Product Guide

- Living Wall
- Moss Art

ans interior

Welcome

Leaving a legacy of biophilic and biodiverse spaces.

Bring the outside into your interior designs and create biophilic internal landscapes that improve the health, well-being and productivity of the people.

Not only do they enhance the feel of spaces as living pieces of art, living walls also restore our innate human connection to nature. On a smaller scale, moss art can be used to creatively bring a piece of nature indoors.

We hope we inspire you to enhance spaces naturally.

Richard Silcock
Managing Director

Fitbit Office

The ANS Living Wall System

What do we do differently?

Building on the right foundation. There is one key element that allows for multiple added benefits, soil. Not only supporting a more sustainable focus, soil allows us:

- Greater design scope
- Water storage/buffer
- Improved air quality
- Minimal water usage

Plants are growing in their natural habitat. This means a larger plant selection, greater design flexibility and added health and sustainability benefits.

The ANS Living Wall System

What's the difference between natural soil and hydroponic systems?

Hydroponic

Uses a man-made substrate (such as rock-wool or insulation) for the plants to take root in. As there is no soil to retain moisture, it requires an almost constant irrigation supply containing chemical based nutrients feed the plants. As the plants are not growing in their natural habitat, plant design choice is limited.

The plants root hairs have insufficient protection and should the irrigation fail even for just two days, the entire wall is susceptible to drying out with devastating effect (pictured above).

ANS do not install hydroponic systems. While they can work in some applications the risk of failure is too great.

The ANS Living Wall System

What's the difference between natural soil and hydroponic systems?

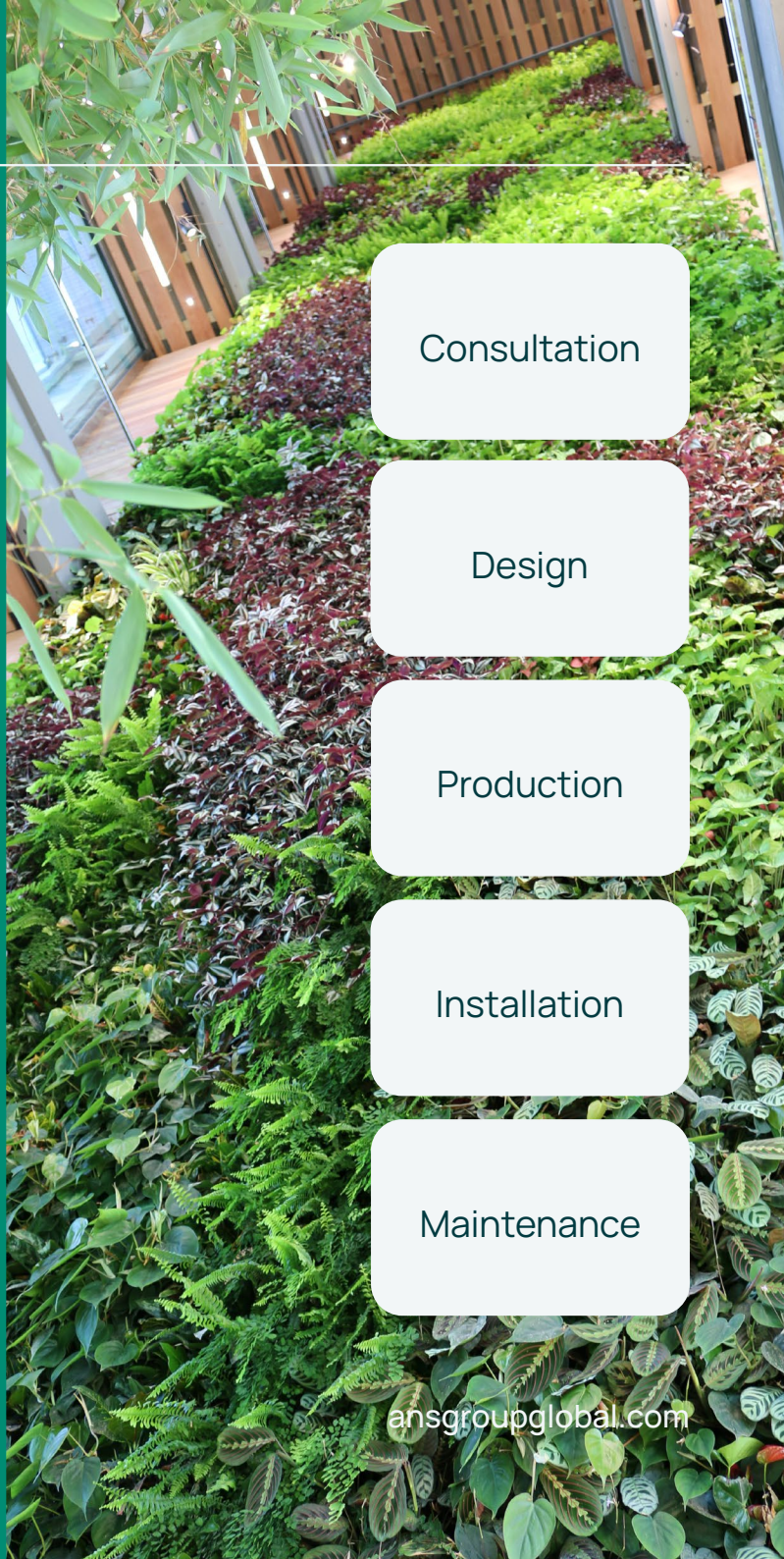
Natural Soil

This living wall system uses a natural soil based media as the plant substrate. The plants are therefore growing in their natural environment which allows for healthy natural growth, and greater flexibility with planting design to fulfil the purpose (eg. biodiversity). The system allows for a huge range of plant species and the planting facilitates creativity with shapes, patterns and words. The living wall can be installed fully established giving instant impact.

Natural soil is a long-term stable environment for the plants that retains water efficiently and provides greater biodiverse benefits. Even if the irrigation should fail, the plants root hairs are protected by the contracting soil, guaranteeing longevity.

The Process

1. Consultation
2. Design
3. Production
4. Installation
5. Maintenance



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Consultation

What's your purpose?

