

## Space Heating in Schools.

In general a school's valuable and scarce resources are preferentially allocated to buying more books and educational needs for the pupils and staff. Schools are increasingly managing their own budgets and, unfortunately, maintenance of low temperature hot water (LTHW) systems for space heating sits low on the list of priorities.

This can become an issue during winter months where schools rely on their heating systems to provide a warm and comfortable environment for teaching and learning. If the heating fails there may be no other alternative than to close the school until the problem is identified and resolved or undertake expensive emergency repairs.

In the majority of these incidents the problem is passed back to those deemed responsible, the 'Landlord' Local Authority. In these circumstances there is pressure exerted by the school, the children's parents and occasionally the local press, as well as the need for a swift resolution. Unfortunately, emergency remedial works of this type incur costs at a premium rate regardless of where liability lies.

Thousands of schools across the UK will have just experienced the symptoms of a poorly maintained and poorly performing heating system. Symptoms include poor circulation and disproportionate heating, pump failures, leakages and boiler faults. Excessive system top up compounds these problems. With the ingress of highly oxygenated water and disruption of an effective treatment regime the conditions deteriorate further.

Where schools experience hot and cold zones due to poor circulation it will lead to increased fuel consumption. An overly hot classroom is not conducive to learning and very often a teacher's only recourse for 'cooling' is to open a window and vent the extra heat.

A combination of increases in UK energy prices and new legislation dictate that these inefficient systems can not continue to be managed and controlled in this way. Boiler refurbishment programmes and improved building management systems are on the increase to achieve higher



efficiency and greater control. However, the success of these projects is limited by the existing water quality and the potential damage it can do.

In the majority of cases replacement is not the most successful or most cost effective cure. Simply cleaning up and maintaining the energy carrier itself will significantly improve existing component efficiencies and allow them to operate for longer.

The ability to clean and protect against corrosion, scaling and general fouling without generating leaks is crucial as the majority of our schools have old pipework which has experienced years of neglect. Many chemical treatments are formulated to disperse corrosion by-products and scales by dissolving them into solution, presenting a major threat to the connective pipework's structural integrity. As a consequence this has often led to a lack of any water treatment in the hope that this is the lower risk option.

Significant improvements in water quality can now be achieved with a less aggressive conditioning approach, focusing on key parameters such as pH, alkalinity and hardness. When combined with a side stream filter it is possible to pull these systems back towards their design efficiencies. The cost of this remedial approach is a fraction of the cost of the boiler replacement scheme and allows local authorities to spread their resources more evenly across several schools, benefiting the majority and not just the few.

Local Authorities responsible for schools across the UK will soon be commencing their summer works. If the water quality has been considered fully the next heating season will pass without complications or complaints and the LEA's, schools, parents and the tax payer will realise the benefits.

For a full version of this case study and any other information on the EnwaMatic® water treatment units please contact:

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