

# National Assembly for Wales Sustainability Committee

## Inquiry into Residential Carbon Reduction

Sean Rendall  
Principal Policy Officer  
Woking Borough Council



2007-2008  
*Promoting Sustainable  
Communities Through  
the Planning Process*











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**BARRATT**

*Britain's Premier House Builder*

Sales Hotline

**01483 727296**

**OBJECTS OF DESIRE  
IN WOKING**



**BARRATT**





Energy Efficiency Accreditation,  
December 2005



Low Carbon Leaders  
Award, December 2005



The Queen's Award for  
Enterprise



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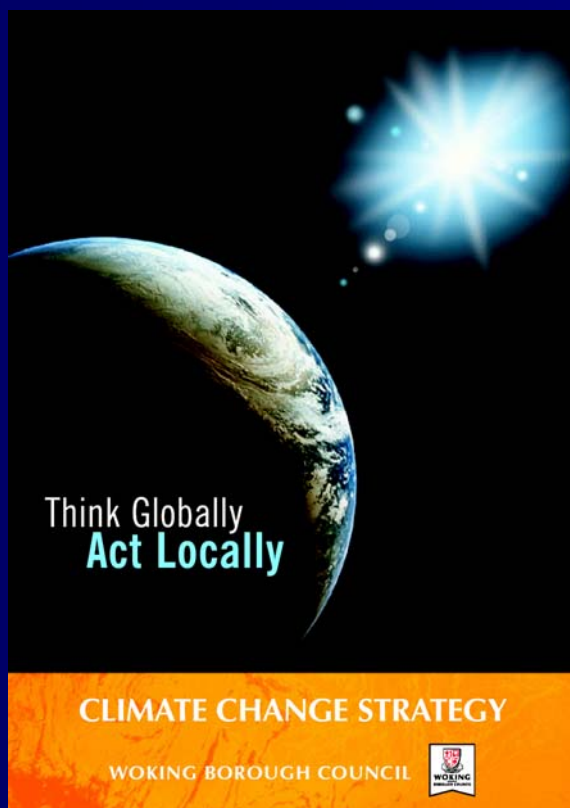
# Reducing carbon emissions through...

- Community leadership
- Asset management
- Use of regulatory powers
- Council enterprises

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# Woking's Climate Change Strategy



Adopted December 2002

Three Overarching Aims:

- Reduction of CO2 equivalent emissions
- Adaptation to climate change
- Promotion of sustainable development

# Woking's Climate Change strategy

- 8 key themes
- Aims to deliver 60% CO<sub>2</sub> reductions by 2050
- Long term strategy, with short and medium term targets
- Regular progress reports to cross-party group





Discover



Talk



Advance



Woking Solar Frontier



Names: Clare and Robert

Location: Mayford, Woking

System installed: 1992

We decided to install solar water heating in 1992 because we had a young family and we were concerned about their future as the possibility of climate change was becoming apparent.

This was our first major 'investment' to reduce our carbon emissions and it was good to know that we were starting to take control of our own contributions to climate change. We have used the installation as a stepping-stone to continue to reduce our energy impact and it has become a great educational tool for our children friends and neighbours.

# greener home

50

greener homes | PART 3



## Useful tips and contacts

### GRANTS AND FUNDING

There may be grants available to provide assistance with particular household modifications. The following organisations can provide information about funding.

#### Boiler Efficiency Database (SEDBUK)

Developed under the Government's Energy Efficiency Best Practice Programme, the co-operation of boiler manufacturers provides a basis for fair comparison of energy performance of different boilers.  
Web: [www.sedbuk.com](http://www.sedbuk.com)

#### Cleaner Car Conversion - Power Shift Programme

Grants worth up to 75% of the added cost of buying a clean fuel vehicle converting an existing vehicle. Grants are available to help with the purchase of approved vehicles running on liquefied petroleum gas (LPG), natural gas or electricity (including hybrids).  
Tel: 0845 602 1425  
Web: [www.transportenergy.org.uk/grantsavailable/powershift/](http://www.transportenergy.org.uk/grantsavailable/powershift/)



Helping you create a healthier, more environmentally-friendly home in Woking

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## Building extensions, loft conversions and conservatories

### Location and position

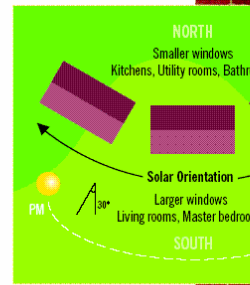
Before considering building an extension or converting your loft, check that you are using all your existing internal space. Look to see if there is any unused space within the confines of the existing walls that can be converted, or if there is a different way of creating storage that could make better use of space.