Design Statement

We have greater scope for design as soil is the natural medium in which most plants grow, therefore there are many species for us to choose from. We can incorporate patterns, textures, 3D effects and different colours to achieve maximum visual impact.

Improve Air Quality

With a larger plant range to select from, we have the opportunity to specifically select plant species with air purification benefits, and therefore create a feature that has measurable impacts on the air quality of the space.

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Consultation

What's your purpose?

Biophilia + Well-being

The science of biophilia proves that people feel better in spaces with natural features. If well-being is your focus, we can work with you to design something that makes the most of the space, with patterns, colour, 3D effects and scents that create the right atmosphere.

Building Ratings

With long-term benefits for the building (eg. improved building performance) and it's occupants, natural sustainable living walls support building standards such as BREEAM and WELL effectively. Understanding this at design stage allows us to create a feature that will help achieve certain standards.

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Consultation

Opportunities for further sustainability and efficiencies (eg. rainwater harvesting)

Understanding of key project drivers

Consultation Stage

Analysis of on-site potential

Understanding of client's vision

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Design: Plant Selection

Plant selection is critical to the long-term success of a living wall. Our in-house horticulturists have crafted comprehensive plant lists based on a range of locations, aspects and design considerations.

As well as the condition of the space, light levels and location, the desired aesthetic and project drivers are also key factors that affect the plant selection. For example, we create plant palettes:

- For air purification
- Aesthetics (that 'wow' feature)
- Aid achievement of building ratings

Design: Plant Selection

A challenge on a smaller scale: create a continuous tapestry of plants between the kitchen and the garden, using interior and exterior plant palettes.

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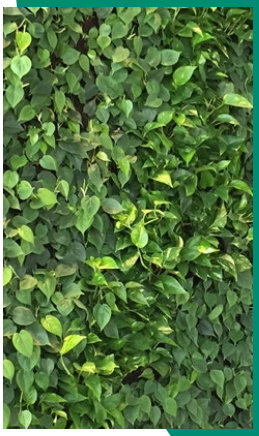
Design: Concept Design

Our design team can produce full colour mock-up and design concepts either for a decided location, or to highlight the potential for living walls on multiple locations in the space.

These designs are helpful to show the benefits of different planting designs using the chosen plant palette, playing with colour, pattern, texture and 3D effects.

For this project, the final choice was a design using just green plants, playing with texture for a sophisticated finish.



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Production

Each plant chosen for the wall is numbered according to its position within the module as well as the main wall. The modules are hand planted in accordance with the design's numbering.

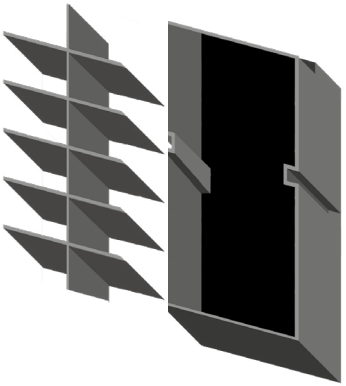
Our dedicated nursery team have years of horticultural experience, so the plants are carefully maintained and tended to throughout the establishment period.

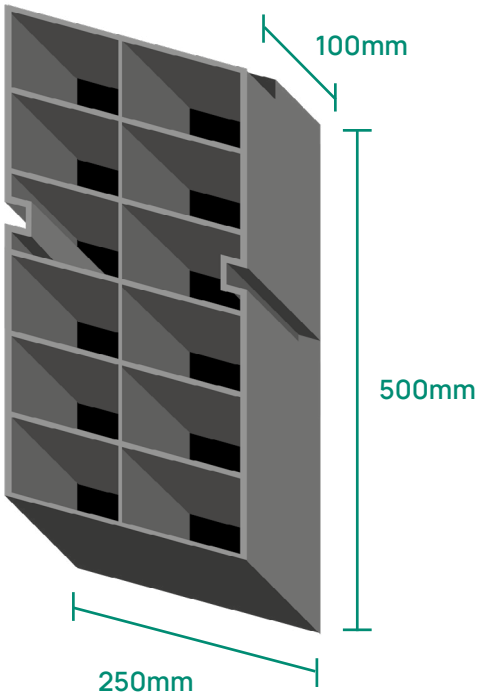
We normally allow for a minimum establishment time of 3-4 weeks for internal living walls and 6-8 weeks for external, although this is dependant on the plant species used in the wall.

Once the wall is planted, the client is welcome to visit the nursery to inspect their wall and make any finer adjustments they feel are necessary to ensure the product's design and growth is to their satisfaction.

The ANS Living Wall Module

- Manufactured in the UK from 100% recycled material
- Wind resistant to 140mph
- Modules are planted and plants are acclimatised prior to installation
- 72kg per m^2 fully saturated
- In extreme weather the module is designed to expand externally
- 8 modules per m^2
- No visual exposure of the module on the frontage
- 96 plants per m^2
- Central section is separate to allow for deeper root movement in the module. This allows for larger plant species to develop.





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The ANS Living Wall Module

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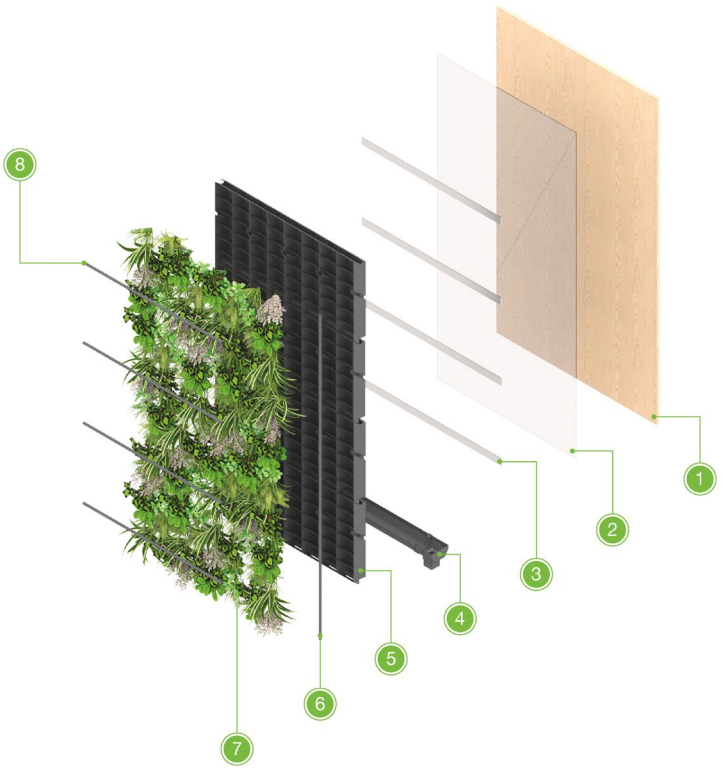
Installation

Backing Board Build-up System

This build-up is suitable for interior applications.

