THE UNIVERSITY of EDINBURGH

GROUND WATER DYNAMICS

The Avian Research Facility, Edinburgh University

New build commercial

The proposed new Avian Research Facility hit problems with its planning application. Scottish Water refused permission for the storm water drainage to connect to existing storm drains, forcing the drainage design to have to be rethought, with all storm water to be dealt with on site. We were contacted and submitted a ECO-90™ supported storm trench design which was accepted by the planning authority and we completed the installation in 2018.

INTRODUCING THE ECO-90™

- Deals with storm water at source, solving SuDS planning issues
- Unique design that forms a differential hydraulic head to move water down
- Moves ground water to multiple unsaturated soil stratas
- Installed to depths of 12 metres plus, less land needed for drainage increasing GDV
- No moving parts, no external power needed, self-cleaning sealed system
- A CARBON NEGATIVE drainage system
- Now with over 300 successful installations

ECO-90™ Technical System Specification

Based on the Drainage Design Statement

Project:	Planning contingent on storm water being dealt with on-site
Impermeable area:	3,200 m^2
Maximum design storm water event:	1 in 200 years plus 30% climate change
System design:	Storm water trench supported by ECO-90™ system
Trench size:	Length 150m; Width 2m; Depth 0.43m; Capacity: 58.5m^3
ECO-90™ system size[1]:	74 Primary and 210 Secondary ECO-90s™
Consultant engineer (providing Drainage Design Statement):	EC49

[1] A Primary ECO-90™ is either 6 or 12 metres in length, a Secondary ECO-90™ is either 1.5 or 3 metres in length.

£500,000

PROFESSIONAL INDEMNITY COVER

Where we supply and install an ECO-90™ engineered drainage solution we offer an insured warranty, covered by up to £500,000 Professional Indemnity cover. Higher cover is available as required.

In some instances, such as natural turf where we offer our own ECO-90™ drainage design solution and install, we offer a two year defect warranty. This means we will return to site to remedy any problems at our expense.

info@groundwaterdynamics.co.uk www.groundwaterdynamics.co.uk T 01926 833146

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The ECO-90™
Transforming Drainage Design & Scope

The ECO-90™ is an internationally patented product with unique characteristics that solve a multitude of drainage problems. We launched it in the UK under licence in 2012, since when we have completed over 300 successful installations, from commercial and residential new builds to car parks and cemeteries. We also have our 'Hall of Fame' installs.

Made from high density polyethylene (HDPE), standard drainage extrusion, the unique ECO-90™ design uses a multiple open chamber system that creates lateral (horizontal) water transfer to soil stratas to a depth of over 12 metres (go to www.groundwaterdynamics.co.uk for full information).

Our ethos is that the time has come for a new drainage solution that:

- does not move large amounts of storm water from A to B in conventional horizontal pipes creating problems "down the line", including the flooding of water treatment facilities that then discharge into critical marine, river and stream ecosystems
- improves the carbon footprint by removing external energy requirements to deal with storm water, with no need for pumps moving water or the energy requirements of treatment works
- stimulates plant growth, creating ECO-90's™ CARBON NEGATIVE standard
- does not take storm water directly off the surface into deep borehole systems creating possible pathways for contaminants.

Instead, we have introduced a drainage system that takes ground water, indirectly, laterally through the ground into an installation of multiple ECO-90s™, **changing the drainage characteristics of soils which previously were unable to accommodate positive infiltration rates.** That's the game changer.

ECO-90™ HALL OF FAME

Edgbaston CC

Gleneagles

Royal Ascot

Silverstone

"The ECO-90™ design requires no maintenance, has no mechanical moving parts and needs no external energy requirement to function. It uniquely harnesses soil based gravitational pressure, porosity and waters enthusiasm to keep on moving."

"The unrivalled result is that a ECO-90™ installation uses the entire volume of soil to a depth of 12m below the ground for water drainage, creating a massive volume of earth to deal with storm water. For new build sites this results in less area for drainage, more for building and higher GDVs."

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