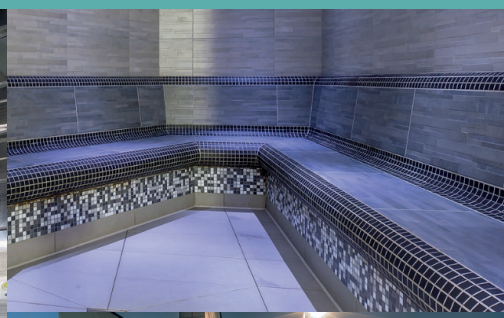
LeisureEnergy
Sustainable savings

Archway Leisure Centre GLL
North London



Project value	**£172,000**	Annual electricity savings	**409,932 kWh (37.6%)**
Annual savings	**£62,019**	Annual gas savings	**702,136 kWh (28.2%)**
Annual CO_2 savings	**317 tonnes**	Annual water savings	**1,000m^3**

Working with Leisure Energy, GLL in partnership with Islington Council **reduced their annual energy consumption** at Archway Leisure Centre **by 33%** with a payback period of **2.8 years.**

ARCHWAY LEISURE CENTRE 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

A clear business case for change

Leisure Energy examined the whole life cost implications of the proposed improvements from the outset. This enabled us to demonstrate a return on investment to GLL and Islington Council – modelling the capital cost of improvements against maintenance and operational costs. Our proposals showed how Archway Leisure Centre could benefit from a dramatic reduction in gas (28.2% per annum) and electricity consumption (37.6% per annum). The payback period for the capital works amounts to 2.8 years.

The outcomes for Archway Leisure Centre not only include improvements to the quality of the pool environment but real financial benefits when measured against whole life cost/value.

£62,019

REDUCTION IN ANNUAL ENERGY COSTS

2.8yrs

28.2%

REDUCTION IN ANNUAL GAS CONSUMPTION

37.6%

REDUCTION IN ANNUAL ELECTRICITY CONSUMPTION

£2,100

REDUCTION IN ANNUAL WATER BILL

Project summary

Leisure Energy's audit recommended that Archway Leisure Centre carry out a suite of interdependent works. These were completed for a total sum of £172,000, which has a payback of 2.8 years when measured against savings in energy costs; the overall savings allow for the January 2016 reduction in gas prices. As a result of additional measures installed, we anticipate the annual gas saving to rise to 39% and continuing at that level – this will further reduce the payback period.

Air handling unit (AHU)

The air handling system accounts for perhaps 50% or more of the energy used Archway Leisure Centre.

The existing AHU had reached the end of its useful life. A new system was installed with a number of energy controlling features. These result in significantly lower energy costs and good operational control. The new system uses (expensively) heated air up to five times. This is done quite safely and modulates up and down in response to bather demand.

The old air supply was unbalanced, pushing air throughout the whole centre, particularly into the (chilled) fitness suite. Installing a new controlled pool AHU will therefore have a positive energy saving impact on the fitness room energy as well as the pool.

Low energy pool lighting and sensors

We installed specialist low energy lighting in the pool hall, with good light quality, and intelligent daylight sensing. This means that the lights automatically adjust their intensity according to the amount of daylight that is present at any particular time of day.

The pool hall at Archway has excellent levels of daylight. This smart technology means that the lights are only ever used when they are needed, leading to significant reductions in electricity use and associated costs.

Automated pool covers

Once any pool area has a responsive, controlled AHU, then a pool cover becomes a valuable energy saver. A responsive AHU which modulates to the lower night time humidity, optimises the efficiency of the pool cover.

We identified that not all the pool at Archway was covered, so an additional high quality, long life, automated cover carrying a 10 year warranty was installed.

The automation of the pool cover makes it easier for the centre staff to ensure the pools are covered each evening.

Pool water control

We installed a control system that allows the large pool motors to be modulated without disturbing water quality. In turn this both improves water quality and lowers energy costs.

The new flow controllers are not flow dependant, so retain accuracy and dosing 'intelligence' at varying levels of flow. As a result, we are able to reduce total energy use of the 4 motors from 18kW per hour, to an average of 7kW, alongside a significant improvement in water quality.

Water savings

We identified the water loss draining into the mains sewer to be two litres per minute; this equates to 1,000m^3 of water that could be safely recycled each year. This water is warmed, treated and passed its test, so there is no logic for the wastage.

We installed a controller to recycle the water back into the pool, which saves the centre £2,100 per annum.

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