

Case Study

Wrea Green, Lancashire

Lancashire village hosts UK's single largest deployment of SDS smart rainwater recycling systems



SDS Systems

SDS Intellistorm® Smart Water Butts;
SDS SYMBiotic™ Water Management Software.

SDS Customer

United Utilities.

Client

Householders in Wrea Green, Lancashire.

Project

Domestic smart rainwater attenuation scheme.

Purpose

To reduce the impact of rainwater from residential properties on the drainage network during rainfall.

Brief to SDS

To design, supply, install and control fully autonomous, weather forecast-responsive rainwater harvesting tanks that release stored water in advance of rainfall, whilst providing a source of non-potable water for reuse by residents.

Timing

The first stage of homeowner recruitment and installation commenced in 2023; a further stage increased the number of properties with Intellistorm® smart water butts to 85 spread across the village.

Project Background Information

United Utilities is committed to exploring innovative and sustainable approaches to surface water management, particularly in residential settings which are vulnerable to heavy rainfall and resultant sewer overflows, flooding and pollution. Building on the success of earlier pilots in United Utilities' regions, Wrea Green was selected for a large scale rollout of SDS Intellistorm® and SYMBiotic™ technologies.

Project Objectives

To reduce the volume of surface water entering the local sewer network at rainfall time, reduce sewer overflows during storm events, and to help decrease localised flooding.

Project Requirements

To provide a system that is compatible with varied property layouts, sizes and existing drainage infrastructure, enabling straightforward and discrete installation with minimal disruption, and requiring little or no operating involvement or maintenance by the householder.

SDS Product Features

SDS Intellistorm® smart water butts are equipped with integrated sensors and mini-computers that connect to SDS SYMBiotIC™, a cloud-based software platform that enables real-time monitoring and predictive control. Each tank operates autonomously and independently by actively monitoring its water levels and releasing stored rainwater to the drainage network in advance of forecasted rainfall; this ensures that maximum capacity is available to capture imminent stormwater. In addition to mitigating flood risk, the tanks store the rainwater for reuse, thereby providing the dual benefits of attenuation and environmental sustainability, whilst also reducing the cost of householders' water utility bills.

Issues Overcome

Although the scheme was fully funded by United Utilities, nevertheless a key challenge involved engaging with

and recruiting residents to voluntarily participate. This required extensive, multi-faceted communication between SDS, United Utilities and the local community to build trust, explain the benefits, and tailor the installed systems to individual property conditions. Installation also needed to account for diverse drainage configurations, requiring site-specific adaptation to ensure each system's performance and effectiveness.

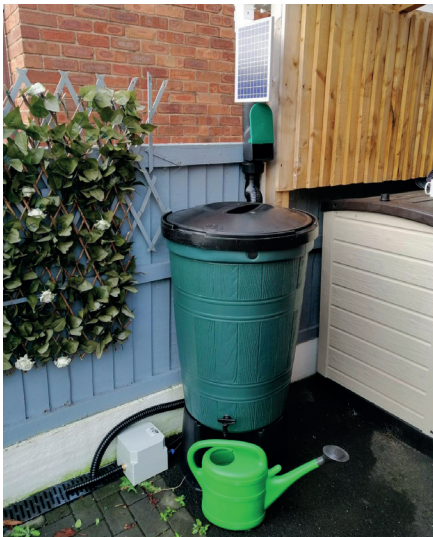
Results

To date, eighty five properties have adopted the technology, with smart tanks already delivering measurable improvements in surface water management.

Village residents have experienced fewer flooding issues and gained increased confidence in the resilience of their homes and neighbourhood, while there has been a measurable difference in the water discharged to the sewer during storm events.

As the project continues to expand, Wrea Green is emerging as a model for sustainable, technology-led residential water management, supporting national ambitions for climate resilience and smart infrastructure.

Katy Bevan, Operations Manager – Rainwater Management, United Utilities, said: *"This project is an important step in demonstrating how smart, site-specific technologies like Intellistorm® and SYMBiotIC™ can be deployed at scale in residential settings. By combining real-time data and predictive control, we're helping to manage surface water more effectively at source, reducing the burden on sewer networks and supporting wider flood resilience objectives. It's a practical, forward-looking solution that addresses both current and future drainage challenges."*



Images: SDS Intellistorm smart rainwater recycling systems installed at multiple properties in Wrea Green.

