

## Case Study

### The Headland Hotel, Newquay, Cornwall

SDS enables practical rainwater recovery and reuse at a coastal hotel, supporting reduced potable water demand



#### SDS Systems

SDS Intellistorm® Smart Rainwater Management.  
SDS SYMBiotIC™ Monitoring Platform.

#### SDS Customer

MOSL.

#### Client

The Headland Hotel and Spa, Newquay.

#### Project

Recovery and reuse of rainwater from a pre-existing attenuation system to reduce potable water demand and demonstrate innovative water efficiency within the non-household sector.

#### Purpose

To capture and reuse rainwater on site, which would otherwise be attenuated, thereby replacing mains water for non-potable uses, reducing operational water consumption, and providing verifiable performance data through smart monitoring.

#### Brief to SDS

SDS was engaged as part of a MOSL-funded innovation project to demonstrate how rainwater stored within existing attenuation systems could be recovered and reused rather than discharged to ground or sewer. The brief was to design and install a system that could extract water from the hotel's attenuation infrastructure, treat and store it safely, and supply it to selected end uses within the hotel's surf and leisure facilities. A further requirement was to monitor water recovery and reuse volumes, enabling transparent reporting of water savings.

#### Timing

Project development commenced in March 2023, with the system being fully operational in June 2023 as part of the MOSL Market Improvement Fund Rainwater Recovery Project delivery phase.

#### Project Background Information

Market Operator Services Ltd (MOSL) manages the competitive non-household water sector in England, acting as the central market operator between retailers and wholesalers. In 2021, MOSL launched its inaugural

Market Improvement Fund to support innovative projects that could improve the efficiency, resilience and transparency of the business water sector.

SDS partnered with Source4Business to develop a proposal to the MOSL Market Improvement Fund focused on rainwater recovery from pre-existing attenuation systems—an underutilised asset across many commercial and hospitality sites. The Headland Hotel was selected as one of the pilot locations due to its existing attenuation infrastructure, proximity between storage and potential end uses, and strong commitment to environmental sustainability.

Located on the clifftops overlooking Fistral Beach, The Headland Hotel and Spa is a five-star destination set within a Site of Special Scientific Interest (SSSI). The hotel's operations are closely tied to the surrounding natural environment, making responsible water management a priority both operationally and reputationally.

## Project Objectives

To demonstrate that rainwater attenuation systems can be repurposed as a valuable water resource, reducing potable water demand while maintaining the primary flood protection function of the infrastructure. A further objective was to provide measurable evidence of water savings using smart monitoring, supporting both the hotel's sustainability strategy and MOSL's wider market improvement aims.

## Project Requirements

The system needed to recover water without compromising the attenuation tank's role as a soakaway. It was required to operate reliably in a coastal environment and supply water to toilet flushing and wetsuit washing facilities, where demand is seasonal but significant. Filtration and pumping arrangements had to ensure appropriate water quality for non-potable use, while sensors were required to track water levels and usage accurately for reporting via SDS SYMBiotIC™.

## SDS Product Features

At the Headland, rainwater falling on the hotel roof is captured within an existing attenuation tank that previously acted solely as a soakaway. SDS adapted the arrangement so that water could be collected from the inlet catchpit and pumped uphill to a 5,000-litre above-ground storage tank, discreetly located behind screening to preserve the site's visual setting.

From the storage tank, rainwater is filtered and pumped to four toilets within the outdoor facilities area, replacing

mains water for flushing. The system also supplies a water trough used for washing wetsuits, a high-demand activity directly linked to the hotel's surf school and coastal location.

Sensors installed within the attenuation tank pickup chamber and in the above-ground storage tank continuously monitor water levels, while a water meter on the distribution line records volumes reused. All data is collated and displayed through the SDS SYMBiotIC™ dashboard, allowing water savings to be visualised and reported clearly.

## Issues Overcome

Recovering water from an attenuation system presents different challenges to conventional roof-fed rainwater harvesting. Careful design was required to ensure that the attenuation tank continued to function effectively during heavy rainfall while allowing water to be abstracted safely for reuse.

Material selection for pumps, pipework and filtration components, along with the choice of filtration media, was carefully considered to ensure reliable performance and long-term operation in a coastal environment. The coastal setting and sensitive environmental designation of the site also required a discreet installation that would not detract from the hotel's landscape or heritage value.

## Results

The Headland Hotel installation demonstrates the significant untapped potential of existing attenuation infrastructure as a sustainable water resource. By diverting rainwater that would otherwise soak away unused, the system reduces reliance on mains water for toilet flushing and wetsuit washing—activities that align closely with the hotel's operational profile.

The integration of smart sensors and the SYMBiotIC™ platform enables transparent measurement of recovered and reused water, supporting evidence-based sustainability reporting for both the hotel and the MOSL Market Improvement Fund.

This project shows how innovative rainwater recovery can support ambitious environmental commitments within the hospitality sector, particularly in water-stressed and environmentally sensitive locations.

As part of a wider MOSL-funded programme, the Headland project contributes to a growing body of evidence that smart, data-led water management can reduce costs, improve resilience and deliver tangible environmental benefits, helping to protect Cornwall's coastline while supporting a greener future for tourism.

**Bethany Branigan, Sustainability Lead, The Headland Hotel, said:** "SDS were proactive and knowledgeable throughout the project, from design through to installation and commissioning, and the integration of monitoring gives clear visibility of the water we are recovering and reusing. This has helped us reduce reliance on mains water for appropriate uses whilst strengthening our EarthCheck partnership, supporting our journey towards achieving EarthCheck Silver certification in September 2025."