

# Residential sprinklers not the panacea that some expect

Recently there has been an increasing number of parties calling for compulsory introduction of fire sprinkler systems into all types of buildings and for various reasons, not all of them entirely apparent.

Most recently, a spokesperson for the Chief Fire Officers Association appeared on BBC morning news with some very impressive footage of fires in sprinkler and unsprinklered living rooms, and no one should doubt the upset and devastation that a fire in a domestic environment will cause.

Statistically, you are more likely to die or to be seriously injured in a fire, in your house or flat than in any other type of building. UK Fire Statistics for 2010-2011 indicate that residential fires represent 16% of all fires attended by the fire service, although 79% of all UK fire deaths occur in residential building fires. Furthermore, a study carried out in 2004 also shows that the fire service are called to only 20% of all residential fires, indicating that the other 80% are successfully extinguished by the householder before it could grow to any appreciable size.

It goes without saying that any death is lamentable and must be avoided if possible, but it may be unrealistic to expect to be able to prevent all deaths from fires in the UK. The UK record in this matter is pretty good, when considered in the round. The number of fire deaths in 2010-2011 were the lowest recorded since the 1950's, but we can still do more.

## Are automatic sprinklers the answer?

Well, a recent report by the Building Research Establishment (BRE) sheds an interesting glow on this whole question.

Their report, issued on 27<sup>th</sup> April this year, titled 'Cost benefit analysis of residential sprinklers for Wales' makes fascinating reading.

The Welsh government recently enacted a piece of legislation, the 'Domestic Fire Safety (Wales) Measure 2011', which will be introduced in September 2013. This policy will regulate the installation of sprinklers in new and converted residential accommodation. The accommodation types that are covered by this Measure are houses, purpose-built and converted flats, houses of multiple occupation (HMO), residential care homes, residential colleges, boarding schools and student halls of residence.

The BRE, taking into account all of the costs and savings, including the potential reduction in fire deaths, injuries and property damage, have arrived at the following conclusions:

- Fitting sprinklers in all new residential buildings in Wales is not cost effective.
- Sprinklers are cost effective in new care homes and halls of residence.
- Sprinklers may be marginally cost effective (i.e. the proof is not statistically significant) in new blocks of flats, blocks of sheltered accommodation and 'traditional' HMO's.
- Sprinklers are not cost effective in new single occupancy houses, shared houses, hostels and sheltered accommodation.



## So where does this leave us?

Putting aside the emotive images that are often used in discussions of this sort, one could speculate on two obvious benefits of installing sprinklers in new homes:

- Fire authorities will be able to reduce the number and size of fire stations and fire fighting forces. For example, instead of having two fire engines arriving at a house fire within, say 8 minutes, they can send one fire engine to a fire in a sprinkler protected house in, maybe 12 minutes.
- Relocating fire stations to, perhaps, an industrial estate on the outskirts of a town can be a cheaper option than to maintain a fire station in the middle of a residential conurbation. Freeing up this land for redevelopment may provide a useful source of income.

There can be no argument that, under the right circumstances, automatic sprinklers can significantly reduce the damage that a fire may cause and can, in some cases, contribute to saving lives.

The engineers at Cundall Fire Engineering promote the use sprinkler systems where they can be shown to provide a real benefit to our clients. Including these systems into the more innovative or complicated buildings can provide a very effective way to achieve flexibility and efficiency in the design, but the cost must be weighed up against the benefits otherwise it can become cost prohibitive.