

# LEISURE CENTRE



## HENGROVE, BRISTOL CITY COUNCIL VARIABLE SPEED DRIVES CASE STUDY

Parkwood Community Leisure  
working in partnership with  
Bristol City Council



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## BACKGROUND

In most cases pool filtration, treatment and heating systems when installed are designed to cope with the maximum bather load of the pool although the pool rarely runs at maximum capacity so to run a large system consistently at full turnover rate is costly and unnecessary. The pumps are either "on" or "off" there is no means of altering their speed.

Using the valve is possible to slow the flow but it doesn't offer an energy saving. Fitting Variable Speed Drives (VSDs) on these motors can reduce the power used by up to 30% over a 24 hour period. Despite knowledge of the benefits of a VSD and quick payback, the VSD project at Hengrove Park Leisure Centre was not included within the original build design and a retrofit project was later delayed due to the ongoing building defect period and contractual reasons.

### DESCRIPTION

VSDs were installed on 3 main pool pumps and 2 learner pool pumps by Gibbons Engineering. The VSDs came with a 2 year on site warranty and the project cost £15k. Due to pool design and water at deck level, the installation initially had an impact on the levels of the pool and balance tank. It took a couple of adjustments to optimise the set up but have managed to reduce the pool pump speeds to 40hz day and night (a 20% reduction in speed)

### IMPACT AND BENEFITS

Hengrove has sub meters installed which measured a 26kW (26kWh saving per hour) saving on the pool pumps electricity use after the project.

- **44% reduction** in the electricity used by the pool pumps - this is greater than initial 30% reduction expected.
- **70 tonnes CO<sub>2</sub>** reduction/ year
- **£30k saving / year**
- **6 months** payback
- Increased life of the pump = reduced maintenance costs

### LESSONS LEARNT

- Just installing the drives won't save any money; they need to be used and proactively managed.
- 20% reduction in pump speeds equal a 50% in energy use
- Each pool system is different and can take time to optimise the commissioning of the drives for the pool but the savings are worth the effort.
- All pool pumps should have a VSD installed