Improvement Fund
Project Proposals

Creating a sporting habit for life

BRADLEY STOKE 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 water heating panels added to the roof and combined with a new heating system
- New booking management system combining energy saving measures such lighting and air conditioning with the centre's booking schedule
- Passive Infrared (PIR) sensors to turn off the lights when spaces are not being used
- Sensor operated taps, urinals and hand dryers.

Rainwater harvesting equipment proposed on roof

Bradley Stoke Leisure Centre has a catchment of over 360,000 adults within a six mile radius. The leisure facilities include two swimming pools, a 6 court sports hall and an 80 station gym. The centre is major hub for the local community housing the library amongst other amenities.

Sport England awarded the centre £316,500 of an overall budget of £422,900 to add further 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. Voltage optimisation and heat recovery will be applied to the pool area and this will have a significant effect on improving the energy efficiency of the building.

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 anticipated.

Main entrance to centre

Reuse, recycle: rainwater harvesting

Rainwater harvesting equipment is to be added to the roof of the swimming pool and sports centre. External storage tanks will hold the water until it is required and transferred into the building via a new pumping system.The water will be used to flush toilets and urinals, thereby reducing the overall demand for clean water. It is anticipated that a reduction of 25% in mains water usage is feasible with this installation and could save the centre up to £210,000 per annum. The centre has estimated that it could harvest up to 70% of the 100,000 m^3 water it uses each year.

Booking management system control to sports hall

Solar thermal heating

The centre currently uses 34,000 m^3 of hot water each year throughout the facility, which is almost enough to fill 15 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 the 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 then be reinvested in the facility.

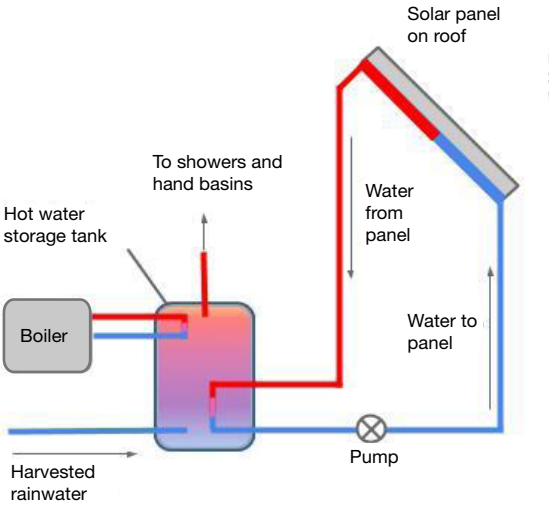
Management system

The centre will soon be reducing their energy costs as it moves to a booking management system which will combine energy saving measures such as lighting and air conditioning usage with the centre's booking schedule. This will be fully automated and bring huge savings on electricity usage as it removes human intervention. The system optimises the bookings as they are taken and for example, if only one badminton court is required, the court nearest the door will be allocated and prepared to avoid all the lights in the sports hall being activated.

The system will cool or heat the room as required and turn the lights on five minutes before a court or room is to be used. It also turns the lights off five minutes after the session, preventing the lights being left on when the room is not in use. Passive Infrared (PIR) sensors which turn off the lights when movement is not detected are also to be used as a further measure.

Combined initiatives

In conjunction with rainwater harvesting, sensor operated taps, urinals and hand dryers are to be installed in the toilets and changing areas. This initiative has already been piloted in a small number of the toilet facilities and has had a major effect on water usage, with each unit saving 20% per year compared to manually operated equivalents.



Solar thermal heating and rainwater harvesting

"... solar thermal heating is expected to provide sufficient capacity to meet the Centre's daily hot water needs..."

Director

Building and Environment

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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