If you have made these checks and are still sure that you need to increase your accommodation without moving house, then there are environmental options you need to consider for an extension or loft conversion. It is important to note that Listed Buildings are subject to more stringent planning constraints.

#### Design considerations

Position extensions so that they do not cut out natural sunlight and daylight to the rest of the house or your neighbours' homes. This is an important issue for

planning permission, as are windows: they should not overlook neighbours' private facilities. The smaller the external surface area of a building, the less opportunity there is for heat to escape. The exposure of a building to the



Source: © Crown Copyright

greener homes | PART 1

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### Quick Tips

- Plan in advance to make sure you order an optimum amount of material instead of relying on quantity discounts that could leave you with surplus materials you may have to throw away.
- Save money by planning carefully before cutting hardboard, ply, laminates or pipe work to make the best use of the material. This will cut your costs as well as waste produced.
- Ask your suppliers whether they will take back your unused or waste materials, for re-use or responsible disposal.
- Reuse materials and other items where you can recover screws and fasteners, offcuts of timber, fabrics and pipe work, for example. Avoid scraping them, and the possible need to buy more material at a later date and thereby using up more natural resources.

## Improving and decorating your home

### Choosing materials

If you want to make environmentally-sound choices for home maintenance and improvement, choose materials that are:

- Clean or non-polluting
- Healthy (to humans and domestic animals)
- Renewable
- Abundant
- Natural
- Recyclable
- Energy-efficient
- Locally obtained
- Durable
- Designed for efficiency

Coatings and adhesives applied under factory conditions are likely to have been subject to strict environmental regulations so that emissions of harmful fumes and Volatile Organic Compounds will be curbed. Applying coatings under factory conditions is likely to be more efficient than doing the same job at home, uses less coating materials, and cuts cost and environmental impact.

Packaging materials should be, where possible, 'fit for purpose' and not designed largely for display. Ask your retailer whether there are arrangements for the return of used packaging once it has served its purpose.

### The complete picture

Consider the overall impact on the environment.

- Transportation: how far have the materials or products travelled before reaching you? Can you select locally sourced products, to cut back the environmental impact (through carbon emissions) of the transportation involved?

Maintenance and servicing of the product once it is in use: will a wooden or steel product need regular re-painting, at a cost financially and environmentally? Or is there an alternative in plastic, aluminium or stainless steel, where no maintenance may be required for the lifetime of the product?



# Reducing carbon emissions through...

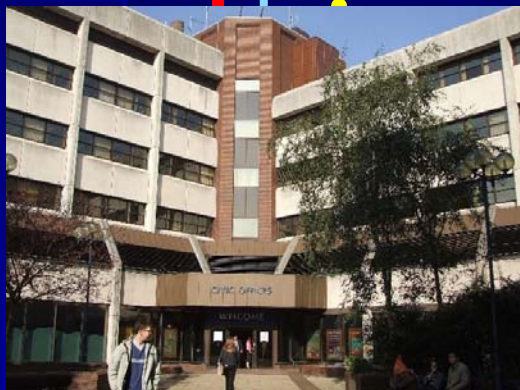
- Community leadership
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Power



Chilled Water



Hot Water



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SOUTHERN ELEVATION  
(facing Iving, Iving Road Side.)

EASTERN ELEVATION  
(facing Westfield Ave./ Working I C.)

# Reducing carbon emissions through...

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# Woking's Climate Neutral Development good practice guide



Published July 2004

# Guidance on 5 target areas of good practice (published July 2004)

## Location and Transport

**Good Practice**

- New development should be located close to local travel destinations (such as the town centre) or where there is good access to public transport.
- New development should be located away from areas liable to flooding, and should not be dependent on transport links, roads, footpaths and public buildings.
- New development should include facilities to support the use of bicycles, such as the charging of electric vehicles from green electricity sources and measures to reduce private car use.

