Overview

Fenland District Council has used the National Re:fit Programme as a partner of Cambridgeshire County Council's Re:fit project. The aim is to build capacity and skills in the region's local authorities to bring forward investment into energy efficiency and renewable energy-generation projects.

Fenland identified that four of its leisure centres needed improvements and included them as part of Cambridgeshire's portfolio of buildings to be investigated by the selected service provider:

- Hudson Leisure Centre
- Manor Leisure
- George Campbell Leisure
- The Chatteris Centre

These buildings were identified for an energy performance contract due to a combination of aged mechanical and electrical infrastructure and building construction.

Local Partnerships supported the Council in delivering its Re:fit project by providing analysis of its sites, assisting with internal approvals and supplying quality assurance reviews of the technical documentation produced by the selected service provider Bouygues to help gain approval to install relevant measures.

The planned works for these leisure centres will encompass a large number of energy conservation solutions (ECMs) across the buildings. It has been identified that this project could save 26 per cent of the leisure centres' annual energy bills, with an average payback period of less than 13 years.

Project:	**Fenland District Council Leisure Centres**	
Savings:	£85,450 energy spend reduction per annum 493,473Wh (11%) energy savings per annum	Around 390 tonnes of CO_2 per annum saved
Value:	£1,015,000 investment of retrofit works	Simple payback of 12 years
Timescale:	Installation commencing in the winter of 2016	

A view of the Hudson Leisure Centre

"Fenland District Council is delivering needed improvements to its leisure centres in an effective and speedy fashion. The guaranteed energy savings have allowed these projects to be progressed. Local Partnerships' support and technical expertise have allowed the Council to choose the most effective solutions to help reduce our energy bills and improve our customers' experience."

Phil Hughes, Head of Leisure Services

Summary of Energy Conservation Measures (ECMs)

The Council's leisure centres project encompasses a number of energy-efficiency measures. These are listed below:

Lighting replacement and control upgrade
Installation of high-efficiency LED lighting will ensure that savings can be made as cost effective as possible by maximising the lifetime of the existing assets. The proposed LED products have been specified as suitable alternatives to the existing lighting to ensure that the Council's energy savings and payback criteria are met. The new LEDs will also ensure that lighting levels are maintained or improved.

Solar PV
A range of roof-mounted solar arrays across the buildings will ensure the sites have displaced electricity usage. This will ensure savings are achieved with less electricity being used from the grid.

Insulation
Heat loss through un-insulated pipework can generate high surface temperatures. This wastes energy and is also a health and safety risk if touched. A range of insulating solutions will be applied to the buildings' exposed pipes and flanges in plant rooms and their heating system pipework.

Boiler replacements and controls
Existing inefficient boilers will be replaced with new high-efficiency biomass boilers and new 20kWe small-scale Combined Heat Power (CHP) solution

Building Management System (BMS) optimisation and monitoring
Issues were identified with the setup of the existing systems and strategy scripts. BMS will ensure buildings are set up to operate at optimum energy efficiency and that these optimum conditions persist throughout the payback period. BMS upgrades are identified at the existing boiler houses and swimming pool outstations.

Building Energy Management Systems (BEMS) and remote optimisation
Replacement of ineffective BEMS, optimisation of existing systems and use of remote management controls will provide a full and clear understanding of the buildings' operation.

Pool pump control
The installation and commission of variable speed drives and control panels to reduce speed and related energy consumption of the pool pumps overnight and during periods of low us**e.**

Energy efficiency and financial savings through Re:fit

Re:fit is a procurement framework and support service available to all public sector organisations in the UK. Since 2009 it has been helping organisations to deliver "spend-to-save" environmental retrofit projects that both improve their buildings and, importantly, make substantial guaranteed financial savings.

For further information
For more information about the National Re:fit Programme, contact robert.mckinnon@local.gov.uk or phone 07920 702 297.