliar angles. Vertical spaces in particular open up completely new approaches to indoor and outdoor design. Façade greenery is becoming increasingly popular here: whether single house walls or the extensive planting of entire building complexes – this approach undoubtedly enhances the appearance of a building and makes it one of a kind. It also makes a meaningful contribution from an environmental and sustainability perspective.

In this brochure, we will provide you with an overview of the various forms of façade greenery available, the advantages they offer, and the aspects that should be considered when implementing and maintaining the planting systems.

Types of façade greenery

Generally speaking, we differentiate between two types of green walls. The first is the ground-based version, which is a classic way of adding greenery to house façades. It has been used for decades and is still popular today. This method sees self-clinging climbing plants such as ivy or creepers grown along climbing supports. While it creates a very organic and natural greenery, it can take years for the plant to cover the entire surface of a given area depending on the species of plant.

The second type of green wall is the wall-mounted version. The greenery achieved with this version takes full effect right away. Specially developed structures, such as our **Adam** living wall, take the place of usual façade elements and form the outer shell of the building or wall. Vertical or horizontal planters holding the respective substrate tend to be used here and are fixed to the façade before being planted. While the plants that make up the ground-based greenery generally regulate their own supply of water and nutrients, those used in wall-mounted systems require a higher level of care.



Advantages of façade greenery at a glance

The green plus for humans and nature

1. Building insulation

The plants protect the façade from direct sunlight while retaining heat in the winter

2. Reduction in heat reflection

The sun's radiation is absorbed rather than reflected. This minimises the build-up of heat, especially in urban areas

3. Noise protection

Sound is similarly absorbed by the façade greenery

4. Building protection

The building itself is protected from direct exposure to UV rays, precipitation, extreme temperatures and dirt

5. Contribution to a better urban climate

Pollutants are filtered from the air, rainwater is stored effectively and evaporation areas are created

6. Biodiversity protection

Façade greenery provides habitats for numerous plants, animals and organisms

7. Cities of the future

Planted façades contribute significantly to the realisation of modern-day urban planning and create spaces that can be enjoyed by people and animals alike





Thought should always be given to the individual requirements and external conditions at the installation site. Is the façade usually in the sun or shade? Is the location exposed to wind or generally protected? You should always discuss these and other questions in advance with the responsible landscape gardeners as well as the architects and manufacturers.

We are also happy to assist you with help and advice.

Choosing the right plants

Using plants that work with a specific type of façade greenery not only shapes how a space will look in the future; it also influences the longevity and maintenance needs of the plants and determines how long they will retain their colour throughout the seasons. In the case of ground-based greenery, traditional self-clinging climbers such as Virginia creepers, climbing hydrangeas or ivy are used. While the latter remains green throughout the year, the Virginia creeper impresses with its bright red hues in the autumn but loses its leaves in the winter. Suitable planting for the wall-mounted solutions include evergreen and stress-conditioned shrubs and grasses, ferns, herbs such as lavender, rosemary or sage as well as geraniums and elephant's ears.

“Suitable planting for the wall-mounted solutions include evergreen and stress-conditioned shrubs and grasses, ferns, and herbs such as lavender, rosemary or sage.”



Further aspects from planning to installation



The right model regardless of statics

Various substructures are available to hold the plant cassettes depending on the type of wall and masonry. With our diverse product portfolio, we always have the right solution for you. Find out more on pages 10/11.



The right type of planting

The orientation of the planned living wall – whether it faces north or south, for example – should be considered when choosing plants. We are happy to advise you on which plants would best suit your project.



Water supply and irrigation

Sufficient irrigation is essential when it comes to caring for living walls and green façades. Our systems have this covered with the optional integration of drip irrigation hoses. If possible, you should therefore plan to incorporate a water-supply line into your project.



Individual advice from our team

Every project is unique and requires an individual and competent consultation. We are happy to assist you with help and advice. Turn to the back of this brochure for the contact details of your personal experts.

See contact details:



Our living wall experts are happy to advise you in person and assist with your planning from start to finish.



