Case Study

The Buttery Farm, Shropshire

SDS enhances farm irrigation and flood resilience with wireless-controlled rainwater management systems



SDS Systems
SDS Intellistorm® Rainwater Harvesting System;
SDS SYMBiotIC™ smart water management platform.

SDS Customer
Shropshire Council.

Client
The Buttery Farm.

Project
Rainwater harvesting and irrigation optimisation for a working agricultural site.

Purpose
To improve water resilience by capturing and reusing rainfall from the farm buildings' roof structures to support crop irrigation and reduce flood risk in the immediate vicinity of the buildings.

Brief to SDS
To design and deliver a smart, automated rainwater harvesting system capable of storing and distributing water for irrigation across the farm.

Timing
Installation was completed in Spring 2025.

Project Background Information
The Buttery Farm relies heavily on a consistent and resilient supply of water to support its operations. Like many rural businesses, the farm faces increasing pressure from climate volatility: extended dry periods that limit water availability, followed by sudden high-intensity storms that challenge drainage and soil stability.

The farm primarily grows miscanthus, used for animal bedding, where drier conditions result in smaller, lighter yields and reduced income. Maintaining adequate water availability is therefore important to help mitigate crop losses during dry spells. In addition, captured water is used for drinking water for horses and for irrigation of the on-site kitchen garden and allotment.

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Previously, rainfall from the large barn roof was lost as uncontrolled runoff, offering no strategic value during dry periods and contributing to increased flood risk in the immediate surrounding area during heavy rainfall events. The farm's existing systems lacked the ability to regulate water supply efficiently across the growing season. As part of a wider drive to improve sustainability and self-sufficiency, the farm identified the need for a modernised water management approach capable of capturing, storing and reusing rainwater to reduce environmental impact and improve operational resilience.

Project Objectives

To increase water self-sufficiency on the farm, to support irrigation requirements, and to provide additional flood resilience.

Project Requirements

The solution needed to operate reliably in a rural agricultural setting with limited access to power and variable water demand throughout the seasons. It was essential that the rainwater storage tanks could be installed alongside the farm's main barn, within a narrow corridor where crops are not grown, while operating as a single integrated system. Shropshire Council, as the customer, required automated control, the ability to respond to weather forecasts, and a setup that would minimise operational oversight, allowing the farm team to focus on day-to-day activities.

SDS Product Features

SDS installed four 5,000 litre tanks arranged linearly alongside the farm's main barn. Each tank is connected via a balancing pipe to the Intellistorm® control hardware, while the SYMBiotIC™ wireless control platform enables the tanks to operate as a single, cohesive system. Rainfall collected from the main barn roof enters each tank directly via individual leaf filters, with each tank effectively filling from consecutive roof bays, before being managed as part of the four-tank network. Stored water is used for irrigation, filling animal troughs and other farm activities, or released in a controlled manner into the barn's storm drainage system to create attenuation volume when required.

The smart control system continuously monitors tank levels, weather forecasts and irrigation demand. During dry periods, the tanks retain maximum storage to supply water for crops and horses. Ahead of forecasted storms, the system automatically creates storage capacity by releasing water in advance, reducing runoff volumes, protecting nearby farmland and drainage channels from excess flow, and minimising discharge into the Strine.

Issues Overcome

The installation at The Buttery Farm presented several technical and logistical challenges. The farm building offered limited space along one elevation, requiring the tanks to be positioned in a narrow corridor while still functioning as a complete, balanced system. The SYMBiotIC™ wireless network allowed the tanks to be treated as a single managed asset despite their physical separation, ensuring consistent flow regulation and coordinated storage behaviour.

Seasonal demand for irrigation fluctuates significantly, so the system needed to assess the quantity of water remaining in the tanks, forthcoming rainfall forecasts, and local historical demand to distinguish between long dry periods and incoming storms. Intellistorm®'s forecasting algorithms and automated control ensure that storage is always optimised, reducing both water scarcity and localised flood risk.

Rural sites such as this often present practical difficulties including uneven surfaces, intermittent power availability and limitations for accessing machinery. The modular nature of the SDS system made installation efficient and avoided disruption to the farm's operations.

Results

The integrated Intellistorm® and SYMBiotIC™ system has transformed water management at The Buttery Farm. The four connected tanks now provide a reliable supply of harvested rainwater for irrigation, helping the farm reduce borehole water demand and operate more sustainably throughout the growing season. At the same time, the system mitigates flooding by actively managing storage capacity before storms and reducing uncontrolled discharge from the barn roof. Additionally, significant quantities of water have been removed from entering the Strine catchment during rainfall periods.

The project demonstrates how SDS's smart water management technologies can support agricultural resilience, combining practical functionality with environmental stewardship. The Buttery Farm now benefits from a future-proofed, automated rainwater harvesting solution that protects the land, reduces operating costs and offers a model for rural water efficiency.

Helen Holman, Farm Partner, Buttery Farm, said: *"As a working farm, having a reliable and resilient water supply is essential. The Intellistorm® system from SDS has transformed how we manage rainfall. Instead of losing water from the barn roof as runoff, we now capture and store it for irrigation, general farm use, and drinking water for the horses, which helps reduce our reliance on our borehole supply. The automated, wireless control means the system manages itself – retaining water when we need it and creating capacity ahead of heavy rainfall to help reduce local flood risk. It's a practical, low-maintenance solution that has strengthened our sustainability and given us far greater confidence in our water management.*