

Welbourne Attenu8® Blue Roof at Tottenham Hale



Project Overview

The Welbourne development in Tottenham Hale, a £100m flagship project forming part of a wider £500m regeneration scheme led by Related Argent PLC in partnership with the London Borough of Haringey, has delivered 1,030 new homes alongside retail, healthcare and public amenity spaces designed to revitalise the area.

At the heart of the development's sustainability strategy was the installation of a blue roof on a central podium, an area designed to manage stormwater, improve insulation and support biodiversity. Proteus Waterproofing®, under its Attenu8® brand, worked closely with architects CZWG and Pollard Thomas Edwards and water management specialists **ACO Technologies** to deliver a technically advanced solution. Attenu8®'s modular attenuation and

drainage system was perfectly suited to meet the complex requirements of the project, providing both water storage and controlled discharge while integrating seamlessly with the waterproofing layer and podium finishes.

The podium now provides both a recreational terrace for residents and a green, attenuated surface capable of safely managing stormwater flows, contributing to energy efficiency

and supporting plant and insect life, a demonstration of how urban regeneration can align with sustainable environmental design.

Project Materials & Build-Up

Proteus Waterproofing®, a leader in waterproofing, thermal insulation and blue roof systems, combined its expertise with **ACO Technologies** to deliver the ultimate integrated solution.

Proteus Waterproofing Limited

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CASE STUDY

The podium build-up included:

- Concrete deck with proprietary expansion joints
- Pro-Prime® Bitumen primer
- Proteus Hot Melt® waterproofing membrane
- Anti-Root Capsheet
- XPS Plus Insulation
- ACO Roofbloxx structural drainage system with attenuation cells, secondary waterproofing, and graduated falls from 285mm to 60mm
- Access units around roof outlets and restrictors
- Permeable resin-bound aggregate finish for planters and play areas

This complex layering ensured long-term waterproofing integrity, excellent stormwater attenuation and sustainable functionality.

Complexity

The Welbourne podium presented a unique challenge. The original blue roof design was intended for a flat deck - however, insurer requirements meant that a 1:80 minimum fall across the podium was needed. Proteus therefore worked with **ACO Technologies** to design a tapered blue roof attenuation system, incrementally stepped across a 30m span to maintain the correct water retention volume, while avoiding interference with surrounding residential blocks and surrounding resin-bound finishes.

This bespoke system incorporated an emergency overflow compliant with EN 12056 to manage excess stormwater, while maintaining the environmental and recreational functions of the podium. Multiple roof levels, sloped sections, integrated planters and access points for maintenance further increased the installation complexity - which meant that the Proteus team had to work

closely with CZWG architects to ensure the design remained buildable and compliant with planning and sustainability requirements.

Workmanship

The Proteus Hot Melt® membrane was applied over the concrete deck, followed by a structurally tapered drainage layer and blue roof attenuation cells. Custom edge detailing prevented water ingress along perimeter edges and substrate and suitable plants were tailored to cope with variable sunlight and wind exposure across the roof.

Mock-ups of roof sections were constructed and reviewed prior to full-scale installation to ensure alignment with the design. Proteus conducted regular inspections to maintain quality and resolve on-site challenges, including phased integration with existing green roofs and access thresholds.



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Insulation

Thermal performance was enhanced using Proteus Pro-Therm XPS Plus insulation, ensuring the podium met building regulations and energy efficiency targets. With a verified Environmental Product Declaration (EPD) and a U-value of 0.14 W/m²K, the insulation reduced heat loss, minimised summer gains and contributed to the building's long-term sustainability.

Project Management

Successful delivery relied on coordinated project management across multiple stakeholders. With constrained urban access and ongoing construction, deliveries were timed outside peak hours to minimise disruption. Installation sequences were also carefully planned to prevent congestion and maximise efficiency.

Furthermore, weather contingencies were incorporated to address heavy rain and wind, while ongoing communication with the client ensured expectations were met or exceeded. The team consistently aligned the Attenu8® blue roof installation with the broader SuDS strategy, maintaining both programme and budget targets without compromising performance.

Health, Safety & Environmental Management

Health, safety, and environmental considerations were paramount throughout the project. Comprehensive risk assessments and informed safety protocols were essential, including the addition of fall protection systems and regular training for operatives. Welfare facilities were provided on-site, while dust, noise and waste control measures reduced environmental impact.

Proteus also ensured that all contractors were trained to the highest standards before installation, by providing on-site guidance to operatives due to the unique tapered design of the roof.

All this meant that the team overcame several unexpected challenges, including redesigning the podium for sloping falls, coordinating deliveries under restricted access and adapting to variable weather conditions.

Flexibility, real-time problem-solving and close collaboration with architects and suppliers, also allowed Proteus to deliver a robust, functional, and aesthetically pleasing Attenu8® blue roof system.



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