

# Resource efficiency improvements reduce business costs and risks at a caravan park



Growth that doesn't cost the earth

**Cairnsmill Caravan Park** is a family-owned and managed holiday park, based in St Andrews. It has 300 static caravans, which are owned by customers across the UK and beyond who come to stay for their holidays and use the park as a base to explore Scotland. There is also a bunk house and space for campers and tourers. The park can accommodate up to 700 holidaymakers at any one time.

Run by John Kirkaldy and his family with help from a team of 15 staff, the park includes a swimming pool, a children's pool, a bar and restaurant, indoor games area, children's play park, shop, fishing pond, laundry and self-catering kitchens.

## Background

Being off the mains gas network, Cairnsmill Caravan Park relies on liquefied propane gas (LPG) for heating. LPG fuel is more expensive than mains gas and because it is transported to the site by road, there is a supply risk during inclement weather conditions.

John and his family recognised that installing equipment that would reduce the park's reliance on LPG would not only produce immediate financial savings on energy bills, but also protect the company against rising and volatile energy costs, and fuel supply risks.



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**Our resource efficiency achievements have not only helped us reduce costs, but helped us to achieve a David Bellamy Conservation Gold Award.**  
”

**John Kirkaldy**  
Owner  
Cairnsmill Caravan Park

**CAIRNSMILL**  
• CARAVAN PARK •

[www.cairnsmill.co.uk](http://www.cairnsmill.co.uk)



# Case study – Resource efficiency improvements reduce business costs and risks at a caravan park

## Reducing swimming pool heating costs

A large part of the LPG consumption at Cairnsmill Caravan Park was attributed to the swimming pool, which needs to be heated constantly to ensure that it is ready for the 10,000 visitors who use it throughout the year.

During a major renovation of the swimming pool, the opportunity was taken to look at alternative heating technologies and the decision was made to install an air source heat pump (ASHP).

ASHPs work by absorbing low temperature heat from the air into a fluid, which is then passed through a compressor to increase the fluid's temperature. This higher temperature fluid then transfers its heat to heating circuits, in this case to heat the swimming pool.

A modern LPG condensing boiler was also installed as a back-up to provide heating when the outside air is too cold for the heat pump to operate – which is surprisingly infrequent given the fact that ASHPs can still operate at temperatures as low as 8°C.

**By minimising water use, less water will need to be heated by the LPG boiler, thereby further reducing costs.**

## Improving resource efficiency – pool insulation

ASHPs deliver heat at a lower temperature and over a longer period than conventional boilers. Therefore, during the renovation, to ensure optimum efficiency of the new system, the walls and base of the pool were fitted with 100mm of insulation to slow down the loss of heat from the pool water. In addition, to ensure that none of the heated water is wasted when people get in and out of the pool, balance tanks were installed to collect and re-use displaced water.

A great deal of heat escapes from the surface of a swimming pool. Therefore, to help minimise heat loss further, Cairnsmill Caravan Park installed a chemical pool cover. This consists of a safe chemical additive that settles on the surface of the water and works even when people are in the pool. The advantage of such a system is that it replaces a traditional pool cover, which can only be used when the pool is not in use. The chemical cover has the added benefit of reducing condensation which, if not properly controlled, can be detrimental to the structure of the building causing mould, timber decay and metal corrosion.



The installation costs for the chemical pool cover were £1,100 and it is expected to reduce heat losses by between 10% and 30%.

Other hot water facilities in the pool area, such as showers and hand-washing facilities, were fitted with water-minimising systems such as percussion shower controls, which automatically turn off after a pre-determined time, and tap flow reducers. By minimising water use, less water will need to be heated by the LPG boiler, thereby further reducing costs.

## Finding further savings opportunities

Cairnsmill Caravan Park has enjoyed significant cost savings by investing in the swimming pool heating technology and facilities. In addition, the company is now providing customers with modern, resource efficient facilities that are no longer affected by the risk of inclement weather.

Following on from this success, John Kirkaldy is now investigating further opportunities and is working with Resource Efficient Scotland to assess the feasibility of installing a new biomass boiler on site to heat various rented accommodation units.

[www.resourceefficientscotland.com](http://www.resourceefficientscotland.com) | 0808 808 2268 | @ResourceScot

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