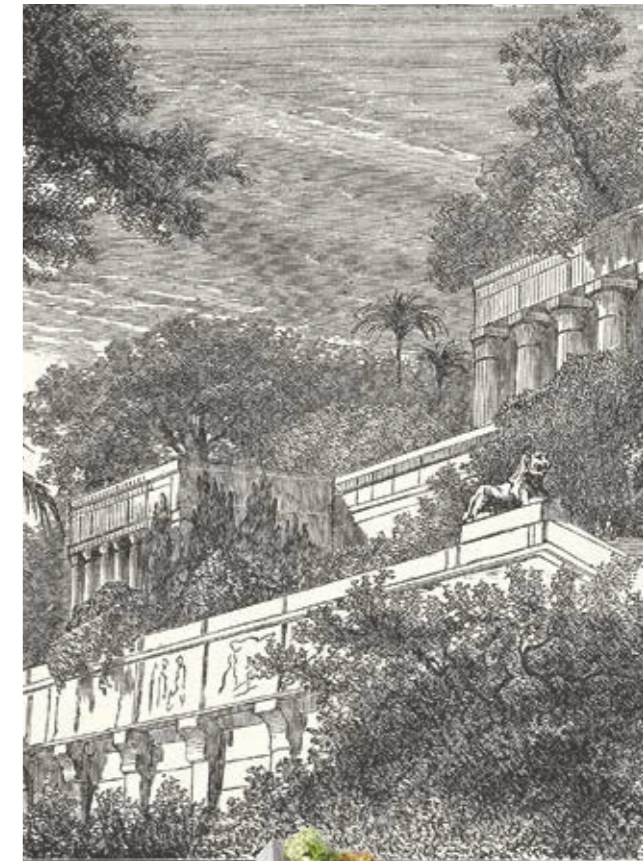


Our inspiration

The Hanging Gardens of Babylon used to be one of the seven wonders of the world. But while a huge composition of tiered buildings and garden terraces had to be constructed in the Ancient World, today our **Adam** living wall can transform pretty much any unused wall space into an impressive vertical garden. Conventional, artificial irrigation systems make sure the wall is sufficiently supplied with the necessary water. This means you don't need to have a penchant for gardening or to invest a lot of time to be able to sit among nature – be it on a penthouse terrace, your own balcony, or across the façades of private or public buildings.

With the **Adam** living wall, we provide a comprehensive system for both new builds and existing buildings. The modular construction of the living wall guarantees straightforward assembly for everything from a small house wall to entire building complexes.

By contrast, the **Eva** living wall functions as Adam's free-standing counterpart. It can be planted on both sides and achieves large-scale greenery even in the smallest of spaces. Whether intended as a partition or fence element or as a deliberate feature wall – Eva is the perfect solution for new, green perspectives in outside areas.



Custom solutions for a variety of wall structures

The next few pages will introduce a number of living-wall systems. Some aim to accommodate various existing structural conditions as wall-mounted versions; others create completely new green spaces outdoor as free-standing versions. There are virtually no limits to the vertical planting of open spaces or building façades.

Our products

Both the **Eva** free-standing wall and the **Adam** façade wall enable vertical greenery and thus create oasis-like settings in otherwise unaccustomed perspectives. Even dull expanses of concrete and wall spaces can enjoy a nature boost while improving the urban climate in our ever warmer cities. What's more, green walls also benefit the buildings themselves, with added cooling capacity in summer and heating capacity in winter. Our living walls are therefore advantageous to nature, people and buildings in equal measure.