1. Backing board
2. Waterproof membrane
3. 48x12mm ANS Fixing Rail
4. Osma Squareline Gutter or client specified
5. ANS Living Wall Module 500x250x100mm
6. 16mm vertical irrigation pipe
7. Planting
8. 16mm inline emitter pressure regulated irrigation pipe



Irrigation

The irrigation pipes are hidden from view but fulfil a critical role. The supply of water to the wall is essential to healthy plant development. The back of each living wall module is kept moist facilitating the natural composting of mature roots.

For living walls under 30m^2, we'll use an irrigation system without a tank, and for any living wall over 30m^2 there'll be a tank.

Using natural soil means we can keep the water usage to a minimum, as soil efficiently retains moisture - more than a man-made material can.

Rainwater Harvesting

Harvested rainwater from the building roof can be used for the wall.

We can work with you in the early stages to design in and integrate a rainwater harvesting system.

This is where we collect rainwater and use it to irrigate the living wall where possible. This not only increases the sustainability of the scheme by reducing mains water usage, but is effectively an alternative approach to SuDS (Sustainable Drainage Systems).

Every ANS Living Wall includes a built in irrigation system.

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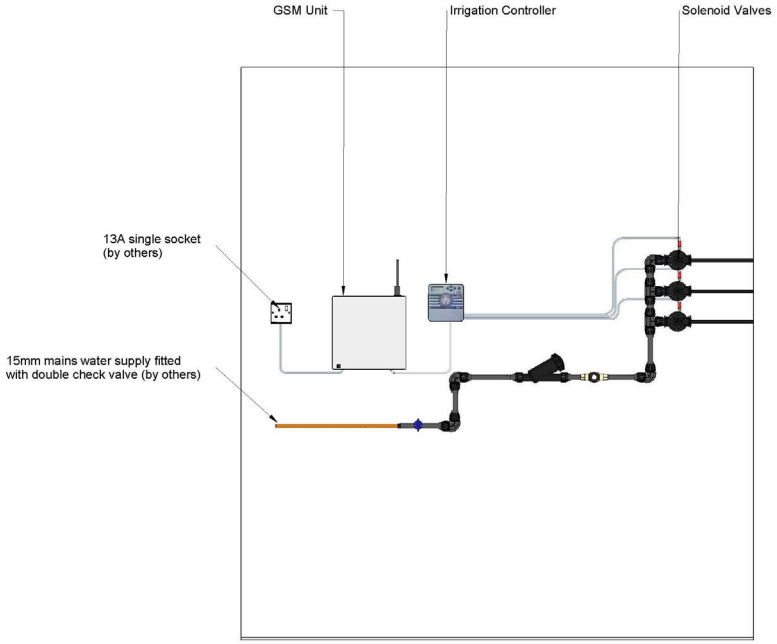
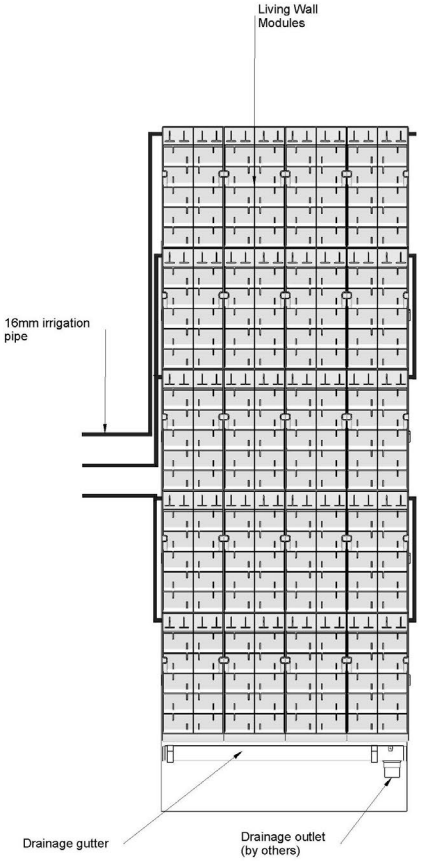
Irrigation no tank

