The Retrofit challenge: how existing buildings are the ‘elephant in the room' and the factors influencing the lack of progress in the retrofit industry

Thought leadership piece written by Glen Irwin, MEP & Sustainability Manager at Stepnell on behalf of the Built Environment Hub

Any building professionals who have the basic ability to do a few ‘back of an envelope' calculations will have worked out where the vast majority of carbon emissions emanate from in buildings: the existing stock. Even in a building boom the existing stock is only replaced at the rate of around 2% year on year. It doesn't take a genius to work out that the existing stock is a massive issue as the vast majority of these properties will be with us way beyond our 2050 80% carbon reduction target - according to the Carbon Trust: ‘approximately 60% of the buildings that will be in use in 2050 have already been built today'.

So, why the lack of action in improving the existing stock? Well, having looked into this for the last 10 years or so, the lack of hard drivers remains the same. In new build there are so many ‘carrots and sticks' at play: constantly ramping up carbon restrictions with Building Regs Part L being the most dominant. It is easy to concentrate on the new because it is much easier to start afresh, and this is what the legislators can really get their teeth into. But many of us live and work in old buildings, without much control on how much energy we use to heat, light, ventilate and cool those buildings - provided we keep paying the energy bills.

When challenging landlords and developers about the prospect of refurbishing old buildings, the immediate question of ‘how much' is quickly rebuffed with - ‘that doesn't stack up with my rental returns' or ‘the end product won't sell for enough to make a profit'. It's simple economics to any business person. ‘The Green Deal' launched in Jan 2013 was meant to unlock masses of potential in low carbon refurbishment, but that failed for the same reason - the numbers don't stack up. So we often see legislation as one of the few means by which the playing field is levelled - to a higher level.

So what might change in the future to start the huge transformation of the existing stock in the kind of numbers which will actually make an impact on our national carbon emissions? Well there are signs of some new legislative drivers in the form of the Energy Savings Opportunity Scheme (ESOS) and the Energy Act 2011. The ESOS centres around energy audits for medium to large organisations, and these need to be in place by early December this year. But feedback from the few assessors around at present is that firms just see this as another set of forms to fill in and to ignore. At best maybe 10% of firms will actually do anything on the back of these energy audits. However, the Energy Act potentially has more teeth, with the current proposal being that from April 2018 this will prevent any property to be sold or let if it doesn't have a minimum ‘E' rated EPC - always assuming a change of Government doesn't overturn the whole thing. One estimate suggests that of those commercial properties that actually have an EPC, around 20% have an ‘F' or ‘G' rating.

So if this legislation does come in then we will either see a massive explosion in the demand for refurbishment or we will see a lot of empty buildings awaiting demolition. This has two knock-on effects - the rental and buyer's market goes up generally, as this flushing out of the cheap end of the market increases demand further up the quality rankings. But it could also cause some companies to go out of business if they can't find the capital to improve their stock. This is where the Green Investment Bank should be doing it's thing in a capital starved economy. A check of their website shows that the vast majority of these funds are being put into worthy but big money grabbing projects such as waste to energy, biopower, industrial scale and large offshore wind projects - with only a few normal building refurbishments being

supported. Maybe this is because the demand isn't there yet, but come April 2018 it certainly will be. I'm not sure how much money they have to loan, but it is likely that the Green Investment Bank won't be able to finance a tidal wave of demand for low interest rate loans to support refurbishment on a national scale. So the question remains: where are doubtless billions of pounds coming from? Perhaps the economists out there can come up with some answers, but my guess is it has to come from everyone ultimately.

Technology is unlikely to be the biggest hurdle to refurbishment. There are plenty of new developments out there in terms of insulating buildings (outside is better than inside for a number of reasons), efficient heating options, high performance glass and films, and the big one being new lighting technologies. Designer capability isn't the real issue, as there are plenty of consultants out there poised to tackle the challenge, and contractors certainly have the keenness to do refurbishment work.

As with most things, it comes down to money, and, until building owners and tenants are forced to pay more, then the refurbishment market will remain limited to those with altruistic ambitions to do their bit for the environment. Interestingly, the recent slight fall in energy bills is probably making the focus drop further down the boardroom agenda. The unfortunate consequence of falling energy bills is that payback periods become even more extended.

But new legislation is not the only driver - corporate morality and simple economics of operational energy costs can play a part, which is why we should support initiatives to bring in Voluntary Display Energy Certificates (VolDECs), which offer more reliable clues as to a building's efficiency than EPCs. Check out the National Energy Foundations VolDECs initiative to read more: http://www.nef.org.uk/service/search/result/voldecs-voluntary-display-energy-certificates

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