Living wall with mounting system

Our systems compared

Adam living wall

Utilisation:
wall-mounted planting

Suitable for:
façades and walls, new builds and existing buildings

Assembly:
modular, with substructure and plant cassettes

Substructures:
mounted directly onto the wall, with mounting system or for EWIS systems

Planting:
inside vertical or stepped cassettes

Read more about our Adam living wall from page 8 onwards

Eva living wall

Utilisation:
free-standing vertical planting

Suitable as:
partition or fence element, privacy screen

Assembly:
simple plug-in system, can also be supplied with floor anchors

Planting:
to either side in wall panels

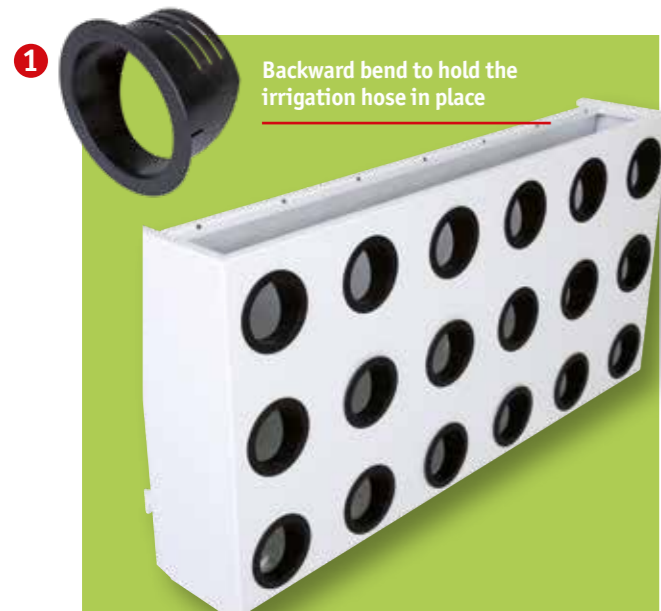
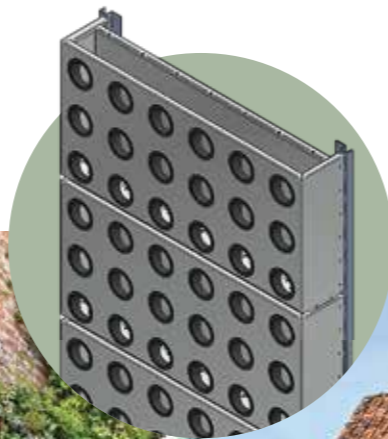
Read more about our Eva living wall from page 14 onwards



Vertical **Adam** plant cassettes made of aluminium Minimum assembly for maximum greenery

The entirely perpendicular design of our plant cassettes accommodates plants through pre-cut holes measuring 84mm in diameter. **Plastic granulate collectors** ① placed in the holes allow neat insertion of the plants. While the plants are inserted from the side, the substrate is gradually filled from the top of each cassette. This model enables the plants to flourish in just a short space of time, transforming your façade into an abundance of lush foliage.

To protect against frost and heat, we fit the vertical cassettes with XPS panels during manufacture. The panels are drilled through at the plant openings, making it easy to add the respective plants to the walls. Come sun, rain, wind or snow – you can rely on a year-round, flourishing green façade with our extremely robust and durable system.



Height: 495mm
Width: 495mm, 995mm, custom
Depth: 170mm
Plant opening diameter: 84mm
Plants per cassette: 9, 18, custom
Types: featuring a series of drainage holes that allow the water to run down to the cassettes below, or with nozzles to drain surplus water

Other custom measurements and bespoke products available on request.

Please see our price list for further information:



Cassettes with run-off nozzles are used in the bottommost row and enable excess water to be drained away.



Cassettes with a series of drainage holes allow water to run down to the plant cassettes below.

Stepped **Adam** plant cassettes made of aluminium Vertical construction with virtually horizontal planting



We developed the stepped variant of our plant cassettes to hold the greatest diversity of suitable plants while still enabling excellent rainwater intake. The riveted plant-cassette tiers made from 2mm-thick aluminium are slightly tilted, enabling vertical planting in a substrate depth of 120mm. They also allow greenery, especially climbing plants, to drape elegantly over the tiers below.

Alongside variants that feature three plant boxes arranged one on top of the other, we also offer stepped single boxes. These are an excellent choice for the upper edge of the wall in order to achieve as much plant coverage as possible.

