

APPENDIX C

WAVERLEY BOROUGH COUNCIL

COMMUNITY OVERVIEW AND SCRUTINY COMMITTEE - 9 NOVEMBER 2009

Title:

**ENERGY EFFICIENCY, CLIMATE CHANGE AND
HOUSING STOCK IMPROVEMENTS**

**[Portfolio Holder: Cllr. Keith Webster]
[Wards Affected: ALL]**

Summary and purpose:

This report raises awareness about what the landlord service is doing in respect of climate change and energy efficiency and the difference we are making as a landlord. The Annexe to the report provides a summary statement of what actions the Council, as a landlord, has taken over recent years to improve energy efficiency – thus reducing the cost of fuel consumption to tenants; saving energy and contributing towards climate change issues.

How this report relates to the Council's Corporate Priorities:

This report relates to three of the Council's Corporate Priorities namely: **Environment** – Protecting and enhancing Waverley's unique mix of rural and urban communities; **Improving Lives** – Improving the quality of life for all, particularly the more vulnerable within our society; and **Subsidised affordable housing** – Working for more affordable housing to be built and managing council housing well. It also addresses one of the Council's priority Strategic Projects – Tackling Climate Change.

Equality and Diversity Implications:

Many of Waverley's tenants are on low incomes. With the steep rises in heating cost, currently being experienced, a growing number are at risk of falling into Fuel Poverty. By improving energy efficiency of its tenanted homes, Waverley is helping to address Fuel Poverty.

Resource/Value for Money implications:

In order to tackle Climate Change and implement Energy Efficient measures, Waverley has been making significant investments in its stock. This is reflected in fuel cost savings being achieved by its tenants.

Legal Implications:

There are none arising from this report.

Background and Introduction

1. Addressing climate change issues and promoting energy efficiency are important areas of the Council's work. Over the years, the Council, as a landlord, has undertaken a significant amount of energy efficiency work to its homes as part of

its on-going maintenance and improvement programmes. The Annexe attached to this report outlines the work undertaken to date and the difference that this has made in respect of reducing CO² emissions, Carbon Reduction, as well as cost savings to tenants.

2. The Council, as a landlord, has been making good progress in addressing energy efficiency in its housing stock particularly:
 - Loft insulation
 - Wall insulation
 - Double-glazing
 - Boiler/heating replacement
 - Thermostatic valves
 - Lighting
3. The benefits of these improvements to the Council's homes are directly felt by tenants in reduced fuel bills. It is estimated that the works carried out to Council homes have given rise to fuel saving costs of £954,000 per annum (approximately £190 per tenant per annum).
4. Many of the energy efficiency works also contribute towards meeting the Government's Decent Homes Standard, so when the Council does energy efficiency works, it is also contributing to another Government target.

Financial Implications

5. Over the years Waverley has financed its Energy Efficiency programme of works by supplementing its own funds with funding made available through energy suppliers and energy saving organizations. Waverley will continue to bid for these grants, in order to contribute towards the funding of future projects.

Conclusion

6. As a result of Waverley's policy of investing in Energy Efficiency over the years, it has successfully implemented many 'quick win' measures. The next step now is to tackle the more challenging projects, such as Renewable technologies, within the constraints of the available funding.

Recommendation

It is recommended that the work on Energy Efficiency, undertaken by the Council's landlord service, be welcomed and noted.

Background Papers

There are no background papers (as defined by Section 100D(5) of the Legal Government Act 1972), relating to this report.

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ANNEXE 1

ENERGY EFFICIENCY, CLIMATE CHANGE AND HOUSING STOCK IMPROVEMENTS

BACKGROUND

Climate changes are natural occurrences that have been happening for the last 4.6 billion years. However, recently there has been an unprecedented increase in global warming. We are already seeing the effects here in the UK. Winters are becoming milder, and rainfall patterns are changing, leading to an increase in flooding and droughts.

Carbon dioxide (CO²) is the main greenhouse gas that is causing climate change. In the UK over 40% of the CO² emissions actually come from the energy used every day in our homes and when we travel. The UK has committed to reducing its CO² emissions by 34% below 1990 levels by 2020 and is seeking an 80% reduction by 2050.

