

# INNOVATION GATEWAY

Challenge Selection  
Round 1, 2019

**Innovator Briefs – Water and Waste Management**



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# Water and Waste Management

## Water saving devices

### The challenge

Water is an increasing utility cost and a resource that requires effective management, especially in areas predisposed to drought. The Innovation Gateway Partners have diverse portfolios of commercial buildings that consume large amounts of water, including:

- Community centres, libraries, crematoriums and other public buildings.
- Leisure centres and pools.
- Commercial offices.
- Transport terminals.

The challenge is to identify innovative solutions that reduce water consumption across the range of commercial properties and across a range of applications.

### The solutions we are seeking

The Partners are seeking innovative water-saving technologies to improve the efficiency of their buildings, focusing on consumption associated with taps, toilets and showers.

Potential solutions of interest range from simple add-on products all the way to full system replacement solutions. Solutions that are technologically simple or advanced are of equal interest.

Retrofittable solutions should demonstrate the ability to integrate with existing pipework and flows, while ensuring minimal disruption.

Solutions must demonstrate a level of robustness and functionality necessary for continuous operation.

### Further information

Any solution that will be public facing must meet with the Partners' aesthetic requirements, looking smart and continuous with existing systems and brand guidelines.

Due to the range of buildings involved, a solution may be suitable for installation across only a section of the estate, but this will not rule out any innovation from consideration.

### Selection criteria

- Water and cost savings are key requirements.
- Solutions must be WRAS certified for consideration.
- 3-5 year payback.
- Any degree of market readiness will be considered, with pilot sites used to test solutions before rolling out.
- Low maintenance solutions are desirable.

# Use of sink grey water for toilet flushing

## The challenge

Toilets are responsible for a significant proportion of water consumption across the Innovation Gateway Partners' estates.

The challenge is to locate innovative ways of using grey water from sinks associated with the toilets to provide the flushing water.

## The solutions we are seeking

The aim is the reduction in water consumption across their sites, with no impact on the performance of the toilets and no impact on the user's perception of the toilets.

Solutions that work with toilets and sinks that are spaced significantly apart from one another, as in public bathrooms, are necessary for the commercial buildings across the Partners' estates.

Retrofittable solutions that integrate into existing systems with minimal disruption and low maintenance requirements are desirable. However, there is the possibility of combining installation with upgrades across some of the properties.

## Further information

An innovation that displays a solution to the associated discolouration/staining that comes from using grey water would be preferred. While some Partners are able to roll out educational programmes to increase public understanding, others would struggle with aesthetic requirements.

## Selection criteria

- Solutions must be WRAS certified.
- A solution from a UK based provider is preferable.
- For the right trial, the Partners would consider a cost of £10-20k.

# Prevention of drainage issues and reduced risk of non-compliance

## The challenge

Current solutions to large drainage blockages (small fatberg type blockages) involve grease traps and enzyme dosing followed by high pressure jetting to unblock drains.

This can be costly, time-consuming and uses a lot of water. There are also risks of noncompliance with the wastewater regulations.

The challenge is to find innovative solutions that save time, money, water and effort when maintaining drainage systems.

## The solutions we are seeking

Solutions will ideally lower the water costs associated with treating blockages, increase safety and ensure the system is kept compliant.

The following types of solutions are of particular interest:

- Sensing technology that monitors the condition of drains and provides early warning indicators so that major blockages can be avoided.
- Biological treatments that target any organic material that enters the drains.
- More effective solutions for preventing inappropriate waste entering the drains.
- Solutions that increase the efficiency of cleaning drains when blockages do occur.

A retrofittable solution that can integrate with existing drainage systems is preferred.

A solution that can maintain effectiveness throughout changes of staff would be ideal.

## Further information

The drains systems range from those associated with office kitchens to larger commercial operations.

Ways of using recovered fat for feedstock or the biofuel industry are of interest.

The solution would ideally be mobile, although there is demand for permanent solutions at problematic sites.

## Selection criteria

- Staff safety must not be compromised.
- Effective through high staff turnover.
- Mobile or fixed installation.