

Introduction

The SEACS project is a cooperation project funded by Europe between local authorities in Devon, Dorset, Wiltshire and Cotes D'Armor and Lannion-Trégor in Brittany, France. It aimed to share best practice on energy efficiency and behaviour change.

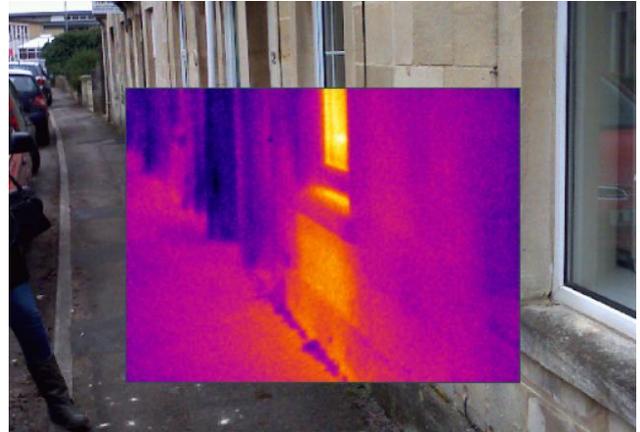
Prior to the SEACS project, Wiltshire Council embarked on a buildings programme to reduce the number of council buildings and offices from 95 to 4 main hubs, saving over £85 million. Energy efficiency was considered when the buildings were developed with heating and lighting being controlled centrally and new ways of working being introduced. When the project began many teams were still in temporary locations, so a behaviour project based around the workplace would have been badly timed.

In order to achieve a reduction in office space, staff members are encouraged to work from home for up to three days a week. This campaign aimed to support Wiltshire staff in being energy efficient when working from home.

The campaign ran from January 2013 to February 2014, with an introduction to the campaign being displayed during climate week March 2013 and the full case studies, findings and advice being displayed in 2014.



Above: Staff participant and home electricity monitor



Above: Thermal image showing heat loss at participant's house

Implementation

This campaign was developed to focus on a small number of staff members over the period of a year. Their energy consumption would be closely monitored and their homes audited.

Recommendations and support would be offered to increase energy efficiency and their success and testimonials shared with other staff members through a display during Climate Week (3rd – 9th March) 2013.

In December 2012 six staff members were recruited, through Wiltshire Council's weekly newsletter, to take part in the campaign; they were chosen to represent a variety of house types and locations. Each participant was given a [home electricity monitor](#) and asked to manually record their meter readings on the website [imeasure](#), which carries out degree day analysis based on information input regarding your home.

Staff members were supported to analyse the graphs created by imeasure and the electricity monitors software. They were encouraged to become aware of their home's base load and average consumption levels and to act when their consumption exceeded their expectations.

Each home was surveyed using Wiltshire Council's [thermal imaging camera](#), by a trained energy auditor and internal temperature was also

collected in a variety of rooms at each property using [data loggers](#). This information was then analysed and presented in a report to each participant with a series of prioritised recommendations.

Resources and support were provided to install draught proofing and radiator reflector panels, which were found to be a common recommendation for all participants.

Information regarding the changes made and testimonials were displayed around County Hall during Climate Week along with an interactive competition to encourage and track participation.

Resources

Staff

Support was required in the form of training to use the thermal imaging camera and analyse the images. Support from a trained energy auditor was also required to provide participants with a comprehensive survey.

Tools used

- Data loggers
- Thermal imaging camera
- Home energy monitors - These were loaned to Wiltshire Council from two different manufactures: Wattson and Efergy
- Radiator panels
- Imeasure
- SEACS Home energy matrix

Findings

Challenges

Demonstrating reductions in energy consumption has been difficult for a number of reasons. One of them being that the imeasure site requires manual readings to be taken on the first of the month, or ideally at the start of the week; in order for accurate degree day analysis to be carried out. This was very difficult for participants to achieve despite automatic email reminders from the site.

Similarly the electricity monitors used by participants required regular “downloading” to a computer once a month. This proved to be difficult for participants too, resulting in incomplete data. Some participants found the software associated with each monitor to be difficult to use and required support each time to download their data

and most needed support to install the software onto their machines.

Another difficulty in demonstrating the effectiveness of the measures suggested is that, while most participants planned to carry out the actions suggested, they planned not to until after the project had finished. This meant that there wasn't the opportunity to gauge the savings achieved.

Results

However through the use of the SEACS developed Energy Matrix (see appendix) I was able to use qualitative information from the participants to gauge an improvement in their awareness and behaviours. Each participant scored themselves in the 5 criteria based on the descriptions provided by the matrix; both at the start of the campaign and at the end.

In some cases individual scores for a section did not improve during the project, however there was only a decrease in one section for one participant. The section that we saw the decrease was the “knowledge and understanding section”; this unpredicted change could be the result of the participant having over estimated his knowledge at the start of the project.

Below is a table that shows the combined differences between each participant's first and second score. The two areas that showed the best improvement were those associated with sharing knowledge with others and monitoring their own energy.

Action	Participant responses increase combined
Measure and monitor my energy consumption	10
Know and understand the challenges of climate change	6
Saving energy in everyday life	6
Reflect on my purchasing actions	9
Participate in my community life	11

Please give your household a score for each action

Action	 DISREGARD 1	 START 2	 STRENGTHEN 3	 TAKE OFF 4	 BECOME EXEMPLARY 5	Score
Measure and monitor my energy consumption	The energy used is not known nor monitored.	The energy used is measured by a person when there seems to be a billing error or the annual energy consumption is known by one person	The energy used is measured every two months by a person but is not shared with the rest of the household	The energy used is measured monthly and communicated to all household members	The energy used is measured monthly consumption targets have been set. Everyone is aware of actions that affect more or less the energy consumption.	
Know and understand the challenges of climate change	Climate change and its consequences are not known.	Climate change and its consequences are known by a person in the household.	Climate change and its consequences are known by all household members from general news or via the school.	Climate change and its consequences are known by all household members. Everyone is personally informed by books, documentaries and internet.	Climate change and its consequences are well known by all household members. It is natural to educate people coming in the house to the question.	
Saving energy in everyday life	Nobody pays attention to save energy	A person in the household occasionally makes a few gestures to save energy. The others are aware but are not the actions of energy savings.	Adults and children perform daily actions to save energy. Children are aware of some gestures but do not necessarily make them.	All persons are aware and carry out actions to conserve energy. Everyone can introduce a new proposal for action in the everyday life of each household member.	All persons are aware, forces proposal and carry out actions to conserve energy. People outside the home are encouraged to perform energy savings when they visit our place.	
Reflect on my purchasing actions	When we buy something, energy consumption is never considered.	When we buy something energy consumption is looked at but it is not a priority	When we buy something, energy consumption is accounted for purchases that we are directly paying energy for (freezer, car, TV ...)	The energy criterion is taken into account for all purchases. A search for energy savings is always present. The home tries to focus on local and energy-efficient products.	All purchasing activities are reflected to minimize household energy bills and also the indirect energy consumption by looking at the source of the products, their composition and choosing for the most local and green products.	
Participate in my community life	Nobody in the household communicate with the outside world (family, friends) on energy issues and energy saving	One person comes to the community on energy issues when a problem occurs in the home energy.	One or more persons in the household is interested in energy issues and regularly exchanges with the community on these issues.	All persons regularly exchange on issues of energy consumption at work, school or leisure. A person is recognized as an energy ambassador by the community.	All persons are recognized as energy ambassadors and are involved in the community, at school or at work.	
						total score