Triple-stepped cassette



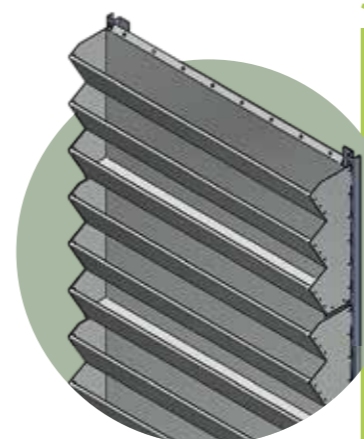
Height: 495mm
Width: 495mm, 995mm, custom
Depth: 170mm
Plants per compartment: 3-4, 6-8, custom
Types: featuring a series of drainage holes that allow the water to run down to the cassettes below, or with nozzles to drain surplus water.

Other custom measurements and bespoke products available on request.

Please see our price list for further information:



Single cassette



Single cassette with series of drainage holes

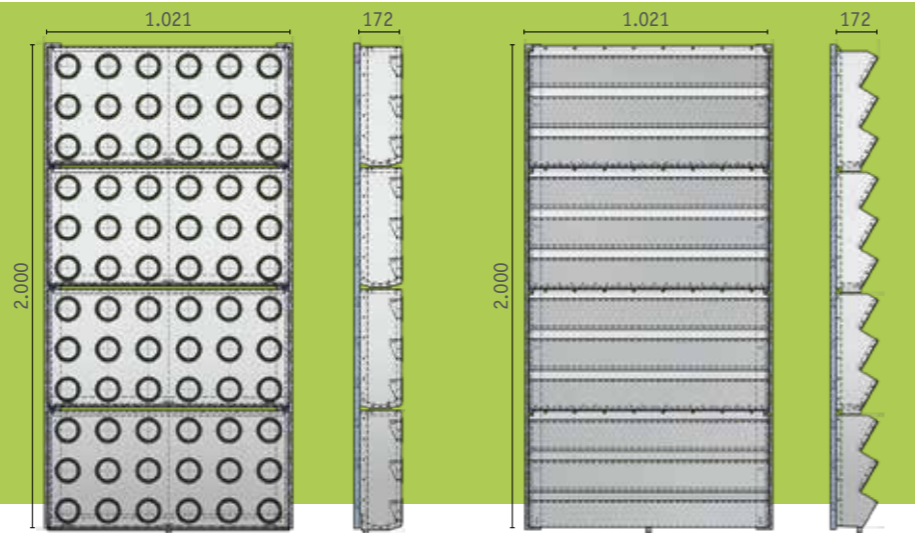




Substructure for **Adam** plant cassettes to attach directly to the wall (concrete wall)



The cassettes take in water evenly in the stepped version



Article	Material	Mounting rail position	Substructure installation depth
PWA U1L 20 ST	hot-dip galvanised steel	left	20mm
PWA U1R 20 ST	hot-dip galvanised steel	right	20mm
PWA U1M 20 ST	hot-dip galvanised steel	centre	20mm

The first substructure is an excellent choice for walls that are able to take a static load of around 140kg per square metre. It is made up of three top-hat rails that are directly screwed to the wall. The chosen plant cassettes are then hung from the rails.

A 40mm gap is left between the wall and the cassettes' outer wall to ensure continual airing of the façade. This version has an especially clean look and gives the impression that the plants are floating in front of the wall.

Substructure for **Adam** plant cassettes with mounting system to reduce the load on the wall

Article	Material	Mounting rail position	Substructure installation depth
PWA U2L 115 AL	aluminium	left	115mm
PWA U2R 115 AL	aluminium	right	115mm
PWA U2M 115 AL	aluminium	centre	115mm

If the exterior wall requires extra support because the static load of the living wall is too high, the second version of our substructures is the most apt choice. It features integrated feet that are placed on top of and screwed into a foundation. This allows the feet to take most of the weight, while special fixtures between the substructure and the wall reliably counter the tipping load of the planted systems.

