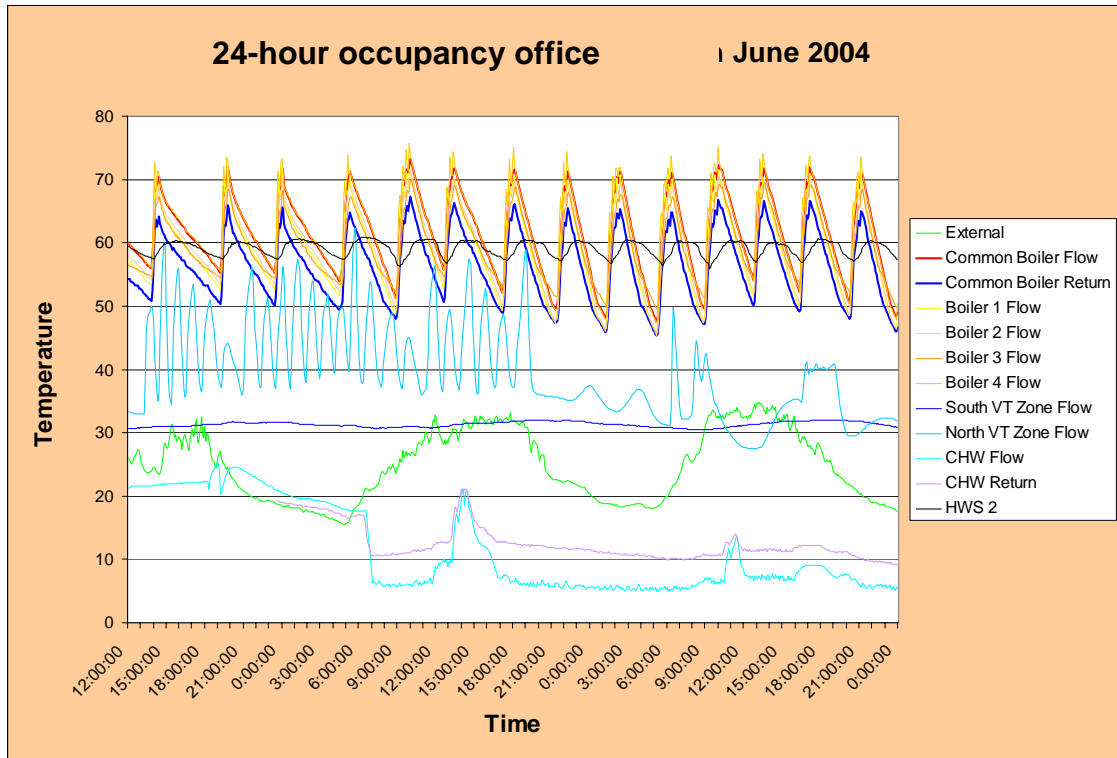


An example of “before” and “after” AEC delivered savings



A mass of data logged over three days showing common flow and return temperatures, individual boiler flow and two variable temperature circuits, domestic hot water, outside air and the chilling flow and return temperatures.

There are a number of clear issues visible from this data where improvements will lead to greater energy efficiency

1. Improve stability of the boilers

With over a 20°C range in the boiler temperatures there is massive instability and potential damage to the boiler as well as the threat of condensates building up.

2. Zone control

Both of these zones are “variable temperature, i.e. they should react to the demand for heating which is ultimately governed by the outside air temperature. From this chart it can be seen that the “south” zone is not moving at all and that the “north” zone is very unstable and the variations appear bare no relationship with outside air or any other temperatures.

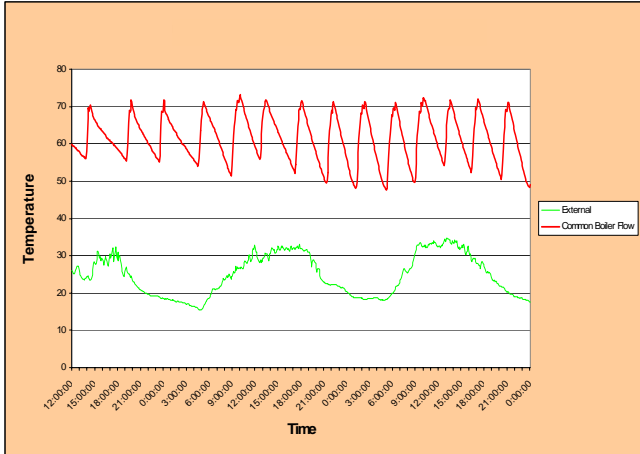
3. Boiler sequencing

This data was taken in summer, the outside air temperatures are well up at expected maximums, for most of the time the only heat requirement is for domestic hot water, by

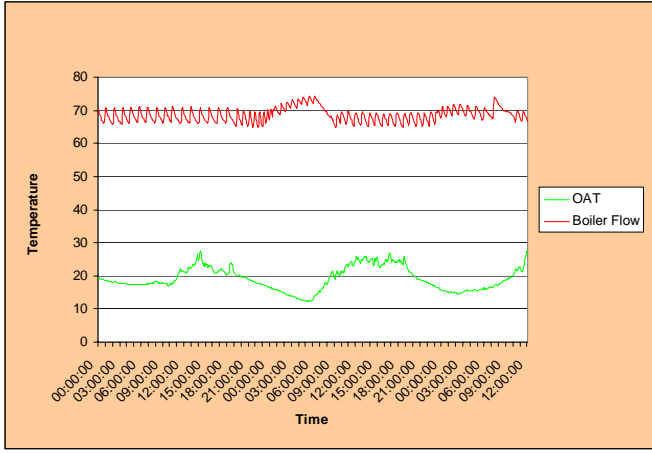
ensuring that only as many boilers fire to satisfy actual demand significant savings will be achieved.

