

# Drain Blockages & Water Loss Incidents Audit

May 2026

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## Purpose

The purpose of this audit is to provide a comprehensive assessment of maintenance incidents relating to blocked drainage systems and water loss across Edge Hill University during the 2024/25 academic year. Specifically, the audit seeks to quantify and analyse the frequency and distribution of issues affecting key water-using fixtures, including sinks, toilets, and showers, across residential accommodation, non-residential university buildings, and the Sports Centre.

This review has been undertaken to:

- **Establish a clear baseline** of reactive maintenance demand associated with drainage blockages and water inefficiencies across different asset types and building uses.
- **Identify trends and patterns** in incidents, including high-frequency locations, fixture types most prone to failure or misuse, and any differences between residential and non-residential environments.
- **Assess operational impact**, including the burden placed on Estates and Facilities resources, response requirements, and potential disruption to students, staff, and visitors.
- **Evaluate water efficiency performance** by examining the prevalence of avoidable water loss issues such as running toilet cisterns, dripping taps, and minor leaks.
- **Support sustainability objectives**, recognising that water wastage contributes to both increased utility costs and indirect carbon emissions associated with water supply, treatment, and heating.
- **Inform preventative maintenance strategies**, enabling a shift from reactive to proactive interventions, particularly in high-use or high-risk areas such as halls of residence kitchens and Sports Centre shower facilities.
- **Provide an evidence base for investment decisions**, including potential upgrades to fixtures, introduction of water-saving technologies, or implementation of monitoring systems.
- **Enhance user awareness and behaviour**, particularly in residential settings, by highlighting common causes of blockages and avoidable water loss.

Ultimately, the audit aims to support continuous improvement in asset management, reduce environmental impact, and contribute to the University's wider sustainability and operational efficiency goals.

## Scope

This audit encompasses maintenance incidents associated with blocked drainage systems and water loss across a range of building types and functional spaces within Edge Hill University during the 2024/25 academic year. The scope has been deliberately defined to capture issues relating to frequently used water fixtures that have the greatest potential to impact user experience, operational efficiency, and water consumption.

Within residential accommodation (halls of residence), the audit includes all reported incidents relating to bathroom sinks, toilets, showers, and kitchen sinks located within student flats and communal areas. These environments are characterised by high occupancy levels and intensive daily use, making them particularly susceptible to drainage blockages arising from misuse, as well as wear and tear affecting plumbing fixtures.

In non-residential buildings, the scope focuses on shared and public-facing facilities, including kitchen or kitchenette sinks, bathroom sinks, and toilets. These areas are used by staff, students, and visitors and typically experience varied usage patterns throughout the day. While showers are not generally present in these spaces, the audit captures all relevant drainage and water loss issues linked to standard sanitary and kitchen fittings.

The Sports Centre is considered as a distinct category within the audit due to its unique usage profile, particularly the high-frequency use of shower facilities. The scope therefore includes showers alongside toilets and sinks within this setting. The inclusion of showers in this category recognises their elevated risk of blockages (e.g. from hair and debris) and their contribution to overall water consumption.

In addition to drainage blockages, the scope extends to water loss issues across all categories, capturing incidents such as continuously running toilet cisterns, dripping taps, and minor leaks from fixtures or visible pipework. These issues, while often categorised as low-level faults, represent a significant source of preventable water wastage when aggregated across the estate.

Overall, the scope is intended to provide a comprehensive view of both reactive maintenance demand and inefficiencies in water usage across the University's operational environments, enabling meaningful comparisons between residential, non-residential, and sports facilities.

## Date Source and Methodology

The data used for this audit was derived from maintenance tickets raised within the University's facilities management system, Invida Resolve, covering the full duration of the 2024/25 academic year. All relevant tickets logged within this timeframe were accessed and systematically reviewed to identify those relating specifically to blocked drainage issues and water loss.

A filtering and classification process was undertaken to extract incidents aligned to the audit criteria. This involved analysing ticket descriptions, fault categories, and location data to determine whether each record corresponded to a blocked drain (including sinks, toilets, or showers) or a water loss issue (such as running cisterns, dripping taps, or leaks). Where ticket categorisation was inconsistent or unclear, manual review of the descriptive information was used to ensure appropriate classification.

Each identified incident was then allocated to one of three primary categories based on its location: residential, non-residential, or Sports Centre. Further categorisation was applied within each group to distinguish between fixture types (e.g. sinks, toilets, showers) and issue types (e.g. blockage vs. water loss). This enabled the development of a detailed, structured dataset suitable for comparative analysis.

The resulting dataset was subsequently analysed to quantify the number of incidents within each category and sub-category, allowing for an assessment of distribution patterns across the estate. This approach ensures that the audit provides both a high-level overview of total incident volumes and a more granular understanding of where issues are most prevalent.

