

Local Government News



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March 2019

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The UK's greenest Victorian homes

Europe's first Passivhaus EnerPHit Plus homes have opened in Manchester. Laura Sharman finds out how councils can refurbish their own heritage properties to this demanding standard.

While the Government could be accused of putting green buildings on the back burner - who can forget the scrapping of the zero carbon homes policy in 2015 - councils certainly haven't sat on their laurels when it comes to improving the energy efficiency of their housing stock.

Councils across the country have already embraced Passive House with Norwich and Exeter both launching large scale social housing schemes.

However, will the same be said about Passivhaus EnerPHit Plus, the world's toughest performance set by the renowned German Passivhaus Institute?

While no-one is arguing that achieving this demanding standard will be easy for local authorities, a new scheme in Manchester has shown what is possible. The buildings will outperform 99.9% of new builds through their use of Nobel-prize winning super material graphene and other world first technologies.

Renovated by eco consultants Ecospheric, the buildings require no central heating and will generate more power than they use so occupants can sell excess electricity back to the national grid.

'Period semi-detached properties such as those found on Zetland Road represent a



significant portion of the UK's housing stock, yet they are one of the trickiest formats to upgrade,' said Kit Knowles, managing director of Ecospheric.

'Whilst many case studies can be found on high performance new builds and there are a number of well-known solutions for mid/late twentieth century properties, there is very little guidance or help to be found out there for the eight million pre 1930's properties.

'We wanted to show how a Victorian property could be upgraded to remain comfortable and warm year round without a central heating system and without compromising its heritage.'

Photovoltaic (PV) panels on the roof will power the homes' lighting and appliances, as well as heating the hot water tank which is the first in the world to have a thermocline control. A vapour control membrane is also hidden in the roof build up to provide an airtight barrier. The wooden external cladding is 'pre-fossilised' so it's resistant to rot and UV degradation, while the copper guttering and downpipes are expected to last over 100 years.

Over the next ten years, the properties are expected to save £50,000 through zero energy bills and minimal maintenance requirements.

Although Knowles admits that the cost of refurbishing properties to this standard is more than typical retrofits, this doesn't need to be a barrier to local government.

'The additional cost of achieving Passive House certification for new builds has been

demonstrated to be 15% on average,' he explains. 'There have been two large scale new build social housing schemes - one in Essex and one in Norwich - that have produced Passive House certified solutions at the same cost they would normally spend per unit.'

He adds: 'In the coming years, Ecospheric will be trying to answer big questions about cost and quality associated with a phased project. We hope to even develop solutions that enable the householder to reside in the building during the process, in order to break down the barriers to widespread retrofit.'

Knowles also offers the following advice to councils looking to bring their properties up to Passivhaus Enerphit Plus: 'Passive House new build is absolutely doable on budget for councils and RSL's. Blocks of flats can also be refurbished to passive house standard with attractive lifetime costings. EnerPHit for individual houses is a bit more challenging. A realistic approach would be to piggyback onto VOID programs. Anyone managing large numbers of low value housing have typically well-funded and rigorous programs of work that take place between tenants: a general refresh of the building that may include new kitchen, bathroom, boiler and many general repairs.

'There are so many quick wins and no brainers that can be slotted into this program of works. The average 15 day program can see new ventilation solutions and other M&E reforms transform building performance.' ■