

SuDS Retaining Wall

Attenuation Pond, Webwall,
Bellway Homes, Nottingham, UK



Project Description

Bellway Homes developed a new northern suburb of Nottingham on a greenfield site near Arnold.

The Challenge

Typically, planning consents are granted based on SuDS retention equivalent to a green field site. For reasonably large developments, such as this, the volume of water accumulated from rain run-off would mean sizeable ponds using up valuable building land. The designer proposed a basin with steep slopes to save space; the lower portion at 60 degrees and the upper 30 degrees. The challenge was to provide a steep wall with a green finish which can withstand surface run-off erosion and be structurally sound at minimum cost.

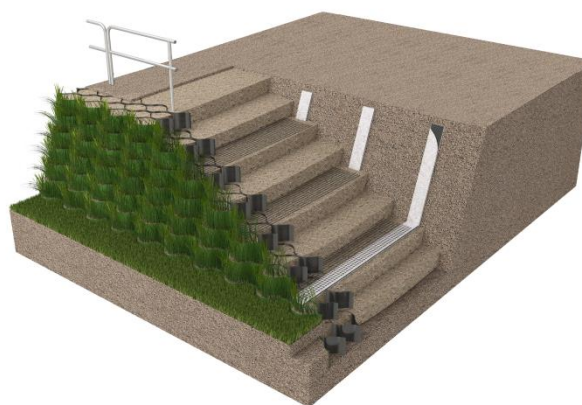
The Solution

ABG offered **Webwall**® as it uses locally won materials to stabilise weak or low cohesion soils. Laid in horizontal layers, infilled and compacted using site won materials, it was shaped to fit local contours and fitted neatly around the outfall structures. This avoided the costly importing of aggregates and reduced the impact on the environment from the extraction and transport of aggregate to site. During build up and filling, the front cells are filled with topsoil to encourage growth in the front cell once construction is complete. Vegetation on the face gives a pleasing visual impact and improves system longevity.

The wall needed to be stable during construction and service. Calculations showed that layers of **Abgrid** geogrid were needed for wall heights above two meters.

Project Information

Client	Bellway Homes
Contractor	Geogreen Solutions
Consultant	Stephen Daykin Cons/GRM/JPA
Products	Webwall, Abgrid, Fildrain, Erosamat 1
Quantity	600m ² face of wall
Benefits	• Use locally won fill saving on cost and environmental impact • Green integrated solution • Versatile flexible profile



ABG Webwall, Fildrain, Abgrid

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As these ponds are at the bottom of a series of swales, there will be a higher water table at times of heavy rain. Strips of **Fildrain** are included behind the **Webwall**® to provide drainage for ground water flows to prevent saturation of the reinforced section of the structure. The **Abgrid** alone was used to reinforce the upper slopes and the face was protected from surface erosion with **Erosamat**® **Type 1** while vegetation established. The overall construction was finished on time, within budget and to specification and will form a green civic amenity in the midst of a new urban development.

The ABG Service

ABG offered a full turnkey design, supply and installation package (installation by the ABG subsidiary, Geogreen Solutions). This package was chosen based on the technical proposal, meeting the construction program and ultimately cost effectiveness.



Layers of Abgrid and Webwall are progressively built and backfilled with locally won fill. The front cell is filled with topsoil and planted. The Webwall is shaped to fit with headwall structures



Finished structure with upper slopes reinforced with Abgrid and surface protected with Erosamat Type 1



Finished pond starting to green and blend with the natural environment

Contact ABG today to discuss your project specific requirements and discover how ABG past experience and innovative products can help on your project.