CASE STUDY | LIVING WALLS

Biotecture
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LIVING CLADDING AT MCARTHURGLEN ASHFORD DESIGNER OUTLET

Ashford, Kent

Client: McLaren

2019
Designed and installed by Biotecture

>2,000m²
of BioPanel living cladding

120,000
plants

34
plant species

Overview

Biotecture's statement living walls are integral to the architectural look and feel at McArthurGlen Ashford Designer Outlet.

They were designed to enrich the retail experience and strengthen the outlet's position as a flagship shopping destination. Working collaboratively with the design team and the main contractor, Biotecture designed and installed over 2,000m² of living wall to create a rich vertical garden.

The green walls help establish a sense of place, and reflect Kent's status as 'The Garden of England'. The project is one of Europe's largest living walls and demonstrates how living walls can be delivered at scale to enhance the urban environment.

Project Details

Biotecture was appointed to design and install over 2,000m^2 of living wall rainscreen cladding on Ashford Designer Outlet's second phase of development. The whole project was conceived by the site's owner McArthurGlen, as an opportunity to revamp the retail experience and to create a unique flagship designer outlet for the UK. Biotecture's living walls played a key part in achieving this vision.

The original retail outlet, designed by renowned architect Richard Rogers and completed in 2000, has a distinctive architectural aesthetic - a ring of tensile structures. The design team at Chapman Taylor wanted phase two to have an equally strong and innovative architectural language of its own. After working collaboratively with Applied Landscape Design and the Biotecture team, they chose to clad the new development in living wall to create a 'rich vertical garden', to help establish a sense of place, and reflect Kent's status as 'The Garden of England'.

The new expansion has created new retail units as well as an events space, food piazza, interactive children's play area and additional car parking. Biotecture's BioPanel living wall system spans the walls of the new entrance promenade, walkways, and many of the 46 new stores.

> **Living walls are proven to help uplift people's mood, reduce air pollution and aid biodiversity - this installation creates a calming atmosphere at the focal point of the new shopping space, with beautiful vertical gardens covering the walls and providing new habitats for local wildlife.**

Jay Newman, Managing Director
McLaren South

Integrated Design

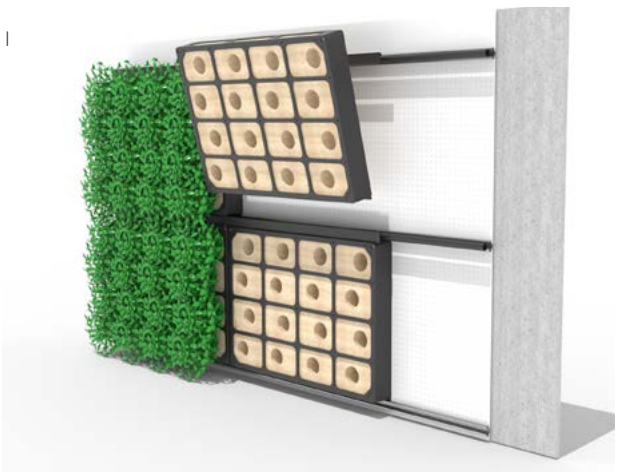
This innovative project needed a collaborative design approach at all stages. Biotecture worked closely with the architect, landscape designer, and main contractor to fulfill the client's vision. We were first approached by landscape architect, Applied Landscape Design, in 2013. They were looking at different living wall options to confirm what they wanted to achieve. Using our 700m^2 wall at 20 Fenchurch Street in London as a precedent, we were able to contribute to the architectural look and feel of the design.

Our large-scale living walls are hydroponic; the plants are grown in a natural, dimensionally stable, chemically inert substrate and watered through an integrated irrigation system. This helps to control water usage and nutrient delivery and provides a stable and predictable root zone for the plants.

Early involvement in the project allowed the required irrigation infrastructure to be incorporated into the design at an early stage. The extension is made up of three separate blocks and each block has its own plant room with a network of ducting and pipework.

> **Realising the vision at Ashford was always going to be a demanding project but having tackled the hurdles early in regard to managing Client and Centre Manager's expectations I have to say that it has gone smoother and looks better than we ever hoped for and that is down to the proactive and experienced involvement from all at Biotecture**
>
> Kym Jones
> Principal, Applied Landscape Design

1



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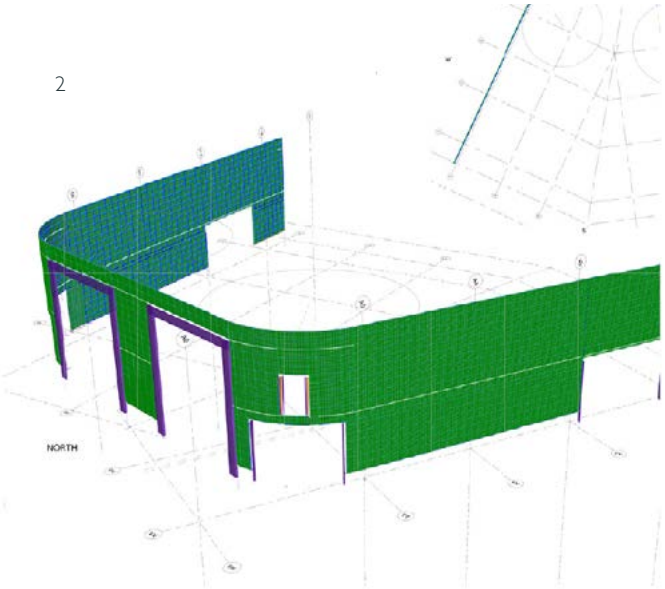


