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Llywodraeth Cymru
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Consultation Document

Implementing the Domestic Fire Safety (Wales) Measure 2011

Section 3 – Regulatory Impact Assessment

Date of issue: **25 March 2013**
Action required: Responses by **17 June 2013**

Overview

The Building Regulations, and the associated guidance set out in Approved Documents, seek to ensure buildings meet certain standards for health, safety, welfare, convenience and sustainability.

The Domestic Fire Safety (Wales) Measure 2011 enables Welsh Ministers to introduce regulations which make automatic fire suppression systems compulsory in all new and converted domestic properties.

To implement the Domestic Fire Safety (Wales) Measure 2011, it is the Welsh Government's intention to introduce new Building Regulations and technical guidance relating to the installation of fire suppression systems. This consultation paper sets out the Welsh Government's proposed approach.

How to respond

Consultees are invited to email questionnaire responses to:

enquiries.brconstruction@wales.gsi.gov.uk

Those who prefer to submit a paper copy of their response should send these to:

Building Regulations Consultation
Construction Unit
Housing and Regeneration Directorate
Welsh Government
Rhyd y Car Offices
Merthyr Tydfil
CF48 1UZ

Further information and related documents

Large print, Braille and alternative language versions of this document are available on request.

Contact details

Implementing the Domestic Fire Safety (Wales) Measure 2011 Consultation:

Construction Unit
Welsh Government
Rhyd y Car Offices
Merthyr Tydfil
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email: enquiries.brconstruction@wales.gsi.gov.uk
telephone: 0300 062 8380

Data protection

How the views and information you give us will be used

Any response you send us will be seen in full by Welsh Government staff dealing with the issues which this consultation is about. It may also be seen by other Welsh Government staff to help them plan future consultations.

The Welsh Government intends to publish a summary of the responses to this document. We may also publish responses in full. Normally, the name and address (or part of the address) of the person or organisation who sent the response are published with the response. This helps to show that the consultation was carried out properly. If you do not want your name or address published, please tell us this in writing when you send your response. We will then blank them out.

Names or addresses we blank out might still get published later, though we do not think this would happen very often. The Freedom of Information Act 2000 and the Environmental Information Regulations 2004 allow the public to ask to see information held by many public bodies, including the Welsh Government. This includes information which has not been published. However, the law also allows us to withhold information in some circumstances. If anyone asks to see information we have withheld, we will have to decide whether to release it or not. If someone has asked for their name and address not to be published, that is an important fact we would take into account. However, there might sometimes be important reasons why we would have to reveal someone's name and address, even though they have asked for them not to be published. We would get in touch with the person and ask their views before we finally decided to reveal the information.

Title: Sprinklers in new-build residential premises **Lead Welsh Government department :** Department for Housing and Regeneration	**Impact Assessment (IA)** **Date: March 2013** **Source of intervention:** Domestic **Type of measure:** Secondary Legislation **Contact for enquiries**: Simon Bilsborough

Summary: Intervention and Options

Cost of Preferred (or more likely) Option			
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	
-£190.5m	-£239.3m	-£21.0m	

What is the problem under consideration? Why is government intervention necessary?

The reduction in the number of deaths from fires in the home over the last ten years has been significant. Hard-wired smoke detectors are already compulsory in new residential premises under building regulations and a major Welsh Government investment programme resulted in hard wired detectors being installed in most existing social housing. The introduction of Reduced Ignition Propensity cigarettes in November 2011 is expected to reduce the incidence of fires started by cigarettes and the number of associated fire deaths.

Notwithstanding this progress, the number of deaths and injuries is still too high. On average, over the last 10 years, 17 deaths and 503 injuries have resulted from fires in residential properties each year in Wales.

Appropriately designed and maintained fire suppression systems undoubtedly save lives and prevent injuries, as well as reducing damage from fires. The British Standard sprinkler system is the highest level of protection from fire currently available; there are other systems available, however the evidence of their effectiveness is not strong and the absence of standards makes regulation difficult.

