THE ENERGY CHALLENGE

Rufus Bellamy, BH&HPA national adviser on conservation and environmental management, reviews the options available to save costs on energy and reduce pollution

'Good business is green business' is one of the current catchphrases of the conservation movement and nowhere is this truer than in the area of energy use, where savings in energy consumption can bring significant rewards on the bottom line. Many BH&HPA member parks have already pioneered energy conservation and renewable energy generation - and are saving tens of thousands of pounds a year as a result. Best practice on parks the length and breadth of the country shows just what is possible: chalets and lodges are being heated by log stoves fuelled by sustainably -coppiced wood; guests are washing their hands with water warmed by solar panels perched on top of shower blocks; and the way around parks is being picked out by down-lighters powered by photovoltaic (solar electricity) panels.

All this great work obviously has important environmental benefits. Reductions in energy use leads to less pollution being produced; this further leads to reduced amounts of coal, oil and gas being used up (all finite resources that are becoming increasingly hard to come by). These reasons alone make energy conservation a good idea - add on the potential that you will be doing your bit to stop global warming (if you sign up to the recent Intergovernmental Panel on Climate Change report highlighting man-made climate change) and the environmental reasons for doing something get even more persuasive.

Of course it often takes the harsh realities of economics to spur even the most well-meaning into action. However, with fuel bills heading skywards and customers starting to choose holidays based on their 'carbon footprint', now is a good time to grasp the energy nettle and see what benefits your park business can achieve. In the following pages we look at what energy-conservation initiatives have been shown to work on BH&HPA member parks across the country - and look towards a future where energy conservation is part of the story that parks sell to encourage people to visit and recharge their batteries (in a sustainable way, of course!). continued...

Economics and environment

The energy challenge is one that encompasses almost all aspects of park management - from how the beers in the bar are chilled to how the lights in the lavatory block are turned out. This means that the best place to start saving energy is by appointing someone to be in charge of energy conservation - an energy 'champion'. This person should be charged with the task of auditing the use of energy on the park with a view to making usage (and therefore cost) improvements. The obvious starting point is the park's energy bills - electricity, gas, oil, coal etc. - which will give an idea for how much energy is used during a year. With these records to hand, it is also possible to see what effect energy saving projects have once they are implemented.

The next step is to profile a park's energy use to see where it is being used unnecessarily or excessively. This is made easier if a park's energy use is metered in sections (it is possible to get a PC-based system to monitor and record energy usage automatically). If such meters aren't in place then energy use can be calculated based on the amount of time a device is used and its rated energy consumption. Whichever way it is done, such an assessment should be as wide-ranging and comprehensive as possible, covering all the buildings and activities that take place on site. For businesses with an annual turnover in excess of £50,000, free help is at hand. The Carbon Trust, a government agency set up to encourage energy conservation, will do a free site survey to identify hot spots of energy consumption and advise on cost-effective ways to save energy (www.carbontrust.org.uk).

Auditing and action

One park that has gainfully used the energy audit approach is Marton Mere Holiday Village near Blackpool. As with most successful businesses, the decision to act was not based solely on altruism, but on commercial common sense. *'I think that it is something that we have always thought about, but it's only since the electricity and gas prices shot through the roof that we have started to act,'* says park manager Paul Cressey, who explains that an audit of the park's energy usage allowed them to focus on action that would have a real impact at a reasonable cost. Some of the audit findings were a little surprising.

'We have a large complex building with about 3,000 sq ft of office space which until recently, was only used for storage,' Paul explains, highlighting one key focus for his team's energy work. *'This space was lit by 14 strip lights that were on the same circuit as the main office and were being used unnecessarily every time the office lights were switched on.'* To solve this problem, Paul got the local electrician to re-wire the circuit - and at a stroke started to save energy.

