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## **Flash steam recovery helps Leighton Hospital cut fuel bills by £10,000 and reduce carbon emissions**

A flash steam recovery system from Spirax Sarco is helping Leighton Hospital in Crewe reduce its carbon emissions by around 95 tonnes a year, cutting fuel bills by over £10,000 and helping the hospital meet its emissions trading targets.

The skid-mounted system is fitted on the condensate return from the hospital laundry. Around 1,500 kg/h of condensate heads back to the boiler room from the laundry, but an estimated 14% of this was previously vented to atmosphere as flash steam. The new recovery unit retains all this useful energy within the system and uses the flash steam to pre-heat the feed water for the laundry boiler. The feed water used to pass directly from the hot well to the boiler at around 80°C, the flash steam now heats it under pressure to between 120 and 140°C – a rise of over 50°C.

“We’re very satisfied,” says Adam Lane, energy engineer at Leighton Hospital. “When we first calculated the potential savings, they worked out at over £17,000 a year. Because gas prices have fallen they’re now more like £10,000, but that doesn’t alter the amount we’ve managed to cut our emissions by. We’re also reducing the amount of make-up water and dosing chemicals we need.”

The condensate from the laundry passes first through a flash separation vessel. Steam leaves the top of the vessel and passes through a plate heat exchanger, where it heats the feed water and condenses. Meanwhile, the condensate from the bottom of the flash vessel passes through a second plate heat exchanger, where it also heats the feed water. The heated feed water only enters the boiler once it has been through both exchangers. The original condensate and the condensed flash steam are then recombined before returning to the hot well.

“I initially thought we might use the flash steam to heat water in the laundry, but Spirax Sarco came up with this piece of kit. We calculated we could get the same level of savings but the cost and ease of installation would be much better,” says Mr. Lane.

Spirax Sarco engineered systems are supplied skid-mounted and pre-commissioned. The advantages of this approach typically include straightforward specification, fast, easy installation, a compact footprint and the higher build quality associated with factory-assembled equipment, rather than systems built on site. “The installation went very smoothly, with 99% of the job done during working hours. It’s now up and running and we’ve got no complaints,” says Mr. Lane.

