

Warwickshire **Climate Change Partnership**

27 March 2008

Submission Form for Case Studies

Please Insert:

Name of Organisation: Orbit Heart of England Housing Group

Name of Project: Ground source heat Pumps

Strategic Category:

Chosen from:

1. Energy
2. Transport
3. Resource Efficiency
4. Adaptation
5. Communications and Education

Date: 06/03/2008

Please return to: Dr. Jacky Lawrence, Strategic Energy Manager, Environmental Management, E&E, WCC, PO Box 43, Warwick CV34 4SX.

Email: climatechange@warwickshire.gov.uk, Web: www.warwickshire.gov.uk/climatechange



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Please use as much space in the boxes as you need

1 What climate change means to our organisation

1.1 Challenges and CSR –our vision for tackling climate change, our targets

An environmentally responsible organisation needs to have strategies, performance commitments and leadership on climate change at the business unit and site level. A corporate strategy or national policy alone is not enough to deliver the changes required, and the benefits those changes can bring.

A description of our corporate commitment to tackling climate change, elements of our strategy and our targets can be seen below.

Orbit Heart of England Housing Group aims to contribute to the quality of the life of communities in which it works and will seek to ensure that development meets the needs of the present without compromising the ability of future generations to meet their own needs.

The group's environmental policy is to:

- Provide housing with a good living environment
- Enable residents to reduce the living costs of their homes
- Avoid building on green fields sites where the use of redevelopment land is feasible
- Take action to reduce emissions of carbon dioxide and other gases which could effect climate change
- Reduce the dependence on non-renewable resources
- Promote the reuse and recycling of materials
- Avoid the use of potentially toxic and environmentally damaging materials and processes
- Reduce the use of resources in the day to day operations of the group

A description of our business unit / site level commitment to tackling climate change, elements of our strategy and our targets can be seen below.

At a site level it has been ensured that all properties are produced and maintained to Decent Homes or Decent Homes Plus standard. This may include provisions such as double glazing, full insulation and use of new technology.

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1.2 Innovation – why our organisation is involved in climate change projects

Tackling climate change, not just in our own business, but helping others to tackle climate change, reduces long term risk and makes all businesses safer in the medium to long term.

A description of how tackling climate change has driven innovation can be seen below.

This organisation has been involved in climate change projects for a number of reasons

- Satisfying tenants' needs and wants
- The organisation has a five year commitment to change from solid fuel to ground source heating pumps in rural areas
- Lower maintenance and more sustainable methods and resources for fuel and energy
- Energy efficiency will assist in the combat against fuel poverty
- The organisation has a commitment to reduce CO2 by installing ground source heat pumps; it will help achieve this commitment as well as ensuring that tenants can afford to heat their homes.

1.3 Opportunities – how climate change projects have benefited our organisation

There are opportunities to be had from taking responsibility to tackle climate change, but these opportunities may lie outside of what a company has traditionally considered its core areas of influence.

Below is a description of how tackling climate change has presented our organisation with opportunities.

- Carrying out the Lighthorne Heath project has provided Orbit Heart of England Housing Association with a number of new communication channels with other organisations wanting to discuss their latest products.
- It has also allowed for networking opportunities, with the sharing of experience and knowledge.
- Energy efficiency projects carried out have brought about affordable heating for their tenants, increasing the properties marketability.
- By keeping more heat in the homes, tenants are able to use their disposable income in other ways, improving quality of life.

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2 Project Concept - what our organisation did.

Below is listed the name of and a description of our project. Why we did it (the main driver). What the aims and objectives were. How it was expected to work, what had to done to make the project succeed and what the expected benefits of the scheme were.

Orbit Heart of England Housing Association has been engaging local energy providers and groups to develop new ways of heating properties. Working alongside the Energy Saving Trust and Warwickshire Energy Efficiency Advice Centre, one of the major initiatives it has been working on is the use of Ground Source Heat Pumps (GSHP) as a method of sustainable energy for both existing and new build properties.