**Background**

Location of new development, its use and design

Development should be located in areas that are accessible by public transport, walking and cycling. It should be located away from areas liable to flooding, and should not be dependent on transport links, roads, footpaths and public buildings.

New development should include facilities to support the use of bicycles, such as the charging of electric vehicles from green electricity sources and measures to reduce private car use.

**CLIMATE NEUTRAL DEVELOPMENT**  
A good practice guide

## Site Layout and Building Design

**Good Practice**

- The layout of new development should maximise the potential for passive solar gains.
- Site layout should use landscaping and landscaping to help limit heat loss and avoid over-shading of the solar orientation of buildings.
- Design principles should be applied to new buildings, that maximise the capture and use of passive solar energy while avoiding excessive solar gains in summer.
- Site layout and landscaping should provide adequate shade in summer.

**Background**

Passive solar gains can be used to reduce the need for heating in winter and to reduce the need for cooling in summer. This can be achieved by using landscaping and landscaping to help limit heat loss and avoid over-shading of the solar orientation of buildings.

Design principles should be applied to new buildings, that maximise the capture and use of passive solar energy while avoiding excessive solar gains in summer.

Site layout and landscaping should provide adequate shade in summer.

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A good practice guide

## Energy

**Good Practice**

- Technology in common for new development should avoid the use of technologies that have a high embodied energy and a high carbon footprint.
- Buildings in new development should be designed to use energy efficiently by making the most of passive solar gains and local renewable energy.
- The energy requirements of new development should be met through a combination of energy efficiency measures, renewable energy and sustainable energy generation.

**Background**

Technology in common for new development should avoid the use of technologies that have a high embodied energy and a high carbon footprint.

Buildings in new development should be designed to use energy efficiently by making the most of passive solar gains and local renewable energy.

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**CLIMATE NEUTRAL DEVELOPMENT**  
A good practice guide

## Sustainable Drainage Systems

**Good Practice**

- New development should provide appropriate sustainable drainage systems (SuDS) for the disposal of surface water.
- SuDS should be applied within the curtilage of the development site, if this is not possible, developments should contribute towards the cost of off-site SuDS.
- SuDS can be designed to provide anti-flood benefits, such as public amenity and wildlife improvements.
- Where possible, rainwater should be stored for re-use such as irrigation or toilet flushing (see Water Conservation and Recycling).

**Background**

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**CLIMATE NEUTRAL DEVELOPMENT**  
A good practice guide

## Water Conservation and Recycling

**Good Practice**

- New development should include measures to reduce water consumption.
- Facilities for rainwater harvesting and recycling of greywater should be designed into new development.
- An integrated approach to water demand and rainwater disposal combines the benefits of reduced consumption and sustainable water drainage systems (SuDS).

**Background**

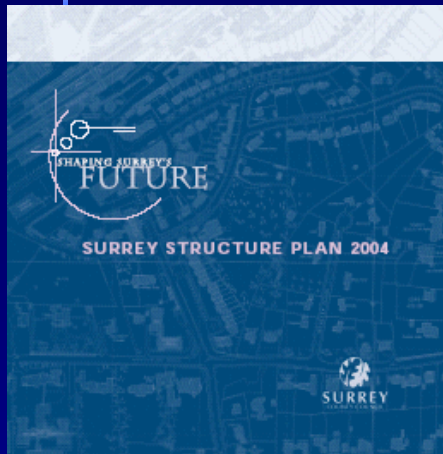
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**CLIMATE NEUTRAL DEVELOPMENT**  
A good practice guide