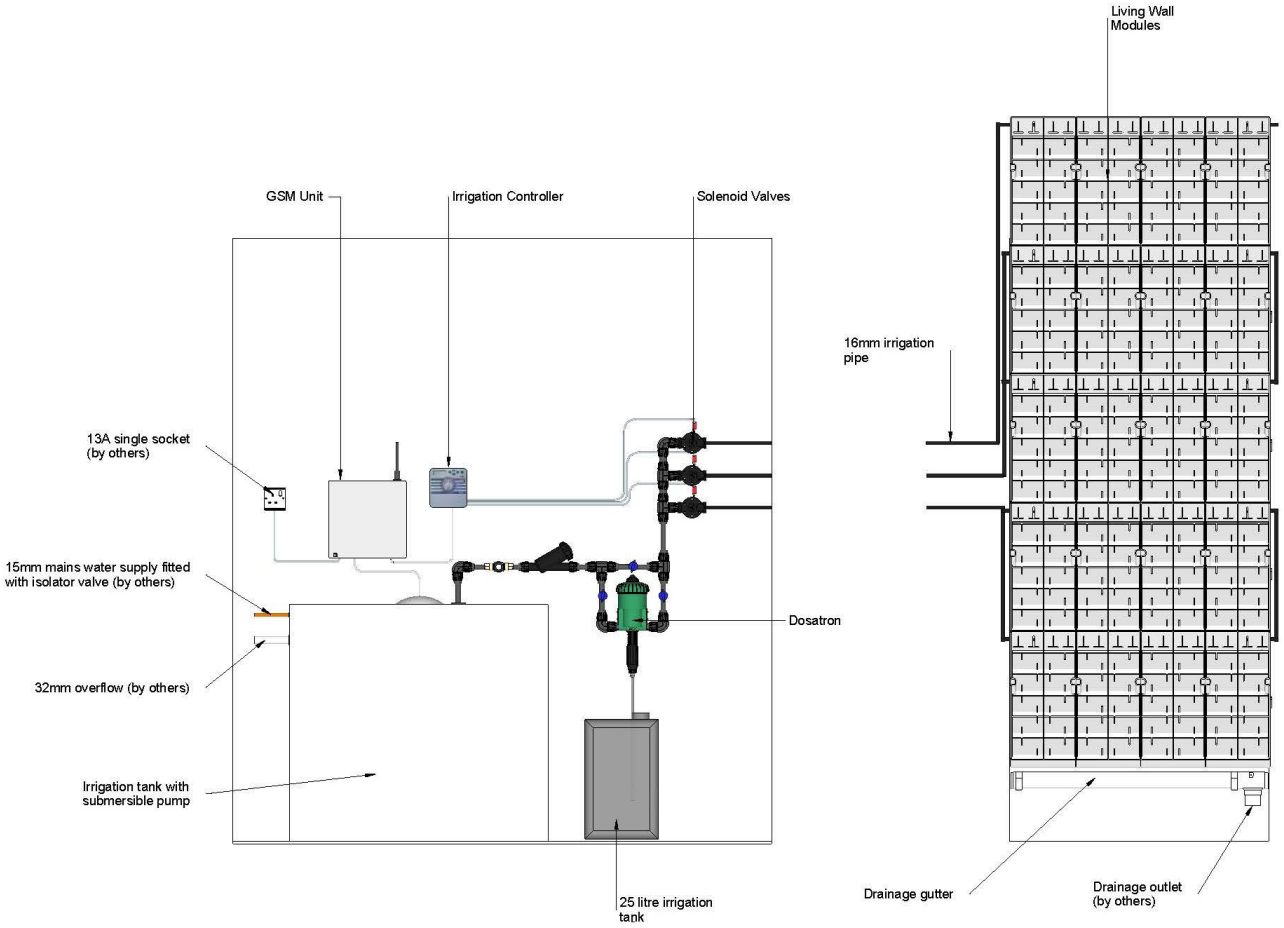
Irrigation layout for living walls under 30m²





Irrigation with tank

Irrigation layout for living walls over 30m²



Lighting

Lighting is an important consideration when designing a living wall. As in natural environments, different plant species thrive in various light levels.

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Lighting

Top
Culverdon House

Right
Crystal Cruise

We can select plants to accommodate the aspect and natural light intensity of each project.

In areas where no natural light is present (particularly indoors) it is essential to artificially create the right light intensity and colour temperature to support healthy plant growth. Light intensity is measured in foot candles (FC) or lumen's.

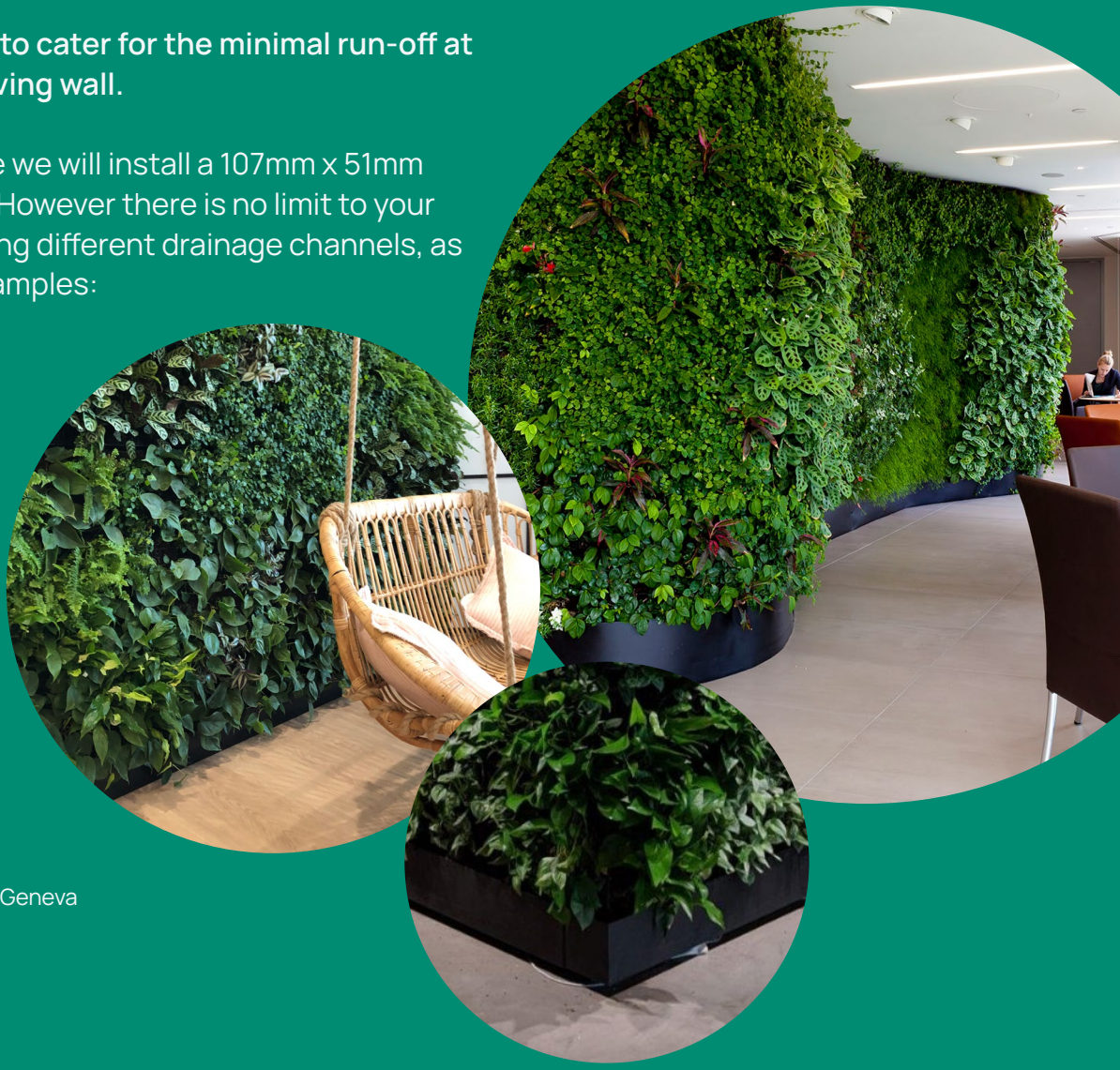
For reference a clear summer day is around 15000 FC. We require a minimum of 250 FC for a long lasting living wall. Light colour temperature is measured in Kelvin (K). Natural sunlight provides a full spectrum of colour and indoor living walls will thrive with a similar light balance (4500 K to 6000 K). For a healthy living wall we require a minimum of 3000 K.