One development using this technology is Lighthorne Heath, Warwickshire, where eighty ground source heat pumps have been installed. Lighthorne Heath is an ex Ministry of Defence estate bought around 30 years ago; there were around 150 to 200 properties on this site, of which Orbit Housing association bought 80. Over this period the houses have had their energy efficiency improved through double glazing, PVCU doors, roof insulation and cavity wall insulation, before the next stage of ground source heating was installed.

This technology provides energy efficient heating that uses the earth's thermal energy to warm up a house. No gas is used, meaning lower carbon emissions and reduced fuel costs.

An energy advice officer is also available to offer new tenants training and assistance on energy efficiency and how to use their boilers.

3 Project Partners – who was involved.

The names of all the people, job titles and all other organisations that were involved in delivering this project are listed below.

- Orbit Heart of England Housing Group
- Energy Saving Trust
- Warwickshire Energy Efficiency advice Centre
- E.on
- Heat pumps (new builds) Ice Energy
- Drilling contractors - Earth Energy
- Heat pump manufacturers - Calorex

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4 What our business / organisation learned from becoming involved in climate change projects

A description of what we learned in carrying out this project can be seen below, i.e. what the easy successes were, the overall outcome and what the barriers were.

What worked?

The main benefits from using ground source heat pumps are: reduced fuel costs, lower carbon emissions, low maintenance costs, long life expectancy, ideal for rural locations with no main connections.

This system has provided affordable, controllable heating addressing fuel poverty and has increased customer satisfaction, thus making properties more marketable.

What didn't work?

A major part of this project was research into sustainable heating; only after this was carried out was Ground Source Heating found most suitable. Although it is still early day for this project there have been no serious issues to date. There have, however, been minor disruptions to gardens and estate when installing.

How this project generated enthusiasm, won hearts and minds and drove cultural change

This project has allowed for the learning of new technology; it is helping the environment and cost-effective.

A variety of people are interested in the project including tenants, staff and other focus groups as it is sustainable, long term and 'greener'.

What the unexpected knock-on effects of this project were - both good and bad

It has created a lot of interest with a lot of people talking, especially other social housing landlords who are now interested in the new technology and methods used. It has also received positive feedback from partners involved in the project.

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5 How emissions were reduced by doing this project – i.e. quantified fuel and energy savings

We list here the fuel and/ or energy savings associated with this project. The amount of greenhouse gas emissions, especially the amount of carbon dioxide, that have been saved or will be saved because of doing this project are quantified below.

When compared with the gas equivalent, Orbit Heart of England Housing Association envisages an average 33% saving in annual fuel costs and 54% carbon emission saving in comparison.

When compared with the electric equivalent it is envisaged that there would be an average saving of 62% in annual fuel costs and 74% carbon savings.

6 What we would you do differently if we did this project again

Below is a description of what we would do differently in this project if we started again from scratch.

Nothing so far.

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7 Continuous Improvement

Below is a description of what we intend to do next in tackling climate change within our organisation.

- Constantly trying to improve efficiency in properties.
- Investigating the use of air sourced heat pumps and the use of solar water heating. However the cost of some products may have to decrease before they can become viable options.
- Looking at new ways to make positive changes.
- The housing group is currently working with Powergen to introduce a workable tariff for ground source heat pumps within the next 12 months.

Below is a description of what we would do if we were given £10,000 to do a climate change project.

Two potential projects have been suggested:

1 – Raising awareness; the money could be used to educate and influence directly with a literature campaign.

2 – We have already run a project along these lines: the 'Home of the Future' challenge – over 400 teenagers from schools across south Warwickshire took part in a competition to help design affordable homes of the future .

8 Contact Details – where to go for further information on the above project

Below is a list of all sources of information and relevant contact details for this project.

John Barnham / Jeremy Page / Martin Agar
Orbit Heart of England Housing Association
10 Greenhill Street
Stratford upon Avon
Warwickshire
CV37 6LG
Tel: 01789 404471

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9 Any other useful information?

Sources of other useful information and links are given below.

www.heart-of-england.co.uk



Image shows drill required to install Ground Source Heat Pump