



Specialists in Roofing
and Waterproofing

BlueRoof

Storm water attenuation
roofing systems



St Pancras Place (above) and Anchorage House, London (below) both use Radmat Blue Roof systems finished with either green roofs or paving and planters.

The management of rainfall within the built environment is an important task for the construction industry, with correct and sympathetic source control and attenuation being key to Sustainable Urban Drainage System (SuDS) design.

SuDS demands that water falling across a development site is not simply channelled into storm water drains and discharged into the local river. Instead the drainage is designed to mimic that found in nature where water is attenuated, treated and infiltrated through natural processes. In many cases the Environment Agency is involved in limiting the site discharge through a Limited Discharge Consent Notice, which may be related to the natural drainage rate of 5 litres per second per hectare of site, or lower.

Managing inner city and urban rainwater

Whilst a variety of SuDS systems can easily be integrated into large scale out of town developments managing rainwater in an inner city or urban location provides a greater challenge, particularly on brownfield sites where the land may be contaminated.

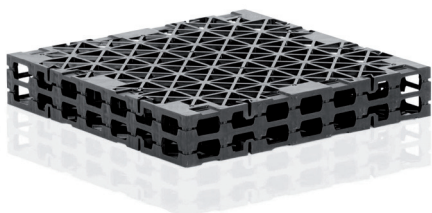
A modern method of source control and attenuation is the Blue Roof, where the roofing system is explicitly designed to attenuate rainwater rather than drain it as quickly as possible, as in traditional roof drainage design.

Blue Roofs can significantly contribute to the SuDS requirements within a development by collecting and temporarily retaining rainfall (for a maximum of 24 hours) within the roof finishes before discharging at a controlled rate. This is particularly beneficial on constrained sites, such as in urbanised areas, or brown field sites, where the use of underground tanks are difficult and/or costly.



Typical finishes above a Radmat Blue Roof include:

- MedO Green and Biodiverse Living Roofs
- Paving on Pedestals
- Gravel Ballast



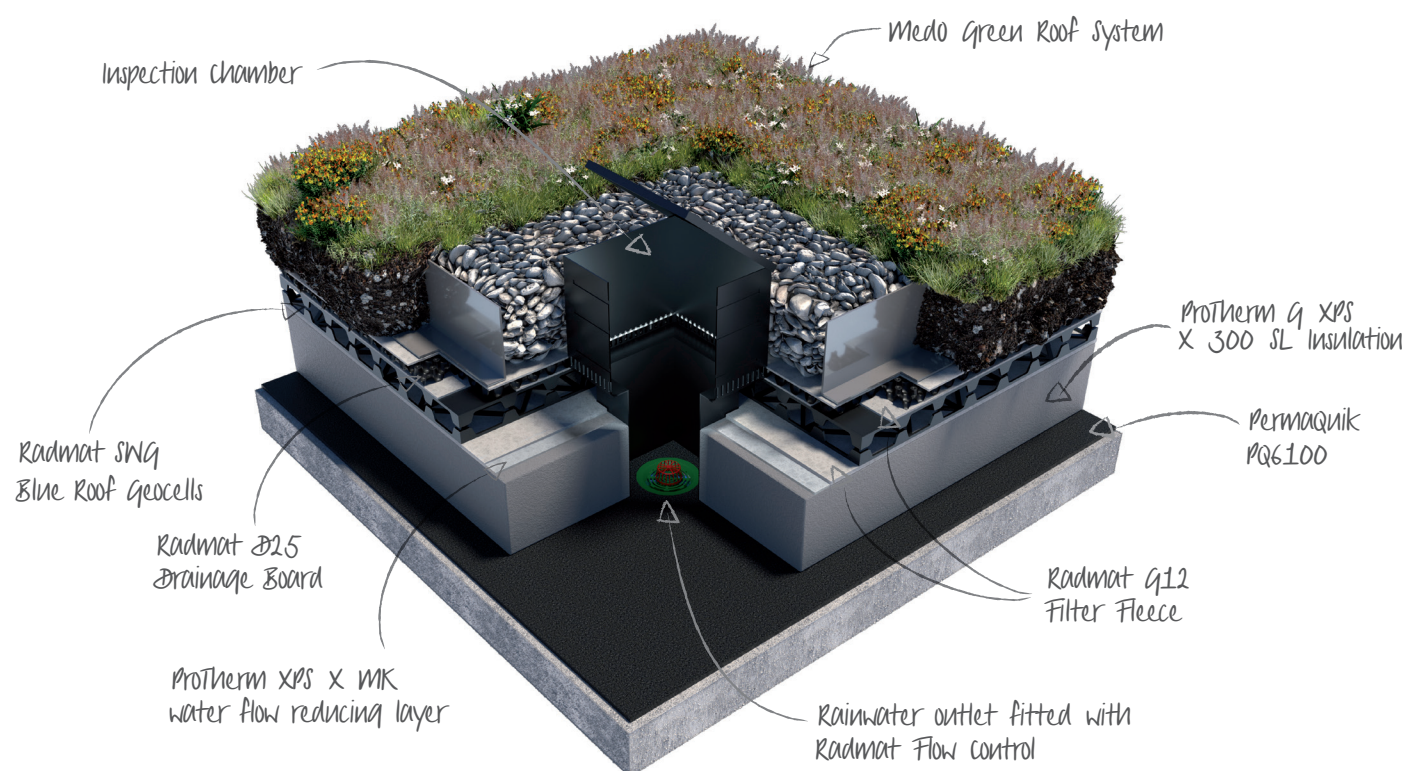
SWB/SWG Geocells provide attenuation as part of a Blue Roof system that is designed to manage and control incident rainfall at a rate in line with the SuDS strategy or the attenuation requirements for a development.

A **Radmat Blue Roof** can be installed at either roof or podium level above the waterproofing membrane or the water flow reducing layer (WFRL) in a PermaQuik or ParaFlex FD inverted application or above an EshaFlex warm roof application. The Radmat Blue Roof will be designed to attenuate water for no more than a 24-hour period from the end of the maximum designed rainfall event. The discharge rate will be calculated to allow the roof to be half empty of attenuated water in a 12-hour period.

To eliminate the risk of the Blue Roof system not being designed to complement the waterproofing system, and to eliminate warranty risk or split liability, a Radmat Blue Roof System is designed to be installed on our PermaQuik, ParaFlex FD or EshaFlex waterproofing systems, which are BBA Certified for zero falls applications. For project specific information, specification and design support please contact Radmat using any of the means shown on the back page.

Attenuation within a Radmat Blue Roof System is created by either SWG or SWB Blue Roof Geocell elements, which provide a multidirectional free flowing path above the waterproofing membrane, enabling water to reach the rainwater outlets on the roof surface. The depth of the SWG or SWB Blue Roof Geocell will be designed to create a void that contains the desired attenuation capacity for the rainwater. The discharge rate through the rainwater outlet is managed via outlet restrictors sized to control the flow at the required rate. Overflow drainage will be provided by secondary methods to facilitate the removal of excess rainfall if the designed capacity is exceeded.

The roof deck for the Radmat Blue Roof should be designed to the principles of zero fall as outlined in BBA Building Bulletin No. 4. If falls are to be used, these must be taken into account when calculating the effective storage void on the roof design.





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Anchorage House redevelopment incorporates an Esha warm roof system and Blue Roof attenuation system.

