

CASE STUDY

WORLD-LEADING UNIVERSITY LABORATORY IS THE FIRST TO INSTALL ENVIROGEN'S MODULAR LABPURE WATER PURIFICATION SYSTEM



When our client, a global construction engineering company, won the tender to construct a new building for one of the world's leading physics research centres, they were tasked with providing a centralised lab water purification system on-site. The system would need to supply highly purified lab-grade water to all research departments in the vast 32,900 m² site. The solution: Envirogen's new LabPure laboratory water purification system.

SIMPLIFIED AND CENTRALISED LAB WATER PURIFICATION

Modern laboratories need constant streams of ultra-high purity, lab-grade water. In research centres with multiple laboratories, it makes sense to generate and supply this water from one centralised water purification system, as the cost of buying small local box water purification units or pre-treated water soon becomes cost-prohibitive.

Our client came to us with specific requirements. This new building for the physics research centre would need consistent water supplies of a very high specification for regulatory compliance. But that wasn't all. To meet their sustainability goals, the system needed to demonstrate energy efficiency generation as well as low waste streams, and deliver this all with a low total cost of ownership.



THE SOLUTION: LABPURE

One compact system - with no chemicals and low operating costs

With LabPure, it's about delivering reliable, small-volume, high-quality, high-purity, lab-grade water in a compact, multi-technology system that is simple to install, operate and maintain. By combining three core water treatment technologies in one modular system, we can generate extremely high-purity streams:

- **Energy-efficient, low energy reverse osmosis membranes (RO)** to remove 99.9% of viruses, bacteria, pyrogens and suspended solids, and 96-99% of dissolved ions and organic compounds.
- **Carbon dioxide (CO₂) degas membranes** - for CO₂ removal, which further improves the downstream efficiency of the system.
- **Electrodeionisation (EDI)** - a high-flow rate system that removes remaining dissolved ions while reducing the system's footprint.

GLOBALLY IMPORANT PROJECT

JOHN JEPSON,

Commercial Director, Envirogen Group:

"We're proud that our LabPure installation features in such a high-profile and globally important project. LabPure is the latest product in our extensive EcoRange that includes our most popular, core water treatment technology. In LabPure, we combine established techniques to achieve high-quality laboratory water and like every product in the EcoRange portfolio, clients feel the cost, time and operational benefits of the ultra-efficient, modular, pre-tested and commissioned design."

"In fact, on this site, LabPure was installed along with two other models from our EcoRange. Our EcoRO Compact and EcoSoft systems are working to supply water to the humidifiers and other water needs outside of the laboratories. Our PureCare service and maintenance package is also in place, ensuring ongoing operational efficiency."

KEY OUTCOMES:

- A LabPure, multi-technology, modular system was installed, tested and pre-tested/commissioned off-site to save time on the busy construction site.
- Centralised system supplies up to 150 litres per hour of purified, lab-grade water to all laboratories on-site within a small and compact space.
- Ultra-pure water standards were achieved, meeting pre-requisites for regulatory and design compliance, including:
 - 15 megaohm-cm MΩ-cm resistance through the LabPure system, followed by further polishing in the ringmain.
 - 99.9% rejection of bacteria and pyrogens.
 - 96-99% salt rejection.
- Efficient design achieved nominal rejection rates of between 96-98%, producing very small waste streams.
- No chemical regeneration, meaning there are no associated hazardous waste handling and disposal requirements.
- PureCare service and maintenance package ensures operational efficiency and a low total cost of ownership.



ABOUT THE CLIENT

The client is a global construction engineering company tasked with constructing a new building for a world-leading physics research centre in the UK.

ABOUT ENVIROGEN

Envirogen is a leading international provider of water and wastewater treatment solutions. We solve complex challenges relating to water availability and quality, and help our customers to increase productivity, reduce costs and meet environmental and sustainability targets.

We do this through offering:

- Best in class water and wastewater treatment and process filtration technology
- Expertise in design, project management and engineering
- World class manufacturing and servicing capability



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