# Surrey Structure Plan Policy SE2



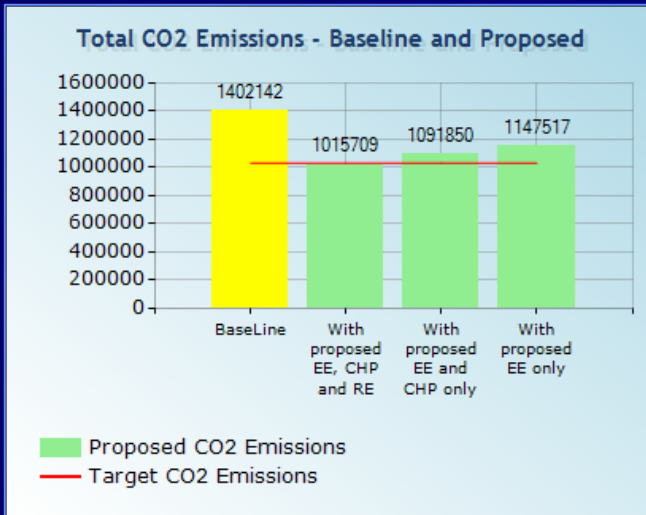
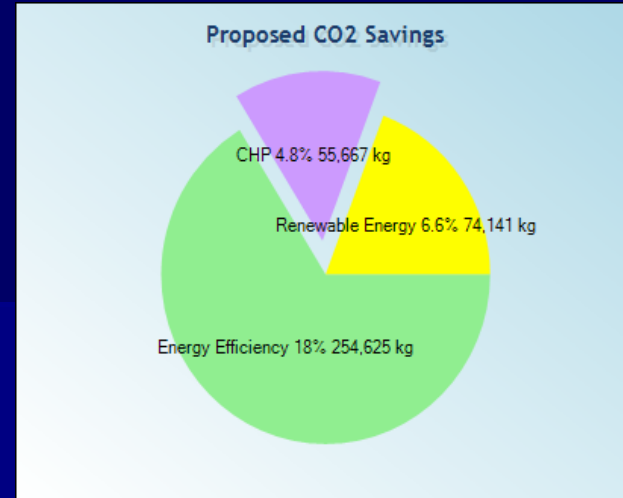
- All development should incorporate best practice energy efficiency measures
- Commercial and residential development designed for a minimum of 10% of the energy requirement is provided by renewable resources.
- Combined heat and power encouraged, and over 5,000 sq m should be the norm.











