

Waterscan



# Water matters

Insight for the UK's universities sector

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# Introduction

We all need water. It's the foundation of every aspect of society.



## Think for a minute...

What would happen if there was a shortage of water across your campus? Within a couple of hours, facilities and administrative teams are under pressure to find solutions.

After a couple of days, the health and wellbeing of students and staff would be put at risk, and everyone is demanding action and answers.

## Now take a few moments to consider...

- When was the last time you analysed water consumption across your estate?
- Do you know where water risks lie, and how these will impact your future plans?
- Is water efficiency supporting or hindering your transition to net zero?

If you're not sure, you're not alone.

In most organisations, water continues to be less of a sustainability priority than issues such as energy and waste. This is because it is apparently readily available, currently less of a budget drain than gas and electricity, and often harder to manage well.

In university settings, water is complex to manage because campuses are:

- diverse estates where water consumption varies from site to site according to function,
- usually large estates, often with outdated plumbing infrastructure,
- subject to significant and pressing funding constraints,

However, stakeholders across the board, from students to investors, are turning their attention to water stewardship, with increasing scrutiny as climate change accelerates water-related risks.

## Spare ten minutes now to read and discover...

- Why water is fast becoming the biggest environmental and economic risk to your estate.
- How boosting water stewardship will help to unlock progress towards all of your sustainability targets.
- Where to begin with your university's journey towards operational water resilience.
- How to benefit more from water data.
- The importance of educating future generations on safeguarding critical water supplies.



# In the spotlight

A sustainability spotlight is being turned on education settings around the world.

The UK government's vision is for a "world-leading education sector in sustainability and climate change by 2030".<sup>1</sup> Focus areas set out in the vision include – flood resilience, sustainable urban drainage, water efficiency and resilience to drought – and is working with water regulator Ofwat and water market operator MOSL to incentivise efficiency across the sector.

This is welcome news but if the necessary water savings are to be achieved, high levels of collaboration at site level, guided by clear, insight-driven strategies, are needed.

Race to Zero<sup>2</sup> (an initiative led by the United Nations Environment Programme and the Alliance for Sustainability Leadership in Education) has seen 166 UK universities and colleges, representing 1.7m students, pledge

support and action. As momentum builds, this is likely to influence where overseas students choose to study.

The People & Planet University League Table<sup>3</sup> is a further signal that young people have water conservation on their radar and here, their insight and methodology are sound. Students are watching, they have high sustainability expectations of their education providers and are willing to hold them to account.

Further, it's important to note that water is directly related to each of the UN Sustainable Development Goals, including SDG 4 relating to quality education. For example the WASH (Water, Sanitation and Hygiene) for all initiative focuses on teaching hygiene fundamentals as part of supporting successful water projects.

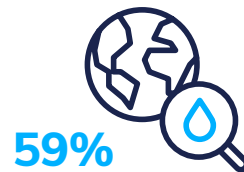
# Pledges are one thing, progress is another

“Unless the next generation have sustainability hardwired into their mindsets and skillsets, the transition to a sustainable world will become much harder.”

United Nations Environment Programme,  
Sustainable University Framework



28 UK universities recorded a zero score for water reduction in the 2023-24 People & Planet University League.



59%

59% of the UK's 153 universities did not meet their shared goal to reduce operational emissions by 43% between 2005 and 2021.<sup>4</sup>



1,400x

The UK's ten highest water using universities alone consumed 5.2 million m<sup>3</sup> of water in the academic year to 2022. To visualise this, that's around 1,400 Olympic sized swimming pools.

# The hidden risk across your estate

Water poses several fast emerging, but often hidden, operational, environmental and financial risks.

The UK's water supply will decrease by 7% as a result of climate change and abstraction limits by 2045.<sup>5</sup> This means that demand is expected to exceed water availability just twenty years from now.

Ofwat, Defra, the Environment Agency, and water companies are working on ways to mitigate this situation. Defra has set a target to reduce non-household water consumption by 9% by 2037<sup>6</sup> – a clear signal that it expects all water users to take greater responsibility for their water-related impacts.

Even so, water efficiency still struggles to make it onto senior leadership schedules when setting sustainability agendas, targets and action plans. Some are considering water in the context of a

ten-year strategy<sup>7</sup>, but this timeframe is not aligned with regulators who want to see water pushed further and faster up the agenda. Delaying action is only exacerbating risks which will become more time consuming and costly to resolve.

