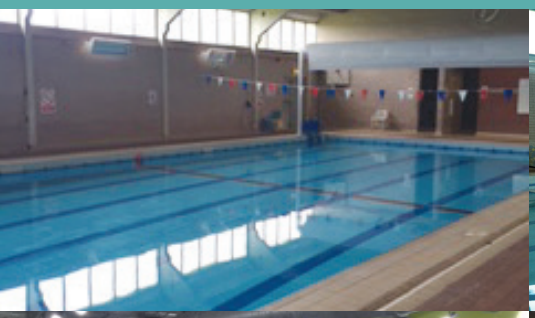
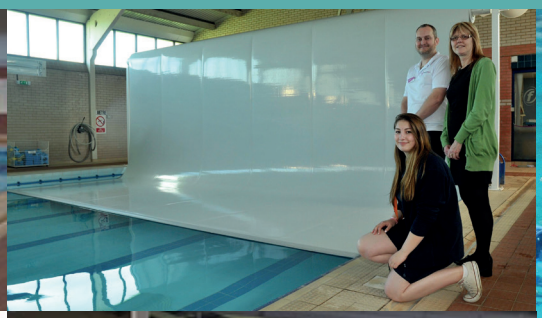
LeisureEnergy
Sustainable savings

Tenbury Swimming Pool Freedom Leisure
Worcestershire

Project value	£165,530	Annual electricity savings	47%
Annual savings	£51,161	Annual gas savings	51%
Annual CO_2 savings	187 tonnes	Annual water savings	2,500m^3

Working with Leisure Energy, Freedom Leisure were able to **reduce their gas and electricity consumption by 51%** and **47%** respectively per annum. The payback for capital works is **3.3 years.**

TENBURY SWIMMING POOL ENERGY AUDIT

- Calculated current energy use
- Analysed the primary 'energy hungry' areas
- Identified sources of wasted energy
- Modelled current systems against Leisure Energy's proven performance data
- Analysed water use and wastage
- Compared existing total annual energy costs with the projected costs post capital investment works

Reducing emissions, saving energy and water

The energy audit at Tenbury identified key areas to make the site more energy efficient. The objective was to make Tenbury Swimming Pool more environmentally friendly by reducing its energy emissions, saving electricity and gas and recycling more of the water within the building.

"By updating several areas at once we will be able to maximise energy efficiency, reduce carbon emissions and reduce our utility costs across the site. Not only will this make Tenbury Swimming Pool more environmentally friendly. It will also improve the financial position of the centre."

Darryl Keech, Freedom Leisure area manager

£51,161

REDUCTION IN ANNUAL ENERGY COSTS

3.3yrs

51%

REDUCTION IN ANNUAL GAS CONSUMPTION

47%

REDUCTION IN ANNUAL ELECTRICITY CONSUMPTION

£6,500

REDUCTION IN ANNUAL WATER BILL

Project summary

Tenbury swimming pool is relatively small with a 25m pool and a small fitness suite. The annual gas consumption amounted to 1,160,000 kWh and electricity 299,000 kWh. A site of this size should use half this amount of energy. The project took eight weeks and the payback is 3.3 years.

Air handling unit (AHU)

The air handling system accounts for 50% or more of the energy used on site in total. The AHU at Tenbury was only recovering around 30% of the expensively produced heat; the supply and extract were both running at a high levels and short circuiting after one pass, without dehumidifying the pool air. A new system with a number of energy controlling features was installed. This helps lower energy costs and provides good operational control. It can use (expensively) heated air quite safely up to five times, as well as modulating up and down to user demand. This new AHU will also save energy in the small fitness room as well.

Pool hall lighting

Specialist lighting for the pool hall was installed to provide high quality lighting, intelligent daylight and occupancy sensing. There was no business case to change the lighting in the gym and changing rooms. The new lights turn on and off according to movement and can adjust their intensity according to the amount of daylight that is present at any particular time of day. This smart technology means the lights are only ever used when they are needed. The outcome is significant reductions in electricity use and associated costs.

Automated pool covers

A responsive AHU which modulates to the lower night time humidity, optimises the energy efficiency of the pool cover. Our audit identified that the pool was not covered at night or at downtimes. A high-quality, long-life, automated cover with a 10 year warranty was installed. The automation of the cover makes it easier for the centre staff to ensure the pools are covered each evening. At Tenbury the centre staff have taken the proactive step of covering the pool when not in use for long periods.

Pool water control

We estimated that three motors were using an excessive 118,000 kWh per annum. Our water control measures not only reduces the energy demand by 66,400 kWh per annum and but also allows the pool motors to be modulated without disturbing water quality – improving water quality and lowering energy costs.

Water savings

At Tenbury the water loss was around 2 litres per minute draining into the mains sewer; this equates to 1,000m^3 of water that could be safely recycled each year. This water has passed its test, is warmed and treated, so there is no logic for it being wasted. We installed a controller to recycle this water back into the pool, saving the centre £3,000 per annum.

Shower flows on both the dry and wet side were measured at 20 litres per minute. By installing low flow showers with consumer-friendly aeriated shower heads the flow rate was reduced to 8 litres per minute. We anticipate this will save the centre £3,500 a year.

Plant room insulation

Our energy audit identified a considerable area of exposed pipework in the plant room; the temperature of the pipework is at its highest here, given the close proximity to the boilers (pipework temperature measured 60°). Simple, flexible 'elephant' bags saved around £2,800 per annum, with a payback period of less than 1 year.

LeisureEnergy
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