1_The BioPanel hyrdoponic living wall system

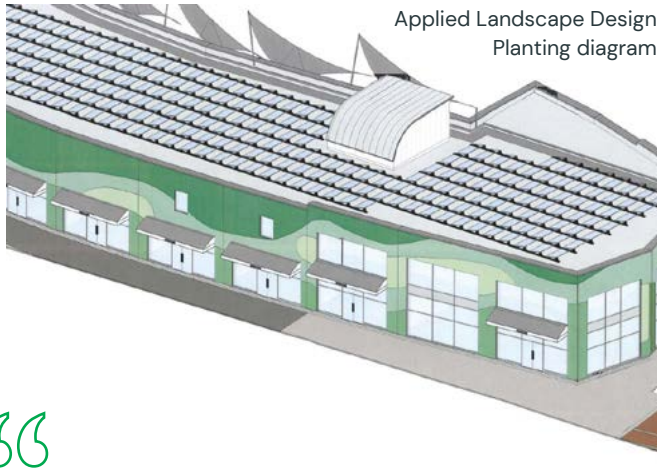
2_Setting out diagram for a curved section of wall at the McArthurGlen Ashford Designer Outlet

We worked with Applied Landscape Design to develop the plant palette. The curved extension has faceted facades facing every direction, therefore the planting had to be carefully planned to account for varying climatic conditions.

We developed a series of matrices to help with plant selection, a system we continue to use on current projects. The final design creates subtle drifting waves across the buildings. Statement plants were included to create pops of colour, and seasonal planting was chosen to create a changing landscape throughout the year and encourage return visitors.

We continued to work collaboratively with Applied Landscape Design and the architect, Chapman Taylor, writing and confirming the specification until the project went to tender in 2016. When McLaren Construction were appointed as the Main Contractor on the project in 2018 they appointed Biotecture to deliver the scheme's living walls. Due to the scale of the project we ordered the plants 12 months in advance and nurtured them in phases in our nursery on the south coast. This was cost-effective for the client and helped with the integrated look and feel of the planting when the panels were installed on site.

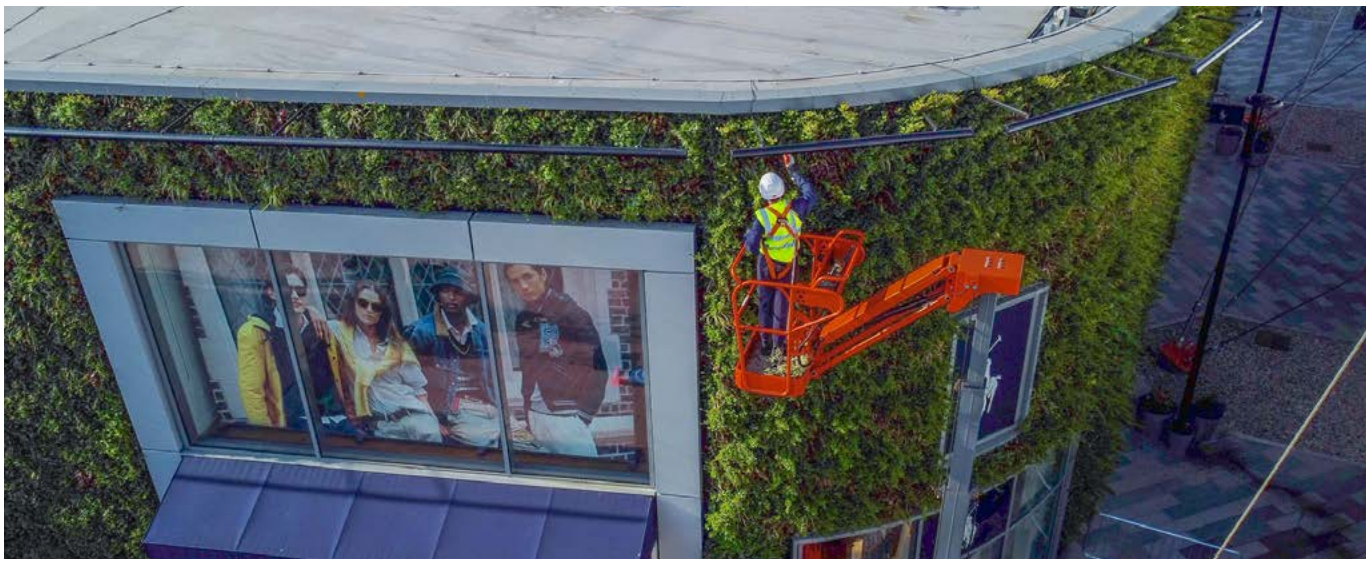
The living walls are integral to the architectural look and feel at the McArthurGlen Ashford Designer Outlet and the scheme was Biotecture's largest project to date. To ensure we fulfilled the design team's vision, we constructed a mock-up in our nursery and full mock-up on site. This helped to inform the final architectural details - such as the height of the plinth. The mock-up also helped to inform site sequencing and ensured all sub-contractors understood the interfaces between the different finishes.



