

RISCAuthority at work



Dr Jim Glockling gives his perspective on the fire risks posed by sustainable buildings in the wake of a fire destroying a timber-framed laboratory at the University of Nottingham

AT THE risk of over-milking a subject area close to our hearts, it would be remiss not to revisit the sustainability vs resilience conversation in light of the University of Nottingham fire. While the intention of sustainability is always well meant and actively promoted by government, there seems to be something in this sustainability race that prevents usually clever people asking why things have historically been done in a particular way before condemning those methods as outmoded and antiquated.

As the son of a chemist, I grew up in various university chemistry laboratories and it won't surprise you to know that it's an environment at the higher end of the hazard scale when it comes to fires and explosions, given the novel nature of the work undertaken and the chemicals, equipment and substances used. The history of chemistry itself (alchemy) is strongly associated with fire and explosive events, generally to the detriment of the poor experimenter seeking their fortune.

Perhaps there is an opportunity to learn from history. Post the Falklands War, the Royal Navy undertook a review of its ships' performances in combat and concluded that since World War Two there had been a steady erosion of resilient ship design features, essentially leading to the creation of 'peaceships' rather than war capable 'warships'. Through this 'lessons-learned' process, the navy is now ensuring this is never repeated, but it's probably worth giving thought to whether this is what we are seeing in the adoption of some combustible sustainable building methods in commercial and industrial applications. In a similar vein to Nottingham's chemistry department, I was surprised to see in *Building Magazine* that one of Europe's largest timber frame structures will be a waste-recycling facility – I'd like to say 'what next?', but given the current situation in the waste industry I'm struggling to think of anything that highlights the issues better than that. War is a relatively rare event; fires in buildings are generally rare events; but when these events happen, the savings originally made (monetary and/or environmentally) may seem paltry and ill-considered in the aftermath.

There are of course different ways of thinking about sustainability, many of which need not lead one down a path of heavy combustible material use (grown for structure, or created for high insulating values). Which is more sustainable in the long term: an old fashioned gas guzzling Land Rover that will still be in existence long after I'm gone, or a petrol sipping Smart Car of limited life span that will need remaking many times over to provide the transport period of the Land Rover? In building terms, is the 16th-century cottage, now in its 500th year of existence, more or less sustainable than a modern house with a life-expectancy that may be as short as 50 years? The equations, particularly in respect of raw material sourcing, fuelling and lifetime, are complex and I'm sure the carbon-neutral points vary in accordance with the constraints chosen. The UK masonry industry will, I'm sure, provide evidence to demonstrate appropriate carbon credentials using modern 'concrete tech', negating the need to get worked up about combustible construction products at all.

What is apparent is that combustible building products, particularly wood, seem to be heavily associated with sustainability and that the measurement schemes in place to judge a building's performance, such as BREAM, paint only one picture – it's clearly time for a more balanced marking scheme – perhaps via BIM, as previously reported in my joint article with Kirti Ruikar (*FRM June 2014, 'Staying Sustainable', p47*). We may be some way off hearing Nottingham's vice chancellor announce that the replacement building will be built to nuclear bunker strength and be carbon neutral on the basis of its 5,000-year predicted life span, but surely there is some middle ground that will protect GlaxoSmithKline's investment more responsibly. Until this is decided, I suppose like every student leaving university today, the chemistry department is setting out with a bit of an overdraft to deal with meeting its future zero-carbon ambitions ■

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