

Water solutions to help James Paget Hospital reduce carbon emissions, UK

Pharmaceuticals | Case Study

The Client

Great Yarmouth's James Paget Hospital trains over one third of the medical students from the University of East Anglia as well as providing comprehensive acute care for the populations of Great Yarmouth, Lowestoft and the surrounding areas.

Like other NHS Trusts James Paget sees caring for the environment as part of its development to improve operational performance, and is committed to playing its part in achieving the Government's target of a 10% reduction in carbon emissions across the NHS by 2015.

The Trust's Carbon Management Plan shows it to be performing well and energy usage is currently 3% below the Good Practice Benchmark identified by NHS Estates.

Key Figures

- New water purification plant for increased capacity
- New plant to fit into limited pace available
- Minimal disruption to production

The Client's Needs

The renal ward at James Paget Hospital operates 16 hours each day, and accommodates up to 18 patients at any one time for three hour sessions. To support this critical activity, James Paget needed to upgrade their existing water treatment system.



A new system would not only include the latest dialysis treatment technologies, but would also mean that parts, spares and consumables are easily available to ensure minimal ward downtime.

However, there was concern about the cost and, more importantly, human stress, associated with transferring the patients to an alternative hospital whilst the new water treatment system was installed and commissioned. Together with the hospital's target that the new system should reduce their carbon footprint – water, energy and chemical consumption – this presented a challenge for the water treatment supplier. So James Paget Hospital approached Veolia Water Technologies.

The Solution

Veolia Water Technologies's carbon analysis team assessed the carbon footprint of the existing system and compared various options for the new system. The recommended solution comprised of a Modula SXL hygienic reverse osmosis unit and a nephro SAFE heat sanitisable ultrafiltration unit.



Modula SXL

The Solution Cont'd

The Modula SXL has the unique ECO mode feature to be able to automatically switch membranes on or off to regulate output according to demand. In addition, the raw water feed pumps were fitted with variable speed drives to minimise energy consumption and, by comparison with the existing plant, the new system will give a **57% reduction in carbon footprint over the next 10 years.**

But selecting a new system was only part of the story. The real problem was maintaining full operation of the renal ward during the work so as to avoid transferring patients to another facility. This was achieved by temporarily installing an AQUAMOVE™ Mobile ORION 2000 with a polishing ultrafiltration module.

The mobile unit, designed for pharmaceutical use, is fully validated and produces ultra pure water compliant with Renal Association guidelines. This allowed the renal water supply to be maintained and dialysis treatment to continue whilst the new plant was installed and commissioned.



In case the hospital needs to increase capacity in the future, or in the event of a problem, the new system has the facility for connecting an AQUAMOVE™ mobile unit to the ring main without any department downtime and without affecting patient treatments

The Benefits

The project has provided James Paget Hospital with a new renal water system to meet its current and planned needs, and with a reduction in carbon footprint. Veolia Water Technologies's innovative approach allowed the ward to remain in operation in full compliance with renal standards whilst the upgrade work was carried out, and all to timescale and budget.



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