Universities have a particular role to play in empowering the next generation to be water-wise and should now embrace the opportunity to take a leadership position on water stewardship.

We believe that those responsible for utilities across the education sector should be supported in their efforts to better understand and conserve water, which in turn will boost resilience and safeguard their reputation.

## The benefits of instigating a water resilience strategy now cannot be overstated.

### Being proactive on water:



Enhances operational resilience to the impacts of climate change.



Lowers utility bills and relieves administrative burdens.



Supports efforts to achieve net zero in line with statutory targets.



Encourages behaviour change for future generations.



Improves accountability on sustainability to all stakeholders.



Facilitates increasing requirements for disclosure and reporting on water.



Secures long-term reputational gains, attracting students and future investment.



Supports progress on all global sustainable development goals, including SDG4 relating to quality education.

Every day, over 50 billion litres of water are taken from the environment for public and commercial consumption in England and Wales.<sup>1</sup>



## Across the globe



Less than **1.2%** of all water on Earth is available for human use.<sup>8</sup>



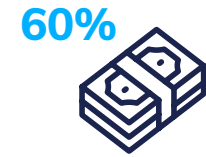
Half the world's population is exposed to **water scarcity** at least once per month.<sup>9</sup>



The financial cost of **water risks** is **5x higher** than the cost of mitigating them.<sup>10</sup>

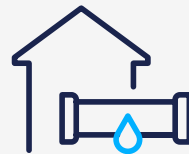


Water stress acts as a multiplier to shortages of other key resources.<sup>11</sup>



Freshwater's economic value is **US\$58 trillion** – equivalent to 60% of global GDP.<sup>12</sup>

## In the UK



Nearly **27 million properties** are connected to the public water supply network.<sup>13</sup>



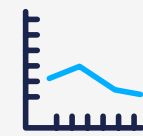
Every day, over **50 billion litres of water** are taken from the environment for public consumption.<sup>14</sup>



Supply interruptions are expected to increase by **25% by 2050**.<sup>15</sup>



By 2050, we will need **4 billion more litres** of water per day.



Half of this must come from **reducing demand**.<sup>16</sup>

# A water responsible campus

## Is data driven

Generating quality water data can be challenging, as it is often a time consuming and manual process. Where installed, Automated Meter Readers (AMR) are extremely useful, but however water data is gathered, data needs to offer meaning and action. Some organisations invest heavily in the technology, or are given grants to do so, but may not be achieving a good return on this investment, simply because they don't know what the data is telling them, or they are using technology and data in isolation from other information sources.

Mapping data against other metrics provides context and a benchmark from which to measure progress. A review of year-on-year changes highlights inconsistencies that are likely to be issues to address. Cross referencing this analysis with student and staff numbers will identify opportunities for improvement.

## Thinks locally

Wide variations in regional water availability and demand makes a 'one size fits all' approach to water management impossible. What is appropriate for a campus on one side of the country will not have the same impact for one on the opposite coast, especially when projected climate changes and urban development are factored in.

Even on campus, there are usually considerable fluctuations in water use. Seasonality will likely impact water usage patterns at halls of residence and catering facilities more than it will in research and office spaces, for example. Further complexity can be added by the range of courses and the facilities, for example, a veterinarian courses water needs are likely to be quite different to a mathematics course. Understanding the nuances and aspirations of each estate at the outset is essential groundwork.





## Tackles issues

There is no substitute for getting a technician on site to audit and evidence what the data is showing. This important step will make sure that meters are functioning well. It will also give early warning of problems, like an underground water leak or an issue with trade effluent compliance. Where more granular information is needed to identify opportunities to make progress, sub-metering might be recommended for more complex sites.

## Optimises budget

The deregulation of the water market across England and Wales in 2017 created an opportunity for all non-household water users to review how they source their water, just as they do with their energy procurement strategy. Making the most of procurement options is likely to be a beneficial component of any water strategy to further derisk operations, so long as the approach to the water market is supported with robust data sets and insight.

## Communicates

Data analysis and audits may have identified unusual or excessive water consumption patterns arising from behavioural rather than infrastructural issues. Put into context, this tangible insight will be helpful in developing specific interventions to educate staff and students and encourage them to take a more responsible approach to their water use.

Higher levels of water insight will also help with external reporting and stakeholder transparency while performance indicators give focus, catalyse action, track progress and lead to improvements.