The BRE report indicates the cost benefit analysis case for installing sprinkler systems in new build care homes, halls of residence and potentially for flats, sheltered flats, and traditional houses in multiple occupation (HMOs).

The study indicates that the cost benefit case is less strong for regulating all new domestic properties but the Welsh Government believes that care is required when considering any policy that has the potential to protect life. Installing sprinkler systems in new residential premises would protect around 6,000 new dwellings each year and would significantly improve fire safety in them.

On February 16th 2011 the National Assembly for Wales passed one of the first examples of Private Members' legislation, the Domestic Fire Safety (Wales) Measure 2011 (the Measure) which was introduced by Ann Jones AM, enabling Ministers to introduce regulations making automatic fire suppression systems compulsory in all new and converted domestic properties. The Welsh Government has recognised the clearly expressed will of the Assembly and has considered in detail the complex questions raised. WG accepts that there is a cost to introducing sprinklers but, as a society, we must seek to prevent avoidable death and injury arising from house fires.

Implementation will be through a combination of Measure and existing building legislation powers:

- Commence section 1 of the Measure;
- Make an order under section 6(2) of the Measure to amend the description of an existing class of "residence" to ensure greater consistency with Building Regulations; and
- Exercise functions under the Building Act 1984 to make changes to Part B of the Building Regulations, to implement the objective of the Measure.

What are the policy objectives and the intended effects?

The policy aim is to reduce deaths and injuries from fire in all new and converted residential accommodation, including new housing, in Wales. The policy aim will be put into effect through the introduction of regulations requiring fire suppression systems for life safety purposes to be installed in all new and converted residential accommodation, including new housing, in Wales.

The intended effects are to:

- Reduce the number of deaths from fire in all new and converted residential accommodation in Wales;
- Reduce the numbers of injuries from fire in all new and converted residential accommodation in Wales;
- Reduce the value of property damage from fire in all new and converted residential accommodation in Wales.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The policy options considered are:

0. Do nothing (Baseline)
1. Installation of sprinklers in all new residential buildings within the categories covered by the Measure (Preferred option)
2. Installation of sprinklers in all residential buildings within the categories covered by the Measure deemed to be cost effective

The BRE report indicates the cost benefit analysis case for installing sprinkler systems in new build care homes, halls of residence and potentially for flats, sheltered flats, and traditional houses in multiple occupation (HMOs).

The study indicates that the cost benefit case is less strong for regulating all new domestic properties but the Welsh Government believes that care is required when considering any policy that has the potential to protect life. Installing sprinkler systems in new residential premises would protect around 6,000 new dwellings each year and would significantly improve fire safety in them.

Based on the input data, assumptions and main analysis described in this report, the conclusions of this cost benefit analysis are:

- Fitting sprinklers in all new residential premises in Wales is not cost effective.
- Sprinklers are cost effective in new care homes and halls/dormitories. This is mainly due to the reduction in financial losses from damage to the building, its contents and business interruption.
- Sprinklers may also be marginally cost effective, (i.e. not statistically significant) in new blocks of flats, blocks of sheltered flats (not including sheltered houses) and “traditional” HMOs (on average six accommodation units per building; not including shared houses or hostels).

  The key reason for this is that costs can be shared over a number of accommodation units.
- Sprinklers are not cost effective in new single occupancy houses, shared houses, hostels and sheltered houses.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date: N/A**

Does implementation go beyond minimum EU requirements?			Yes		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** Yes	**< 20** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** nil	**Non-traded:** 0.001	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: Francois Samuel Date: March 2013

Summary: Analysis & Evidence

Policy Option 1 (Preferred option)

Description: Sprinklers in all new residential buildings

FULL ECONOMIC ASSESSMENT

Price Base Year 2010	PV Base Year 2010	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional		Optional	**£230.8m**
High	Optional		Optional	**£247.8m**
Best Estimate	£0.5m		£21.0m	**£239.3m**

Description and scale of key monetised costs by 'main affected groups'

One-off costs for sprinkler installation in new residential buildings over 10 years are £144.3m ± £8.3m.
Maintenance costs for the whole life of these systems (40-50 years) are £95m ± £1.5m.

