

ENERGY EFFICIENCY AUDIT FOR GIRTON GRAMMAR SCHOOL



Project Background

Girton Grammar School in Bendigo educates over one thousand pupils, both senior and junior. The School comprises several buildings of various architectural styles ranging from traditional to modern.

One of the major environmental impacts of the School is the emission of greenhouse gases relating to energy use. Energy is used in the form of electricity and gas to provide heating, lighting and cooling at the School and to power educational equipment including a computer network.



As well as the environmental costs, electricity and gas bills cost the School significant sums each year. The School management continues to monitor these costs carefully, especially as energy prices are on the increase.

The opening of the recently completed \$5.2M Performing Arts Building, caused a step increase in energy usage at the School as this new building must of course be heated, lit and cooled.

The Federal and State Solar Schools Programmes provide grants for the installation of energy saving measures. It was decided however, that the first step before raising the capital for such a programme should be to assess the current energy consumption pattern and to identify what the energy saving priorities might be.

How Enhar is Assisting

At the start of 2009, an energy audit by Enhar was commissioned to identify means of reducing energy wastage and to improve efficiency of energy usage at Girton Grammar School.

The School had been impressed by the proposal made by Enhar earlier in 2008 and felt that an impartial energy assessment would benefit the School.

The task for Enhar was to identify specific ways of saving energy which are both effective and feasible for Girton Grammar School.

Enhar's Approach and Project Details

Enhar's approach was to study both the fabric of the buildings and the behaviour of its occupants. Factors which were found to dictate energy consumption in the School include:

- Lighting controls for Classrooms and common areas

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- Standby power usage for Computers and Photocopiers throughout the School
- Hot water usage for showers
- Swimming Pool temperature control
- Glazing on north facing facades of incident high sunlight
- Insulation of roof cavities
- Passive ventilation to exhaust the heat trapped in roof areas
- Behavioural patterns of teachers and pupils

In many aspects of the School, such as those listed above, opportunities for energy savings were identified. But not only the technical feasibility and environmental benefits were considered, the capital and maintenance cost implications were also assessed. Price information for the various energy saving measures was obtained from product suppliers. This was included in a financial energy model which projected the School energy-related expenditure from 2008 to 2015. The projection compared an Improved Energy Efficiency scenario to a Business as Usual scenario.

Enhar analysed the 2008 gas and electricity bills and made on-site audit inspections during which all buildings of the School were visited. Enhar was kindly escorted throughout the site by the Girton Campus Manager. During the audit, measurements were taken of room temperature and light levels.

During the audit, discussions were held with occupants of rooms or those using rooms when visited to learn of the occupants experience of the buildings through the seasons.

Enhar's final report to Girton Grammar School recommended a package of measures which would enable the School to reduce its energy consumption by 25%. This itemised a series of measures to implement within a specified budget.

The carbon emissions from the energy usage were also quantified based on actual bills, and the ratio of carbon emissions to pupil numbers was calculated. The improved energy efficiency scenario would enable the School to reduce the carbon intensity (tonnes of CO₂ per pupil) by 45%.

Client Testimonial: "Enhar investigated every avenue to ascertain where our power consumption was being used and how to curtail it. Their attention to detail was admirable."

Neville Faulkes, Campus Manager, Girton Grammar School

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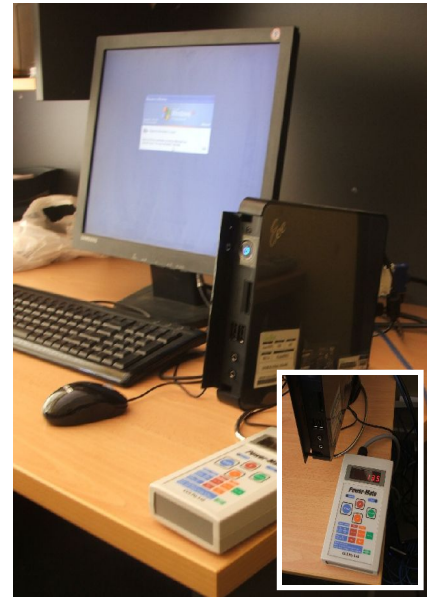
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Enhar auditors measured the power consumption of School computers left in 'standby' mode

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