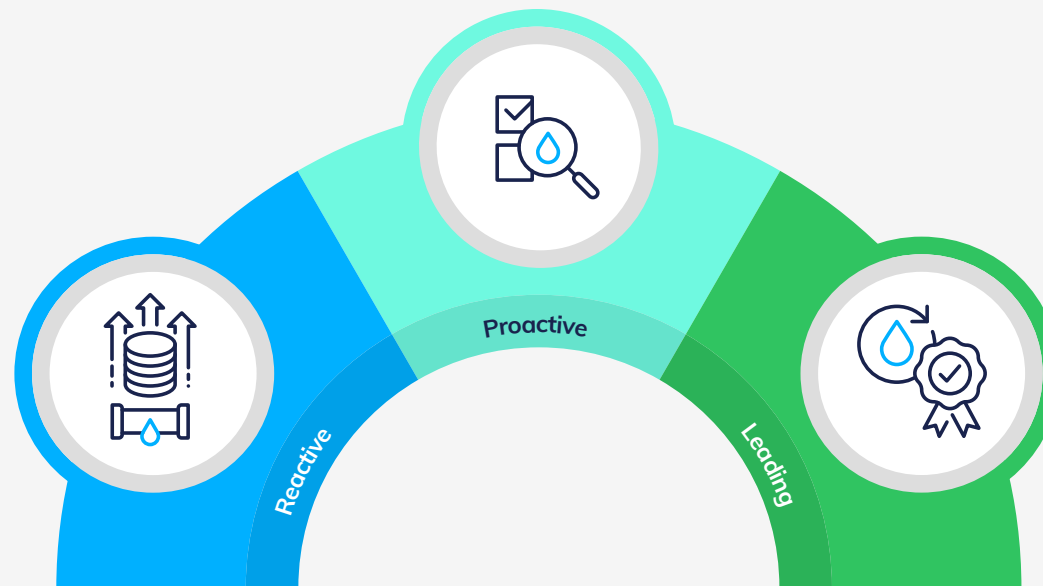
## Ready to make a start?

An independent water specialist for thirty years, Waterscan understands better than anyone how to help organisations address water-related risks and uncover opportunities to become more resilient. Our services and expertise equip organisations to implement sound water strategies that will safeguard operations and reputations, reduce risk and support responsible growth.



# Step 1: assess

Benchmark your operation



## Understand what leadership on water looks like

### Water reactive

Unless their operations are negatively impacted by an unexpected water-related event, these organisations just pay their water bills and remain largely uninformed about their water risks and opportunities.

### Water proactive

Recognising the critical role that water plays in daily operations, these organisations are engaged with water and are working to improve their position and future resilience prospects.

### Water leaders

Responsible water use is as important as lowering emissions and stamping out waste for these organisations.

These companies understand the interplay between water and other environmental impacts, such as greenhouse gas emissions, and have therefore integrated water into their net zero transition planning.



## Water reactive

Their lack of water data and insight into how much water they use, where and how, means that leaks across their estate will go unnoticed. They will therefore be paying for water they are not benefiting from, and also amassing costs for future reactive repair work.

At board level, low awareness of all that responsible water stewardship involves could well be amplifying short, mid, and long-term financial and operational risks. And, failing to fully integrate water into sustainability plans will be slowing progress towards net zero targets.

Water reactive organisations are at imminent risk of intense stakeholder scrutiny.



## Water proactive

They have proactively enhanced water meter reading activity to achieve granular visibility of their water consumption. This means that they can confidently engage with suppliers and make good decisions on procurement options in the water marketplace. These companies will be saving both water and money, as well as a considerable amount of administration.

Their actionable insight provides a level of control and the capability to spot fluctuations in usage that could signal a simple repair of a leaky tap or loo before it turns into a big problem. They may be using AMR to further improve efficiency and help them prioritise action across their estate. Importantly, they know they are compliant with environmental regulations, including trade effluent and abstraction requirements.

Water proactive organisations are on their journey to responsible water use and are likely to be looking at next-level water strategies to secure long-term resilience.



## Water leaders

Already working towards continual improvement, these companies are likely to be collaborating with a wide range of stakeholders at catchment and national levels to deepen their understanding of opportunities and to share learnings with industry peers. They may also be investing in test and learn initiatives to inform a strategic direction that is right for their business now, but also aligned with strategic estate growth plans.