If you are unsure whether you will need extra lighting for your living wall, give us a call on +44 1243 545818 and we can discuss.

Drainage

Drainage is needed to cater for the minimal run-off at the bottom of the living wall.

As standard practise we will install a 107mm x 51mm black plastic gutter. However there is no limit to your creativity in specifying different drainage channels, as per the following examples:



Top Right
XL Catlins

Top Left
Clinique Hygiene Dentaire, Geneva

Bottom
Avolon, NYC

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Maintenance

University of Nottingham

Maintenance and forward planning are key for product longevity and to ensure your living wall remains an asset.

This will require monthly visits to carry out a visual inspection of the wall, checking for any early signs of pest and disease. Should there be any concerns, our technicians will apply a biological treatment which is safe for the environment through the irrigation system. Plant growth will be monitored and any localised trimming or pruning will be carried out. The team also ensure the irrigation calibration is correct, replace plants where necessary and make sure the leaves are free from dust and the area is clean.

These monthly visits ensure the walls are kept healthy and continue to flourish.

Details of maintenance should be included within the specifications, O&M manuals, and on-going management plans for the building.

Pictured: University of Nottingham

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The Benefits of Interior Living Walls

We'll go into a bit more detail on the power of natural living walls, focusing on the following key advantages:

- Air Quality
- Building Ratings
- Acoustics
- Property and Investment Value
- Health and Well-being

Air Quality

Did you know 1m² of plant cover traps 130 grams of dust per year, and generates the oxygen required by a person throughout the year?

Plants do the opposite to us humans: they absorb carbon dioxide and produce oxygen through photosynthesis, whilst soil assists in capture of particulate matter. Using soil also gives us flexibility with plant selection which allows us maximum opportunity to select species that hold air purification properties.

Living walls are a powerful method to aiding air purification, whether it's inside or out, with the ability to cover a large expanse without taking up precious space.

Avolon, Dublin

Fact
1m² of plant cover traps 130 grams of dust per year, and generates the oxygen required by a person throughout the year.

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Building Ratings

Aiding a design focused on achieving a certain BREEAM rating, a living wall can help improve a buildings efficiency, and support on-going sustainability, successfully demonstrating the proprietor's sustainable credentials. This was the case at the University of Edinburgh, where the living wall supported achievement of **BREEAM Excellent**. This building was specifically designed to meet BREEAM and **Passivhaus** standards.

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Acoustics

In one study, an 80mm thick green wall reduced noise by 15dB. Our living wall solution at Acopia Group offices (following page) was designed to create a partition between a break-out area and the main office, ensuring unwanted noise was not transferred between the two. With the purpose being acoustic-driven, we selected plant species which are best known for sound absorption properties, such as ferns and plants with woodier stems.

Plants reduce noise in three different ways:

Deflection
Hard surfaces tend to amplify sound as the sound waves bounce of them, whereas plants are flexible and break up the sounds waves, deadening the sound.

Absorption
Soil, leaves, branches and woodier stems effectively absorb sound.

Refraction
Plant leaves refract noise and eliminate the echoes as the sound waves do not simply bounce of the surface (unlike rigid surfaces), creating an echo.

Acoustics: Case Study

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Property & Investment Value

Healthy people perform better and healthy buildings are financially more attractive.

The science of biophilia proves that people are drawn to spaces with natural features, which returns the value of investment, and creates stronger future investment opportunities.

Relating to a workspace setting, more than 90% of a company's operating costs are linked to human resources, and financial losses due to absenteeism account for 4%. The main reasons for work related absences are stress and psychological problems. Employees with no view of nature take an average of 68 hours per year of sick leave more than those who have a view.

Pictured: Crystal Symphony Cruise

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Property & Investment Value

We often build for function, but do we consider how when there is a natural feature integrated into a property design, this automatically increases the property value?

In a retail setting, the use of greening, in or outside leads to increases in rental rates on retail spaces with an **increased customer spend of 8-12%**, and in the hospitality sector, clients are willing to pay 23% more for rooms utilising biophilic design principles.

