

Case Study

RSPAIR, Shropshire

SDS Intellistorm® helps fulfil Council's climate adaptation goals



SDS Systems

SDS Intellistorm® Smart Rainwater Harvesting and Recycling.

SDS Customer

Shropshire Council.

Client

Caynton House Farm;
The Buttery Farm;
RBSL (part of BAE Systems).

Project

Installation of smart wireless-controlled rainwater harvesting and stormwater attenuation systems across multiple sites in the River Severn region.

Purpose

To improve environmental resilience and water sustainability through the smart reuse of rainwater and advanced control of stormwater runoff. The project was designed to support climate adaptation goals by reducing flood risk, optimising water resources for

agricultural and industrial use, and demonstrating the potential of wireless water management technologies across diverse land uses.

Brief to SDS

Shropshire Council's River Severn Partnership originally focused on exploring the role of 5G networks in enhancing regional resilience. Following a presentation at a CIWEM event, SDS was introduced to Project Manager Matt Smith, who identified an opportunity to integrate our smart rainwater harvesting technology into the initiative. The brief was to design and install wireless-controlled water systems at three sites—two agricultural and one industrial—that could reduce surface water runoff, prioritise the reuse of rainwater, and be installed within a tight two-month timeframe.

Timing

March to April 2025.

Project Background Information

The River Severn Partnership Advanced Wireless Innovation Region (RSPAIR) began as a technology-led

initiative to examine the role of advanced connectivity in addressing environmental challenges. As the project evolved, and through discussion with United Utilities and SDS, it expanded to include smart water management infrastructure. With a growing recognition of the impact of stormwater on rural and urban flooding, and the potential for rainwater reuse to reduce pressure on potable water systems, the project team selected SDS to deploy our Intellistorm® systems across a mix of operational settings.

Project Objectives

To retrofit existing sites with smart water infrastructure that could capture and reuse rainwater for practical applications while controlling stormwater discharge to local watercourses. The goal was to demonstrate how a wireless-controlled approach could help farms and industry become more water-efficient—especially in times of drought—and reduce the flood risk posed by heavy rainfall. For the industrial site, the focus was on water reuse for maintenance activities while maximising limited space for stormwater control.

Project Requirements

Each of the three sites required a bespoke solution tailored to roof sizes, available space, and end-use priorities. The systems needed to integrate with ongoing operations and be simple to maintain while providing live control over water storage and discharge. Accurate measurement of rainwater volumes and prioritised use of harvested water over other sources, such as boreholes, were essential for achieving the desired environmental outcomes. Where attenuation was critical, the systems were required to retain water during storm events and release it gradually to reduce downstream pressure.

Issues Overcome

Each site presented a distinct set of technical and logistical challenges. At Caynton House Farm, spatial constraints meant that large tanks could not be used in the ideal capture locations. Instead, SDS deployed a combination of smaller overground tanks to balance the space available with the need to store sufficient

water. The site also required careful calibration to ensure rainwater was used ahead of borehole supplies, helping to preserve groundwater resources.

At The Buttery Farm, the large barn roof had multiple downpipes, requiring a distributed tank system with wireless controls to ensure effective coordination of storage and release. The attenuation function was particularly valuable here, helping to reduce the flow of water into local ditches during periods of heavy rain.

The industrial site at RBSL in Telford required a creative solution to intercept water from a large cast iron downpipe connected to a 4,000-square-metre roof. SDS designed a system that diverted rainwater into a 10,000-litre tank, with a solar-powered valve and a manual tap for accessing water used in cleaning and equipment washing. The approach made full use of the available footprint without interfering with operations and ensured that valuable rainwater was no longer lost to the sewer.

Results

Despite the ambitious schedule completed in Spring 2025 all systems were fully operational ahead of project milestones. This rapid delivery required close collaboration with site owners and swift adaptation to on-the-ground conditions.

SDS completed all installations within the two-month window. Across the three sites, the SDS Intellistorm® systems now capture rainfall from more than 5,600m² of roof area—equating to an expected annual yield of over five million litres. This water is being reused for crop spraying, livestock care, industrial cleaning, and landscape irrigation, significantly reducing reliance on potable and borehole water.

At The Buttery Farm, the attenuation system is already helping to moderate flow into nearby watercourses, supporting local flood risk reduction. At RBSL, the innovative use of limited space has delivered a practical water reuse solution within a challenging industrial setting. Despite an unusually dry spring (in 2025), the systems are performing well and are set to deliver even greater environmental benefits as rainfall patterns return to normal.

Matt Smith, Project Manager, River Severn Partnership, said: *"The integration of SDS's wireless-controlled rainwater harvesting systems into our River Severn project has been a real breakthrough. Their ability to tailor solutions to different sites, from farms to industrial operations, is impressive. The technology has allowed us to control and optimise water usage in real-time, and the stormwater attenuation capabilities have already proven valuable in reducing flood risks in the area. This project is making a significant difference, and we look forward to seeing even more positive results as rainfall increases."*



Sam Dickinson, SDS, Adrian Stones, RBSL
and Dr Neil Sewell, SDS