Government estimates state that in 2004, the annual domestic energy usage in Waverley resulted in the emission of more than 335,000 tonnes of carbon, or 2.9 tonnes per person. This compares to a UK average at the time of 2.6 tonnes per person, some 10% less than Waverley. These figures relate to the borough as a whole i.e. both private and social housing and reflect the fact that Waverley has larger than average houses and a higher than average ownership of domestic appliances.

WHAT HAS WAVERLEY DONE AS A LANDLORD

Waverley, as a landlord, has been carrying out a range of energy efficiency measures over several years. This has been done for a number of reasons: - firstly, to help reduce fuel consumption and consequent costs to tenants, recognising that many tenants are on low income; secondly, to address the climate change agenda. We also wanted to gain maximum benefit from capital investment and address our wider corporate and social responsibility objectives.

There are several ways to reduce (CO²) emissions and help fight climate change. Waverley has adopted the following methods to improve the energy efficiency of its housing stock:

- **Loft Insulation:**

Over the past twenty years Waverley has had a programme of loft insulation improvement. This has taken the initial recommended thicknesses of 50mm and topped it up, firstly to 100mm then 200mm through to the current recommended level of 300mm. Currently 95% of lofts have at least 150mm of insulation with 67% having over 200mm. By insulating the loft, the heat loss through the roof is reduced from 25% to 8%.

This has had a major impact on the energy efficiency of the housing stock resulting in typical annual per dwelling savings of 849kWh of electricity, 50kg of carbon and 183kg of CO². The tenants also benefit from tangible saving on their heating costs of around £35/year.

- **Wall Insulation:**

An ongoing programme of cavity wall insulation further enhances the cost and energy savings that Waverley is achieving. 35% of the heat loss from a house is through the walls. This is reduced to 12% when the walls are insulated. 94% of the stock with cavity walls is now insulated and the remaining 6% is currently being completed.

1% of the housing stock has solid walls. These have been externally insulated and are achieving similar savings.

By insulating the walls, it is possible to make typical annual per dwelling savings of 3,305kWh of electricity, 194kg of carbon and 711kg of CO². There is also a saving of £100/year in heating costs, which directly benefits the tenant.

- **Window Double-glazing:**

The majority of the Council housing stock was originally constructed using Crittal metal single-glazed windows. These were not only energy inefficient but, over time, have tended to warp making them difficult to open and close and extremely draughty.

Over the years, Waverley has been gradually replacing these windows on a responsive basis. However, in 2007 the newly elected councillors took the decision to double glaze 1,000 dwellings. Because of very competitive rates, it has been possible to extend the programme and a total of 1,369 properties have been double-glazed through this programme. This now means that 80% of the Council stock has been double-glazed. 10% of the heat loss from a house is through the windows. This is reduced to 5% when the windows are double-glazed.

By upgrading from single-glazing to double-glazing it is possible to make typical annual per dwelling savings of 1,618kWh of electricity, 95kg of carbon and 348kg of CO². The tenants also benefit from a saving of £49/year in heating costs.

A beneficial side effect from installing double-glazed windows is the enhanced appearance of the property and the streetscape, as well as the added security for the building.

- **Boiler/Heating Upgrades:**

Waverley currently has a programme to upgrade, wherever possible, all gas conventional boilers to 'A' grade condensing boilers. This produces significant energy efficiency savings and, because boilers are a Decent Homes 'Key Component', they also make a significant contribution towards meeting the Government's Decent Homes target. Of the 4,400 properties that have gas central heating, to date (August 2009) Waverley has upgraded approximately 2,100 homes. Subject to funding being available, it is planned to have all boilers upgraded by the year 2013.

By upgrading the boilers Waverley has been able to make typical annual per dwelling savings of 2,330kWh of electricity, 123kg of carbon and 451kg of CO². It also produces a saving on running costs for tenants of £61/year.