Pictured: Christchurch Airport

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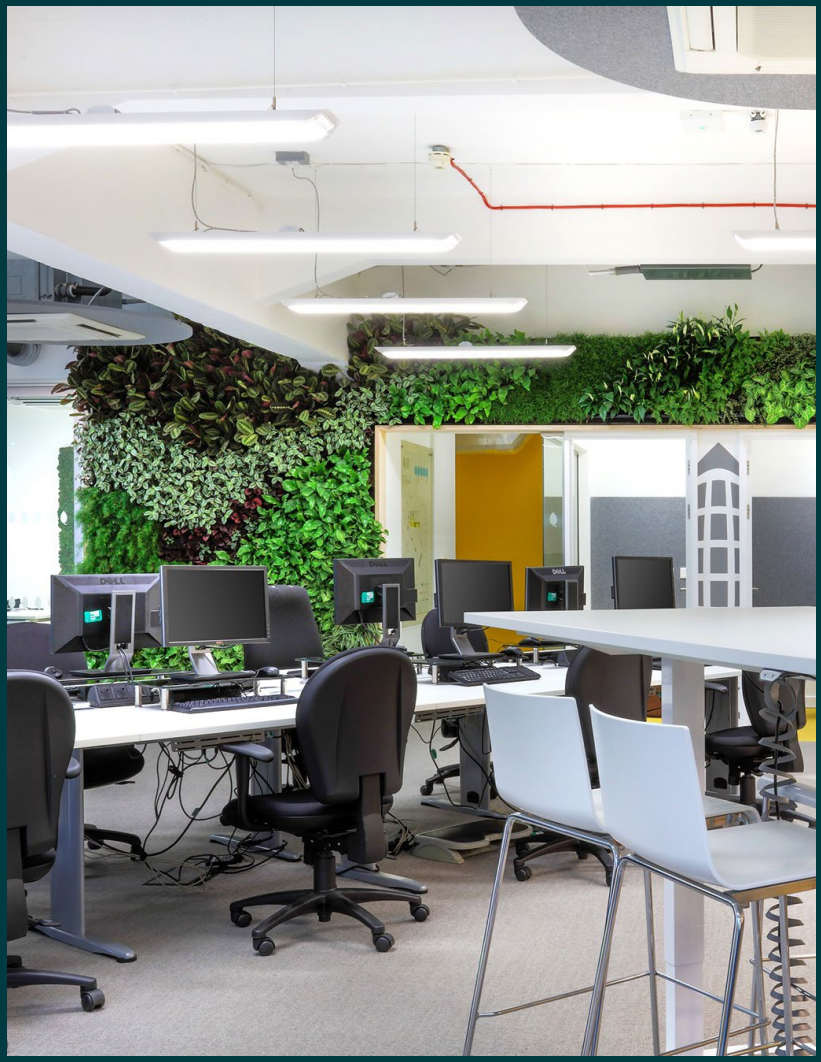
Health & Well-being

Our link with nature as humans is backed by science.

According to a study by Ulrich in 2002, simply having a view of greenery increased workplace productivity and patient recovery rates in hospital.

The biophilia effect describes our innate connection to nature and highlights the importance of restoring and keeping this connection for our mental and physical health.

In an office where nature was present, **efficiency increases of up to 8%** were noted, with rates of well-being up by 15% with notable increases in **creativity** and decreased absenteeism and stress-related illnesses.



Pictured: UK Green Building Council

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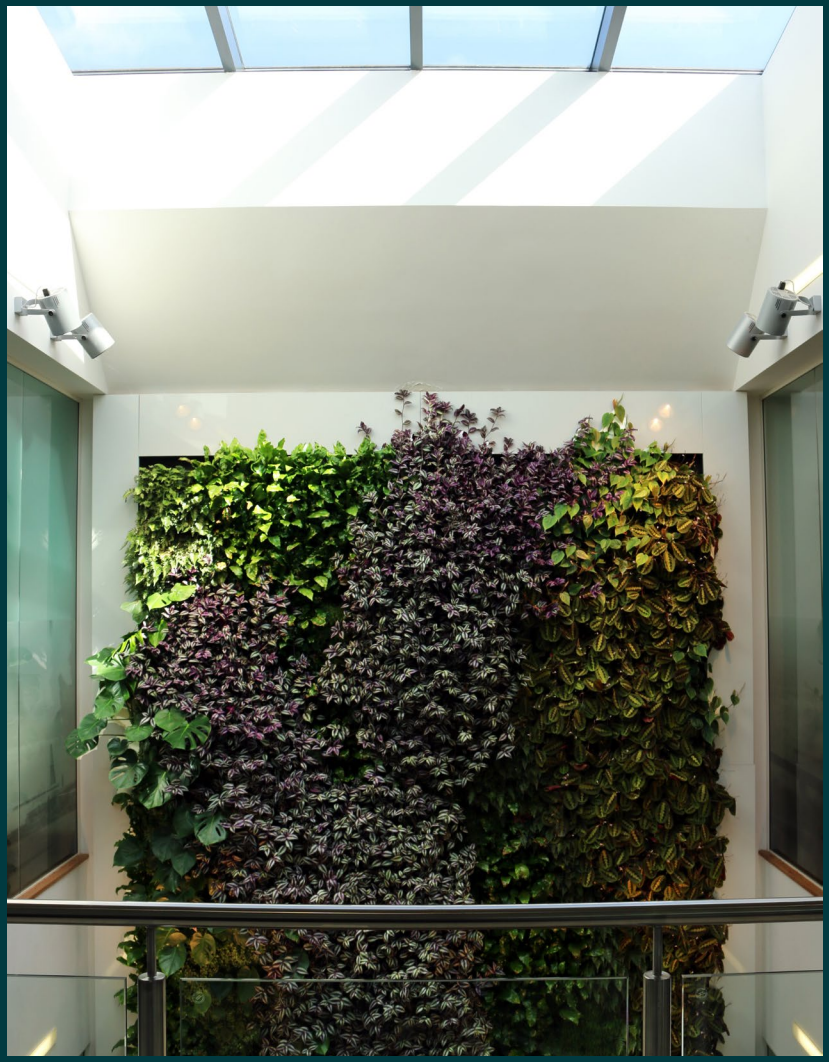
Health & Well-being



In three separate studies, results showed that **views of greenery caused positive changes** in systolic blood pressure, restored cognitive abilities, and decreased mental fatigue.

Spanning a vertical surface, a living wall is an effective solution to bring nature indoors, without compromising on space, and allowing more occupants a view of greenery.

Pictured: AJW Group Offices

The Foundation of Success

What matters to us is creating something that is going to last a long time and will continue to fulfil the purpose it was designed for.

But this doesn't happen automatically. The design stage is the most important part of the process, usually allowing us to find and take advantage of the opportunities for greater sustainability, decrease costs and ensure the purpose of the living wall is fulfilled. Spending time on this stage will mean a successful finish.

What makes a living wall a long-term asset?

