Fire sprinklers in care and nursing homes - the changing attitude to life safety and evacuation techniques

Did you know?
There are over 800 fires, on average, in premises providing care for the elderly in the UK every year and on average 5 people die and over 90 are injured. Primary causes of fires in care homes are faulty electrical appliances or wiring, cooking facilities, smoking related combustion, misuse of equipment and deliberate arson.

Disaster in Scotland
In 2003 a terrible fire in a Scottish care home brought a toll of 13 lives lost as elderly residents could not be evacuated as fire spread through that property. So horrified were the public in Scotland at the scale of the carnage that the Scottish parliament was moved to legislate and in 2005 the bill demanding that all new nursing and care homes must install full sprinkler systems, and all extensions to existing must also be protected, was passed.

Legislation & Building Regulations in England and Wales
A similar proposal was drafted for the House of Commons but following lobbying from developers and others intent on minimizing costs on construction a watered down version, in which it is not mandatory to install sprinklers, was approved. In April 2007 part B of the building regulations changed in England and Wales, bringing opportunities for developers to use fire sprinklers as an added life safety system and to offset other costs incurred in the staffing and running of care homes.

What do changes to building regulations and the F.S.O. 2005 mean to operators?
The fire safety order which came into force in October 2006 imposes responsibility on the owner and operators of all care homes. Now operators have to carry out risk assessments and would have to stand up to scrutiny in a court if these risk assessments are proven unsatisfactory resulting in death or serious injury. No longer do operators have the benefit of the sage fire officer (even when a different officer used to visit and move the goalposts!) but now owners have to ensure they are compliant or buy in expertise.

Advantages of having fire sprinklers installed
The application of sprinklers can be used as a trade off against other measures that would be impractical. The application of such compensatory measures might be wider than you think.

For example:- Nationwide Fire Sprinklers installed a system in Leeds in 2007 where, in consultation with their fire officer, the operator decided that it would be safer to leave the severely disabled occupants in place in the event of a fire and evacuate only away from areas directly involved with the incident. The fire officer agreed that with the staffing levels, particularly at night, it would simply be impossible to evacuate all the occupants in a safe timescale. So with a choice of increasing staffing levels, to cope with evacuation, or investing in sprinklers it became clear that sprinklers would be quickly paid for by staff cost savings, in fact within 3 years in this instance.

At a similar project in Windsor, but with occupancy of 90 beds, the operator has installed sprinklers in their new build to reduce staffing costs overnight by 50%. They say they will save £480,000 over a 25 year life cycle in staff - costs set against £80,000 for the sprinkler system.

Other cost savings available by using sprinklers include increased compartmentation areas, increased travel distances between compartments with a reduction in lobbies and fire door screens, phased or delayed evacuation (as outlined in the example above).

How do sprinklers work?
Either connected to the town mains or to a reservoir tank and a fire pump interconnecting pipe runs feed individual sprinklers. There is a suitable standard for water based systems but not for "mist systems" which are more suited to offshore applications such as oil rigs.
The sprinklers are concealed in the floor or ceiling void above the area to be protected and only a discreet metal cover plate is seen on the ceiling. Each sprinkler is individually activated by heat only (not by smoke). A sustained fire passing heat of around 68 degrees centigrade over the sprinkler head is needed to activate it. In the event of a fire only sprinklers in the immediate area of the fire will activate and usually between one and four will actually set off.


The discreet concealed sprinkler head

Typically a sprinkler will put about 60 litres of water out into a fire, 80% of which evaporates as it extinguishes the fire. It is usual for the fire brigade to be in attendance within around 10 minutes or less. About 120 litres of water will be left but the fire will be out. *The rest of the premises will be unaffected and the operator can continue to provide care for their residents*

Compare this to an unchecked fire, building for 10 minutes, after 6 minutes the area will have flashed over (explosive combustion) and may well have spread beyond the immediate area causing extensive smoke and heat damage throughout the premises. The fire brigade will be faced with a fierce and threatening fire which may take them 20 minutes and 24,000 litres of water to get under control. *The premises will be badly smoke damaged, waterlogged and the area around the fire destroyed. The property is likely to be unusable before extensive costly and lengthy rebuilding and refurbishment.*

What are the costs involved?
Of course no two properties are the same, but as a guide, a 90 bedroom unit might cost around £80,000. A10 bedroom unit around £13,000. A "retro fit" into an existing property will cost more than a new installation and the provision of a suitable fire fighting water supply needs careful consideration. Nationwide Fire Sprinklers are currently installing a retro fit system for Swindon Town Council in a 70 bed care home for around £45,000.00.

Your insurer may well discount your renewal of premium, and you can reduce staffing levels to recover the full installation costs within only a relatively short timeframe.

Finally think of the benefits for you the operator:

- Minimal risk of loss of business following a fire
- Demonstration of proactive approach to risk of fire
- Huge long term staff cost savings
- Additional quality of safe surroundings for *residents staff and visitors*
- Almost elimination of the potential for loss of life and consequential investigation into the culpability of the operators and owners

What to do next
Call us for an informal discussion about your premises on 0800 028 9911.

We install systems to care home operators throughout the UK from small single unit operators, specialist children and disabled care homes and hospices through to the major players with multi-million turnovers and in excess of 120 homes each.

We will give you the same level of service no matter who you are and our existing operator customers will be pleased to give you a glowing account of our company.