With water data well understood and benchmarks established, these companies are informed about the financial and operational risks arising from failing to act on water and realise the benefits of water disclosure via schemes including TCFD, TNFD and CPD.

Water Leaders can be confident that they have a secure supply and a strategic approach that will significantly improve organisational resilience for the long-term.

# Step 2: act

## 8 steps to mitigate water risks

Some simple steps to start reducing risk and building resilience across your operations



### 1 Discover

Take stock of your campus's relationship with water. Confirm your current water consumption and processes for water procurement and management. Are you aware of the status of water availability in your location? Are you at risk of flooding? How likely is it that your campus will be impacted by drought?

### 2 Analyse

Review current water consumption needs in line with course and population profile. Consider how water use varies from site to site according to its function (laboratories compared to student union or classrooms). Consider strategic growth ambitions and the expectations of stakeholders including future students and how these will impact your future water requirements.

### 3 Data awareness

Delve into the detail of your available water data ensuring that your metering is working well to provide accurate reads. Review trends and anomalies to highlight areas on campus that require immediate focus, potential problems to address, and opportunities to explore.

### 4 Benchmark

Cross reference consumption across your campus with external data and benchmarks to create a baseline to work from. Adapt this to your specific university profile. What learnings can you take from others with regard to the water-related risks you have uncovered?

### 5 Actionable insights and reports

Unlike other utilities, water requires constant management as leaks and meter failures can occur at any time, creating the potential for unplanned expenditure and impacting the student experience. Build processes and reports that allow you to investigate unusual consumption patterns promptly.

### 6 Cost optimisation

Analysing verified water consumption against spend will ensure that your water bills are accurate. Optimise costs by considering your options for procuring water in the water market for best value, noting that water prices are set to increase. Also evaluate and test smart technologies to drive down water use in areas where reducing consumption through other means is likely to be a challenge.

### 7 Collaborate and innovate

Connect with stakeholders and partners to accelerate the pace of your water efficiency work through a focused project and share the learnings from this with peers. Where behaviour change is required, how might students and staff help harness this effort? Might a science faculty research project be a breakthrough?

### 8 ESG transparency

Lead by example by reporting on your water impacts and mitigation strategies via mandatory (such as TCFD) and voluntary schemes (like CDP). This transparency will drive continual improvement across university settings and build your reputation with future students, local communities and investor groups. Reflect your achievements in your reporting on net zero progress, remembering the link between water and emissions.

- 1 <https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy/sustainability-and-climate-change-a-strategy-for-the-education-and-childrens-services-systems#action-area-4-operations-and-supply-chains>
- 2 <https://www.theracetozero.co.uk/>
- 3 <https://peopleandplanet.org/university-league>
- 4 <https://www.edie.net/6-in-10-uk-universities-failing-to-cut-carbon-emissions-in-line-with-sector-wide-commitment/>
- 5 <https://www.hesa.ac.uk/data-and-analysis/estates/table-2>
- 6 <https://www.water.org.uk/protecting-environment/climate-change>
- 7 <https://www.weforum.org/publications/global-risks-report-2024/>
- 8 Plan for Water: our integrated plan for delivering clean and plentiful water – GOV.UK ([www.gov.uk](http://www.gov.uk))
- 9 <https://www.cdp.net/en/water>
- 10 [wwf-high-cost-of-cheap-water--final-lr-for-web-.pdf](#) (panda.org)
- 11 <https://www.cdp.net/en/research/global-reports/global-water-report-2020>
- 12 [https://www3.weforum.org/docs/WEF\\_Global\\_Risks\\_Report\\_2023.Pdf](https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.Pdf) p61
- 13 [wwf-high-cost-of-cheap-water--final-lr-for-web-.pdf](#) (panda.org)
- 14 <https://www.discoverwater.co.uk/amount-we-use>
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- 16 <https://www.water.org.uk/news-views-publications/news/ambitious-collaborative-agenda-needed-deliver-customers-and>
- 17 [https://consult.defra.gov.uk/water-efficiency-labelling/water-efficiency-labelling/supporting\\_documents/Water%20efficiency%20labelling%20consultation.pdf](https://consult.defra.gov.uk/water-efficiency-labelling/water-efficiency-labelling/supporting_documents/Water%20efficiency%20labelling%20consultation.pdf)