



The school prior to the commencement of work

## CASE STUDY – CAPITAL PROJECTS

### **THE GLENKENS COMMUNITY AND ARTS TRUST WOOD PELLETT PROJECT**

#### **Introduction**

GCAT, a limited company with charitable status, was formed in 2001 to help counter rural isolation through the promotion of high quality arts and community events to cater for all tastes. This aim is to be achieved through the transformation of the Old School in New Galloway and the creation of a vibrant, dynamic and accessible Music, Arts and Community Centre. In keeping with the ethos of sustainability, as well as to control the running costs of the centre in the long term, the group decided to look into the use of a renewable energy heating system for the centre.

Following discussions with the local SCHRI Development Officer, quotes were obtained for a wood pellet boiler and a capital grant application made to the SCHRI for 50% of the installation costs, the balance to be funded mainly by grant from Fresh Futures but also a variety of other sources.

The installation was carried out in March 2007 and commissioning will take place when the building is closer to completion.

#### **Aims & Objectives**

The overall project was to convert the 100+ year-old derelict school in the centre of New Galloway, into a focal point for the communities of the Glenkens (comprising the parishes of New Galloway, Dalry, Balmaclellan and Carsphairn). The building will provide a contemporary, high quality performance, exhibition and meeting space with full disabled access.

The wood pellet heating system will allow the centre to use a sustainable source of fuel for its heating and hot water and help minimise its carbon footprint. It is expected that it will also make the heating costs more predictable and lower over the long term with oil costs expected to rise over time.

#### **Who was involved?**

Glenkens Community & Arts Trust	Owner of the building
ARP Lorimer Associates	Architects
Forbes Leslie Network	Consulting M&E Engineers
T Graham & Sons (of Langholm)	Main contractors
3G Energi Ltd	Supplier of the Kob Dyn 45 boiler and design advice
SCHRI	Provision of advice and funding
Fresh Futures (Forward Scotland)	Funder

The group instigated a meeting between the local SCHRI Development Officer and the architect to consider all the renewable energy options which might be used at the site. It was unsuitable for wind generation being too sheltered. Solar water heating was considered inappropriate as little hot water use is envisaged. PV was thought to be uneconomical and the pellet heating was chosen over heatpumps due to the lower environmental impact and appropriateness of using wood in the Galloway Forest. The potential provision of local employment, in due course, supplying and delivering the fuel was seen as fitting the ethos of the Centre. The M&E consultants were involved in specifying the system and preparing and overseeing the tender process.

#### **The approach**

Both wood chip and wood pellet systems were considered. Pellet was chosen as the heat demand of the building will be modest as heat loss and ventilation will be carefully controlled, such that the extra cost of a chip system would not be justified by the reduced running costs. Also the space for fuel storage is restricted so deliveries of chips would have been impracticably frequent.

Several companies were asked to tender and whilst 3G Energi's was the most costly, it was chosen as being the most comprehensive and involving the most automated system which would suit the management of the centre which will be manned mostly by volunteers.

The boiler specified was a 45kW-rated Kob Dyn. The storage is slightly smaller than ideal, with capacity of just under 6 cubic metres, which should allow deliveries of three tonnes (but only when there's very little in reserve).

This was dictated by the restricted site. The auger feed to the boiler is a run of around ten metres from the roadside to the boiler room, at ground level.

## Results

Calculations based on the expected fuel use, compared to the equivalent of LPG, suggest an annual requirement of 151,200kWh per year, equivalent to 30 tonnes of pellets and carbon dioxide savings of 27.73 tonnes per annum (assuming a reduction of six sevenths of the emissions by using pellets) \*\*. The cost is currently estimated at £210 per tonne of pellets including 5% VAT.

\*\*THESE FIGURES SEEM VERY HIGH AND WILL BE CHECKED AND AMENDED SHORTLY.

The final cost of the total installation was £58,000, including the boiler, the plumbing and electrical connections, boiler house preparation, storage silo, flue, auger system, commissioning, warranty and other miscellaneous costs, and project management. £29,000 was provided towards this by the SCHRI. The boiler itself cost £10,933.

Ongoing maintenance costs are expected to be minimal. The actual running costs and performance will be monitored carefully and the information made available via the contacts listed below.

It is hoped that a local pellet-buying cooperative can be set up in due course to allow delivery of a whole lorry load of pellets for local distribution. This should significantly reduce fuel costs and encourage more people and organisations to invest in this greener heating technology.

## Lessons Learned

This project actually went very smoothly, by most standards, apart from time being lost in the delivery of the boiler due to a communication failure. The main lesson learned is that whenever a type of technology is used which is unfamiliar to the many disciplines and professions involved in a development of this kind, communication between them all is crucial to ensure that each knows what is expected of them.

### **SCHRI Development Officer**

**Carola Menzel**

**Donald Hendrie Building**

**Auchincruive**

**Ayr, KA6 5HW**

**Tel No. 01292 521896**

**Email:** [carolamenzel@energyagency.org.uk](mailto:carolamenzel@energyagency.org.uk)

Contact details for the community group may be obtained via the SCHRI Development Officer.

### **Scottish Community and Householder Renewables Initiative – General Enquiries**

T: 0800 138 8858

E: [schri@est.org.uk](mailto:schri@est.org.uk)

W: [www.est.org.uk/schri](http://www.est.org.uk/schri)

*At the time of publication and to the best of our knowledge, the information contained in this case study was correct, however the Energy Saving Trust does not warrant or guarantee any of the information contained herein. Energy saving figures and related information has been provided by the community group.*