



The darkest hour is just before the dawn – the Green Deal is upon us

The new energy company obligation is likely to lead to a substantial increase in solid wall insulation installations, particularly in social housing, and the structure of the obligation puts pressure on providers to deliver this as cheaply as possible. David White warns that this pressure, combined with lack of understanding of critical issues such as thermal bridging and ventilation, could lead to wasteful or even dangerous installations. However, if the sector takes the opportunity to share the knowledge we do have, and, crucially, to go on learning, the outlook could be a lot better.

As I sit here writing this article, the much-heralded, if not necessarily loved, Green Deal is all of two days old. In some ways, it is a relief to see the Green Deal actually up and running, as it means we can stop speculating as to what might happen and see what it looks like in reality.

For better or worse, the Green Deal/ECO is going to be one of the few sources of funding for domestic energy efficiency measures in the UK, but I came away from this year's AECB annual conference – where I'd presented on the Green Deal (see www.aecb.net/PDFs/conference12/green-deal-David_White.pdf) – with the distinct impression that AECB members are none too keen on the Green Deal, to say the least, and are rather hoping it will go away! I personally view this is a cause for concern, as we have the knowledge and experience that could make a real difference to the quality of the measures that will be installed under the Green Deal.

This brings me on to my current preoccupation – the fact that we're about to embark on a mass field trial of solid wall insulation (SWI) in the UK, the results of which will become clear in, oh, say ten years' time. SWI will be a major focus of the Green Deal, as the Government has established a new obligation on energy companies (the ECO) to finance measures that it would be difficult to finance from energy savings alone. Prominent among these measures is solid wall (and hard-to-treat cavity wall) insulation.

Having spent a considerable amount of time digging around in the detail of the Impact Assessment that was published alongside the Government's consultation response in June, it's been instructive to look at where DECC sees the market for solid wall insulation over the next decade.

Although the numbers are heavily caveated, DECC's central estimate is for just under a million solid wall properties to be insulated by 2022, with installation rates predicted to increase from the current 20,000 per year to 100,000 per year by 2015^[1]

DECC also provides a split of these expected installations between social housing, the private rented sector and owner-occupiers – see chart below.

If this estimate proves to be correct, then some 43% of solid wall properties in the social housing sector will have been insulated by 2022, along with 23% of those in the private rented sector and just 5% of those with owner occupiers.

There are plenty of reasons to be concerned about this low level of ambition, particularly amongst owner occupiers. However, having seen some of the SWI schemes that have been completed under CESP^[1], my main worry relates to the social housing sector, as this will see the highest level of activity over the next ten years in relative terms.

All SWI installations under the Green Deal will require ECO subsidy in order to meet the 'Golden Rule' and roughly 60% of the ECO must be met by the delivery of solid wall or hard-to-treat cavity wall insulation, delivered as part of a package of measures.

As ECO is a carbon obligation on the big energy suppliers, requiring them to deliver a certain level of carbon savings — as opposed to setting aside a finite amount of money — it would be reasonable to assume that the energy companies will wish to deliver these carbon savings as cheaply as possible. So far as SWI is concerned, this means undertaking large, multi-property schemes in order to achieve lower unit costs. Using social housing as the core for these projects has a number of attractions for Green Deal Providers, not least because social landlords have access to sources of match funding, such as ERDF, which could potentially reduce the level of ECO subsidy required.

Beyond this, the only way to achieve lower costs is by lowering specifications, for example by limiting the amount of detailing, e.g. not insulating lintels and cills, and using cheaper, but unsustainable and impermeable, petroleum based products.

A typical example of SWI I've seen being installed recently was in some small solid wall terraced properties that were being externally insulated as part of a CESP project. These properties had a substantial bay window feature, covering at least a third of the front façade of the property, which

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had been left completely uninsulated, resulting in a large thermal bridge and thus providing an escape route for heat and which could also present a condensation risk.

Added to this, the pre-existing airbricks in the walls, of which there were several, had been left open, which is likely to result in significant uncontrolled ventilation and ongoing excessive heat loss. The net effect, I fear, is that the property will be hardly any warmer or any cheaper to heat, and there will be virtually no energy savings, despite the installation of several thousand pounds worth of insulation.