Whenever the heating distribution system is replaced, new energy efficient radiators are used, and thermostatic radiator valves (TRVs) are fitted. This enables the optimum temperature to be set for each room and adds to the overall energy efficiency. The TRVs produce an annual per dwelling savings of 953kWh of electricity, 50kg of carbon and 184kg of CO². It also produces a £25/year saving for tenants on running costs.

- **Lighting:**

When properties are rewired, or become void, Waverley has a policy of fitting energy saving light bulbs. These produce an annual per dwelling savings of 34kWh of electricity, 4kg of carbon and 14kg of CO². It also produces a saving for the tenants on running costs of £5/year.

ILLUSTRATION OF POTENTIAL ANNUAL SAVINGS

Table 1 summarises the current reduction in CO² and Carbon, together with the cash saving made by the tenants: -

Item	No. of dwlgs.	CO ² Reduction per dwlg.	Carbon Reduction per dwlg.	Cash savings per dwlg.	Total potential CO ² reduction	Total potential Carbon reduction	Total potential cash savings
Loft insulation	3,825	183 kg	50 kg	£26	699,975 kg	191,250 kg	£99,450
Wall Insulation	4,497	711 kg	194 kg	£100	3,197,367 kg	872,418 kg	£449,700
Double-glazing	4,100	348 kg	95 kg	£49	1,426,800 kg	389,500 kg	£200,900
Boilers	2,100	451 kg	123 kg	£61	947,100 kg	258,300 kg	£128,100
Thermostatic radiator valves	2,100	184 kg	50 kg	£25	386,400 kg	105,000 kg	£52,500
Lighting	4,672	14 kg	4 kg	£5	65,408 kg	18,688 kg	£23,360
Total Potential Saving:-							£954,010

Table 2 summarises the total potential reduction in CO² and Carbon, together with the possible cash savings to be made by the tenants, if all the energy efficiency works were completed to all Waverley owned homes: -

Item	No. of dwlgs.	CO ² Reduction per dwlg.	Carbon Reduction per dwlg.	Cash savings per dwlg.	Total potential CO ² reduction	Total potential Carbon reduction	Total potential cash savings
Loft insulation	3,878	183 kg	50 kg	£26	709,674 kg	193,900 kg	£100,828
Wall Insulation	4,653	711 kg	194 kg	£100	3,308,283 kg	902,682 kg	£465,300
Double-glazing	4,984	348 kg	95 kg	£49	1,734,432 kg	473,480 kg	£244,216
Boilers	4,400	451 kg	123 kg	£61	1,984,400 kg	541,200 kg	£268,400
Thermostatic radiator valves	4,400	184 kg	50 kg	£25	809,600 kg	220,000 kg	£110,000
Lighting	4,984	14 kg	4 kg	£5	69,776 kg	19,936 kg	£24,920
Total Potential Saving:-							£1,213,664

Table 3 shows the energy use of a typical household: -

Item	No. of dwlgs.
Space heating	57%
Water heating	25%
Cooking	5%
Lights & Appliances	13%

FUNDING

In order to help homeowners and social landlords meet the target reductions set by the Government, funding has been made available through national energy suppliers and energy saving organisations, in the form of grants.

Historically, Waverley has been active in bidding for eligible funding. More recently, over £25,000 has been secured, with further funding opportunities being actively sought. These include funding from Carbon Emissions Reduction Target (C.E.R.T.) and Salix Finance.

STANDARD ASSESSMENT PROCEDURE (SAP)

SAP is the UK government's standard methodology for home energy rating. SAP ratings are used to estimate the energy efficiency of existing housing. The rating is based upon running costs for space and water heating and lighting. It is calculated taking account of the shape and fabric of the building, its thermal insulation, the fuel used and the performance of the heating system. SAP ratings are expressed on a range of 1 to 100, the higher the better.

Currently, Waverley's housing stock has an average SAP rating of 72. This is in the top quartile of social housing providers.

ECOHOMES

EcoHomes provides an authoritative rating for new, converted or renovated homes, and covers houses, flats and apartments. It balances environmental performance with the need for a high quality of life and a safe and healthy internal environment. Many of the issues are optional, ensuring EcoHomes is flexible enough to be tailored to a particular development or market.

