

Groundbreaking legislation giving the go-ahead for sprinklers in all new homes in Wales is expected to get approval in the coming weeks. **Ann Jones** reflects on the journey



Home journey

AFTER SPENDING almost 30 years in the fire and rescue service and serving as a national official of the Fire Brigades Union (FBU), I have seen at first hand the personal and financial devastation that fire can cause. It is for this reason that I have campaigned extensively on fire safety issues since being elected as the Labour Assembly Member for the Vale of Clwyd in 1999.

It is against this background that I decided to introduce a backbench proposal to make the installation of sprinkler systems mandatory in all new homes built in Wales. I was able to do this by winning the National Assembly for Wales' first-ever Legislative Competence Order (LCO) ballot, which gives us backbenchers a shot at devolving power from Westminster in a broad range of areas.

The strength of the LCO lies in its simplicity. This clearly defined, narrow Order will save lives in Wales for generations to come – building on the progress we have made in making sprinklers a standard installation in all new schools.

After nearly three years of pushing the LCO through the political process, it is now expected to pass Parliamentary votes and gain Royal assent in the coming weeks, at which stage it will be necessary to introduce an Assembly Measure to enact its objectives.

Moral and technical case

Since introducing the LCO back in June 2007, I have enjoyed incredible support from the National Fire Sprinkler Network, the three fire and rescue services of Wales, the British Automatic Fire Sprinkler Association, the FBU and numerous other organisations in the community. This has helped us create a comprehensive moral and technical case for sprinklers and, with devoted Assembly debates and committee time, we have



had a major public platform. As a result, the Welsh Assembly Government has, along with each political party, given its full support to what is arguably the most important fire safety legislation in modern times.

As all who are interested know, the threat of domestic fire is ubiquitous. We can never fully fire-proof lifestyles, choices and human error, but what we can do – and will do in Wales – is combat fires in the home through automatic suppression. Even though the LCO only applies to new residential premises, it will help prevent many avoidable deaths, which is a strong statement of intent. Politicians in both Wales and Westminster were struck by the fact that, in the UK, no-one has ever died as a result of a fire in a home fitted with sprinklers.

This is just one example of how the whole legislative process is helping raise awareness around what is an often overlooked life-saving device. Fire sprinklers are not new and their effectiveness has been proven around the world, with particularly impressive examples in North America. Despite this, their use is frustratingly uncommon in most residential and many commercial settings – especially in the UK.

Cost issues

It was clear from the outset that legislative bids regarding sprinklers needed to be workable and appealing, in order to help showcase the realistic opportunity that sprinkler systems offer people all over Wales. By targeting new homes and ruling out retro-fitting altogether, the LCO presents a sensible approach that will see sprinklers being phased in and becoming commonplace over a long period of time as new housing stock increases. During this process it is also likely that significant price reductions will come about.

At present, the cost of fire is completely unsustainable. There is no hiding from the fact that fire is costing the UK economy around £7bn every year. As eye-watering as this figure may be, it is worth betting that more indirect costs flow from the ones already included in this estimate. The average cost of a single domestic fire is estimated at £24,900, about £14,600 of which is accounted for by the economic cost of injuries and fatalities and £7,300 is due to property damage.

Sprinklers offer something quite different from smoke alarms or increased investment in the fire and rescue service. We need to ask whether these measures will ever make a serious dent to the financial burden we are currently carrying because they just cannot contain fires before real damage is done.

I know from the continual lobbying that surrounds us politicians that supposed opportunity costs are abundant in health, social services and local government, but they almost always require major up-front investment – sprinklers do not. I am pleased that the sprinkler campaign in England is concentrating on new residential premises as well, because this phased approach is both reasonable and cost-effective. Expert estimates currently tell us that the cost of installation stands at around £1,500 – perhaps less. As more homes are built, major developers will also benefit from economies of scale and, looking further down the line, competition is also very likely to drive prices down.

The estimates above include healthcare costs as a direct consequence of fires, but they do not account for the emotional

“ Sprinklers will be phased in as new housing stock increases, hopefully resulting in significant price reductions ”

suffering and healthcare costs related to firefighter injuries incurred during training. This is another powerful message when one considers the benefits of sprinklers. These devices, which tackle a fire between 0-3 minutes after its inception, can drastically reduce the danger faced by firefighters as blazes are stopped from tearing through buildings. This method of protection presents an opportunity to make the job of a firefighter much safer – making the case all the more compelling.

The economic cost to the fire service itself is also reduced when a brigade attends a fire being tackled by sprinklers. Based on the appliances used, firefighter wages, moves to maintain fire cover and other implications, it is estimated that the average cost borne by the service is around £3,444 for a non-fatal domestic fire. If a sprinkler has activated to quell the fire, this cost drops to around £1,500. The money-saving potential of this LCO increases more and more as new homes are built – particularly welcome in these tough economic times.

Performance data

By far the most comprehensive study of the effectiveness of sprinklers has been carried out in the USA by Scottsdale Fire Department, Arizona. In June 1985, the City of Scottsdale passed an Ordinance that required all new flatted and



commercial structures built after 5 July 1985 to be fitted with a sprinkler system, and all new single-family residences built after 1 January 1986 to be able to accommodate sprinklers.

In 1997, the Rural/Metro Fire Department of Scottsdale published *Saving Lives, Saving Money*, a 10-year study which analysed the impact of the Ordinance. The study examined 109 fires that occurred in premises fitted with sprinklers, 44 of which were residential. It concluded that eight lives were saved over the period as a direct result of the installation of sprinkler systems, four of these in residential properties, and that up to US\$25.4m was saved, based on the total potential loss due to fire in sprinklered residential properties.

