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## **Steam-driven pumps from Spirax Sarco boost condensate handling efficiency for Royal United Hospital Bath**

Royal United Hospital (RUH) Bath is reducing maintenance costs and improving energy efficiency by swapping its electrical condensate return pumps for steam-driven mechanical pumps from Spirax Sarco.

RUH Bath uses steam to provide heating, hot water and other services throughout the hospital. It saves energy and water by returning as much hot condensate as possible to the boiler house via eight pumping stations. Each station comprises a receiving vessel and two pumps, with one on duty and the other on standby.

The existing electrical pumps only switch on once the associated receiver is full, stopping again once it's empty. The cycle takes 12 minutes on average, which reduces energy efficiency because the condensate cools down while it's waiting to be pumped away. Such a lengthy cycle also leads to a very sporadic flow of condensate to the boiler feed tank.

"We have found it is usually the drive shaft seal or packing glands that fail on electric pumps", says Steam Engineering Technician, Peter Devrell. When three pumps needed replacing, the maintenance team decided to try a different solution in the shape of MFP14 pumps from Spirax Sarco.

Condensate collects in the MFP14's pumping chamber, raising a ball float and opening a valve to allow steam into the chamber. The increased pressure then forces the condensate out, making the ball drop and closing off the steam supply.

Each cycle takes around two and a half minutes and removes 12.8 litres of condensate at a time.

This regular rate of return contrasts with the sporadic flow formerly returned by the electric pumps. “The condensate returns to the feed tank hotter as it keeps moving through the system and does not wait so long - if at all - in condensate receivers,” says Peter Devrell. “The heat contained in the steam that pushes it along also helps to keep the condensate hot.”

Additional advantages of the new pumps include quiet operation and improved safety. “These pumps operate almost silently, with just the clicking of the valves and a quiet, reassuring sound of surging steam as the condensate is pumped away,” says Mr Devrell. “The MFPs should also be much easier and safer to work on, offsetting the risk of working in wet, cramped conditions with electricity.”

In the last 15 months the hospital has replaced four pairs of pumps with the new mechanical units. “They’ve been very efficient and we haven’t had any trouble with them,” says Mr Devrell. The replacement programme will continue and the remaining electric pumps will ultimately be replaced as the hospital upgrades its plant installation with standard equipment.