On Waverley's Kiln Fields estate in Haslemere, thirty three council owned houses have been built to the EcoHomes 'Very Good' standard, with two of them upgraded to 'Excellent' status.

Waverley has also signed up to the voluntary EcoHomesXB scheme. This is an offshoot of the EcoHomes standard, designed specifically for existing dwellings. A pilot project has been carried out on the Chiddingfold area, using the EcoHomesXB criteria. The results are being used to target future work programmes to improve the SAP rating of the stock.

ENERGY PERFORMANCE CERTIFICATES (EPCs)

Since October 2008, all social landlords are required to provide an EPC at each change of tenancy e.g. Right to Buy, Re-lets, Mutual Exchanges etc. The Certificate shows the current SAP and CO² levels and includes a set of recommendations for saving heat and upgrading wasteful appliances.

Waverley produces an EPC at each change of tenancy and is valid for ten years. The recommendations for savings are used when compiling programmes of work.

ENERGY AUDIT - SHELTERED UNITS

Waverley is implementing an energy audit of all of its sheltered accommodation. The heating systems in most of them are coming to the end of their useful life and so the opportunity is being taken to identify and address any energy in-efficiencies.

The first scheme to be assessed is Blunden Court, Bramley. A number of energy saving opportunities have been identified. These include replacing the existing boilers with high efficiency condensing boilers and improving the heating circuits, time clocks and heating controls.

Blunden Court also has good potential for using renewable energy. Solar heating panels and photovoltaic electricity producing panels can both be used here and both are eligible for 50% grant funding. Likewise, high temperature air-source heat pumps can be used to supplement the heating system.

However, biomass boilers are not recommended, as the fuel needed requires too much storage area. Likewise, wind turbines would not be suitable as the wind levels in this location are insufficient.

The lessons learnt and recommendations made will be applied to the other sheltered units in the borough where similar savings can be achieved.

THE FUTURE

- **Renewables**

Now that Waverley has implemented all the energy efficiency 'quick wins', more innovative ways of achieving energy and cost savings will need to be implemented.

To this end, an option appraisal has been carried out on two typical properties in the borough, one at Woodland Cottages in Brook and the other at Coneyhurst Cottages in Ewhurst. It was found that both properties would benefit from solar heating panels, photovoltaic electricity producing panels and domestic wind turbines. In addition it was recommended that the property at Coneyhurst cottages would also benefit from a ground source heat pump.

The annual predicted savings to the tenant would be in the region of £530 and £1,270 respectively and the annual saving of CO² would be approximately 4.2 tonnes and 8.5 tonnes respectively.

However, the capital cost to Waverley, net of grants, which amounts to £27,000 and £31,000 respectively, would not, at present, be viable.

- **Local Authority Carbon Management**

Waverley has signed up to the Carbon Trust's Local Authority Carbon Management Programme (LACM). Through the programme, the Carbon Trust provides councils with technical and change management guidance and mentoring that helps to identify practical carbon and cost savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and waste.

Participating organisations are guided through a structured process that builds a team, measures the cost and carbon baseline (carbon footprint), identifies projects and pulls together a compelling case for action to senior decision makers. Carbon Trust consultants are on hand throughout the ten months duration of the programme. Direct support is provided through a mixture of regional workshops, teleconferences, webinars and national events. The journey of developing a Carbon Management plan within an organisation follows the proven success of the five steps below:

1. *Mobilise the Organisation*
2. *Set baseline, forecast and targets*
3. *Identify and quantify options*
4. *Finalise strategy & implementation plan*
5. *Implement the plan*

Waverley's plan is to:

**Reduce Co² emissions from Council Operations by 25% by 2015 and 34% by 2020
(based on 2008/09 levels)**

- **The Nottingham Declaration**

The Nottingham Declaration recognises the central role of local authorities in leading society's response to the challenge of climate change. By signing the Declaration councils pledge to systematically address the causes of climate change and to prepare their community for its impacts.

