



## Horizon Pond Sustainable Urban Drainage System

**Location:** Forres, Scotland

**Client:** Highlands & Islands Enterprise

**Objective:** SUDS, Amenity water feature

Project in collaboration with:



### Challenge

Through a competitive tendering process, Biomatrix Water was appointed by Highlands and Islands Enterprise to replace and enhance a failed pond at the Horizon Buildings in the HIE Enterprise Park in Forres, Moray. The pond needed to achieve a high aesthetic function as well as perform a function to receive and treat rainwater. The design and construction needed to overcome geotechnical challenges, including groundworks and lino replacement under bridges and incorporating penetrations and existing architectural features.



*Before*

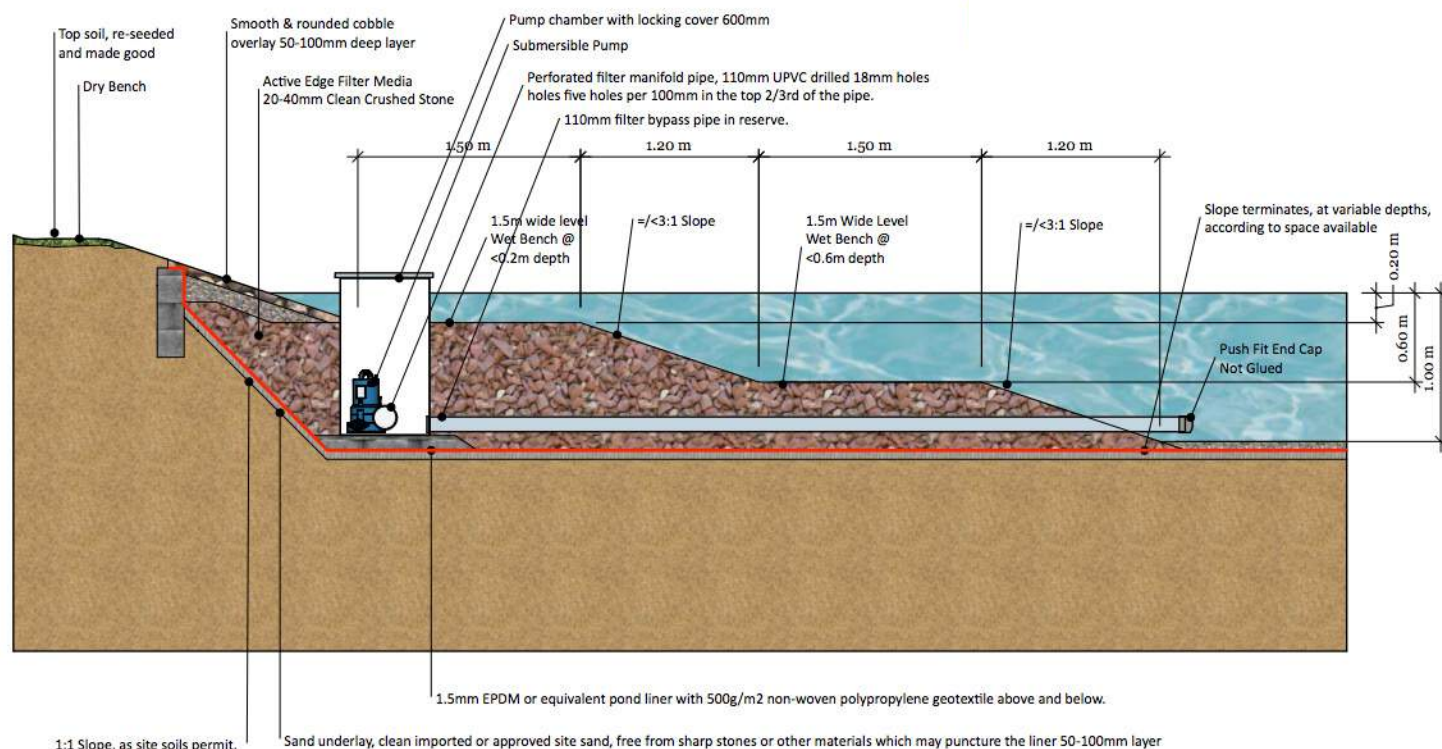


*After*

### Solution

Biomatrix Water completely removed the failed liner and redesigned and regraded the pond system to incorporate a four-stage step pool cascade, a floating island, planting shelves and an integrated subsurface horizontal active edge filter. The active edge filter draws water in through 30 tons of gravel, with the outflow discharging to the top of the cascade, where water is oxygenated as it flows over the cascade steps. This system achieves multiple functions while reducing energy and operational costs. The Biomatrix team are trained firestone installers and they selected a 1.5mm heavy duty geotechnical EPDM lining system, working in collaboration with Watergems during the lining process. The project has attracted visitors from the Cairngorm National Park Authority CNPA team as well as others. It offers an example of the aesthetic benefits which can be achieved with well designed SUD systems.





