

## [ CONSTRUCTION ]

FRANK  
McDONALD

# Bringing down the house

We failed to build on the property boom to achieve innovation and quality in construction. If we don't start now, we'll pay an even higher price

**W**ITH ALL the construction that took place in Ireland during the boom years, you might have thought we would have developed an export-orientated manufacturing industry that went beyond merely building tens of thousands of houses every year. But, despite all the political rhetoric about promoting innovation and building a "green economy", not a single innovative building product developed here has been submitted for European Technical Approval (ETA) certification so that it could be sold in other EU countries.

According to Jeff Colley, editor of magazine *Construct Ireland*, "one of the less-considered tragedies of the Celtic Tiger years was our failure to use an extraordinary growth to achieve extraordinary, or even minor, innovation in construction".

As he says, most of "the buildings and infrastructure we built were designed poorly, if at all, and were built using the cheapest, quickest methods possible". Think of all the shoebox apartments built by Zoe Developments or our monotonous suburban housing estates.

"Even the imperative behind one of the few innovations to take hold during the boom – the use of timber-frame construction – was speed of construction, so we got mostly sub-standard timber frame, invariably with a blockwork wall externally in any case," Colley says. "The buildings we built and the materials we produced for those buildings were neither fit for purpose in Ireland nor worth selling into other markets." So it's no wonder that this "insular approach" led to little or no innovation in the construction sector.

This was "starkly laid bare", says Colley, by one of the goals set down by the National

Standards Authority of Ireland (NSAI) in its current strategy – to encourage the first ETA issue for an Irish construction product by December 2011 at the latest.

ETA is a pan-European alternative to national *agrément* certificates, enabling innovative construction products to be sold throughout Europe. And although the first ETAs were issued in 1998/99, Ireland is still without a single one in this category some 12 years later.

A rough estimate from the ETA website shows that Germany has issued hundreds of ETA certs; France has issued 200, Spain 120, Austria 100, Belgium 60 and Denmark 35 while "even our Eurosceptic UK neighbours have issued around 70 so far".

"Ireland has none. As a result, not only are we not building here [as a result of the recession], we're not supplying to building projects in other countries. How many lost jobs has that lack of vision cost us, and how much damage to our balance of trade?" asks Colley.

"We absolutely need to understand why the construction industry had such a total collapse when the domestic recession hit – a collapse that could in some part have been avoided if Irish suppliers, builders and designers had enough of a foothold in other markets."

Because we have fallen so far behind other countries, "we're forced to buy the solutions from them. You only have to look at the renewable energy heating market – virtually all the best gear comes from Germany, Austria, Scandinavia, etc, because they seized the initiative".

Colley believes that builders here were disincentivised to innovate, as the authorities accepted "traditional" construction methods while insisting on *agrément* certificates – costing up to €50,000 and taking several years to attain – for innovative techniques.

"Incidentally, when they talk of 'traditional'



**Ghost** of a chance: empty estates abound in Ireland, poorly designed and cheaply constructed. Photograph: Eric Luke

construction, they don't mean wattle and daub, they very much mean masonry cavity wall construction or the shockingly bad nine-inch hollow block construction and insulated plasterboard which abounds in the greater Dublin area."

He is also critical of their approach to energy efficiency. "For example, we've published a series of technical articles over the last two years pointing out the significant health risks posed by dry-lining, an issue that rises exponentially depending on how effective the insulation is.

"Essentially, if dry-lining works too well, it stops heat escaping. A good thing, right? Not necessarily. If the external wall behind the insulation is wet, it creates the perfect conditions for mould growth, leading to potential structural defects and significant health risks.

"We've proven this through the work of green architect Joseph Little, using Wufi, the Fraunhofer Institute's world-leading software. Fraunhofer has just helped the German government to create standards for upgrade, which prevent people from applying too much



dry-lining. The relevant government departments and agencies (SEAI and NSAI) are now listening, and will hopefully change building standards and grants accordingly – although they'll need to be put under pressure to do so as it involves them admitting mistakes."

The SEAI (Sustainable Energy Association of Ireland) in particular should take heed – it has paid out grants for dry-lining over 2,500 homes under the Home Energy Saving scheme alone; in order to qualify for the grant you must insulate to a level that Little has proven to be unsafe (a U-value of 0.27 watts per sq metre).

"How many of those homeowners will be suffering from foul smells, the beginnings of respiratory diseases and the cost of repair work a few years down the line?" asks Colley. "To what extent will that undermine public confidence in energy upgrades? This needs to be nipped in the bud."

In a recent edition of *Construct Ireland*, eco design consultant Xavier Dubuisson warns that grant-aided insulation upgrades and draught-proofing can raise humidity and car-

bon dioxide levels to unsafe levels if efforts are not made to ensure effective ventilation.

"Conventional methods of wall vents and intermittent fans appear to fail to adequately deal with moisture levels in wet rooms," says Dubuisson, former manager of the SEAI Renewable Energy Information Office, the state's public advice body on green energy.

"Retrofitting houses poses a real challenge to indoor air quality as the airtightness of refurbished properties increases," he warns. Yet despite the potential health benefits, energy-efficient ventilation systems are not included in energy upgrade grant programmes.

A study by French ventilation specialists Aereco of a 1950s mid-terrace house in Dublin showed that "smart systems" such as demand control ventilation can improve indoor air quality, giving homeowners a chance to save energy while protecting their health.

"When we're considering energy upgrading a building, we should not only think about the jobs created to carry out the upgrade work itself. We should think about the potential to create jobs manufacturing the technology or

materials that are being installed," Dubuisson says.

"We should think of setting the standards for new construction and upgrade subsidies to such a level that it stimulates innovation . . . If we do that, we'll stand a chance of exporting green skills and technology and turning our balance of trade around."

With the world still at an early stage in the shift to sustainable development, he suggests "we can – with a strong vision from the political system, the business community (yes, including Ibec and the IFA, if they wake up) and the Irish people – rapidly evolve into a sustainable economy. Our possibility to turn things around hangs on one great uncertainty – vision. We need political leaders and senior civil servants who truly understand what Ireland must do. We also need a public sector that is less fearful of innovation".

"Call it Utopian, call it naive, but I believe our need is such that we have to aim as high as possible. I also believe a small country with an entrepreneurial spirit can change direction much more quickly than a big economy can." ■

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