

# SCALING DOWN

LIMESCALE BUILD-UP AFFECTS ANY HEATING SYSTEM THAT COMES INTO CONTACT WITH WATER, SO DESCALING BECOMES A MAJOR TASK. PSLG SUGGESTS A SOLUTION

**H**ellesdon Hospital at Norwich is a mental health hospital that, like many Victorian era hospitals, has a main building with a number of satellite buildings and wards. Norfolk is an area with particularly hard water and this presents major problems for the estates department where limescale build-up is concerned. This affects any heating system that comes into contact with water, so in addition to the Andrews water heaters, there have been recurring problems with the hospital's many tea boilers. As a result, staff have to descale every year.

The main building of the hospital uses an ion-exchange water softener system but there are many outbuildings and boiler houses that are not protected. The heating systems in these buildings, along with tea boilers, had to be annually serviced by taking them apart and descaling by acid flush and physical scraping. Even so, there were periodic breakdowns caused by limescale build up. The estates department had previously tried an electronic water conditioner on one of the boiler houses but the results were disappointing.

The hospital's mechanical supervisor, Tony Bezants, had studied the application of electrical fields on liquids and was familiar with the principles. While at the Plumbing and Heating Exhibition (PHEX) in 2001, he met with representatives of Hydropath (UK), the manufacturers of the Hydroflow water conditioning system. Bezants agreed to take a Hydroflow HS38 unit and trial it on a tea

boiler as that would allow an at-a-glance evaluation of how the system was performing. Within a very short space of time, Bezants could see that limescale was not building up on the elements as it would normally. He then moved the HS38 to the incoming cold mains of an old nursing accommodation block that had a traditional boiler and cylinder heating system.

## COMBINATION BOILER

He also bought a number of HS34 units for tea boilers and a combination boiler (as the output of the HS38 was overkill for such tasks). These trials were also successful, so in summer 2002, Bezants had a C60 unit, designed for larger and industrial applications, fitted to a stand-alone boiler house powered by around 10 Andrews water heaters.

The patented Hydroflow system is a physical water treatment system that prevents the build up of all limescale deposits, including calcium carbonate. Hydroflow works by emitting randomly-varying electric fields throughout the system. This enhances the precipitation of the bicarbonates from solution to suspension by introducing clusters of ions in the water to act as seed for suspended crystallisation. The resulting suspension does not adhere to pipework or internal surfaces, but is merely 'washed away' with the flow and during blow down.

No other physical water treatment system operates in the same way as Hydroflow; it offers specific advantages such as treating the water upstream and downstream of the



unit. It also protects standing water and isn't dependent on water flowing past the unit.

Hydroflow is easily fitted to existing and new systems. The choice of unit required is dependent on the size of the incoming water main and in turn, the size of the system to be protected. Hydroflow requires connection to the electrical mains, but has a low power consumption and the low operating costs will deliver payback in a very short period of time. There are environmental benefits, too: lower fuel requirements and compared to a chemical water softener, reduction in sodium that finds its way back to the watercourse.

The estates department team at Hellesdon Hospital no longer has to do an extensive descale of systems every year and there have been no more breakdowns as a result of limescale build up. A simple visual inspection of the elements is all that is needed. There has also been a huge reduction in scale on mixing valves, which saves a great deal of staff time on breakdown and descale. Bezants believes the savings made in fuel usage, staff time, chemicals and replacement parts have far outweighed the cost of the Hydroflow units.

He plans to add more Hydroflow units to other satellite buildings as budget allows and as part of the hospital's maintenance programme ○

**For more information about Hydropath, please use the enquiry number below and go to [www.unity-media.com/pslg](http://www.unity-media.com/pslg)**

**ENQUIRY NUMBER >>> 67**



Scale before Hydroflow water conditioning



Example of severe limescale build-up



Scale-free after the Hydroflow treatment