

PARNELL HOUSE
PIMLICO, LONDON, UK
 Kier Construction London

BIG Biodiversity Challenge Award category: Small Scale Permanent Award

Project overview

Located within Westminster, this urban redevelopment project includes the refurbishment of the existing building's interior for commercial use, the redesign of the building's exterior and central atrium, and the addition of three extra floors on top of the building for 14 residential properties. The building is adjacent to the Grade II listed Victoria Train Station and has a party wall with the Grade II listed Apollo Victoria Theatre to the North and Neathouse Place office to the South. In addition, there is a public house at ground floor level which remained live throughout. The project started in July 2015 with a 102 week programme. The value of the project is £34.6m and the Gross Internal Area is 14,094m². The project has involved a monthly average of 168 people on site over the last 12 months.

What were the biodiversity conditions on site, prior to the enhancement?

Very limited vegetation with only a few amenity planted horticultural plants and potted shrubs recorded on the ground floor of the building's Eastern elevation.

Were there any specific reasons that led to this project?

The inclusion of biodiverse features at Parnell House contributed to achieving an 'Excellent' BREEAM rating and was essential in discharging planning conditions - a green/brown roof was listed as a condition (C44AA Sustainability) on the City of Westminster planning decision notice along with the provision of bird/bat boxes.

To increase the biodiversity of the environment, as set out in Policy S38 (Biodiversity and Green Infrastructure) of Westminster's City Plan, approval was required for detailed drawings and a biodiversity management plan issued in relation to the green roof which included construction method, layout, species and maintenance regime.



Solitary bee and bug 'hotel' made from sustainable FSC timber on the green roof. The top chamber encourages safe solitary bees to nest and features wooden nesting tubes in a bee block and bamboo tubes of various sizes. The larger feeding hole is for insects such as ladybirds, earwigs and lacewings. The lower chamber is filled with pine cones to provide nooks and crannies for beneficial insects.

What were the biodiversity measures taken?

To assist in delivering objectives of the London Plan (2011), the building has a green roof (130m²) on the terrace at Level 9 and a brown roof (205m²) at Level 10. Both utilise nectar rich, native plant species improving the value of the site for wildlife - the EGR wildflower blanket produced by Eco Green Roofs contains 35 species on the green roof with the planting schedule on the brown roof delivering 42 species. 14 bee and bug 'hotels' made from sustainable FSC timber are present within the green roof, providing over-wintering habitats for insects like ladybirds and lacewings, and a home for solitary bees and other beneficial insects during summer and winter.

The initial ecology assessment showed a variety of protected and/or notable species of mammals, plants and birds occurring within 1km of the site - particularly bats and schedule 1 birds (kingfishers, black redstarts, peregrine falcons and fire crests). Furthermore, numerous records of species listed on the Greater London Biodiversity Action Plan were also found within 1km. This led to the scheme incorporating bird boxes for redstarts and swifts as well as bat boxes - all located at Level 8.

Six large (590mm³) and four small (500 mm³) planters on the terraces of Levels 8 and 9, provide a total area of approximately 3m² of terrace planting. These contain native shrub species to provide a source of food and shelter for invertebrates, which in turn, provide a source of food for insectivorous species of birds and bats.

Our Biodiversity Champion influenced site activities, ensuring detrimental impacts on site biodiversity were minimised through training the workforce/toolbox talks. Throughout the project a large Alder tree was protected along the Eastern elevation - Kier ensured that no storage or lifting of materials was carried out near this tree.



View of the green roof and planters on Level 9

How would you best describe the project?

Ecological enhancement

Further information

Both roofs require relatively low maintenance and were installed with ease. The specification for the green roof includes an Icopal waterproofing system which offers long term durability, 100mm XPS insulation and 50mm PIR insulation under the concrete slab to achieve the U Value, a filter membrane and green roof system.

The green roof in particular adds colour and nature to a congested part of London, allowing the building to compete within the speculative 'green' City development market. The variety of planting and habitats creates a more aesthetically pleasing environment for the tenant/s and surrounding overlooking building users. Recent roof inspections have noted that the grass is growing well and there is increasing bee activity. Plants will continue to improve the air quality as they thrive.

Research indicates that water management will be improved during periods of heavy rain, as the green/brown roof releases water at a slower rate, therefore placing less stress on the sewer systems at peak times. The roof lifespan is also enhanced by the protecting underlying waterproofing system.

Inclusion of a living wall could have been investigated in more detail as this would further contribute to the London Biodiversity Action Plan as well as brighten up other areas.

The project team have benefitted from this biodiversity enhancement scheme by learning about species interaction with their environments and the challenges with biodiversity and construction. It has also given the team an opportunity to educate our supply chain on biodiversity issues which they can use on future jobs.



Close up of the brown roof at Level 10 which encourages biodiversity

What was your personal motivation for carrying out the enhancement?

Personal motivation has been the desire to promote a 'healthy' space. Research suggests both visual and physical contact with nature and wildlife can have therapeutic benefits for people. Cleaner air, changing colours, smells and movement of plants can all hold our attention and may improve our general health and well-being.