

Inquiry into Sustainable Construction and the Green Deal – Rockwool Response

ROCKWOOL® is delighted to have the opportunity to respond to the call for evidence launched by the All Party Parliamentary Group for Excellence in the Built Environment on sustainable construction and the Green Deal.

ROCKWOOL® is the world's largest producer of stone wool insulation and its second largest insulation producer. ROCKWOOL® has 9,300 employees in 40 countries throughout Europe, the Americas and Asia. ROCKWOOL® insulation products are made primarily from renewable volcanic rock and are used in a diverse range of industrial, commercial and residential settings.

ROCKWOOL® has extensive experience of delivering large scale domestic energy efficiency refurbishment schemes across different regions in the UK and it is this experience that we have drawn upon to prepare our response to this call for evidence. This response is based around a number of case studies looking at sustainable energy efficiency refurbishment and the resident experience of the refurbishment, delivering low energy new build housing using innovative construction materials and techniques and a partnership to explore the growth and employment opportunities offered by a transition to a low carbon economy. Also included is an overview of other aspects we believe must be considered to deliver truly sustainable homes.

1. A comprehensive low carbon refurbishment of a 1960's residential development.

The case study may be found [here](#). This is a live project nearing completion and as such the case study will be updated in the future to include additional lessons learnt of which the key points are:

- An education element for residents is essential. Many of the residents in this case study believed the work was being done purely for aesthetic reasons (albeit this is a significant driver for the work) and were unaware of the energy efficiency benefits.
- Certain energy efficiency measures can also improve the thermal comfort, acoustic and fire performance of buildings. Promotion of these additional benefits to consumers is crucial as they are seen as more tangible advantages than preventing climate change and even saving money from energy bills.
- Engagement with the local community was key to the success of this project. The residents felt some ownership of the project and were therefore more accepting about the disturbance of works being carried out. The roll out of a widespread Government awareness and engagement campaign around the Green Deal in addition to commercial activity in this area is essential to creating consumer trust around the Green Deal and the benefits of energy efficiency.
- ROCKWOOL®'s consultancy and expertise was used to ensure the different building elements worked together to create a more energy efficiency building – an outcome which would not have happened had we simply acted as a material supplier. Supply chain integration from project outset to conclusion is fundamentally important to ensuring the right solutions are specified and installed.

High Rise Hope is the first stage of a two part study investigating the social implications of energy efficiency retrofit in large multi-storey tower blocks. It investigates the social impact the works can have on local communities before and during the refurbishment process, with a follow-up study

planned in late 2013. The study was conducted by the London School of Economics and the report may be found [here](#).

2. Growth, investment and employment benefits of the low-carbon transition.

The introduction of the Green Deal and ECO is expected to drive a transformation in the energy efficiency market in the UK and address the energy performance of our existing housing stock. To deliver on this objective, skilled workers are essential to provide high quality installations of energy efficiency measures. With ECO requirements targeting low income areas and vulnerable households, there is a unique opportunity to train and employ local people in these areas which are often affected by a lack of such opportunities and long term unemployment.

The case study is attached as a Word document (it has not yet been formally published) and is an example of an innovative partnership using the delivery of energy efficiency measures in addressing social issues such as reducing fuel poverty, engaging hard to reach households and providing training and job opportunities for the long term unemployed. The Welsh Government is developing a housing strategy which has at its heart these social objectives alongside the purely housing related objectives. Integration of energy efficiency related policies such as introducing consequential improvements into building regulations and linking this closely to the Green Deal by, for example, requiring a Green Deal assessment as a consequence of undertaking controlled works with requirements to undertake some or all cost effective measures for larger works would act towards achieving these social aims by driving demand for the Green Deal thus securing the employment of skilled installers (and also ensuring schemes such as the Insulation Partnership can continue to provide training to meet demand) and bringing about economies of scale in the installation of energy efficiency measures which would allow more widespread ECO delivery to prevent fuel poverty amongst the most vulnerable households.

3. Low energy four bedroom detached home using innovative construction materials and techniques

As the energy performance standards for new domestic buildings move towards zero carbon, construction materials and techniques will have to adapt to deliver these high performance homes.

ROCKWOOL® has developed ROCKSHELL® – a low energy exterior load bearing wall system - to provide the market with a highly energy efficient wall system which also increases the speed of build.

