



Project Description

Formerly owned by Royal Mail, 160 Old Street is a nine storey office redevelopment scheme in London, designed & developed by Great Portland Estates and Orms Architects on behalf of the Great Ropemaker Partnership. In 2020, 160 Old Street won twice at the BCO Awards for best London 'Refurbished / Recycled Workplace' & 'Innovation'.

The Challenge

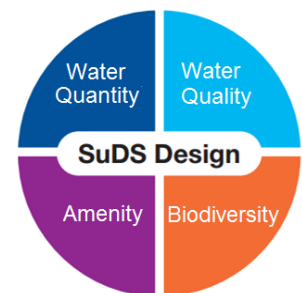
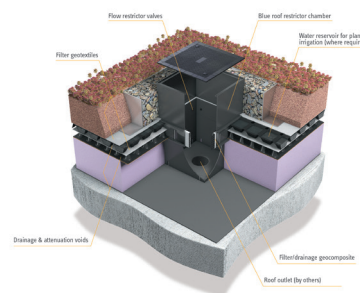
Completed in 2018, the 14,920m² of office space comprises a complex array of 29 different roof zones over multiple floor levels, with 16 of the areas designed with blue roof SuDS attenuation with biodiverse roofs and/or composite decking. The SuDS measures were needed to meet the National Planning Policy Framework (NPPF) & local planning requirements to slow surface water run off during key extreme rainfall events.

The Solution

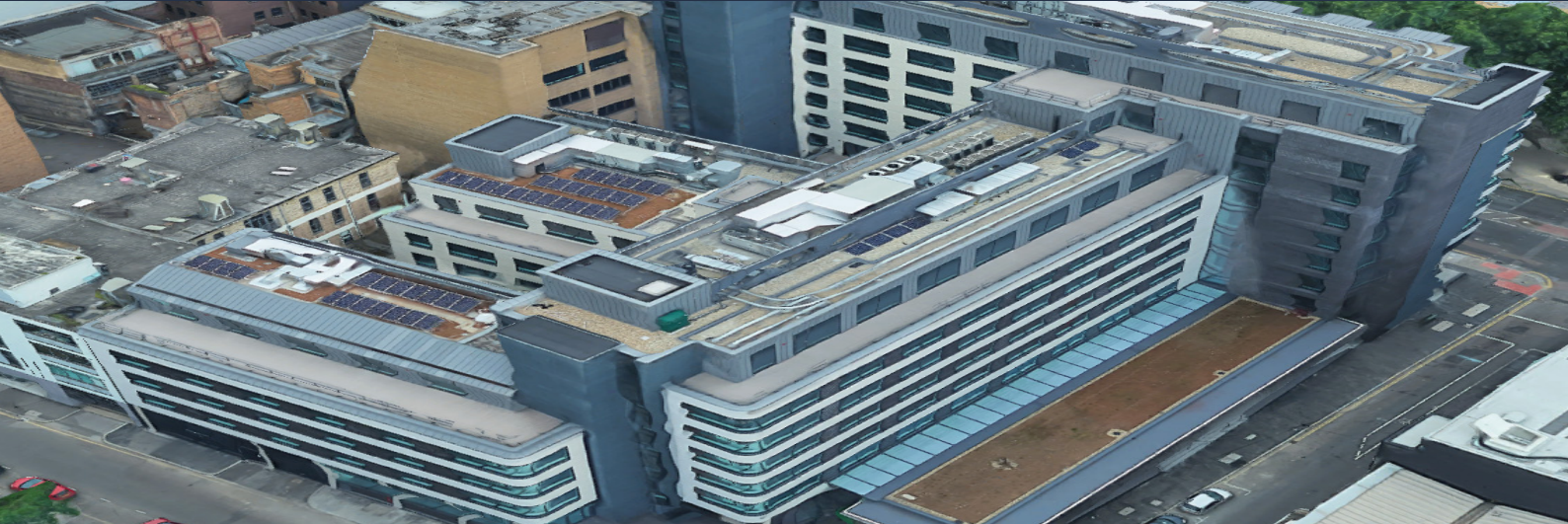
The ABG bluroof was deemed the most cost-effective SuDS solution for the restricted/urban site, with the construction of a basement attenuation tank deemed impractical and expensive. By retaining the attenuation within the building footprint, blue roofs are ideal for urban environments where ground space is limited. During moderate rainfall events the water permeates through the blue roof system and into the roof's rainwater outlets as normal. However, in the event of high intensity and prolonged rainfall events, the 'blue roof' attenuation voids start to backfill as rainwater is controlled & slowed to an agreed maximum discharge rate by the blue roof's 'restrictor chambers'. The water is always allowed to continuously drain and needs to be half-empty within a maximum of 24 hours; but helps to manage the overall site discharge rate and prevent surges into the local sewer networks. blue roof's 'restrictor chambers'.