Applied Landscape Design
Planting diagram

> **Working closely with the appointed living wall specialists Biotecture, we were able to fully understand the living wall system and installation sequencing, along with any limitations, allowing us to fully coordinate the setting-out of the modular panels, irrigation system and drainage across the façades of the building while maintaining our architectural design intent. All of this had to coincide with the setting-out of various other packages of works, such as the feature flashings on shopfront glazing, granite plinths, various rainwater goods penetrations and bracketry for fixtures such as external feature lighting and shop blade signs.**

Neil Allan, Architectural Technologist
Chapman Taylor



Installation and Maintenance

The living walls were installed in three phases between Spring and Autumn 2019. The works were carried out in a live retail environment so we worked closely with the main contractor McLaren Construction to minimise disruption to shoppers.

Our BioPanel system forms an integral part of the building fabric. The first fix included the installation of backing boards and aluminium mounting rail as well as the installation and commissioning of the irrigation system. The second fix was the installation of planted panels, which slot in between the aluminium mounting rails. Biotecture were able to accommodate McLaren's compressed construction programme, delivering 60m^2 of living wall each day per installation team.

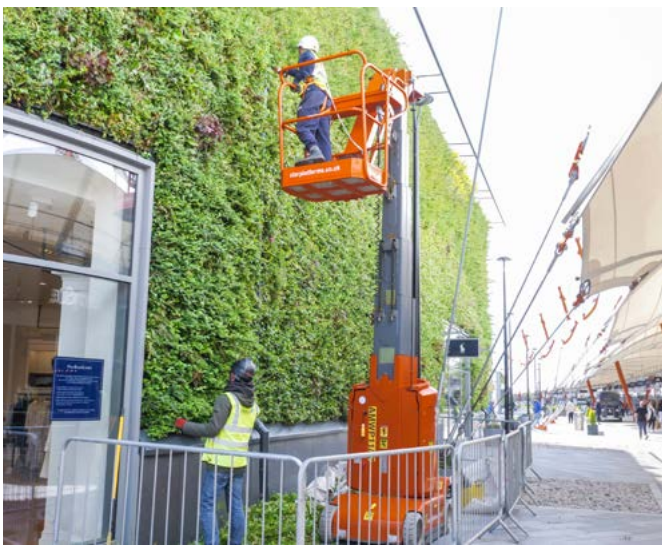
Our living wall system gives the plants the best opportunity to flourish and our maintenance operatives know how to keep them that way. Biotecture maintained the wall for McLaren Construction for the first 12 months and were then awarded a five-year maintenance contract by the outlet's operator, McArthurGlen.

The extensive irrigation system is remotely monitored by our operations team on a daily basis and the settings are altered with the seasons to reflect the plants' changing water requirements. Our expert horticultural team undertake visual inspections every six-eight weeks and full maintenance visits three times a year to keep the plants in top condition. As well as maintaining the planting these visits also include servicing of the irrigation system.

Our regular maintenance visits have drawn lots of interest from the shoppers, becoming a visitor attraction in itself!

> **The entire team at Biotecture filled me with confidence from the start. The Project ran smoothly from detailed design right through to final account. Biotecture matched our fast track site programme and delivered a stellar looking living wall that is a jewel in the crown of this prestigious project. I am looking forward to working with them again.**

Gareth Peebles, Operations Director
McLaren



2014
Biotecture approached by Applied Landscape Design to evaluate the potential of living walls

2016
Biotecture worked with Applied Landscape Design and Chapman Taylor to write and confirm the specification for the living walls

2017
Biotecture worked with the main contract tenderers to ensure that they could satisfy the client's vision for the living walls

2018
McLaren Construction appointed as main contractor

May 2018
McLaren Construction appoint Biotecture. Plants ordered and installed in our nursery to mature

March - April 2019
Biotecture started on site.

Work completed in three phases. Each phase included installation of backing boards, aluminium mounting rail, irrigation set up and commissioning followed by the installation of planted panels.

October 2019
Living walls completed

2019-2020
12-month maintenance contract with McLaren

2020-2025
Biotecture awarded a long term maintenance contract by McArthurGlen, including daily remote monitoring of the irrigation system, regular inspection visits and three full maintenance visits a year

> **It was very interesting to learn about the irrigation systems required and how they are installed. It is also just very nice to stand on site and appreciate the living facade - it looks great and helps create a relaxed atmosphere in keeping with the principles of biophilia. The plants move in the wind, which creates movement across the facade, something which you don't see in more traditional cladding.**

Kieran Bradley, Associate Director, Chapman Taylor

Client:
McArthurGlen

Landscape Architect:
Applied Landscape Design

Architect:
Chapman Taylor

Main Contractor:
McLaren Construction

Get In Touch

Find more information on our living walls services at **www.biotecture.uk.com**