A quick view of before and after for these three issues

1. Improve stability of the boilers

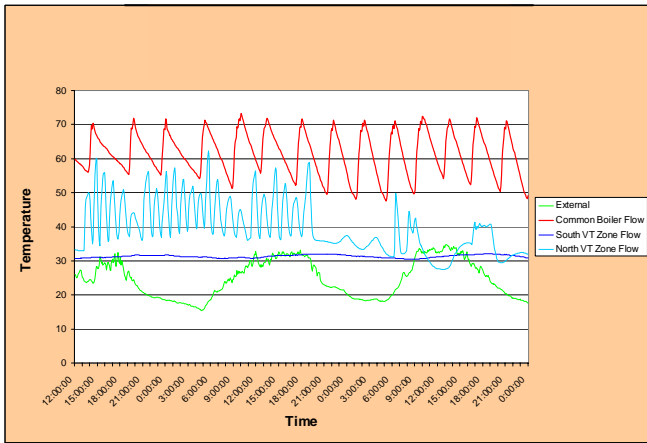


Before; very unstable, very difficult to control heat output and possible threats to the fabric of the boiler plant

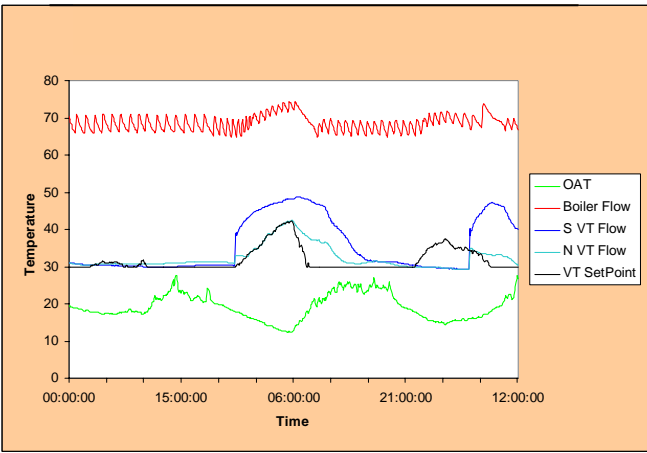


After; increased stability and compensated against outside air (when it gets cool over night the boiler temperature increases to satisfy heating demand)

2. Zone control

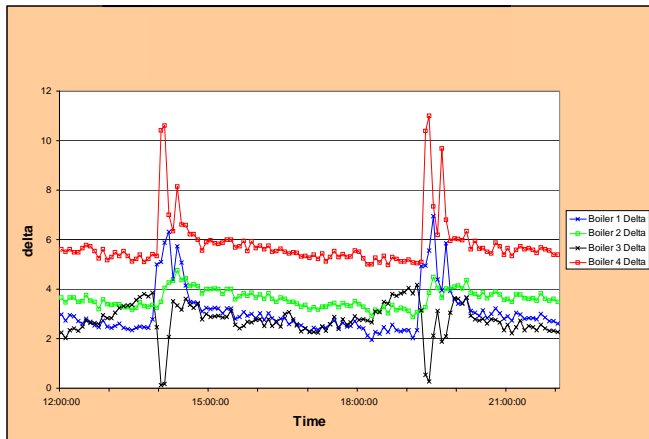


Before; “north” zone very unstable, “south” zone very stable, but not variable, typical view of a stuck valve

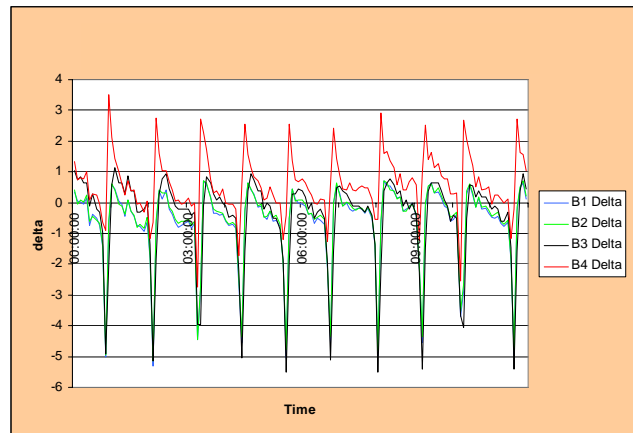


After; the black line represents the target “set point” and as you can see the “north” zone is practically right on track and the “south” zone slightly overshoots, both zones show very tight control

3. Boiler sequencing



Before; three out of the four boilers are firing for about 25 minutes every five and a half hours, creating the large and unstable temperature range



After; one of the boilers fires for about five minutes every eighty

The net result as can be seen from the boiler firing data is that boiler firing time was reduced from 22% of the time to 7% of the time, suggesting in excess of 60% savings, however because this exercise was undertaken in the summer when heating demand was low we would expect greater savings so we would comfortably be able to predict a 30% annual gas saving at this site.

Call AEC on 08453 30 60 30 or email info@efficientcontrol.com
for a review of your energy saving opportunities