The transition costs represent an estimate of the cost to those organisations to upskill in order to install sprinklers as well as the cost for those who choose to become accredited.

Other key non-monetised costs by 'main affected groups'

- Transitional/familiarisation costs by business
- Embodied energy/carbon in the extra materials required

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	**£46.5m**
High	Optional		Optional	**£51.1m**
Best Estimate	£0m		£1.4m	**£48.8m**

Description and scale of key monetised benefits by 'main affected groups'

Lives saved over the whole life of the sprinkler systems (40-50 years) are 35.5 ± 3.8.
Injuries saved over the same period are 799 ± 5.
The total monetised benefits include reductions in deaths, injuries, and property damage.

Other key non-monetised benefits by 'main affected groups'

The amount of carbon dioxide emitted by fires over the whole life of the sprinkler systems (40-50 years) will be reduced by 1,127 ± 206 tonnes.

Others include: reduction in fire and rescue service call outs, savings in water used for manual firefighting by firefighters, reduction in air and water pollution (fewer fires and less water run-off).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

The number of new buildings constructed over 10 years is based on Welsh Government estimates. Cost estimates for installation and maintenance were provided by the sprinkler industry, and water connection charges were supplied by Welsh water companies. All of the installed systems are assumed to be maintained, over their whole lifetime, in accordance with the current British Standard BS 9251. Benefits are assessed over the whole life (40-50 years) of the sprinkler system. Following Treasury guidance, the discount factor for year 31 and beyond is 3%.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:				
Costs: £239m	**Benefits:** £49m	**Net:** -£190m		

Summary: Analysis & Evidence

Policy Option 2

Description: Sprinklers in subset of residential buildings, where expected to be cost-effective

FULL ECONOMIC ASSESSMENT

Price Base Year 2010	PV Base Year 2010	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: £1.8m	**High:** £5.8m	**Best Estimate:** £3.8m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional		Optional	**£12.8m**
High	Optional		Optional	**£15.6m**
Best Estimate	£0.5m		£1.7m	**£14.2m**

Description and scale of key monetised costs by 'main affected groups'

One-off costs for sprinkler installation in subset of new residential buildings over 10 years are £12.6m ± £1.4m. Maintenance costs for the whole life of these systems (40-50 years) are £1.6m ± £0.2m.

The transition costs represent an estimate of the cost to those organisations to upskill in order to install sprinklers as well as the cost for those who choose to become accredited.

Other key non-monetised costs by 'main affected groups'

- Transitional/familiarisation costs by businesses
- Embodied energy/carbon in the extra materials required
- Microbial risk.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	**£16.7m**
High	Optional		Optional	**£19.5m**
Best Estimate	£0m		£0.5m	**£18.1m**

Description and scale of key monetised benefits by 'main affected groups'

Lives saved over the whole life of the sprinkler systems (40-50 years) are 8.6 ± 2.1.
Injuries saved over the same period are 330 ± 2.
The total monetised benefits include reductions in deaths, injuries, and property damage.

Other key non-monetised benefits by 'main affected groups'

The amount of carbon dioxide emitted by fires over the whole life of the sprinkler systems (40-50 years) will be reduced by 337 ± 71 tonnes.

Others include: reduction in fire and rescue service call outs, savings in water used for manual firefighting by firefighters, reduction in air and water pollution (fewer fires and less water run-off).

