Improvement Fund
Project Proposals

Creating a sporting habit for life

YATE LEISURE CENTRE:
SOUTH GLOUCESTERSHIRE

Upgrading works to be completed in 2015

An outline of the project proposals supported through the Lottery Improvement Fund are set out below. These will be followed through to post completion to assess the benefits of the range of interventions, new products and technologies.

New features

Environmental improvements will include:

- Rainwater harvesting equipment added to the roof
- Solar thermal heating panels added to the roof
- LED (light emitting diode) lighting to swimming pool, sports hall and other areas
- Heat recovery system in the pool area
- New efficient boiler system
- Passive Infrared (PIR) sensors to turn off the lights when movement is not detected

Main entrance to centre

Yate Leisure Centre is in the centre of South Gloucestershire and has over 500,000 visitors per year. The leisure facilities at the centre include a 25 m pool and learner pool, a 7 court sports hall, 100 station gym and is home to Yate International Gymnastics Club.

Sport England awarded the centre £429,966 towards an overall budget of £564,166 to install a range environmental sustainability measures at the centre. The money, made available through Sport England's Improvement Fund, will be used to install solar thermal heating and rainwater harvesting initiatives to the roof of the centre. It will also be used to provide more efficient LED lighting throughout the centre.

These initiatives, whilst reducing the centres requirements for conventional energy, are estimated to bring 25% savings to the water usage at the centre. Reductions of 15% in energy and carbon emissions are also anticipated.

Heat recovery

Lots of waste heat is generated by the two pools at Yate, mainly through evaporation of the pool water. This heat will be captured by a new recovery system and transferred to other parts of the building, such as offices and changing rooms significantly reducing the heating bills for the centre. Reducing the need for "new" heat to be generated, will reduce heating costs by 10-20% which could save up to £5,000 of the overall heating bill.

Reuse, recycle: rainwater harvesting

Rainwater harvesting equipment is to be added to the roof of the swimming pool and sports centre and storage tanks will store the water until it is required. It will then be transferred into the building via a new pumping system.The water will be used to flush toilets and urinals and reduce the overall demand for clean water. It is


Squash court lit using LEDs controlled by PIR sensors

anticipated that a reduction of 25% in mains water usage is feasible through harvesting and reusing the rainwater. This installation could save the centre up to £60,000 per annum. The centre has estimated that it could harvest up to 20,000 m^3 of the 80,000 m^3 water it uses each year.

Solar thermal heating

Currently, the centre uses 24,000 m^3 of hot water each year which is almost enough to fill 10 Olympic swimming pools. Applying solar thermal heating panels to the roof of both the pool and sports centre buildings, and installing a new boiler system will allow water to be heated by energy from the sun. The heated water will be used to top up the pool and will also be used in the showers and hand basins in the centre.

The introduction of solar renewable heat is expected to provide sufficient capacity to meet daily hot water needs. These improvements will mean the centre will be using free, renewable energy to heat its water, reducing its reliance on conventional energy sources, saving money on their electricity bill which can be reinvested in the facility.

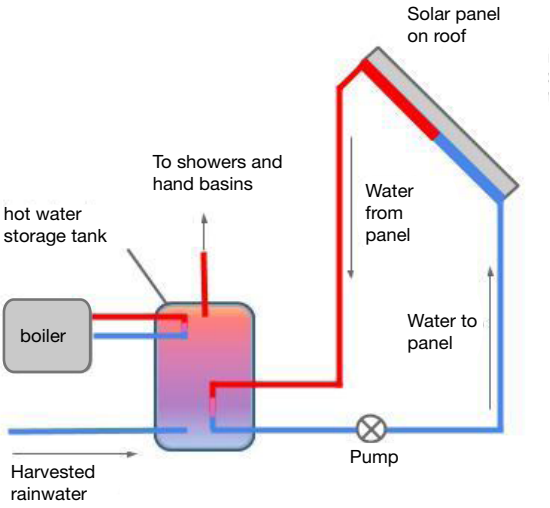
Sustainable features

LED lighting is to be installed in the swimming pool area and the sports hall at Yate. LEDs are already used in the squash courts and it is expected that these further installations will give rise to significant savings in energy usage and cost.

LED lighting has a number of features that will benefit the facility.

- **Saving money** – The increased efficiency of LED lighting is anticipated to make the total lifetime cost (purchase price plus cost of electricity and lamp replacement) significantly lower than metal halide lighting. Although the initial purchase price is higher, the payback period is significantly shorter due to reduced maintenance requirements and energy consumption.
- **Reducing maintenance** - A typical LED light is stated to have an 'average life' of 20,000 hours (15 years at 4 hours/day), and will support 50,000 switch cycles. This will significantly reduce the overall maintenance costs since currently each metal halide bulb is changed a minimum of once a year.
- **Instant start up** - Metal halide bulbs require up to 15 minutes to fully warm up and reach optimum brightness when the gases burn at a high temperature. In addition, when power is lost, a metal halide bulb cannot be restarted until the ignition unit has cooled down which can typically take 10-15 minutes. LED lights have no such requirements for warming up or cooling down and can be easily switched off when the facilities are not in use.

> ***"...The initiatives will reduce the centres requirements for conventional energy and bring 25% savings to the water usage and 15% reduction in carbon emissions ..."***
>
> ***Facilities Manager***
> ***Yate Leisure Centre***



Solar thermal heating and rainwater harvesting

Between 2012 and 2017...

the Improvement Fund will invest £45m of National Lottery funding into medium-sized projects that improve the quality and experience of sport.

The Improvement Fund aims to award capital grants worth £150,000 to £500,000 into sustainable projects with a clear local need.

The priorities for 2014 are projects that can clearly demonstrate environmental sustainability through changes to efficiency and usage of energy.

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