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# Thameswey

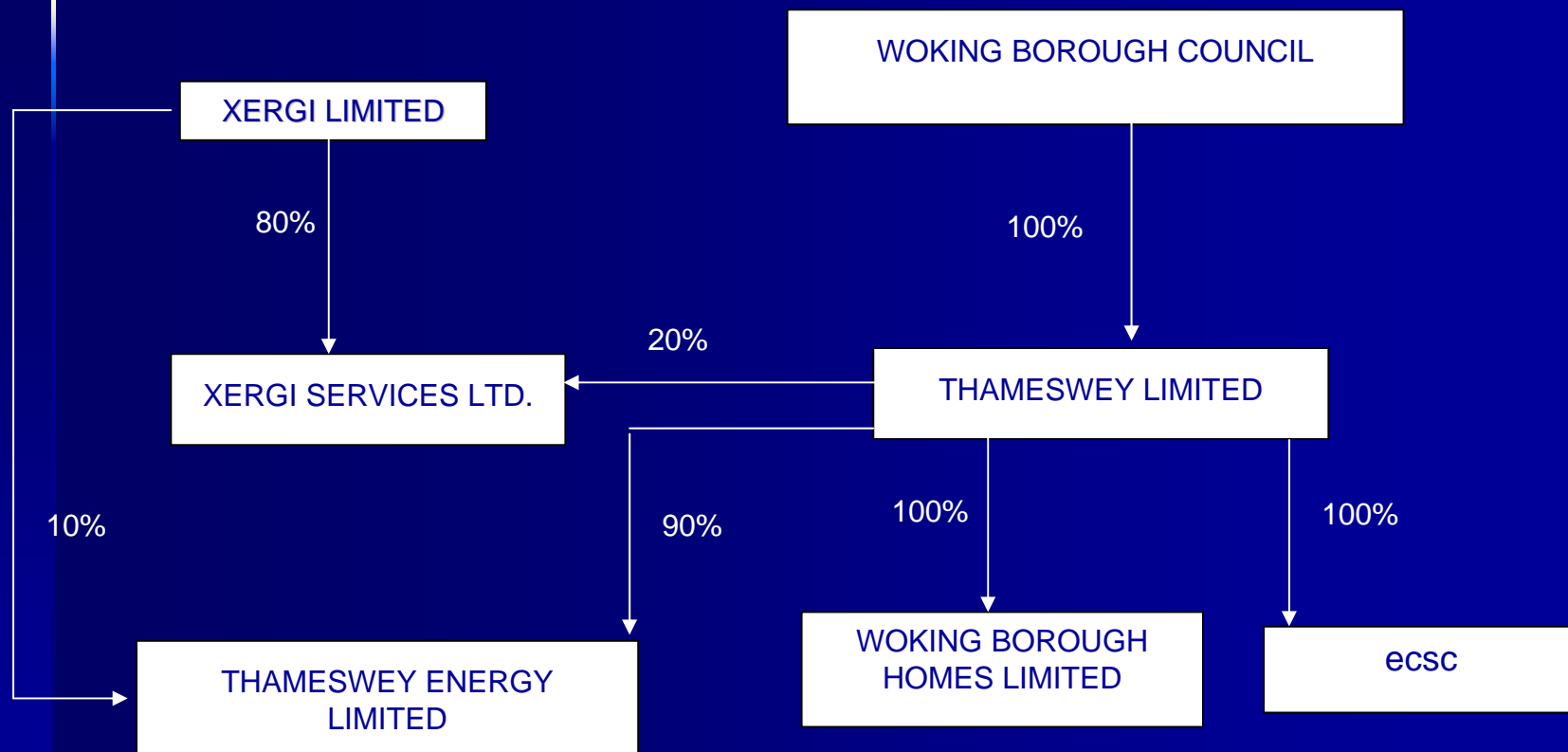


An Energy and Environmental Services Company (EESCO) wholly owned by Woking Borough Council. It enters into public/private joint ventures to deliver energy and environmental projects.



Thameswey Energy Limited (TEL) is a joint venture Energy Services Company or ESCO between Thameswey Limited and its Danish partner contractors, Xergi Ltd.

# Thameswey corporate structure









Management Reports - Microsoft Internet Explorer

Address: http://kbdp.direct.ecsc.org.uk/site/management/def.aub.aspx

My Developments: View All

- Royal Street
- Green Fields
- Oak Street
- Woodburn Road
- Steeleyard Avenue

My Portal Site > C-Plan > Management Area > Management Reports

### Management Reports

Chart A  
Select a report: Total CO2 Emissions

Show Filter Panel

#### Total CO2 Emissions

Scenario	Proposed CO2 Emissions (kg CO2/year)	Target CO2 Emissions (kg CO2/year)
Baseline	~550,000	~550,000
With Energy Efficiency Savings	~400,000	~400,000
With Energy Efficiency and CHP	~320,000	~320,000
With Energy Efficiency, CHP and Renewable Energy	~250,000	~250,000

Legend:   
█ proposed CO2 emissions   
— target CO2 emissions

C-PLAN - My Developments Renewables - Microsoft Internet Explorer

Address: X:\PROJECTS\RECAT\Project Spreadsheets\HTML\CPlan\HTML\06\cplan.html?m...

User: John Smith (Not you? Register here)

My Developments: View All

- Royal Street
- Green Fields
- Oak Street
- Woodburn Road
- Steeleyard Avenue

NEW STATEMENT

Energy Statement

Summary	Energy Efficiency	CHP	Renewables	Emissions Breakdown
Baselines Emissions (2008 Building Regulations) (kg CO2/year)	Total Emissions Target (kg CO2/year)	Total Emissions Reported (kg CO2/year)	Savings Target (kg CO2/year)	Shortfall (kg CO2/year)
100,000	60,000	68,000	40,000 (40%)	48,000 (40%)

Emissions (kg CO2/year)

With proposed energy efficiency only	With proposed energy efficiency and CHP only	With proposed energy efficiency, CHP and renewables	Baseline
85000	75000	55000	100000

Savings from Proposed Measures (kg CO2/year)

Measure	Saving
Renewable Energy	15,000
Energy Efficiency and Passive Design	20,000
CHP	10,000

Renewable Energy Feasibility

Sustainable Energy Measures

Technology	Description	CO2 Saving	% Cost	Feasibility	Planning
Energy Efficiency	EEBPA BP	1234	5%	●	●
CHP	50KW	1234	4%	●	●
Wind	8KW	1234	2%	●	●
Photo-voltaics	2.5KW 16m² panels	1234	1%	●	●
Solar Hot Water	Evacuated tubes 6 panels 3m²	1234	3%	●	●

C-Plan - Microsoft Internet Explorer

Address: http://83.217.172.212/ecsc/website/home02.html

Home For Developers For Local Authorities Case Studies About Us Contact Us

## Welcome to C-Plan

We are excited to announce a new service for developers and local authorities in the UK. C-Plan is nullam consequat. Maecenas interdum euismod massa. Nunc convallis tortor eu ante. Morbi ut sapien. Mauris dictum arcu wise nich. Vestibulum posuere, arcu rutrum congue volutpat, augue felis portitor purus, in mattis tortor diam a tur. Nullam cursus pretium metus. Etiam mattis lacus a elit. Praesent id nisl sit amet justo suscipit iaculis.