There are 4 key factors which are the founding principles of a successful long-term solution for any green infrastructure system:

- Natural organic substrate
- Correct plant species selection
- Water management
- Maintenance

Research References

Darlington, 2001

London Living Roofs and Walls Report 2019 - Dusty Gedge and Gary Grant

Biophilic Design Research Findings - Mott MacDonald

Ulrich, 1986, 2002

Pretty et al., 2005

Kaplan and Kaplan, 1989

van den Berg et al., 2007

Moss Art

The simple no-maintenance solution to bring the outside in.

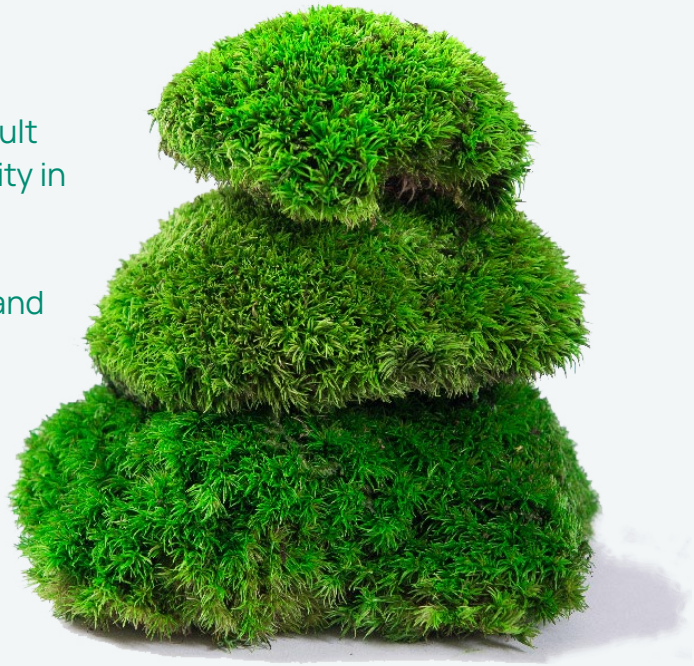
Nothing artificial comes close to the velvet texture and tactile depth of real moss, whether deep dyed to vibrant yellows or true to life in forest greens, it's easily sculpted into shapes, moss logos or lettering to suit you.

Our moss is real moss that is cut and preserved before being dyed in a range of colours. As a result ANS MossArt allows for a huge degree of creativity in the design and is very quick and easy to install.

The finished artwork gives a sculpted 3D effect and requires no maintenance, power or irrigation.

We hope to inspire you to enhance structures naturally.

Richard Silcock
Managing Director



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Why moss art?

Did you know that people working in an environment with plants present were 12% more productive and less stressed than those who worked in an environment without plants?

Branding

Moss can be designed to create an accurate representation of your brand, logo or pattern of your choice. As the size of the moss pieces vary, we can be more detailed to create clear-cut distinctions and a stunning finished piece.

Well-being

It's a fact that we feel better around nature. This is proven by 'the biophilia effect', where we respond better when we are nearer nature - we have an innate connection to nature that we need to ensure we look after. Adding a touch of green to the office can help improve staff's morale, adding some life to a space where we spend most of our time.

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Why moss art?

Sound Insulation

The depth and texture of the moss adds a natural sound barrier and helps deaden distracting noises in any interior environment.

Aesthetics

The texture and depth of real moss adds a sophisticated touch to any space. You can go big or go small and the design flexibility is huge, with colours, patterns and textures.

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Why ANS moss art?

Colour options
With over 20 different colours to choose from, you can be sure your vision will be brought to life accurately.

Fast turnaround
Unlike a living wall, the moss is preserved so there is no waiting for the plants to establish. Once design is confirmed and the piece has been created, we'll be able to have your moss artwork on site within a few weeks.

Maintenance free
Due to our preservation process the moss will remain exactly as it is installed, requiring no on-going maintenance or after-care.

No power or water
The preserved moss requires no electric power, irrigation, drainage point or additional lighting. It is the most hassle-free solution to bringing a piece of nature indoors.

Why ANS moss art?

With three different moss types, we can create pieces of art with different textures, colours and 3D effects. Mix it up or keep it simple - it's up to you.

Ball Moss

Flat Moss

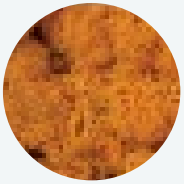
Reindeer Moss

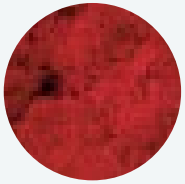
Colour options


Black


Grey


Pink

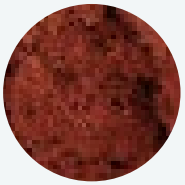

Autumn

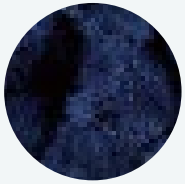

Red


Cyclamen


Old Spring


Moss Green


Sienna


Classic Blue


Lavender


Mango

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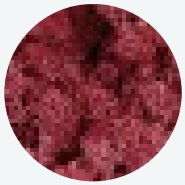
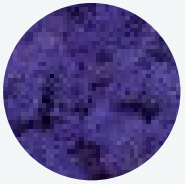
Colour options