Launched in October 2000 in Nottingham, the Declaration has now been signed by more than 300 English Councils. Waverley signed in 2006 and, as a result, a Carbon Change Action Plan was produced. This is now being updated. All Scottish and Welsh councils have signed their own versions of the Declaration.

The Declaration is underpinned by a unique Partnership of all of the key bodies that support English local authorities on climate change. The Nottingham Declaration Partnership was established in 2005 to support Nottingham City Council's re-launch of the Nottingham Declaration. The Partnership is a unique collaboration of all of the key bodies that support local authority action on climate change. The eight partners are the: Carbon Trust; Energy Saving Trust; Environment Agency; International Council for Local Environmental Initiatives; Improvement & Development Agency; Local Government Association; Nottingham City Council; and UK Climate Impacts Programme.

ADVICE

On this page and the next are examples of Energy advice, given to our tenants. In addition, regular cost and energy saving articles are included in the tenants quarterly newsletter, 'Waverley Homes & People': -



Top ten Energy Saving Tips

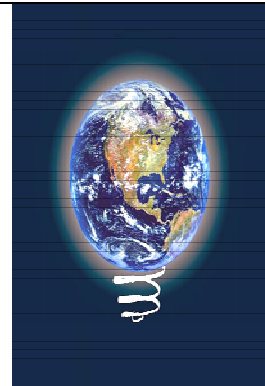
The average UK household could cut its fuel bills by up to £200 a year – doing the simple things below.

1 Turn your room thermostat down by 1°C – reduce your heating bills by 6 to 8%.

2 Only boil as much water as you need in the kettle.

3 Draw your curtains at night and make sure they are tucked in behind the radiators – save £15.

4 Washing your clothes at 40°C use 30% less electricity than at 60°C. Modern detergents operate just as well at these lower temperatures.



5 Use low energy light bulbs – save £10 with each bulb (and they last 10 times longer than an ordinary bulb).

6 If you have a shower it uses 60% less water than bathing.

7 Ensure you have insulation on your hot water cylinder – save £20 – tell us if you haven't.



8 Don't let your taps drip – they can waste Enough water in one day to fill a bath.











9 Don't leave appliances on standby – leaving your TV on standby can cost you around £25 per year.

10 Hang washing out – use the sun and wind, not your money to dry your laundry.

For more information on energy saving call your local Energy Advice Centre free on 0800 512 012 or e-mail your question to energysaving@waverley.gov.uk

Working with Tenants

Here are some simple measures you can do right now:-

	<p>1 Turn your thermostat down. Reducing your room temperature by 1°C could cut your heating bills by up to 10 percent and typically saves around £65 per year. If you have a programmer, set your heating and hot water to come on only when required rather than all the time.</p>
	<p>2 Is your water too hot? Your cylinder thermostat should be set at 60°C/140°F.</p>
	<p>3 Close your curtains at dusk to stop heat escaping through the windows and check for draughts around windows and doors.</p>
	<p>4 Always turn off the lights when you leave a room.</p>
	<p>5 Don't leave appliances on standby and remember not to leave laptops and mobile phones on charge unnecessarily.</p>
	<p>6 If possible, fill up the washing machine, tumble dryer or dishwasher: one full load uses less energy than two half loads.</p>
	<p>7 Only boil as much water as you need (but remember to cover the elements if you're using an electric kettle).</p>
	<p>8 A dripping hot water tap wastes energy and in one week wastes enough hot water to fill half a bath, so fix leaking taps and make sure they're fully turned off!</p>
	<p>9 Use energy saving light bulbs. They last up to 10 times longer than ordinary bulbs, and using one can save you around £45 over the lifetime of the bulb. This saving could be around £70 over its lifetime if you're replacing a high wattage incandescent bulb, or one used for more than a few hours a day.</p>
	<p>10 Do a home energy check. Just answer some simple questions about your home and we'll give you a free, impartial report telling you how you can save up to £340 a year on your household energy bills. Ring free phone number 0800 512 012 for free Home Energy Check.</p>