This study is the most comprehensive of its kind anywhere in the world. Despite this, we often come up against competing statistics that are based on an extremely limited evidence base. The most significant example is the Building Research Establishment (BRE) report, *Effectiveness of sprinklers in residential premises*, issued in 2006.

The data used in this report was derived mainly from UK commercial sprinkler data, while experience from other countries was largely ignored. In addition to Scottsdale, the Canadian city of Vancouver has for some years required all new residential and commercial properties to be fitted with sprinklers, yet this was not used in the BRE calculations.

The report concluded that residential sprinklers would only be 70% effective in preventing death, 30% in preventing injury and 50% in preventing property damage. By comparison, both Scottsdale and Vancouver quote sprinklers as being 100% effective in preventing death, 85% in preventing injury and 90% in reducing property damage.

Although we are moving some way ahead in Wales, I know that England is benefiting from a growing and highly skilled campaign team that is working to promote the strength of international examples to prove the benefits of sprinklers in residential premises. Indeed, the Chief Fire Officers' Association is encouraging the updating of current research from the BRE report and is also exploring new research for Wales to support a correct impact assessment, leading to better regulation decisions made by any government.

Myth busting

While pursuing my legislative bid, I have campaigned to put right some of the dangerous misconceptions that surround sprinklers. Many people still believe that sprinklers will activate in a slightly overheated kitchen, or simply through a common fault such as smoke alarms falsely activating. This is a real problem because it glosses over the most attractive features of the device. The fact is, you are as likely to see a sprinkler activate without cause as you are to win the lottery jackpot. Data collection over a 30-year period reveals that odds stand at around 16 million to 1. Other facts included in our headline message is that the room temperature needs to reach 68°C before activation can begin, reassuring people that burnt toast would not soak them as they get ready for work.

In order to showcase how a sprinkler works, a live demonstration was carried out directly outside the National Assembly for Wales. At this time, the Committee set up to scrutinise the LCO was still in session, so it was a good



Ann Jones (bottom right) and supporters promoting her LCO for sprinklers

opportunity for the members to see up close the difference this proposal could make. The high-profile event was also attended by ITV News and other media organisations.

South Wales Fire and Rescue Service set up a mock living room in a mobile unit before starting a fire in a waste paper bin. After just 20 seconds or so, the sprinkler kicked into action. The fire was contained to the bin and eventually extinguished entirely, proving how this simple installation can mean the difference between life and death by providing a safe route to escape.

During this time, we also developed the message that sprinklers can 'act as a firefighter in every room of your home, ready and waiting 24/7'. We have benefited from some very positive media coverage in Wales, which I hope can be exploited by campaigners across the UK. When politicians, and the media alike, have stopped to look at this issue, those misconceptions have fallen by the wayside pretty quickly and, when sprinklers are a subtle part of the fixtures and fittings in new Welsh homes, I am confident that more and more people will feel reassured about the protection they offer.

Environmental argument

As well as offering cost-effective benefits, sprinklers can also provide significant environmental savings. When one considers the carbon footprint associated with domestic fires, it seems we have a mountain to climb. During the course of a domestic fire, vast carbon dioxide emissions are created as the smoke-filled air emanates from charred furniture, clothes, electronic equipment and other belongings. This is before one takes into account the impact of efforts taken to tackle a fire.

The Scottsdale study, *Saving Lives, Saving Money*, opens up some interesting points here as well. The report found that, in more than 90% of the recorded incidents, one or two sprinkler heads controlled the fires, and the average amount of water used to suppress each domestic fire was 209 gallons, compared to 3,290 gallons estimated for manual suppression. These figures spoke for themselves during the LCO scrutiny process in Wales and Westminster. They provide an excellent, long-term example of how we can drastically reduce the amount of water used to tackle fires that can be contained before the emergency services arrive.

More recently, FM Global carried out a demonstration based around the environmental savings that sprinkler systems offer with regards to structural repairs. This brought another major saving to the fore: when a sprinkler system contains a fire, the carbon footprint associated with rebuilding a new home is entirely eliminated. Homes are, of course, rebuilt on an *ad hoc* basis after a serious fire, but with the increased use of sprinklers, we can ensure that new homes in Wales will never meet the same fate, thus guaranteeing environmental savings.

Collaboration and completion

My proposal has been through two debates and one committee at the Welsh Assembly Government, the Whitehall clearance stage, the Welsh Affairs Select Committee, and now awaits two votes in the Houses of Parliament before gaining Royal assent.

Each part of this process has concluded favourably and, with the support of the Welsh Assembly successfully secured, I am confident that we can get the LCO approved in a matter of weeks. When this is done, I will be in a position to introduce an Assembly Measure to enact the objectives of the LCO, which only devolves the relevant power.

I have engaged with as many people, agencies and organisations as possible while promoting this legislation, to ensure that the legislation is as robust as possible. It is crucial that the proposal is workable, not only because it affects so many households but because it will affect the reputation of sprinkler systems as campaigns move forward elsewhere.

“As the Assembly Measure stage approaches, details on cost, maintenance and responsibilities will need close attention”

As the Assembly Measure stage approaches, the finer details regarding issues such as cost, maintenance and various responsibilities will need close attention, which is why I have already started engaging with utility companies and the housing sector. If the LCO is successful, a measure could be completed within the next year and would, in doing so, represent a historic breakthrough in fire safety legislation in Britain.

Every person in every new home in Wales will be better protected from fire than ever before. A child will be just as well protected at home as at school. The risk of losing valuable property or even an entire home through fire will be lower than ever before. In a small but significant way, I believe that this will be a great achievement for devolution and will save lives for generations to come ■

Ann Jones AM is the Labour Assembly Member for the Vale of Clwyd in Wales



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