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

The number of new buildings constructed over 10 years is based on Welsh Government estimates. Cost estimates for installation and maintenance were provided by the sprinkler industry, and water connection charges were supplied by Welsh water companies. All of the installed systems are assumed to be maintained, over their whole lifetime, in accordance with the current British Standard BS 9251. Benefits are assessed over the whole life (40-50 years) of the sprinkler system. Following Treasury guidance, the discount factor for year 31 and beyond is 3%.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:				
Costs: £14m	**Benefits:** £18m	**Net:** £4m		

Summary: Analysis & Evidence

Policy Option 0

Description: Do nothing

FULL ECONOMIC ASSESSMENT

Price Base Year 2010	PV Base Year 2010	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: £0m	**High:** £0m	**Best Estimate:** £0m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional		Optional	**£0m**
High	Optional		Optional	**£0m**
Best Estimate	£0m		£0m	**£0m**

Description and scale of key monetised costs by 'main affected groups'

As this is the "do nothing" option there are no costs.

Other key non-monetised costs by 'main affected groups'

Not applicable.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	**£0m**
High	Optional		Optional	**£0m**
Best Estimate	£0m		£0m	**£0m**

Description and scale of key monetised benefits by 'main affected groups'

As this is the "do nothing" option there are no benefits.

The current level of residential fire risks in Wales is, on average, 2,168 fires resulting in 17 deaths and 503 injuries per year.

Other key non-monetised benefits by 'main affected groups'

Not applicable.

Key assumptions/sensitivities/risks **Discount rate (%)** N/A

This is the "do nothing" option. The costs and benefits of other options are relative to this option.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:				
Costs: £0m	**Benefits:** £0m	**Net:** £0m		

Evidence Base (for summary sheets)

Background / What is the problem under consideration?

The reduction in the number of deaths from fires in the home over the last ten years has been significant. Hard-wired smoke detectors are already compulsory in new residential premises under building regulations and a major Welsh Government investment programme resulted in hard wired detectors being installed in most existing social housing. The introduction of Reduced Ignition Propensity cigarettes in November 2011 is expected to reduce the incidence of fires started by cigarettes and the number of associated fire deaths.

Notwithstanding this progress, the number of deaths and injuries is still too high. On average, over the last 10 years, 17 deaths and 503 injuries have resulted from fires in residential properties each year in Wales.

The National Assembly for Wales Legislation Committee, in its stage 1 Committee report into the measure, received evidence that recent statistical data has shown that improvements in the incidence of death and injury from fire had plateaued in recent years. The Committee also received evidence that indicated that, whilst smoke alarms are essential in providing early warning from fire, they alone cannot ensure safe egress from the building. Sprinklers contain the fire within the room of origin and extinguish in most circumstances, or check the fire development until the arrival of the fire and rescue service.

The National Assembly for Wales Legislation Committee report (November 2010) having reviewed the evidence, stated that “We accept that fire safety in the home has improved over the years and that homes built today are likely to be better protected against the effects of fire than older housing. However, we cannot ignore the evidence presented to us - that 80 per cent of deaths and injuries from fire in Wales occur in the home. This suggests that additional action in this area is required.”

Appropriately designed and maintained fire suppression systems undoubtedly save lives and prevent injuries, as well as reducing damage from fires. The NAW Legislation Committee stated that “We have received compelling evidence that automatic fire suppression systems provide benefits over and above existing fire safety measures, including smoke detectors”.

The British Standard sprinkler system is the highest level of protection from fire currently available; there are other systems available, however the evidence of their effectiveness is not strong and the absence of standards makes regulation difficult. However, the Committee received evidence that the Measure would:

- help reduce or possibly eradicate fire deaths in Wales;
- help reduce fire injuries in Wales;
- improve the safety of fire-fighters; and
- provide much needed additional protection against the effects of fire, particularly for vulnerable groups.

The BRE report indicates the cost benefit analysis case for installing sprinkler systems in new build care homes, halls of residence and potentially for flats, sheltered flats, and traditional houses in multiple occupation (HMOs).

The study indicates that the cost benefit case is less strong for regulating all new domestic properties but the Welsh Government believes that care is required when considering any policy that has the potential to protect life. Installing sprinkler systems in new residential premises

would protect around 6,000 new dwellings each year and would significantly improve fire safety in them.