Moving on to internal wall insulation (IWI), the issue of interstitial condensation is a serious cause for concern, not least because it can result in significant damage to both the property and the health of its inhabitants. It's worth noting here that DECC estimates that around three-quarters of the SWI installed under the Green Deal will be internal^[3], presumably because of the predominance of solid wall residential properties in central London, the majority of which are in conservation areas.

Given this estimate, it's also interesting to note that Green Deal Providers are required to provide 25 year buildings cover for consequential damage when installing SWI, which might concentrate minds when Green Deal Providers and contractors begin to contemplate their vulnerability to future litigation arising from low spec SWI. They certainly ought to be mindful of jumping in and installing lots of SWI without having a good understanding of the technical issues around it.

The airbrick and IWI issues are both linked to ensuring that properties that have SWI installed are provided with adequate, controlled ventilation. This one really gives me cause for concern, as this issue does not seem to be widely appreciated or understood by installers. Because of the way ECO works (essentially on cost per lifetime tonne of carbon saved), my fear is that ventilation will not be adequately addressed.

Passive stack ventilation, positive input ventilation and wet room single-room heat recovery all have their proponents, but so far as I've been able to ascertain, there is no real consensus amongst retrofit professionals as regards best practice, beyond the fact that adequate, controlled ventilation is needed and that the precise requirements will vary by property type, occupancy and location amongst other things!

But, to return to my example, leaving numerous air bricks in situ (other than those required to ventilate beneath suspended floors), simply can't be the way forward if we are to achieve the deep reductions in carbon emissions required to meet the UK's statutory targets. Yet the national syllabus for training Green Deal Assessors requires exactly this – they must be taught about the “need to maintain and protect all ventilation routes through a wall for air bricks, vents and flues” when considering external wall insulation.^[4] Surely a more nuanced approach is needed?

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If assessment of ventilation and other requirements on a house-by-house basis isn't feasible, given the costs involved, what are we going to do? What would be lovely to see is the trialling of different solutions in the pilot SWI projects that the Green Deal Providers are likely to be undertaking in 2013, with good quality monitoring followed up with dissemination of results, and the development, refinement and enforcement of best practice specifications.

On this front, it has been heartening to see the recent publication of the Sustainable Traditional Building Alliance's report, '*Responsible Retrofit of Traditional Buildings*' [5], which was funded by DECC and calls for precisely this approach. One can only hope that DECC heeds the STBA's warning and moves to fund the necessary research.

In the meantime, I'd urge you to raise these issues with your contacts at local authorities and in the social housing sector whenever you get the opportunity, as Local Authorities and social landlords (RSLs) have the ability to significantly influence the quality of measures installed under the Green Deal. I have been pleasantly surprised when councillors and housing association officers, whom I've spoken to about these issues, have taken them on board and are looking to do something about them, at least within their own sphere of influence.

By raising these issues (and many others beside) and looking to influence specifications, at least at an overall project level, there is an opportunity for us to try and make sure that the SWI and other measures installed under the Green Deal are of the best possible specification, and I'd humbly suggest that the more engaged we are with the Green Deal, the higher the likelihood of achieving some decent outcomes.

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David White worked as a Chartered Accountant for over a decade before deciding it wasn't good for his soul, and left to study for a Masters degree in Renewable Energy in the Built Environment at the Centre for Alternative Technology. During his study, David became interested in the huge challenge of retrofitting the existing housing stock. His MSc thesis examined cost-effective ways to reduce carbon emissions in solid wall terraced properties, including analysis of the potential funding offered by the Green Deal. David currently works as an independent retrofit and renewables consultant in the North West, where he is busy promoting the idea of a not-for-profit Green Deal Provider model.

[1] See DECC's Final Stage Impact Assessment for the Green Deal and Energy Company Obligation, pp.166-167, Table 63 – Uptake of installation measures by year

[2] See http://www.decc.gov.uk/en/content/cms/funding/funding_ops/cesp/cesp.aspx for more information about the Community Energy Saving Programme (CESP)

[3] As for footnote 1.

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[4] See Green Deal Advisor (Domestic) Qualification (Edition One: July 2012), p53 – available at <http://www.assetskills.org/GreenSkills/GDSyllabus/GreenDealSyllabus.aspx>

[5] The STBA's report can be downloaded from

<http://www.building.co.uk/Journals/2012/09/27/x/u/l/RESPONSIBLE-RETROFit.pdf>

Tags: [Green Deal](#), [IWI](#), [solid wall insulation](#), [SWI](#), [the ECO](#)

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