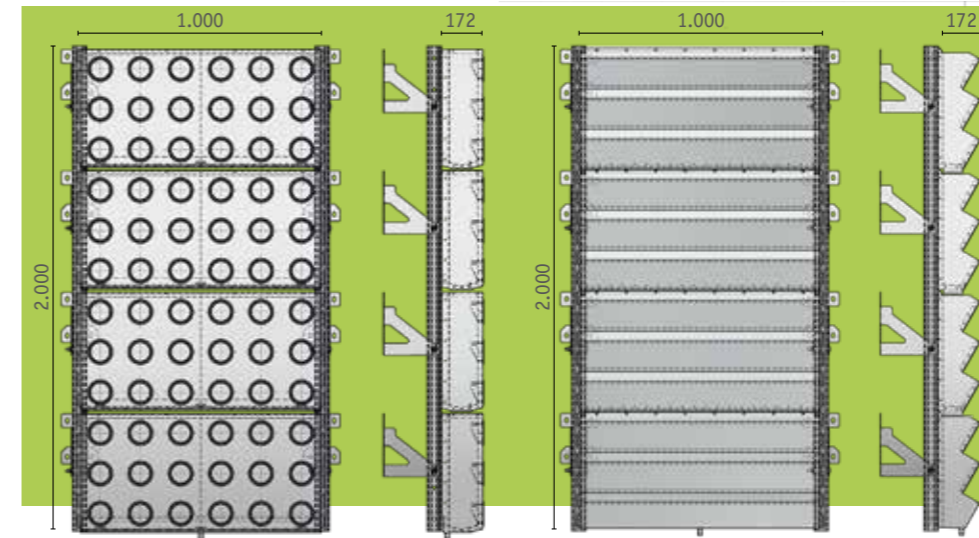
Here, too, the plant cassettes are hung from the three rails integrated into the substructure. This creates a gap of at least 80mm between the wall and cassette for sufficient air circulation. This version of the substructure is suitable for curtain walls with a maximum height of six metres.

Substructure for **Adam** plant cassettes for use with thermal insulation composite systems

Article	Material	Substructure installation depth
PWA U3 240 AL	aluminium	240mm

Our third substructure version is another self-supporting system. It is designed to hold a layer of insulation to the wall-side of the structure (80mm to 240mm), which is installed around the wall mount.

In this case, however, the added diffusion layer does not sit behind a panel, as is otherwise customary with curtain walls, but behind a suitable plant cassette. This is hooked directly into the substructure and covers the entire insulation layer that sits underneath.



The spacers enable the stepped plant cassettes to be attached here, for example, in front of the heat insulation layer.

See price list for further information:



Dimensions on this double page may contain errors.





Adam living wall for indoor installation

If you are looking at ways to also bring vertical planting indoors, we can provide our **Adam** living wall as a free-standing element complete with a base and water drip tray. Drainage slots in the bottommost plant cassette allow excess irrigation water to run into the tray, where it is securely collected. The tray is easily removed to pour out the water or, alternatively, the water can be left to evaporate. A grating made to fit the drip tray beautifully completes the look.

If required, we can install a pump inside the tray that can connect to commercially available drip irrigation hoses. Inclusion of the pump makes it much easier to maintain the living wall: excess irrigation water can be fed back into the water circuit and therefore into the plant cassettes. The only prerequisite is that the tray is filled with enough water at all times. If the pump is used together with a time switch, for instance, irrigation of our indoor **Adam** wall occurs fully automatically.



