



## Harwoods Adventure Playground Watford and Three Rivers Energy Agency, UK

### Summary

The Borough of Watford is situated in Hertfordshire in the United Kingdom. The Watford and Three Rivers Energy Agency is funded by EU SAVE II, SRB and local authority resources. It also is a sub contractor to the Energy Saving Trust. Watford Council community services team decided to improve the energy efficiency of a youth community centre and invested in external solar powered lighting. By investing in staff education, time controls, water saving devices, double glazing and renewable power the council reduced its energy spend on site and helped educate children on climate change issues. It increased the amenity and availability of its facility that led to an 18% increase in visitor numbers and led to a drop in anti social behaviour.

#### End-user area

- New buildings
- Refurbishment of buildings
- Transport and mobility
- Financial instruments
- Industry
- Legal initiatives (regulations, directives, etc)
- Planning issues
- Sustainable communities
- User behaviour
- Education
- Other

#### Target Audience

- Citizens
- Households
- Property owners
- Schools and universities
- Decision makers
- Local and regional authorities
- Transport companies
- Utilities
- ESCOs
- Architects and engineers
- Financial institutions
- Other

#### Technical

- Energy efficiency
- Heating
- Cooling
- Appliances
- Lighting
- CHP
- District Heating
- Solar energy
- Biomass
- Wind
- Geothermal
- Hydro power
- Other

### Context

The Harwoods adventure playground is sited in a poorer area of Watford with very few facilities for children to play. It has a number of facilities for children aged between 5 and 14 years including a small farm. In 2002/3 the facility attracted 22,500 visitors. The community services team were concerned the high energy costs at their playground would contribute to its closure. However closure could have led to a rise in anti-social behaviour in an area already subject to problems. The WTREA project officer provided evidence that costs could be reduced and the facility enhanced. Main reasons for undertaking the project were; helping the council achieve energy targets, educating children and spreading a message to the wider community about renewable power.

### Objectives

The main aim is reduce energy consumption at the facility and provide a practical demonstration of renewable power to the community. The project officer set the objectives thus;

1. Reduce the council energy spending at the adventure playground
2. Improve the thermal efficiency and comfort of the building
3. Reduce water consumption
4. Increase the available use and security of the building with additional external lighting.



5. Make a visual commitment to renewable technology.
6. Assist with anti social behavior

## Process

The end users of the project are the visitors to the adventure playground and the community services team that run the facility. The target audience of the study is decision-makers in public authority departments who are uncertain on investing in energy efficient measures.

A key concept of was to make a perception shift occur at management level. The council needed to see how an ongoing liability could become a wider community asset. The project officer conducted a preliminary audit and explained a variety of scenarios to the community services team and gradually gained the necessary internal co-operation to secure investment in the site.

Specific problems encountered were the release of funding from maintenance budgets, commissioning work under within the council's rigid procurement procedures and convincing budget holders that there was a payback period for solar lighting. These were overcome with a mixture of costing information to make a business case and showing the "green" element of the scheme was consistent with council commitment on climate change.

The next phase was to reconcile the energy accounts and establish a baseline for going forward. At this stage the cost of the external lighting was factored in and the project officer and lighting supplier made predictions on the payback time for two external lighting columns. This also took into account the amount the council would expect to pay if additional conventional grid tied electric lighting was installed.

The implementation phase involved the introduction of energy saving technologies. After a basic cost benefit analysis the following measures were taken; Water consumption was reduced with a mixture of passive infra red controls and displacement bags. Water heating was targeted from and time clocks were installed on the hot water immersion cylinders. Heat loss was targeted with the introduction of double glazed units to replace the wood single units. The ceiling voids were already lagged.

Specialist contractors were engaged to erect the lighting columns. This was labour intensive and did involve some technical considerations. The Watford Council Technical Services department came forward to help resolve these.

## Financial resources and partners

The main cost of the project was encountered by the procurement of the external solar lighting. Materials and labour bring the overall cost to approximately 20k (euros). The free advice to the community team was provided by WTREA under the auspices of the EU save II project with matched support from and SRB fund.

The energy agency worked closely with the local authority partner to facilitate the project and educate the decision-makers. The role of the project officer was critical to proving the business case for deviating from the "norm". Additionally, the lighting provider "solargen" undertook feasibility studies for further work and secured funding from the DTI under the "clear skies" initiative.

## Results

The installation of stand alone lighting should save the facility approximately £90.00 per annum. The project officer noted that payback for the lighting should occur ahead of the estimate set by solargen.

After a six-month evaluation period the project officer noted that the number of visitors to the centre had risen by approximately 18%. The play facility manager also noted that new catchments of older youths were now using the facility. There has been a drop in vandalism in the area and the community services officer believes the extended hours at the playground has helped in this aim.

During this time energy consumption remained comparable with previous years. However water consumption dropped considerably. The project officer noted that despite an increase of approximately 5000 visitors the energy demand remained static. WTREA and the Community services team considered this a success.



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However, the project officer considers an evaluation period of 1 year more appropriate to report on the full extent of the measures in kWh savings.

The wider message of renewable technology is spreading up the upper levels of the Council. Due to the success of this and other projects the Watford Councillors will receive another briefing session later in the year. This represents a positive step for WTREA as in the "perception shift" campaign. The lighting columns and the adjoined solar panels are easily visible to the community and have not attracted any complaints.

### Lessons learned and repeatability

A fundamental lesson is to persevere with public authorities and their management systems. There was a political will to carry out this work but the agency was mindful that the authority has established procedures for procurement. Working within those frameworks takes time and persuasion. Additionally, a more open interpretation of the maintenance budgets for the lower spend work was a helpful outcome.

The process of measurement, education, installation of energy saving measures and inclusion of renewable technology is highly repeatable. Watford Council is keen to use the approach on a number of buildings set aside for refurbishment.

#### Contact for more information:

Organisation / Agency: WTREA

Main contact: David Haygarth

Address: Wiggshall depot, Wiggshall Lane, Watford, WD18 0FB, UK

Tel: +44 (0) 1923 251004

Fax: +44 (0) 1923 239588

E-mail: davidh@wtrea.org.uk

Web Site: www.wtrea.org.uk