

# Holistic Treatment for Holborough

*Editor of HA, Bruce Meehan, visits a housing development in Kent to learn how a Canadian timber frame system is being adapted to UK requirements.*



When winter temperatures can typically remain at -20°C or below for weeks on end, it is easy to understand why Canadian building systems have long been able to offer insulation standards that go far beyond anything constructed to the current Building Regulations in this country.

The BSW Alouette system is in fact just one of half a dozen from the other side of the Atlantic that conform to what they term Super E standards: setting a benchmark requirement of just 1.5 air changes per hour while also insisting on the creation of a healthily ventilated internal environment. And the timber frame solution is proving extremely popular with at least one major UK housebuilder which has been utilising

it on a strikingly successful development in the heart of Kent. The first phase of Berkeley Homes' Holborough scheme saw a total of 147 flats and houses built using the BSW Alouette system. That figure has now passed the 200 mark and the company is benefiting from sales off plan as the attractively styled dwellings are snapped up by the public.

While the storey height panels can be supplied from the Quebec factory in lengths of up to eight metres to offer as few joints as possible, as well as rapid erection times on site, the real secret to the performance is in the attention to detail as the structure is sealed.

BSW's subsidiary company, Framesolve has worked closely with



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*Jerry Quayle, IFC*

the manufacturer, the client and specialist consultancy, IFC, on refining the offering, not just to guarantee its energy performance but also to guard against the risk of fire during the construction phase.

The external Tyvek membrane is overlapped as the buildings are erected while, inside the special polythene vapour barrier is also jointed using a non-hardening acoustic sealant and a batten nailed over the top to compress the overlap. In fact a grid of horizontal and vertical battens – the latter slightly staggered from the line of the 140 mm studs - forms a service zone for pipework and electrics. What is significantly different on Phase II, however, is the consideration that has been given to the principle of compartmentisation as a means of managing fire risk, something the team was working on well before the headline grabbing blaze happened on the St George site in Hendon last autumn.

Geoff Gudge, a director of Framesolve, asserts: “What we have created is an enhancement of what was already basically a good, generally fire safe system.”

Jerry Quayle, from IFC which evaluated the fire risk for the project and helped revise the system specifications, concurs. He says: “What we have done is made it as safe as it possibly can be on an active building site, without stopping that site from operating efficiently.”

Jerry believes that the infamous Hendon fire was so destructive due to the way the construction there was planned and managed. He says: “Timber is not really any more dangerous than most other building materials. Fire is not a timber related problem, it is a construction problem. “The Building Regulations do not handle timber at all well: in fact Approved Document B does not deal with a diminishing substrate – that is to say, timber reduces in cross section during a fire.”

The approach IFC has taken to Holborough Phase II then has been to conduct a full risk assessment of both the site and the individual properties; considering the extent to which each of them is vulnerable to both arson and a fire starting accidentally as the result of the construction process.

This has included looking at the local history in terms of vandalism and the

population's attitude to the development being given permission, and then at such factors as each separate building's position relative to its neighbours and the ability of site staff to monitor them.

A very strict regime has been imposed in terms of storing flammable materials such as loose timber and the fuel for generators. And there is of course a total ban on smoking for the workforce.

The most important change though has been an actual design alteration made to the buildings themselves



*IFC has put the scheme forward for the Fire Safety Engineering award sponsored by Wagner Sprinklers.*

with the immediate creation of compartments as the structure is erected. This has been achieved by facing the party walls with FibreRock boards in the factory so that they are instantly effective as fire walls, meaning that if a blaze starts it can only go upwards and not outwards. The stairwells or common areas, which inevitably create a 'chimney effect', are all protected by the installation of temporary one hour fire doors, which are put in place as soon as the walls are up. Outside openings are also temporarily boarded to prevent unauthorised access and to restrict air movement feeding the flames.

IFC subsequently began the process of inspections and then trained up site personnel. They now video confirmation of such items as the compressible red fire breaks that are inserted into party wall cavities; rather than there just being a tick box log.

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