With drip tray



A cover grating completes the look



Irrigation using drip irrigation hoses

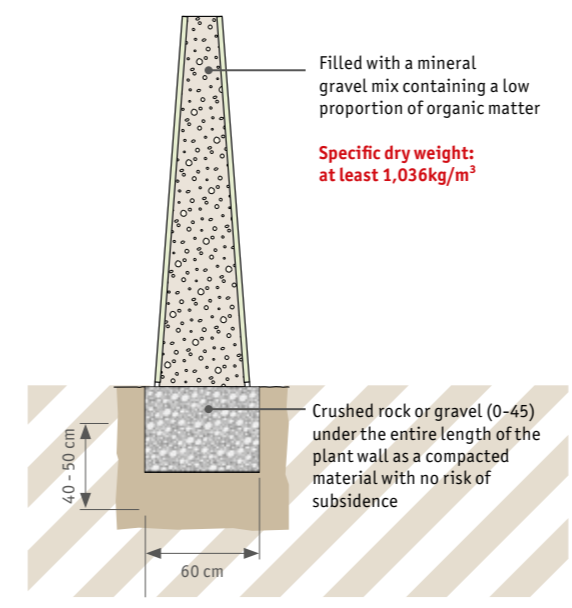


When installed indoors, our **Adam** wall really catches the eye while adding a lush splash of green to every room.

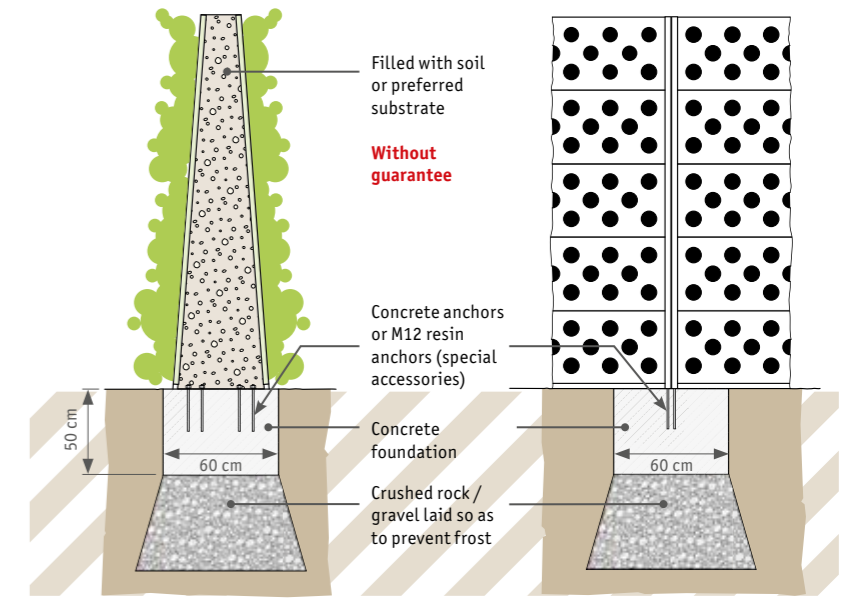
We have combined stepped and vertical cassettes here to demonstrate the different ways in which the system can be configured.



Free-standing Eva living wall made of Magnelis steel* Privacy screen and planting in one



