Structural Drainage & Porous Paving

Podium Landscaping, Roofdrain & ATS, Edinburgh Quartermile, UK

Project Information

Client	Quartermile Management Services
Architect	Foster + Partners
Contractor	Land Engineering
Product	ABG Roofdrain 60 Terrex NW9 Advanced Turf System
Quantity	600m^2
Benefits	• Lightweight and easy to install drainage board layer • Board can be stepped and adjoining rolls overlapped • Reduced depth and carbon footprint design

Project Description

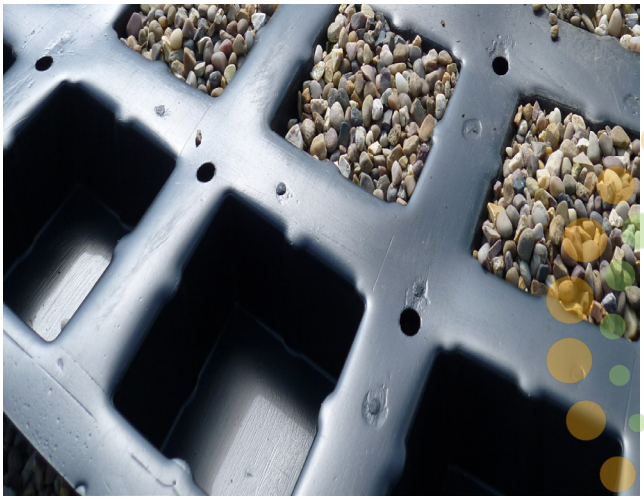
The Quartermile development is a cosmopolitan mix of luxury apartments, cafes and businesses in the heart of Edinburgh city centre. The masterplan for the new area is designed by Foster + Partners and enjoys views of some of Edinburgh's greatest landmarks.

The Challenge

The access to the new building (adjacent to the old Edinburgh Royal Infirmary site) is elevated from the North Meadow Walk pedestrian walkway and cycle route. The pathways and landscaped areas in front of the development needed a structural drainage solution and reinforced turf area that would be suitable for trafficking by maintenance and emergency vehicles when required.

The Solution

ABG's high strength **Roofdrain 60S+RX** geocomposite was specified to provide sub surface drainage across the base of the podium deck. The drainage board provides a high flow capacity void to channel water pressure to the surrounding perimeter drains. By utilising a 60mm drainage layer the need for much deeper and harder to install drainage stone layers can be minimised. The carbon footprint for the product is just 3.3 kgCO_2e per m^2 which is an approximate 50% saving compared to the embodied carbon of quarrying, transportation and installation of the equivalent thickness of drainage aggregates. Once installed the **Roofdrain** core is filled with pea gravel to provide a rigid sub base beneath a bedding layer and resin bound gravel pathways. The drainage core features regular perforations to allow surface water to percolate and drain to the underside of the board.



ABG Roofdrain 60

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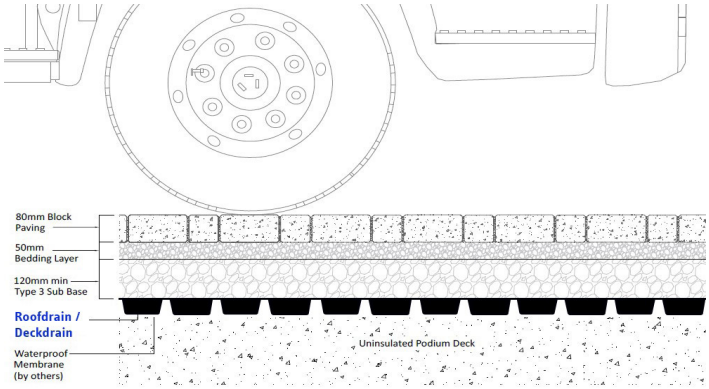
Adjoining rolls can be easily overlapped with the cups designed to slot into one another. The **Roofdrain** was overlaid with a **Terrex NW9** geotextile to prevent fines entering the drainage core. The **Roofdrain** can be stepped to cascade into lower sections to suit the landscaping layout. The main green area to the front of the building was cultivated using the **Advanced Turf** reinforced grass system. The Netlon **Advanced Turf System** (Netlon ATS) is a high performance, mesh element reinforced natural grass rootzone system that provides a SuDS compliant free draining grassed surface. It consists of a high quality, sandy soil rootzone into which thousands of playing card sized polypropylene Netlon plastic mesh elements are pre blended. The composite mesh reinforced rootzone and selected turf are then delivered to site as a system. ATS was specified for this development to support loading by occasional MEWP vehicles such as cherry pickers, and in the event emergency vehicles need to traffic onto the grass.

The ABG Service

ABG provided flow capacity and structural loading calcs alongside installation and logistics support for the project.



Roofdrain for podium drainage (top) and Advanced Turf root zone illustration (left)

Fitting Roofdrain 60 to the base of the new podium deck landscaped area

Delivery and spreading of Advanced Turf Root Zone mix onto the Quartermile landscaped podium area

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