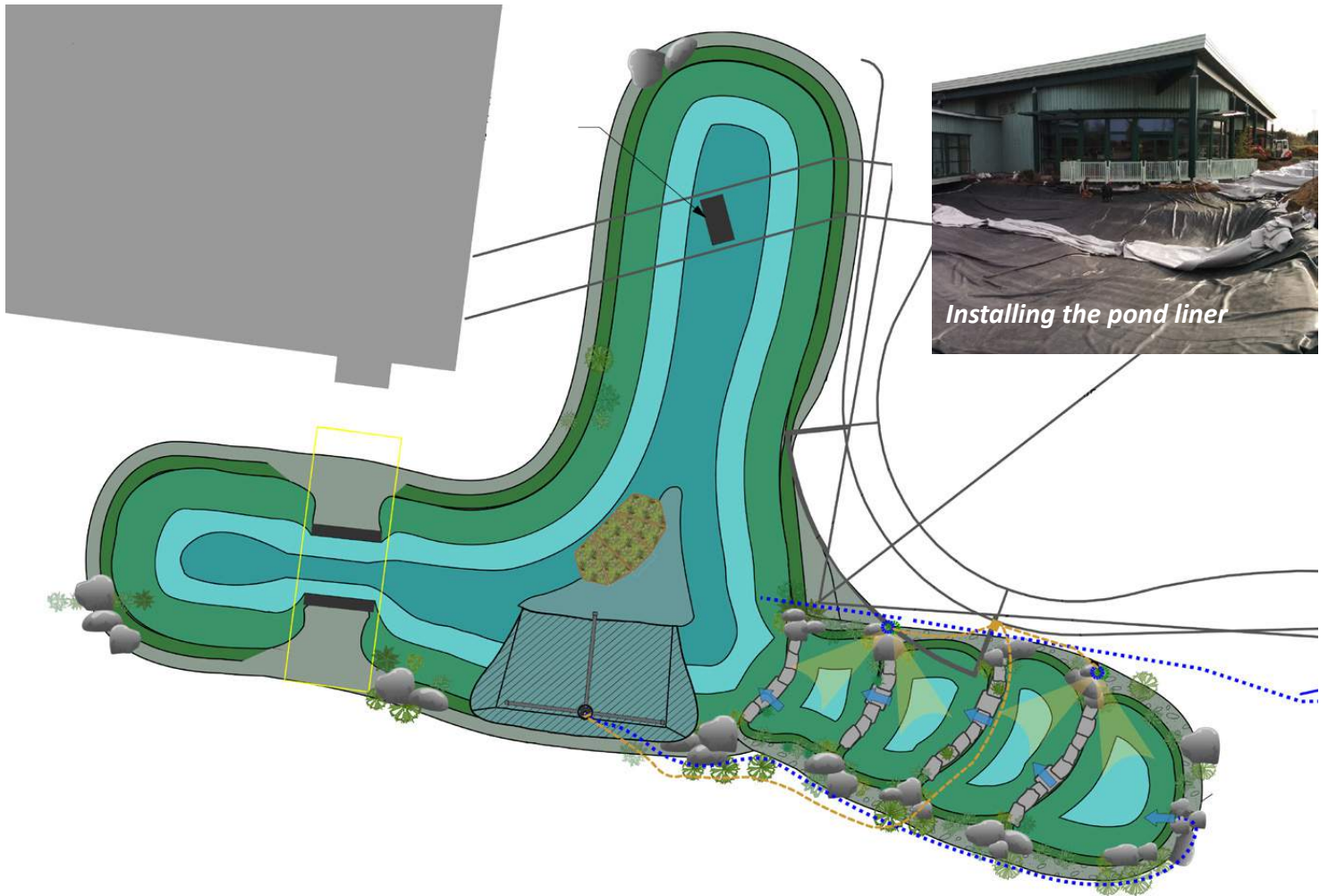
**Active Edge section detail**



Apart from the Active Edge filter, the water quality is greatly enhanced by the sub-surface plant roots underneath the floating islands, by aeration as the water flows over the cascade steps, and by the aquatic plants in the planting zones all around the pond.







*Design drawing*



The pond planting focused on a selection of Scotland’s native aquatic plants to form a soft and natural landscape around the office buildings

“ Visiting the project with the CNPA team was informative, and the project demonstrated a attractive integration of technical and aesthetic features, with a high quality build from Biomatrix” - Sally Mackenzie, CNPA



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