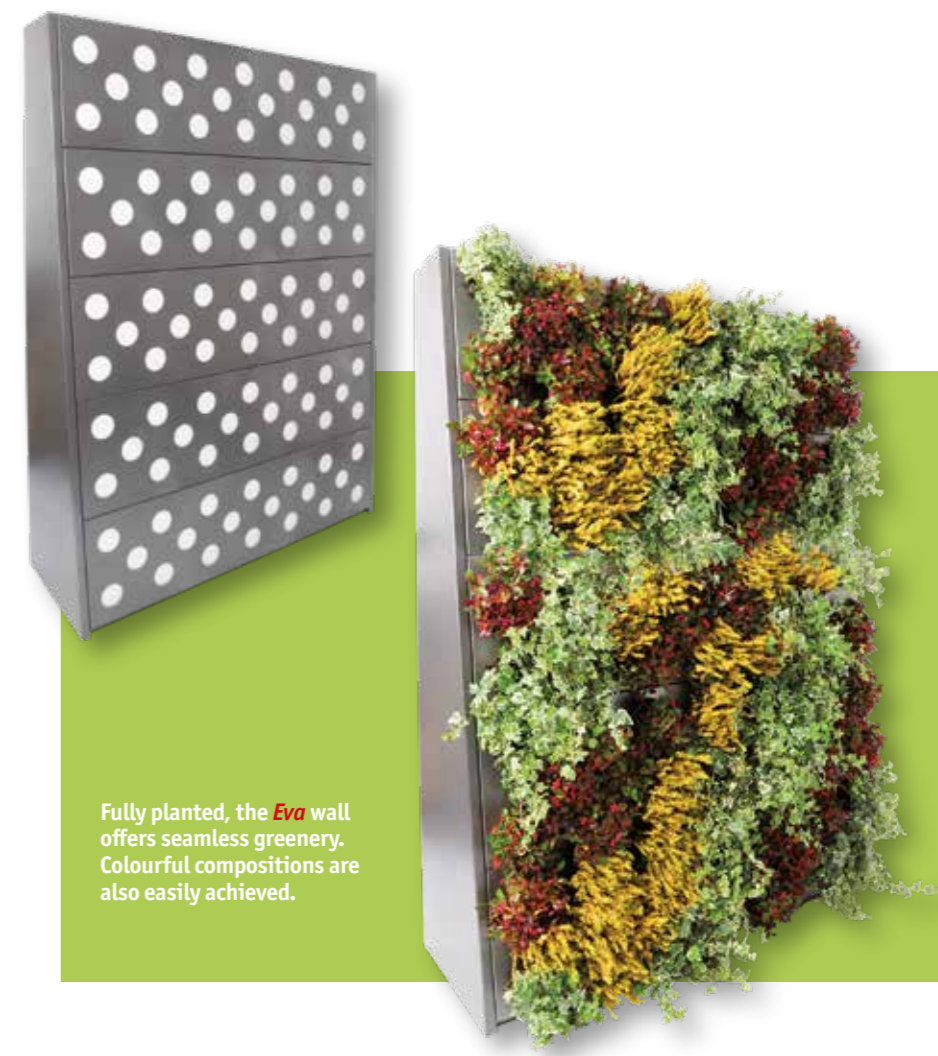
Set-up option A



Set-up option B

Large-scale greenery despite a lack of space? Our **Eva** living wall makes this possible, both indoors and out. The **Eva** wall can hold plants on both sides and facilitates planting in both sunny and also shaded or half-shaded locations depending on its orientation. Its vertical construction offers a large space for greenery despite the wall's small footprint. Available in different heights, the models can be placed alongside each other, for example, to create partition or fence elements, or they can be used as visual highlights thanks to their striking appearance. This is further enhanced by finishing the wall in a pure white (RAL 9010) or iron mica (DB 703) coating. And of course there are no limits to colours and shades beyond the standard versions.

Thanks to the plug-in system, the **Eva** living wall made from highly corrosion-resistant hot-dip galvanised steel is assembled in no time and can securely hold up to 20 plants per wall panel through its openings. The wall can be free-standing depending on the design and weight of the chosen model, however we can also provide additional floor anchors that can be secured into a concrete foundation. If the build-up of frost or occasional heat is a concern at the installation site, we can line the panels, on request, with additional XPS sheets that can be drilled through at the plant openings.



Fully planted, the **Eva** wall offers seamless greenery. Colourful compositions are also easily achieved.

Article	Height	Width	Depth at bottom	Depth at top	Colour
PWE 1176-1450-500 ST O	1.176mm	1.450mm	500mm	324mm	natural/none
PWE 1176-1450-500 ST W	1.176mm	1.450mm	500mm	324mm	pure white
PWE 1176-1450-500 ST G	1.176mm	1.450mm	500mm	324mm	iron mica
PWE 1176-1450-500 Sonderbeschichtung	1.176mm	1.450mm	500mm	324mm	custom colour
PWE 1944-1450-500 ST O	1.944mm	1.450mm	500mm	209mm	natural/none
PWE 1944-1450-500 ST W	1.944mm	1.450mm	500mm	209mm	pure white
PWE 1944-1450-500 ST G	1.944mm	1.450mm	500mm	209mm	iron mica
PWE 1944-1450-500 special coating	1.944mm	1.450mm	500mm	209mm	custom colour

*Magnesium-zinc coating (10 x greater corrosion resistance than galvanised steel; self-healing protection for cut edges)





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