It should be noted that the audit reflects only those incidents formally reported and logged within the system, and therefore may not capture unreported or informally resolved issues. Nevertheless, the dataset provides a robust and representative basis for evaluating maintenance demand and identifying opportunities for improvement in both asset management and water efficiency.

## Summary of Findings

Category	Total number of blockage incidents	Total number of water loss incidents
Residential	848	157
Non-Residential (excluding Sports Centre)	389	294
Sports Centre	62	24
External spaces	0	0
<b>Total</b>	<b>1299</b>	<b>475</b>

## Detailed Breakdown of Findings

### Residential Buildings (Halls of Residence)

#### Blocked Drain Incidents

Fixture Type	Total number of incidents
Bathroom sinks	440
Toilets	79
Showers	302
Kitchen sinks	27
External	0
<b>Total</b>	<b>848</b>

#### Water Loss Incidents

Issue Type	Total number of incidents
Shower	10
Bathroom sink	40
Bathroom tap	5
Other bathroom issues	30
Toilet	8
Kitchen sink	8
Kitchen tap	0
Other kitchen issue	5
Other	35
Boiler/plant room	16

### Non-Residential Buildings

#### Blocked Drain Incidents

Fixture Type	Total number of incidents
Bathroom sinks	33
Toilets	250
Urinals	77
Showers	0
Kitchen/office sinks	18
Cleaners sink	4

Lab sink	7
External	0
Total	389

## Water Loss Incidents

Issue Type	Total number of incidents
Running cisterns	35
Dripping taps/showers	6
Leaks	183
Other	70
Total	294

## Sports Centre

### Blocked Drain Incidents

Fixture Type	Total number of incidents
Sinks	27
Toilets	10
Urinals	20
Showers	5
Total	62

## Water Loss Incidents

Issue Type	Total number of incidents
Running cisterns	1
Dripping taps/showers	5
Leaks	10
Other	8
Total	24

## Key Observations

### Residential buildings drive the majority of blockages

Residential accommodation accounts for 848 of 1,299 blockage incidents ( $\approx 65\%$ ), making it the most significant pressure point for reactive maintenance.

- Bathroom sinks (440 incidents) and showers (302 incidents) together account for over 87% of residential blockages, indicating misuse and accumulation of hair, food waste, and inappropriate materials.
- Kitchen sink blockages are relatively low (27 incidents), suggesting that most drainage issues stem from bathroom behaviours rather than food waste disposal.

### Non-residential buildings show high toilet and urinal related issues

Non-residential spaces account for a substantial 389 blockage incidents, with a distinct pattern:

- Toilets dominate (250 incidents, ~64%) and urinals (77 incidents) are also significant.
- This suggests problems linked to high footfall, inappropriate disposal (e.g., wipes), and heavy usage patterns in public/shared facilities.

### Water loss is more prevalent in non-residential buildings

Although residential areas have more blockages, non-residential spaces have the highest water loss incidents (294 vs. 157).

Leaks alone account for 183 incidents (~62%) in non-residential buildings.

- This highlights that asset condition and ageing infrastructure are likely more significant drivers than user behaviour in these settings.

## Environmental Impact

The audit highlights a clear link between maintenance issues and environmental performance:

Water wastage:

With 475 recorded water loss incidents, even small continuous leaks can result in significant cumulative water waste over time.

Carbon impact:

Water supply, treatment, and heating all carry associated carbon emissions. Persistent leaks and inefficient fixtures therefore contribute indirectly to the University's scope 2 and 3 emissions.

Resource inefficiency:

High levels of blockages require repeated reactive maintenance, increasing:

- o Vehicle movements
- o Labour hours
- o Use of chemicals and equipment

Behaviour-driven environmental pressures:

The high proportion of residential bathroom blockages indicates avoidable behaviours, such as improper disposal of wipes or hair, which directly impact both infrastructure and sustainability performance.

Infrastructure strain:

In non-residential buildings, leak-related incidents suggest aging or stressed systems, leading to ongoing inefficiencies and increased lifecycle impacts.

## Recommendations

### Short-term

- Improve reporting categorisation to enhance data accuracy and enable better root cause analysis.
- Target high-frequency locations (e.g., halls bathrooms, public toilets) for preventative inspections and cleaning regimes.
- Increase response priority for water loss incidents, particularly leaks, to minimise wastage duration.
- Introduce simple awareness campaigns in halls focused on:
  - o What not to put down sinks and toilets
  - o Prompt reporting of issues

### Medium-term

- Trial drain guards/hair traps in residential showers.
- Develop targeted behaviour change campaigns using signage and digital communications.

## Summary and Next Steps

This audit provides a clear evidence base demonstrating that:

- Residential behaviours drive blockage incidents, particularly in bathrooms.
- Non-residential infrastructure drives water loss, especially through leaks.
- There is significant opportunity to reduce both maintenance demand and environmental impact through targeted interventions.

### Next Steps:

1. Develop a delivery plan prioritising high-impact, low-cost interventions.
2. Monitor improvements through year-on-year comparison of incident data.