Training brings results

Marton Mere has already seen the benefits of its energy conservation work which has included common sense measures such as turning down the heating in the park's swimming pool by one degree, getting staff to turn off lights and heating wherever possible and fitting energy efficient light bulbs. Both electricity and gas consumption has gone down. *'We used 57,000 KWh of electricity less in 2006 than in 2005,'* says Paul proudly, pointing out that this work was vital from an economic point of view since increasing energy charges meant that the park actually paid more for its energy last year than the year before, despite the fact that they used less.

For Paul, staff involvement was a key element to the Marton Mere success story. *'It was really about creating an awareness within the park team and getting them to think about how they could save energy,'* he says explaining how basic energy saving ideas are included in the park's 'Creating the Magic' induction training sessions and are also one of the major items on the general training agenda. Paul, who has just ordered £2,000 worth of low-energy light bulbs for the coming season is now looking at ways of incentivising his staff to save energy. Because energy use in buildings across the park is monitored, he is considering offering staff a bonus if they can improve energy use in comparison with previous years - channelling some of the savings they have made back into producing new savings!

Where to go for help

Changing the way people behave is one of the keystones of energy conservation. Other vital areas to investigate include installing energy efficient lighting and timers and improving insulation in lofts, walls and floors and around hot water tanks and plumbing. Other relatively simple measures include draught-proofing windows and doors, installing light tubes to funnel sunlight into dark rooms, specifying electrical equipment that has an official EU energy label rating A (or carries the European Eco-label), and fitting heating controls such as thermostatic radiator valves (and making sure they are properly used). At a more fundamental level it is also possible to look at the positioning of caravans and new buildings to maximize the amount of sunlight that naturally illuminates and heats them.

Two sources of good business-focused information on energy efficiency are the Carbon Trust and an organization called Hospitable Climates (www.hospitableclimates.org.uk). The later offers free information specifically tailored for the hospitality industry. At the heart of Hospitable Climates' approach is a series of *'Energy Measures Fact Files'*. These are designed to take managers from the first step of appointing an energy champion through all the areas of potential waste and savings. There is a mass of other information available on the web covering all aspects of energy efficiency. Another good place to start is the website of the Energy Saving Trust, an organisation that offers advice on all aspects of energy saving (www.est.org.uk).

Technological innovation

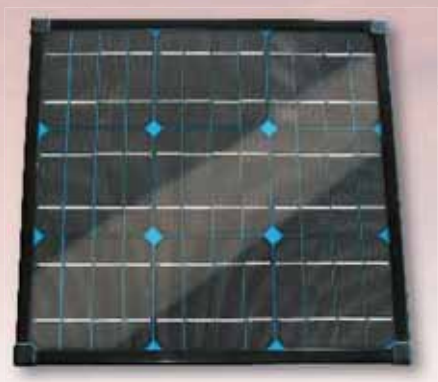
Basic energy saving ideas can be applied to a toilet block, caravan or chalet. However, an energy audit also allows a park to focus in on specific areas of energy use and come up with customised solutions.

A park's swimming pool is an obvious place where savings can be made - and where specific technical alterations can pay dividends. At Hedra Holiday Park in Cornwall, profiled in the last edition of the BH&HPA Journal for the work it has done on habitat creation, the park's managers have achieved significant savings by looking at how the air in its swimming pool complex is heated. According to the park's finance director Will Dexter, they were operating the pool's air handling unit at full power and controlling airflow using a damper. A more energy efficient solution was to fit a variable speed drive. *'We were producing the maximum air flow whether we needed it or not. This was like peddling as hard when cycling down hill as up, when there is clearly no need,'* explains Will in Hedra's environmental report. He calculates that fitting the new system has produced an annual saving of over 190,000 KWh (equivalent to about £4,700).

Although not all parks have swimming pools, most have hot water heating systems and this is another area where good engineering can produce significant benefits. For example, many parks are moving away from traditional systems that store heated water in insulated tanks to systems that provide hot water on demand using high-efficiency gas boilers. These use less fuel and have the added benefit of providing water at the correct temperature - again avoiding unnecessary fuel use and stopping guests scalding themselves. To compare the efficiency of different boilers you can use the database at www.sedbuk.com, or ask your installer.