Constructed of I-shaped steel profiles encompassed in ROCKWOOL® insulation and an OSB lining on the inside, ROCKSHELL® is Passivhaus certified and achieves a typical U-Value of 0.143W/m²K (far superior to traditional techniques with the same wall thickness) and generates virtually no waste on-site. ROCKSHELL® is delivered to site in kit form and can be constructed without specialist equipment and integrates seamlessly with other standard building components.

ROCKSHELL® has been recognised by the Construction Products Association in its annual Innovation & Achievement report. The Construction Products Innovation & Achievement (CPIA) report features new products which can demonstrate innovation. A copy of the report may be found [here](#).

4. Other issues key to the delivery of sustainable homes

When designing new housing, or planning an energy efficiency refurbishment of existing housing, key building performance criteria such as the acoustic environment, fire safety, embodied environmental impact, end-of-life considerations, etc should be recognised in a more holistic way early in the design process. These other aspects have a significant impact on the sustainability of the works and on the occupiers of the buildings.

The health impact of persistent noise exposure includes sleep disturbance, cardiovascular effects and damage to work and school performance. Urban environments are getting noisier and this will impact on people's enjoyment of their homes and long term health unless action is taken to tackle the issue and create quieter, healthier and happier homes. Certain insulation materials, such as ROCKWOOL®, can reduce the level of noise infiltration into a building from its surroundings. When carrying out an energy efficiency refurbishment, choosing an insulation material which provides acoustic protection will lead to a more comfortable home environment. Failure to take account of acoustic performance at this stage misses a crucial opportunity to make a tangible difference to a household suffering from persistent noise ingress from their surroundings.

Fire in buildings can have significant detrimental effects on all three pillars of sustainability – environment, social and economic. The environmental effects are caused by water run-off, soot ash and smoke as well as the potential loss of the resources used to construct the buildings and the resource impacts of having to repair and rebuild damaged properties. The social impacts include the potential for loss of life or serious injury, trauma and stress of losing a home or place of employment and the long term health effects of smoke inhalation. The economic issues include the cost of repairing and rebuilding damaged buildings, increasing insurance premiums, disruption of transport systems and the cost of replacing goods destroyed or damaged by the fire.

Well insulated buildings can lead to rapid temperature rises when a fire breaks out. Increasing the energy efficiency of buildings can increase the risk depending on the choice of materials used. The installed measures may increase the amount of combustible materials within a building which can generate toxic smoke in the event of a fire. It is often the smoke from building materials that causes most damage to property and hazard to life. Improved air tightness means no natural exhaust of smoke and toxic gases generated during a fire. There are also fire risks during construction and refurbishment when insulation materials are exposed. A report is attached detailing an arson attack on a building on the Toryglen estate in Glasgow that had an energy efficiency retrofit. While there was extensive damage to the lobby area of the building where the fire began, the non-combustible ROCKWOOL® insulation fitted to the external wall did not allow the fire to spread across the facade of the building.

The introduction of compulsory CE marking for building products in July 2013 places a legal requirement on building product manufacturers to place a reaction to fire and smoke classification as a label on the product. Simple, digestible guidance from the Government on the smoke properties of different construction materials would assist developers, architects and homeowners to make informed choices about the products used when improving the energy efficiency of their homes.

5. Integration of energy efficiency related policy

The recent Energy Efficiency Strategy announced by the Energy Efficiency Deployment Office included an action to ensure energy efficiency conditionality was considered in all energy related

policy areas. This action has the potential to significantly drive uptake of energy efficiency measures by ensuring all policy levers support each other to achieve the common goal – to reduce energy consumption particularly from fossil fuel sources. Implementation of this action has already been seen within the consultation for the Domestic Renewable Heat Incentive scheme which proposes that homeowners who wish to claim the incentive must first ensure all cost effective energy efficiency measures are installed so that public funds are not used to subsidise wasted heat from inefficient homes.

We believe this integration of policy areas must also apply across different Government departments where policy impacts on the energy performance of buildings. For example, Part L of the Building Regulations has the potential to deliver significant numbers of energy efficiency refurbishments by putting in place requirements relating to energy efficiency when other works are being carried out on a building. The existence of the Green Deal offers a means to assess what works are suitable for the property and what measures would be cost effective so as not to impose unduly burdensome requirements on homeowners. The Green Deal and ECO can also provide a means of meeting the up –front costs of such refurbishments to minimise the impact on homeowners wishing to carry out improvement works on their home such as building an extension or converting a loft or integral garage.