



Carbon Mapping in association with Oxford Brookes University

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**OXFORD
BROOKES
UNIVERSITY**

The Climate Change Act 2008 puts into statute the UK's targets to reduce carbon dioxide (CO₂) emissions by at least 80% by 2050 and at least 26% by 2020. Within the UK, housing produces some 30% of estimated CO₂ emissions. Local authorities are required to seek reduction in their own carbon emissions and in the emissions within their authority area to meet government targets set out in National Indicators 185 and 186.

The first step towards reducing CO₂ emissions is to obtain a baseline of the current residential carbon emissions in your local authority area. The GeoInformation Group has partnered with Oxford Brookes University to produce the comprehensive Cities Revealed **Carbon Mapping** solution.

Carbon Mapping is a low cost authority-wide baseline model for residential CO₂ emissions and is based on nationally accepted carbon models and takes into account the physical properties of each house. It provides a consistent, robust and accurate mechanism

for obtaining and validating property level CO₂ emission data. The baseline CO₂ emission value (kg CO₂/yr) for every property is based on about 95 separate parameters, including key property information such as age, structural type, height and floor space.

This unique geographic information product is comprised of DECoRuM® (Domestic Energy, Carbon Counting and Carbon Reduction Model), developed by Oxford Brookes

University, and receives key input items from Cities Revealed **Building Class** and **Building Heights** databases. This collective information provides an accurate and consistent baseline model for creating an authority-wide CO₂ reduction plan.

See reverse to find out how this links in with a Thermal Survey.

Bright Ideas

Extract from a Local Authority business case proposal for procurement of the Carbon Mapping solution.

Three key authority work areas, identified by the GIS Manager, which would benefit from the results of a **Carbon Mapping** survey:

1. Strategic Housing Service Action Plan, including Decent Homes Standards
2. Home Energy Conservation and Fuel Poverty Strategy
3. Climate Change Bill 2008 and National Indicators 185, 186, 187 and 188.



Full details of this business case are available on the Cities Revealed website www.citiesrevealed.com

Features

Comprises the Oxford Brookes University DECoRuM (Domestic Energy, Carbon Counting and Carbon Reduction model) model, which receives key input items from Cities Revealed Building Class and Building Heights databases

DECoRuM is a GIS-based domestic energy, carbon-counting and carbon-reduction model, which has been demonstrated and validated by studies of housing in Oxford city

Building Class is a comprehensive and unique residential building property database that identifies property age and structure

Building Heights is a value-added height attribute database for each individual property

DECoRuM utilises the Building Research Establishment Domestic Energy Model (BREDEM-12) linked to Standard Assessment Procedure (SAP) to estimate annual energy use, running costs and CO2 emissions from space heating, water heating, cooking, lights and appliances

About 95 separate parameters are used to produce a highly robust CO2 calculation for each residential property

The outputs are provided in a mapping database and are linked to address records

CO₂ emissions can be aggregated and calculated at the street, postcode, ward or authority level; or any geographic area of the user's choice

Integrates with your existing GIS

Includes one day technical training

Benefits

Cities Revealed **Carbon Mapping** offers distinct advantages over gathering CO₂ emissions from householder surveys, which are subject to low return rates and inconsistencies. The figures produced from householder surveys are often based on basic energy models and as a result can be less effective in tackling CO2 reduction. In addition, authority wide field surveys undertaken by councils are costly and time consuming. **Carbon Mapping** is a complete GIS-ready solution that provides consistent and accurate CO₂ data linked to residential addresses. It offers:

Time and cost savings on site visits by showing the complete picture.

Highly consistent data based on national models and refined with local data.

Accurate data provided by two well-respected organisations, working in partnership.

Authorities the ability to target and monitor CO₂ emissions effectively and quickly.

Applications

Cities Revealed **Carbon Mapping** can be utilised in work towards achieving success in the following National Indicators:

185 CO₂ reduction from Local Authority operations

186 Per capita CO₂ emissions in the LA area

When combined with a **Thermal Survey** the **Carbon Mapping** solution is enhanced and will benefit the work for those departments working towards delivering the following National Indicators:

187 Tackling fuel poverty - people receiving income based benefits living in homes with a low energy efficiency rating

188 Adapting to climate change



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