

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
Built:	2011



Water Recycling Requirements

Combined rain and greywater recycling technology was specified by Atkins to help achieve a high BREEAM rating. The new 6th Form was built to replace multiple locations in Lowestoft. To increase 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 that filters the greywater to 5 microns for the water collected from showers and wash hand basins. Underground, precast concrete storage tanks collect, via gravity drainage, the greywater for treatment. Additionally, rainwater from the 3,160m² roof is collected in a 16,000L precast concrete rain and greywater storage tank.

Filtration

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



WC Water Distribution

From the underground treatment and storage tanks the service water for reuse in the building 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 automatically.

The rain manager is a German built integrated cat 5 break tank with twin 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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