Rationale for government intervention

The National Assembly for Wales Legislation Committee argued that, on top of existing fire safety education initiatives, and other programmes (such as the promotion of installing hard wired detectors in social housing), a "more comprehensive approach is required, and that the proposed Measure provides this". The Committee noted that that 80 per cent of deaths and injuries from fire in Wales occur in the home, and stated that *"additional action in this area is required. While individuals and families are suffering as a result of fire, and the effects of fire continue to place a burden on the Welsh economy in terms of cost, we believe that more could and should be done to address this issue."*

The Committee:

- Supported the general principles of the Measure;
- Were content that the content that the proposed Measure is an appropriate legislative vehicle and provided an effective and timely way forward.

The Committee acknowledged that the duty to provide suppression systems is limited to newly created residences, and were content that this approach is both proportionate and practicable.

The Measure was examined by the NAW Constitutional Affairs Committee who concluded in their report (November 2010) that the Measure strikes the correct balance between powers on the face of the Measure and the subordinate legislation powers given to Welsh Ministers. The Committee stated that, from the perspective of the subordinate legislation provisions it contains, there are no reasons why the National Assembly should not agree to the proposed measure.

On February 16th 2011 the National Assembly for Wales passed (as one of the first examples of Private Members' legislation), the Domestic Fire Safety (Wales) Measure 2011 (the Measure) which was introduced by Ann Jones AM, enabling Ministers to introduce regulations making automatic fire suppression systems compulsory in all new and converted domestic properties. The Welsh Government has recognised the clearly expressed will of the Assembly and has considered in detail the complex questions raised. WG accepts that there is a cost to introducing sprinklers but, as a society, we must seek to prevent avoidable death and injury arising from house fires.

Implementation will be through a combination of Measure and existing building legislation powers:

- Commence section 1 of the Measure;
- Make an order under section 6(2) of the Measure to amend the description of an existing class of "residence" to ensure greater consistency with Building Regulations; and
- Exercise functions under the Building Act 1984 to make changes to Part B of the Building Regulations, to implement the objective of the Measure.

Policy objective

The policy aim is to reduce deaths and injuries from fire in all new and converted residential accommodation in Wales, covering:

- new housing;
- flats;
- residential care homes;
- residential accommodation (halls of residence) at boarding schools, colleges and universities.

The policy aim will be put into effect through the introduction of regulations requiring fire suppression systems for life safety purposes to be installed in all new and converted residential accommodation, including new housing, in Wales.

The intended effects are to:

- Reduce the number of deaths from fire in all new and converted residential accommodation in Wales;
- Reduce the numbers of injuries from fire in all new and converted residential accommodation in Wales;
- Reduce the value of property damage from fire in all new and converted residential accommodation in Wales.

Policy Options

The policy options considered are:

0. Do nothing (Baseline).
1. Installation of sprinklers in all new residential buildings within the categories covered by the Measure (Preferred option).
2. Installation of sprinklers in all residential buildings within the categories covered by the Measure deemed to be cost effective.

It is anticipated that the detailed legislative requirements flowing from the Measure will be reflected in revisions to Approved Document B (Fire Safety) of the Building Regulations.

Costs and benefits of each option

The National Assembly for Wales Finance Committee examined the financial implications of the measure. It its report (dated November 2010), it noted there were, at that time, a great many uncertainties surrounding the costs of the measure. The Committee concluded that the measure “will inevitably lead to an increase in construction costs”. The Committee also stated that “there is no evidence that they will be seen as a significant burden on house buyers or have a significant impact on the housing market”. The Committee supported the measure, noting that the RIA would require a more detailed and more specific financial assessment.

The costs and benefits of the three options considered were initially evaluated in a report prepared for Welsh Government, dated April 2012, and published on the Welsh Government website. This report has been updated by BRE, taking into account views expressed by the members of the Welsh Government’s Domestic Fire Safety Measure Working Group. The revised Cost Benefit Analysis (dated February 2013) is attached as Annex A of this Regulatory Impact Assessment.