BH&HPA National Associate Member, Rinnai (www.rinnaiuk.com), produces one particularly interesting system. This market-leader scooped a national environmental innovation award for combining its energy efficient 'Infinity' water heater system with a solar panel array. *'Park owners like the fact that, from the minute the Infinity systems are installed, the only energy used goes towards heating the hot water actually needed and the park no longer pays to heat stored hot water,'* says Andy Clifford, Rinnai's sales manager and holiday parks expert.

As with energy efficient lighting systems, it is vital that heating systems are linked to effective control systems to achieve the best results - no matter how little energy a boiler or light bulb uses, if it is running unnecessarily that's still energy (and money) down the drain. continued…



What about the units of accommodation themselves?

Caravan holiday homes, lodges, chalets and residential park homes can obviously benefit from energy efficiency audits too. However, where units on parks are privately owned it is less easy for park owner/managers to encourage an energy efficiency drive without being seen to be telling private owners/residents 'what to do'.

Nevertheless, private owners/residents can be involved in energy efficiency drives in a number of ways. They can be encouraged to turn off lights, turn down the heating and generally save energy through the use of information leaflets and signage (or even through an energy efficiency club).

In hire fleet units, customers can be helped along the way by being provided with energy-efficient appliances to use, even if it's only the right light bulbs or a smaller kettle than usual (so that they only brew what they need to brew). Park owners could also offer to provide their private caravan holiday home owners or residents with similar appliances on request. Just as with other energy conservation work, there should be economic benefits: If caravans or park homes are individually metered for energy consumption, their owners will receive these directly.

What are the manufacturers doing about energy efficiency?

A really energy efficient unit is going to cost more than average, at least until manufacturers respond to increasing consumer demand and start to produce eco-efficient models in high volumes and at lower cost. However, the cost could be worth it since such units offer a potential selling point for owners or holidaymakers.

However that's not to say that more energy efficient technology is not coming onto the market. For example, one of the larger suppliers of hot water systems for caravans, Morco Products Limited (www.morcoproducts.co.uk), is responding to demand and developing a line of more efficient gas boilers and even looking at ways of linking them to a solar system. The relaxations in the maximum dimensions of a caravan should also encourage better insulation. Many lodge and chalet manufacturers are already willing to specify high levels of insulation and energy efficient heating and lighting systems if they are asked.

Another company, which exhibited at the recent BH&HPA annual conference, Retreat Homes Limited (www.retreathomes.co.uk), shows how these ideas can be brought together. Its wooden Retreat models (which the company states confirm with the statutory definition of a caravan) are design-conscious holiday homes. The company produces a 'sustainable' model of this product which is enhanced with energy-saving features such as low energy light fittings, low energy white goods, photo-voltaic roof panels and solar water heating panels. Standard insulation on this model can also be replaced with therma-fleece (made of sheep's wool) and the company can build bespoke units up to full Building Regulations standards if required. *'The retreat is design with energy conservation in mind from the ground up,'* says Michael Shaw, the company's Director. *'For example, it has large floor to ceiling windows which let in lots of light and reduce the need for lighting. More fundamentally, because it's made from wood, it also takes less energy to construct than many other caravans.'*

What about the public?

Energy generation

If energy efficiency is one side of the energy coin, then renewable energy generation is the other. A quick look at the parks that are involved in the David Bellamy Conservation Award Scheme is enough to convince you that this is an area that parks don't have to ignore. One man who shows just what can be achieved is Richard Rhodes, Managing Director of Dolguog Estates in Wales and Director of the BH&HPA Mid Wales Branch. Richard has combined high levels of insulation and energy efficiency with two types of renewable energy generation to make his on-site bungalow into what amounts to an environmentally friendly power station.