Project Information

Client	Great Ropemaker Partnership
Contractor	Wates Construction - with SIG D&T/IKO, Geogreen & Tilbury Contracts
Consultants	Orms Architects, Hilson Moran, Arup & Heyne Tillett Steel Consultants
Product	ABG bluroof & green roofs
Quantity	976m ²
Benefits	<ul style="list-style-type: none"> Retrofit of blue roof and biodiverse roof systems to provide stormwater attenuation on 16 roof zones, incorporating biodiverse roof and composite decking surface finishes An urban roof-top stormwater attenuation solution in accordance with CIRIA & GLA guidance for retrofitting of SuDS Provides the '4 pillars' of good SuDS design (i.e. biodiversity, amenity, quantity & quality) as described in CIRIA's 'The SuDS Manual C753'



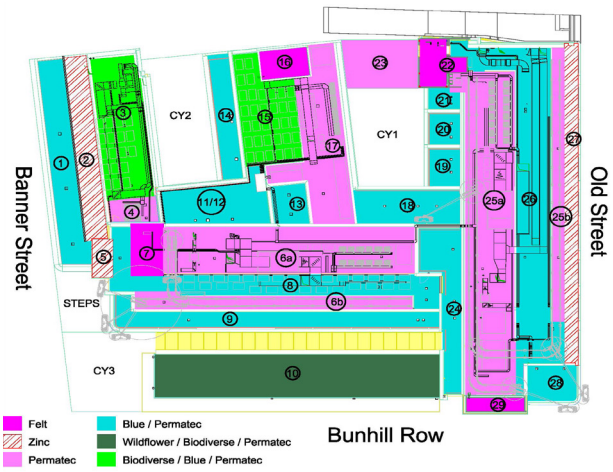
ABG's blue roof system - an 'at source' SuDS solution



ABG's blue roof SuDS attenuation system is very versatile, allowing a combination of surface finishes & uses; including composite decking on amenity areas, biodiverse roofs and ballasted plant areas to be used across the different levels. The maximum discharge rates were calculated by ABG in accordance with the engineer's SuDS drainage strategy and the overall planning requirements. ABG's UK manufactured reservoir & drainage geocomposite boards were also used for the biodiverse & green roof areas. These reservoir boards help to retain the optimal amount of water during drier periods and allow planting a better chance to flourish.

The ABG Service

In total, 976m² of blue roof attenuation was designed and installed to restrict maximum discharge rates to 23.1l/s during the key '1-in-100 year +30% CC' design storm event. For the biodiverse roof areas, an undulating growing media, a London wildflower seeding and various hibernacula were installed (i.e. stone, sand piles and native hardwood log piles) to support various invertebrates and other wildlife. A regular maintenance service was also included as part of the contract, as now required for all SuDS processes, to gain planning approval.



160 Old Street - a complex array of 29 separate roof areas and surface finishes



The lower attenuation void, and geotextile upstand detail



ABG's geocomposite reservoir & drainage boards



The bluerooF restrictor chambers



Roof area 9 - ABG bluerooF with decking surface finish



Roof area 15 - ABG bluerooF with biodiverse & PV finish