Sprinkler installation costs

Costs were based on sprinkler installation costs from members of the British Automatic Fire Sprinkler Association, and were estimated to be £1,950 per house, and £620 per flat[1].

Water supply issues

In their evidence to the NAW Legislation Committee Dwr Cymru, in relation to sprinkler systems that met BS 9251, stated that their customers would expect the system to operate effectively 24 hours per day and 365 days per year. Dwr Cymru noted that without the installation of a pump (by the developer) a large proportion of new dwellings will, when the overall demand for water is high (which they state will be for part of many days), receive a water supply with insufficient pressure to operate sprinklers effectively. This is because the minimum pressure standards required by the Water Act and Ofwat are less than is required by BS 9251 for a sprinkler system to operate effectively. To overcome this problem Dwr Cymru recommended that each dwelling has storage tank and a pump incorporated into its sprinkler system.
Dee Valley Water also argued that houses should be supplied with an additional tank, to provide mitigation against a loss of supply, noting that fire suppression systems rely on a constant supply of water.

The costs of the regulations therefore included the estimated costs for installing a single storage tank and a pump (and the relevant water company charges) per building. For flats with a pump and tank supply, costs assume two pumps and tanks would be provided for the entire building. Costs are estimated at £1,125 per new house and £259 per flat.

Costs of sprinkler maintenance

Based on advice from the British Automatic Fire Sprinkler Association, it is assumed below that 100% of systems will be maintained annually (in accordance with BS 9251). Costs are estimated at £96 per house, and £5 per flat. Costs associated with any regular treatment of water in tanks have not been included.

Costs of carbon dioxide saved

The monetary value of CO_2 saved are taken from the Department for Energy and Climate Change central values of non-traded carbon for different years, and are in the region of £50-100 per tonne.

Benefits

As noted above, on average, over the last 10 years, 17 deaths and 503 injuries have resulted each year from fires in residential properties in Wales. However, the data do not distinguish between age of property so we do not know what proportion of these deaths and injuries occurred in “new” properties (for example, properties with hard wired smoke detectors), and what proportion occurred in older properties.

The benefits from installing fire sprinklers in new premises over the period 2013-2022, and when estimated over 40-50 years, are:

- that a total of 35.5 lives would be saved, and a total of 799 injuries prevented (preferred option 1)
- that a total 8.6 lives would be saved, and a total of 330 injuries prevented (option 2).

The value of a statistical life saved is £1.62m (2010), and that for a fire injury prevented £19.96k (2010), both based on Department for Transport figures.

[1] All the figures on a per flat basis assume 32 flats per block, consistent with the approach taken in the RIA for proposed changes to Part L of the Building Regulations.

In terms of CO_2 saved, again from installing fire sprinklers in new premises over the period 2013-2022, and when estimated over 40-50 years; are:

- 1,127 tonnes CO_2 (preferred option 1);
- 337 tonnes CO_2 (option 2).

CBA of baseline (Option 0) – Do nothing

Under this option, Ministers do not make regulations to enact the Domestic Fire Safety (Wales) measure. There are therefore no benefits or costs to be assessed under this option, and this remains the baseline against which the benefits and costs of options 1 and 2 are assessed.

CBA of preferred option (Option 1)

The results of the cost benefit analysis are presented in the table below. This presents the predicted costs and benefits arising from sprinkler installation in Wales for each type of residential premises over the whole life (40-50 years) of the sprinkler systems installed in buildings constructed from 2013 to 2022 in Wales. The table shows the overall Net Present Value of the policy, Present Values of costs and benefits and the net cost per life saved.

