Case Study

CREWW Building, University of Exeter

Pioneering smart monitoring delivers new insight into building-level water use



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

SDS Customer
IntoHeat.

Client
The University of Exeter.

Project
The deployment of multiple micro-monitoring systems throughout the Centre for Resilience in Environment, Water and Waste (CREWW) building to provide detailed insight into potable water use across a wide range of fixtures and functions.

Purpose
To provide the University of Exeter with clear, granular insight into how potable water is consumed within a flagship environmental research building, supporting better understanding, efficiency and long-term water stewardship.

Brief to SDS
SDS was asked to design, build and deliver a number of compact monitoring systems capable of measuring water use at point-of-use locations throughout the building, including toilets, basins, showers, wash-down areas and laboratories.

Timing
Installation was completed in Autumn 2023, with commissioning carried out in January 2024.

Project Background Information
The CREWW building, located on the University of Exeter's Streatham Campus, is a major research facility addressing some of the most pressing water and environmental challenges facing the UK and international markets. The Centre is a joint venture between South West Water and the University of Exeter and sits at the heart of academic and applied research into water resilience, sustainability and environmental protection.

As a showcase building for environmental innovation, CREWW provides an ideal opportunity to explore how detailed water consumption data can be captured and

used to inform both operational decision-making and research activity. Understanding exactly where and how water is used within such a complex, multi-discipline facility is seen as a critical step in improving efficiency and supporting future best practice.

Project Objectives

The primary objective was to enable the University to understand water use at a highly granular level without relying on large, intrusive smart meters. The system needed to integrate with the University's existing data infrastructure while providing researchers and estates teams with meaningful, accessible information about water consumption across the building.

Project Requirements

The monitoring solution needed to be extremely compact, as many installation points were located above suspended ceilings, beneath laboratory benches or suspended on cable tray systems. Low power consumption was essential, reflecting the building's focus on carbon reduction and environmental performance. In addition, the data generated needed to be visualised clearly and intuitively, allowing both technical and non-technical users to interrogate water usage over time.

SDS Product Features

SDS installed 22 individual monitoring systems throughout the CREWW building, covering lavatories, wash hand basins, cleaning cupboards, laboratory supplies and shower facilities. Each device records real-time water usage from a standard pulsed-output water meter and transmits data via the University's wireless network to the SYMBiotIC™ platform.

The systems provide continuous, high-resolution data capture, enabling detailed analysis of water consumption patterns across different fixtures and functions. Data is visualised through the SYMBiotIC™ interface, allowing estates teams and researchers to interrogate usage trends, compare demand across zones and identify anomalies or opportunities for efficiency improvements.

Issues Overcome

Installation took place after the majority of building works and internal fit-out had been completed, meaning many of the existing water meters had to be located within ceiling voids and congested service zones. Installation therefore needed to be carefully coordinated around existing cabling, ductwork and pipework.

In addition, although the building featured advanced environmental and water management systems, elements of the wireless network were not fully operational at the time of installation. The monitoring systems were able to use a failover connection to the SYMBiotIC™ network during commissioning, allowing SDS to demonstrate correct installation and functionality before seamlessly transitioning to the University's own network once it became available.

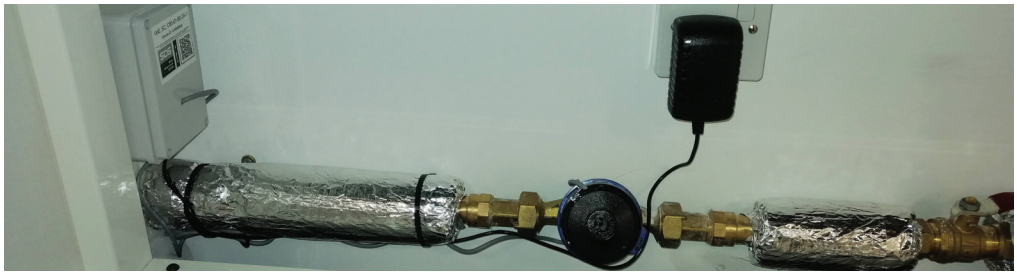
Results

The micro-monitoring systems installed throughout the CREWW building allow the University of Exeter to monitor water use at individual fixtures—a level of granularity far beyond what traditional building-level metering can provide. Estates teams and researchers are now able to examine where water is being used, how usage patterns change over time, and where opportunities exist to reduce unnecessary consumption.

For example, early data from the monitoring systems identified a set of laboratory wash-down taps that were running for longer periods than necessary. Adjustments to operational protocols based on these insights have already reduced unnecessary water use in these areas, demonstrating the practical impact of granular, point-of-use monitoring.

By enabling detailed monitoring, SDS has helped the University deepen its understanding of water use within a complex research environment, supporting both operational efficiency and the wider research aims of the CREWW facility.

John Vickery, Project Director, University of Exeter, said: *"The monitoring systems delivered by SDS have transformed how we can monitor water usage within the CREWW building. By installing compact, point-of-use hardware and making data available through SDS SYMBiotIC™, we now have real-time visibility of water use at individual fixtures rather than relying on whole-building data. This has helped us identify and reduce unnecessary water consumption and gives the University of Exeter clear, actionable insight to support ongoing efficiency and sustainability improvements."*





SDS compact monitoring devices were installed in tight, hard-to-access spaces.