

Profit from efficiency

Avalon Pools Its Resources

Recent increases in utility costs have had a great impact on leisure centres across the country - for many, gas and electricity costs have doubled.

Avalon Leisure operates several facilities for Mendip District Council and asked Excalibur LPA to undertake a energy efficiency survey. The organisation was especially interested in the potential to improve efficiency of the pump/fan systems and boilers at its various venues.

The completed survey showed that opportunities existed to make significant reductions in the energy consumption at Strode Pool in Street, Frome Leisure Centre and Wells Leisure Centre. Mendip District Council agreed to cover the cost of implementation and Excalibur LPA was contracted to undertake the project.

The survey had revealed that all of the swimming pool circulating pumps were using throttling valves to achieve the required flow rates. Excalibur installed inverters on these pumps, allowing the valves to be opened and desired flow rates

achieved by reducing motor speed instead.

As the number of people using a pool varies considerably at different times, the introduction of intelligent control to the motors makes it possible to customise flow rates to match pool occupation. Pump speeds are further decreased overnight when the pool isn't being used.

These modifications reduced the electrical consumption of the swimming pool circulation pumps by a remarkable 50 per cent.

A similar exercise was conducted with the main pool hall supply and extract fans, which also realised a reduction in electrical consumption of 50 per cent.

To provide security of operation, all of the inverters were mounted in bespoke panels which incorporate an override control should it be necessary to operate the pumps independently of the inverters. Additional switching was also provided to allow full speed operation during backwash.

Swimming pool plant rooms are an extremely harsh environment for

complex electrical control units. To ensure moisture doesn't cause corrosion and premature failure, all inverter electronics were tropicalised, allowing extended warranties to be offered to the client.

The other major opportunity to reduce energy consumption for Avalon was found in its boilers, where Excalibur installed its own Stepmaster boiler sequence controls. Conventional controls operate a constant flow temperature, irrespective of the load in the building. The Stepmaster provides a variable control, reducing flow temperature during periods of low demand. Previous experience indicated that this control strategy would reduce gas consumption by 15 per cent.

The installations were overseen by Avalon Technical Manager Malcolm Baker. "Excalibur completed the work professionally and to a high standard," Mr. Baker said. "Initial monitoring shows that, if anything, we are achieving greater energy savings than quoted, with no detrimental effects on operation - we should recover the costs of installation in less than one year."





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Testimonials

Manchester Airport

"Throughout the LPA project at Manchester Airport Excalibur provided a thorough and professional service ensuring the project was delivered on time with minimal operational disruption. The project delivered savings as quoted, the refrigerant change helped re-life ageing equipment and was seen as a great success, so much so that we are about to embark upon a second phase during 2010"

2 Sisters Food Group

"Excalibur installed LPA and inverter control to our Bitzer screw pack, the work was completed to a very high standard with minimum effect to production. Monitoring over the first 12 month period showed a reduction in power consumption of 38%. Several evaporators which had been starved of refrigerant now achieve temperatures where previously they struggled. There have been no reliability issues and we are benefiting from a system which is not only energy efficient but also provides improved refrigeration performance"

Norland Managed Services

"I would like to take this opportunity to thank you and all others from within Excalibur involved with the development of this project, from my initial involvement through to today's handover meeting. All of which has run extremely well, with any issues uncovered being easily resolved with the proactive nature of you and your site team, which are a credit to Excalibur. Hopefully, in the not to distant future I will have the opportunity to call upon Excalibur's assistance and experience again on another LPA Project. Though in between times I would thank you again for your support and guidance".