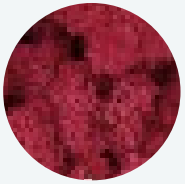

Natural


Burgandy


Peach


Purple


Yellow


Crimson


Mid Green


Turquoise


Ice Blue


Spring Green

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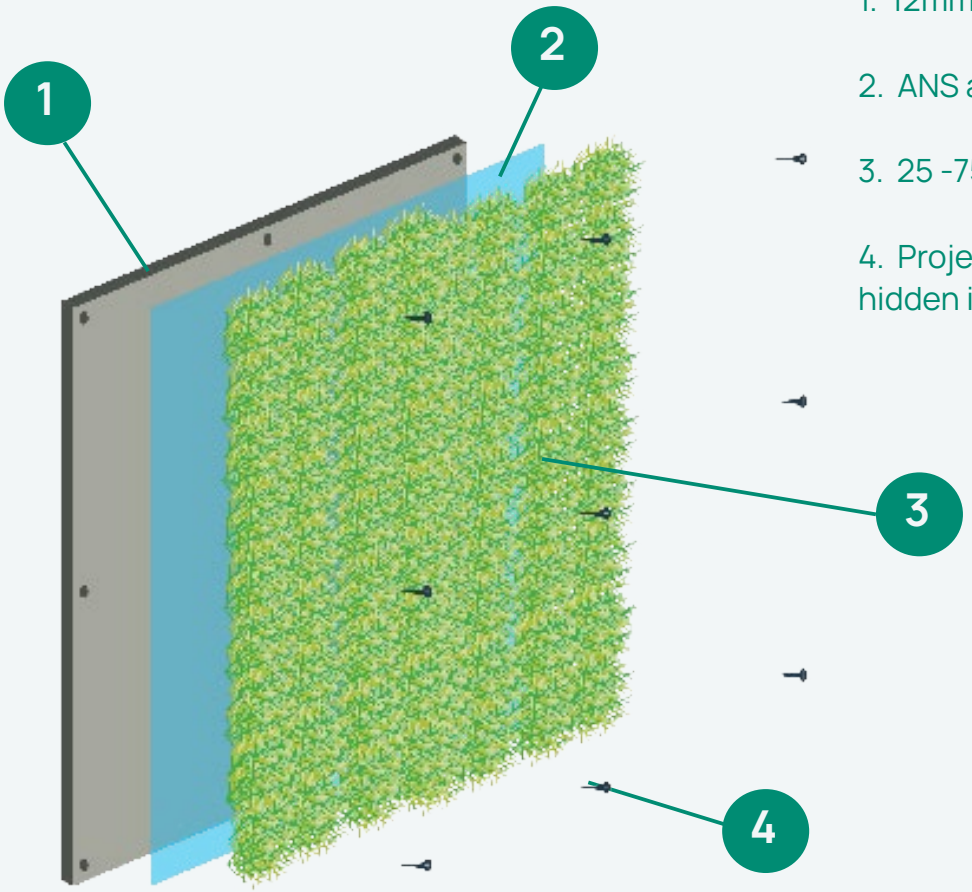
Installation



1. 12mm ply backing board
2. ANS adhesive
3. 25 -75mm ANS preserved moss
4. Project specific screws (heads are hidden in the moss)

Case Studies

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Case Studies

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Case Studies

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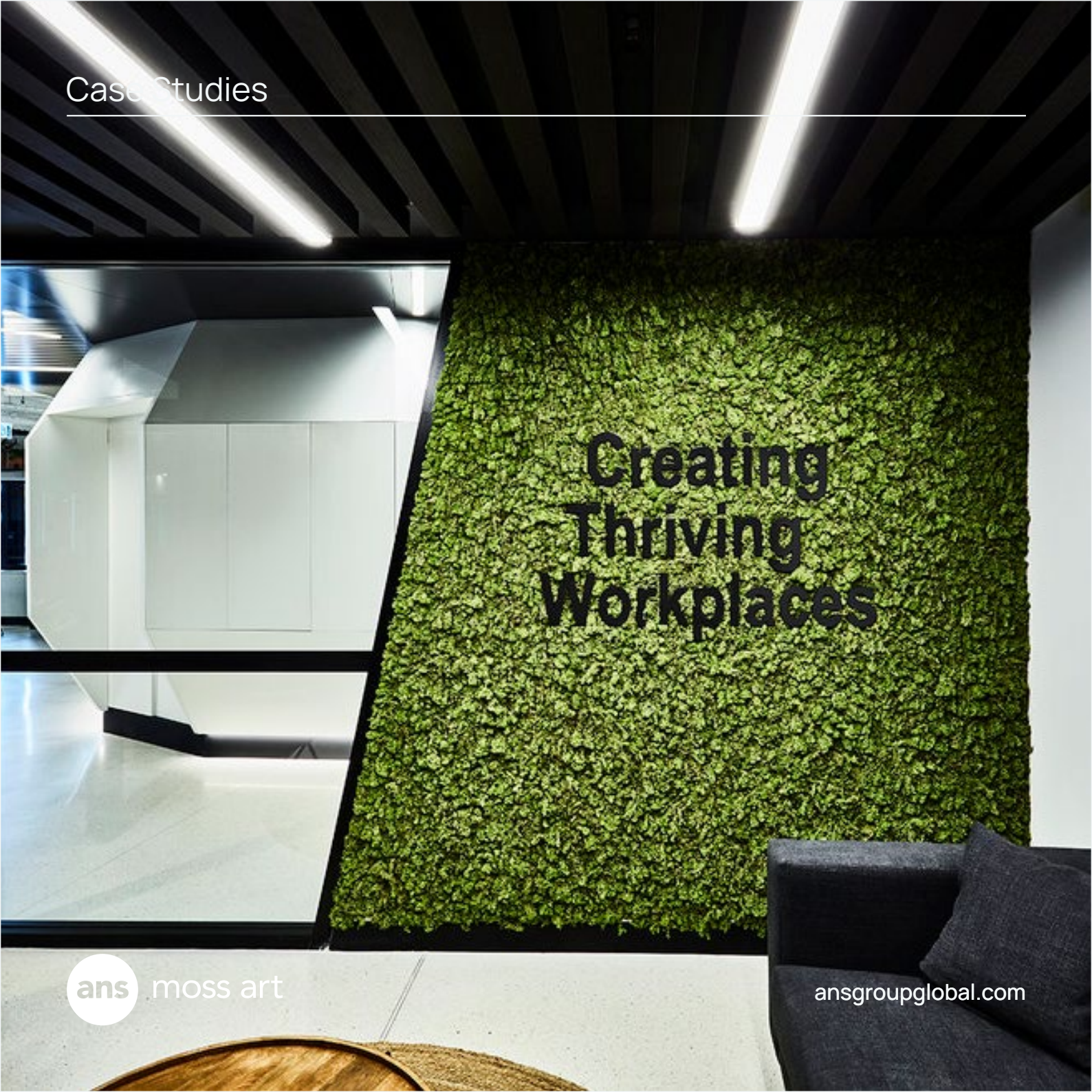

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Our Mission

More than half the world's population lives in cities and the number keeps increasing.

As development increases and space becomes more precious, we've looked to the wasted surfaces in our urban areas to re-introduce nature and provide long-term environmental benefits.

If you have a project or any questions please do get in touch.

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