Richard's system combines an array of 18 solar photovoltaic panels on the roof with a ground-source heat pump system. The solar panels produce electricity. The ground-source system produces warm water. It is made up of about 300 metres of piping buried 1.2 metres down. The liquid in these pipes picks up the heat in the ground. A heat exchanger then transfers this to water that can be piped round the house. The liquid coming from the heat pump exchanger is 30-35 degrees.

'Because you don't get a really high temperature from a ground source system it works well for under-floor heating in a shower block, new sports complex or swimming pool,' explains Richard who uses the ground source solar system to heat his bungalow in this way. He is convinced that such a system is perfect for parks - mainly because they have a lot of open area that can be used for burying the pipes close under the ground - avoiding the need for more expensive 'bore-hole' type installations.

Richard emphasises the point that energy efficiency and careful monitoring of energy use must go hand in hand with energy generation. His building is insulated to a very high degree, he uses the most energy-efficient products and he is almost religious in his zeal for 'turning things off', especially the 'stand-by' functions on electric equipment. *'Turn everything off and still the meter will turn - you'll be surprised how much those little red lights cost you!'* he says.

At a total cost of £25,000 for both technologies, Richard's project was not cheap. However in 2005 it produced a total of 102% of his total energy needs. His hotel next door used the excess. This means that, for Richard, the scheme has been well worth the investment. *'At the time we put it in we were looking at a 20 year payback,'* he says. *'But with increases in energy prices, I'd now put that at about seven years.'* Although still a relatively unknown technology, ground source solar could be one of the 'big ideas' of the next few years. One example of the growth in interest, is shown by the recent news that lodge manufacturer Lodgico (www.lodgico.co.uk) has put in a new development using this technology to help heat residents' water.

Alongside ground-source solar and photovoltaics, there are many other renewable energy options that parks can consider. These include solar hot water systems, well-designed mini-hydro systems, the use of sustainably harvested wood as a fuel and even using lakes and other standing water as the 'heat source' for a heat exchanger based system. Wind energy is another option - but comes with problems in terms of noise and visual impact (for a detailed review of these see the November-December 2006 edition of the BH&HPA Journal). The best source of information on these is probably the Centre for Alternative Technology in Wales (www.cat.org.uk) which provides advice and consultancy services.

Solar water heaters

Of all the renewable energy technologies available, the one that has proved itself most widely on parks is the use of solar panels to directly heat water. Such 'passive' solar systems can be linked into more conventional hot water systems by, for example, using a double immersion system. Even individual caravans can benefit as the panels can be mounted on the roof or next to the units on the ground.

The appropriateness of this technology is shown by the experience of Kath Brasnett, co-owner with her husband Keith of River View Touring Park, a 60-pitch park in Wales. The Brasnetts decided to go solar when they put in a new shower and amenity block and installed five solar panels to supply hot water for the showers and under floor heating. A Carbon-Trust-approved boiler backs up the system. They received a grant for this work from ARENA Network, an independent organisation that provides practical support to business in Wales on environmental issues. *'The system has worked brilliantly,'* says Kath. *'We only had one weekend last year when it struggled, but for the rest of the season it has provided all the hot water we need. Just as importantly, we are ordering less oil than last year.'*

If you can't generate energy yourself there is another way to tap into renewable energy. There is now a significant number of power supply companies that offer so-called 'green tariffs'. Some offer a truly green power supply - where the company ensures that for every unit of electricity you use, the same amount of electricity is purchased from renewable sources. Other companies offer a Green Fund - these companies take a percentage of what you pay on your bill and invest the money into new renewable energy projects and research. Remember that you will probably be supporting the development of wind power - which may colour your views of this approach. For further information on what is an emerging and therefore changing area try the Green Electricity Marketplace (www.greenelectricity.org) which offers information on the various suppliers of renewable electricity in all UK regions, and details of typical prices. continued…

Carbon footprints

So what about the future of energy conservation? Well, among the energy conservation buzzwords being bandied about at the moment, 'Carbon Footprint' is probably the one making the biggest impression (if you'll pardon the pun).