**For Developers**  
Integer condimentum feugiat odio. Cras eu erat pharetra nisl inconvallis conmodo.

**For Local Authorities**  
Ousque vel metus. Donec imperdiet, libero et auctor dignissim, ante sapien dignissim du.

C-Plan Login  
   
 LOGIN Forgotten your password?  
 Interested in using C-Plan? Provide us with a couple details and we'll get you up.  
[Register here](#)

### What is C-Plan?

C-Plan is nullam consequat. Maecenas interdum euismod massa. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Morbi fringilla libero et leo.

[VIEW DEMO](#)

### News & Events

10 Feb 2007  
**C-Plan Demo Day**  
 C-Plan is nullam consequat. Maecenas interdum euismod massa. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Morbi fringilla libero et leo.

23 Jan 2007  
**New Version Ready!**  
 C-Plan is nullam consequat. Maecenas interdum euismod massa. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Morbi fringilla libero et leo.

© Energy Centre for Sustainable Communities Unit 327, 30 Great Guildford Street, London SE1 0HS



**PLAN** Carbon Impact Assessment

[C-Plan Home](#) [My Tasks](#) [My Developments](#)



[My Developments](#) > [Royal Street](#)

User:  
**John Smith**  
(Not you? [Register here](#))

[My Developments:](#)  
[View All](#)

[Royal Street](#)

[Green Friars](#)

[Dean Street](#)

[Woodburn Road](#)

[Steelyard Avenue](#)



**Development Details**

Class	Use	Units	Area	Emissions	Savings
C3 Dwellings	Flats	10	508	60,000	20,000
B1 Offices	Natural Ventilation	2	435	40,000	15,000
<b>TOTAL</b>		<b>12</b>		<b>100,000</b>	<b>35,000</b>

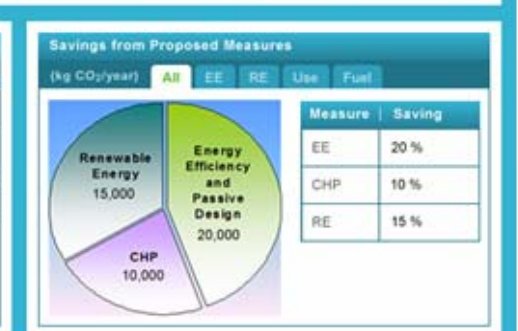
**NEW STATEMENT**

[Energy Statement:](#)  
[Summary](#)  
[Energy Efficiency](#)  
[CHP](#)  
[Renewables](#)  
[Emissions Breakdown](#)

**Energy Statement**

[Summary](#) [Energy Efficiency](#) [CHP](#) [Renewables](#) [Emissions Breakdown](#)

Baselines Emissions (kg CO <sub>2</sub> /year)	Total Emissions (kg CO <sub>2</sub> /year)		Savings (kg CO <sub>2</sub> /year)		Shortfall (kg CO <sub>2</sub> /year)	Offset due £'s
2004 Building Regulations	Target	Proposed	Target	Proposed		
100,000	60,000	60,000	40,000 (40%)	40,000 (40%)	0	0



**Sustainable Energy Measures**

Technology	Description	CO <sub>2</sub> Saving	% Cost	Feasibility	Planning
Energy Efficiency	EEBPH BP	1234	5%	●	●
CHP	50kW	1234	4%	●	●
Wind	6kW	1234	2%	●	●
Photo-voltaics	2.5kW 16m <sup>2</sup> panels	1234	1%	●	●
Solar Hot Water	Evacuated tubes 6 panels 3m <sup>2</sup>	1234	3%	●	●

[woking.gov.uk/climateneutral](http://woking.gov.uk/climateneutral)

[woking.gov.uk/planningenergy](http://woking.gov.uk/planningenergy)

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



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