

# Highway Living Wall, Southampton

*Millbrook Fly Over, Southampton City Centre, United Kingdom*

## Project Case Study

Client: Balfour Beatty

Installed: 2019



Biotecture worked with Balfour Beatty Living Places and Southampton City Council to create a magnificent and welcoming feature on the Millbrook roundabout, a key gateway to the city.

The UK's first highways living walls are also helping to mitigate air quality in Southampton.

The ten freestanding living wall structures are situated below the Millbrook Flyover, one of the city's busiest road areas.

### Project Details

In response to a 2015 study on Air Quality in cities Southampton City council outlined an air quality strategy to address this which included a programme of measures designed to reduce air pollution.

As part of the Millbrook Roundabout reconstruction which has been ongoing since October 2018 and wider road works in Southampton, the city council wanted to look at ways they could create a striking visual statement and welcoming feature on the roundabout that would be more than just nice to look at but would also help to mitigate air pollution on this busy route in and out of the city and the nearby container port. Biotecture consulted with the council and Balfour Beatty to create a living wall design that would both improve air quality with the introduction of 11,295 plants and improve the visual appearance of the concrete flyover structure for residents living in the area.

Each year, health problems from air pollution cost the UK more than £20bn and cause around 40,000 deaths. The living wall will reduce levels of particulates and NO<sup>2</sup> around Millbrook roundabout, reducing exposure to residents and passers by to these damaging pollutants.

### Highlights

- ◆ Situated on the newly reconstructed Millbrook Roundabout
- ◆ Freestanding Living Walls designed to mask the flyover supports while maintaining the ability to inspect them as part of future structural surveys
- ◆ The Living Walls were positioned in this location to help mitigate pollution from the 36,000 vehicles that use the roundabout each day.
- ◆ 260m<sup>2</sup> of freestanding Living Wall installed on the Roundabout which includes more than 11,000 plants
- ◆ A planting design based on the shape of the river Itchen
- ◆ The Living Wall installation was completed in 15 days
- ◆ Awarded a Gold, Green Apple Award by The Green Organisation



### Our Approach

When designing the living wall elements for this project one element of the brief from the city council was that the living walls should help to mask the concrete support columns of the flyover, however the living wall could not be fixed directly back to the flyover because it was essential that the concrete supports could be accessed for future structural inspections. As a result Biotope worked with Balfour Beatty Structural Engineering Consultants to design a bespoke arrowhead shaped, freestanding steel frame that the living wall panels could be mounted to. This gives the effect of a bridge supported on living wall columns but it would still be possible to access the back of the structures for inspections.

When considering planting design Biotope proposed a design based on the shape of the river Itchen. This well known water way flows from central Hampshire to join the sea at Southampton and is a designated site of special scientific interest because of the protected species that call it home. Water and the sea is an important part of the cities identity so it was fitting to use this iconography.

There are 17 different species of plants in the living wall including Euonymus, Convolvulus cneorum and Acorus gramineus which were selected because of their ability to capture particulate matter in line with the client's air quality strategy.

The project was awarded a prestigious Gold, Green Apple Award by The Green Organisation.

**“We have committed to making Southampton a clean, green, sustainable and successful city through our Green City Charter. The Living Wall project at Millbrook Roundabout is the first of its kind in the UK. It’s an exciting way to make our public spaces more attractive whilst at the same time having a beneficial effect on the environment. Investing in greening projects like this will play an important part in safeguarding our local environment for future generations.”**

- CLLR Jacqui Rayment, Cabinet member for transport and public realm | Southampton City Council