Even Tony Blair recently announced that he would redeem the carbon dioxide created by a flight his family took to Florida for a Christmas break. Many park owner/managers are now being asked by their visitors about this issue and are wondering what they can do to respond - indeed some are asking whether there is any marketing mileage in the idea.

A carbon footprint is the term used to describe the amount of carbon dioxide produced by any activity, person or thing. For example, an average family car has a carbon footprint of about 0.3 tonnes for every 1,000 miles it travels. Because carbon dioxide is thought by many to be the key factor in man-made global warming, the carbon footprint is therefore a measure of the potential impact that something has on the climate. As it is intimately linked to the use of energy (the combustion of fossil fuels to produce energy is one of the major sources of carbon dioxide), it is also a measure of how much energy something uses. To see how to calculate your carbon footprint (or that of someone holidaying on your park) visit carbonfootprint at www.carbonfootprint.com.

A number of companies, like carbonfootprint or climate care (www.climatecare.org) have already set themselves up to help people calculate their carbon footprint and then offer ways to reduce or 'offset' it (offsetting is the jargon word here). Investing in energy efficient technology in developing countries is one of the options, as is planting trees. Unfortunately it's here that things get a bit difficult. A recent article in the *Independent* newspaper pointed out that although trees do absorb carbon dioxide as they grow, they also release it when they die. This means that many environmentalists are saying that although tree planting has a wide range of fantastic benefits, it will not solve climate change. Highlighting the controversy, MP Boris Johnson, recently suggested that the answer is to kill a flatulent cow (which produces methane, another global warming gas)!

For the UK holiday parks industry however, the message can be a lot clearer - taking a holiday at home is going to have a much smaller carbon footprint than taking one in a far-away country. If a park is also doing all it can to reduce energy use, so much the better - the holiday's carbon footprint shrinks again. Give out energy saving lightbulbs to your guests or residents and its shrinks again. This is perhaps what the future of energy saving will look like - parks calculating the carbon footprint of a holiday and offering guests ways of offsetting that. At the same time of course, parks can enjoy the savings they are making on their energy bills. Good business is green business? It certainly looks that way.

Grants and loans

There are a number of grants and loans available for energy efficiency improvements or for the purchase of renewable energy technology. Many organisations (such as Arena Network in Wales - www.arenanetwork.org) give specific help in their local areas (search the web for details). However, the first place to contact for advice is the Carbon Trust, which provides loans for small or medium-sized enterprises (SMEs). Up to £100,000 (£200,000 in Northern Ireland) is available. The loans are intended to encourage qualifying companies to invest in energy saving equipment that either upgrades or replaces existing facilities. See (www.thecarbontrust.co.uk/loans) for details.

Tax breaks are available for a wide range of energy efficiency technologies and equipment - from boilers and refrigeration to lighting and heat exchangers. Under the Enhanced Capital Allowances (ECA) scheme, companies can claim an 'enhanced' 100% capital allowance on qualifying investments in equipment in the first tax year. 'Normal' capital allowances on plant and machinery are 25% a year on a reducing balance basis. So the scheme should help boost cash flow and shortens the payback period. For details and a list of eligible equipment go to www.eca.gov.uk.

For grants for renewables, check out the DTI's Low Carbon Buildings programme (www.lowcarbonbuildings.org.uk. This replaces the previous DTI Clear Skies and Solar PV grant programmes. Open to commercial organisations across the UK (except the Channel Islands and the Isle of Man), the programme covers a range of microgeneration technologies including: solar photovoltaics, wind turbines, small hydro, solar thermal hot water and ground/water/air source heat pumps. The aim of the programme is to support the development of low-carbon buildings. SMEs can apply for up to 50% of the total installation costs (excluding VAT). ●