



## Energy project briefs background

### Project statement

“To identify opportunities for new energy services for London “Able to pay” owner occupiers which could substantially reduce Carbon dioxide emissions”.

### Background

Residential households make up a significant part of total energy demand and CO<sub>2</sub> emissions – about one third in the UK as a whole, and up to 45% in London.<sup>1</sup> Domestic energy use is therefore of major importance to the success of the Climate Change Programme and the longer-term imperative of cutting emission sharply to avoid damaging climate change.

Clearly, reducing energy use through efficiency gains has a crucial role to play. According to the 2003 Energy White Paper: “The cheapest, cleanest and safest way of addressing our energy policy objectives is to use less energy”.<sup>2</sup>

Most domestic emissions do not come from fuel poor households, but from the “fuel rich” or “able-to-pay” sector. In London the non-fuel poor sector (both owner occupied and rented) accounts for 38% of all CO<sub>2</sub> emissions - about 16 million tonnes a year. This represents the great majority of domestic emissions.

The crucial fact about this sector is that they are able to invest in their own energy efficiency and home generation. Unlike the fuel poor, where the task is to identify eligible households and undertake free measures, the aim with the fuel rich is to motivate and support investment by householders themselves.

### Design Council RED team

The Design Council is a publicly funded body tasked with making UK managers the best users of design, and has a track record in making social and economic change through the application of design. The RED team within the Design Council uses design methodology and the creativity of designers to produce new approaches and solutions to intractable problems. Through focusing on users and combining this with expertise from within appropriate fields design provides a space for innovation. Previous projects have included; investigating how the interaction between citizen and state could be redesigned to enhance a sense of nationality; and most recently developing new approaches to the question of public health focusing on chronic condition management and prevention.

The team is led by Robin Murray, and includes a core team of designers and policy experts.

For further information on RED and the work that we are doing please look at our weblog at: <http://www.designcouncil.org.uk/red/>

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<sup>1</sup> Environmental Change Unit (2005) *40% house* Oxford University, p 11; GLA (2004) *Green Light to Clean Power: The Mayor's Energy Strategy* p 13

<sup>2</sup> DTI (2003) *Our Energy future – Creating a low carbon economy* p 32

## Brief C: Insulating Wall Covering

Our initial design research has pointed us to the issue of the insulation of external walls in older homes. A very significant percentage of energy is lost through outside facing walls that have no insulation. This is particularly a problem in Victorian housing – which makes up a large percentage of London’s housing stock, built - without any cavity - from solid brickwork.

Insulation is highly effective on the internal face of a wall. It is only needed on outside adjacent walls – i.e. in a typical room in Victorian terrace, it would often only be the single wall facing the street or back garden that needs attention. The problem is that even the most insulating materials are approx. 2 to 3 inches thick. This causes issues where this insulation layer is mounted next to already present fixed features such as windows, radiators, coricing, light switches and power sockets.

There is much research being carried out into thinner, more effective insulating materials, but it may be many years before this research bears fruit. Our brief is to take a design thinking approach rather than a materials science one. How could internal surface wall insulation with its inherent constraint of depth, be (a) made an attractive, even fashionable, home decoration product, - as popular as wallpaper and (b) work around the visual and practical issues of existing fixed features..?

The RED team are drawn to potential solutions that might question the role and choice of the materials, as well as the surface treatment. Current internal insulation approaches commonly utilise a mineral wool packing, trapped within a plasterboard cavity.

The insulation solution could take a number of possible forms, a few that the RED team have thought of include;

- A quilted effect, with the packing retained by a stretched and buttoned fabric...
- Moulded foam panels, with a 2.5D low relief effects...
- Natural materials like straw or earth...
- Modular tiles, with components that integrate around windows and sockets, over radiators, etc...

The domestic energy agenda is moving out of the realm of the enthusiasts and into mainstream everyday life. As this trend continues, design will have increasing leverage in differentiating one energy technology provider over another. Brand communication, retail, service and product design will each have a greater role to play.

In considering this challenge there are a number of related issues that might be worth thinking about;

- Is there a new, aspirational aesthetic for home energy products?
- Could this have any effect on the household’s patterns of energy consumption behaviour?
- How could this design integrate or co-operate with existing household items or products?
- What enhanced functionality would make people more aware of household CO<sub>2</sub> emissions?
- How might energy utility companies harness this approach to help their customer relationships?
- Is there scope for new retail approaches to selling energy technologies for homes?