

College Lane Campus, Lowestoft - Rain and Grey Water Harvesting

Client:	Suffolk County Council
Project:	Lowestoft College 6th Form, combined rain and grey water recycling
Building Type:	Higher Education—6th Form
Roof:	100% membrane
Catchment Area:	3,160 m ² + showers and wash hand basins
Apps:	60 WCs for student and staff use
Sustainability:	BREEAM - Excellent
Built:	2011



Water Recycling Requirements

Combined rain and greywater recycling technology was specified by Atkins to help achieve an 'excellent' BREEAM rating. The new 6th Form was built to replace multiple locations in Lowestoft. To increase the recycled water efficiency water from showers, wash hand basins and the roof is used to flush 60 WCs.

Built by Morgan Sindall and opened September 2011 the new building is estimated to save 5,000L of potable water per day using the rain and grey water recycling. The system efficiency is estimated at 45%.



Storage

Ecozi use German greywater filtration technology to remove particles down to 5 microns from the water collected from showers and wash hand basins. Underground, precast concrete storage tanks collect via gravity drains the greywater for treatment. Additionally, rainwater from the 3,160m² roof is collected in a 16,000L precast concrete service water storage tank.

Filtration

The greywater membrane filters remove particles down to 5 microns. The shower and wash hand basin greywater can then be used for flushing WCs. The greywater filters are located inside the inline series of 3 buried tanks that make-up the civils works, completed by the ground works sub-contractor. The rainwater is simply filtered with a stainless steel 0.4mm² pre-tank mesh filter and bypass before filling the 16,000L service water tank.



WC Water Distribution

From the underground treatment and storage tanks the service water for reuse is lifted to the main plant room and then boosted via a Rain Manager direct to the WCs. When no recycled water is available the Rain Manager switches to mainswater and back again when either rain or greywater is available.

The Rain Manager is a German built integrated cat 5 break tank and booster set specifically designed for rain and greywater distribution.

Scope of Works

Ecozi were employed on a supply, install, commission and maintain basis, excluding builders works for the drainage and storage tank installation.



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