Table of predicted overall costs and benefits over the whole life (40-50 years) of the residential sprinkler systems installed in buildings constructed from 2013 to 2022 in Wales (Present Values, 2010 base year)

Accommodation Type	Present Value total costs (£m)	Present Value total benefits (£m)	Total lives saved	Total injuries prevented	Present Value cost per statistical life saved (£m)	Overall Net Present Value (£m)
House	-£216.7m	£27.9m	24.6	427	£8.8m	-£188.7m
Flat	-£10.8m	£12.4m	7.3	297	£1.5m	£1.6m
Traditional HMO	-£0.1m	£0.1m	0.1	2	£1.1m	£0m
Shared house	-£4.4m	£1.9m	1.7	28	£2.6m	-£2.4m
Hostel	-£2m	£0.3m	0.2	2	£8.2m	-£1.7m
Care home	-£1.9m	£2.3m	0.6	10	£3m	£0.5m
Sheltered house	-£2m	£0.6m	0.3	12	£7.2m	-£1.4m
Sheltered flat	-£0.5m	£0.8m	0.4	16	£1.3m	£0.3m
Hall/Dormitory	-£0.9m	£2.3m	0.2	4	£5.5m	£1.5m
Total for subset where cost effective or marginally cost effective	**-£14.2m**	**£18.1m**	**8.6**	**330**	**£1.6m**	**£3.8m**
Total for all accommodation types	**-£239.3m**	**£48.8m**	**35.5**	**799**	**£6.7m**	**-£190.5m**

Note. Values are based on 'central' estimates of costs.

All values in the Table are subject to uncertainty, due to uncertainties in the values for the input data. As an example the Net Present Value for the total for all accommodation types (-£190.5m) can be expressed as -£190.5m ± £8.8m. The value of £190.5 is the 'central estimate' and the value of £8.8m is the uncertainty (1 standard deviation). Therefore, in this case, the uncertainty is about 5% of the value.

Based on the input data, assumptions and main analysis described in this report, the conclusions of this cost benefit analysis are:

- Fitting sprinklers in all new residential premises in Wales is not cost effective.
- Sprinklers are cost effective in new care homes and halls/dormitories. This is mainly due to the reduction in financial losses from damage to the building, its contents and business interruption.
- Sprinklers may also be marginally cost effective, (i.e. not statistically significant) in new blocks of flats, blocks of sheltered flats (not including sheltered houses) and "traditional" HMOs (on average six accommodation units per building; not including shared houses or hostels).

  The key reason for this is that costs can be shared over a number of accommodation units.
- Sprinklers are not cost effective in new single occupancy houses, shared houses, hostels and sheltered houses.

In terms of the value of CO_2 saved, the total monetary value is in the region of £50-100k, very small in the context of the NPV.

The CBA report itself is included at Annex A and includes the methodology, assumptions, data input, and results of the sensitivity analysis.

The cost to central government for Option 1 is likely to be minimal; the main burden will fall on local government in terms of enforcement through Local Authority Building Control (LABC). However, indications from two Welsh LABCs spoken to as part of the small firms' impact test (Annex B) suggest that this will not be that onerous in light of experience gained from assessing sprinkler installations in the commercial and industrial arenas and the existing schemes for certified products and installers. If compliance costs were deemed too high then clients would probably use Approved Inspectors (AIs).

There are potentially costs to new entrants wishing to install residential sprinklers through a UKAS listed scheme to BS 9251. However, there is no requirement for installers to be third party accredited. Indeed, there are currently only two companies in Wales certified to BS 9251. Indications are that other companies will look to install residential sprinklers if the Measure is to be implemented and this could include plumbing and heating companies. If they are to pursue the accreditation route then this could incur an initial certification cost of about £5k followed by an annual fee of about £2k. At this stage it is difficult to suggest how many Welsh companies will look to certify but the total cost might be of the order of £0.5m with an annual cost of about £0.1m. Larger companies who currently install commercial and industrial sprinkler systems can install residential systems through their existing accreditation.

CBA of Option 2

Table of predicted overall costs and benefits over the whole life (40-50 years) of the residential sprinkler systems installed in buildings constructed from 2013 to 2022 in Wales (Present Values, 2010 base year) – for buildings where this is expected to be cost effective

Accommodation Type	Present Value total costs (£m)	Present Value total benefits (£m)	Total lives saved	Total injuries prevented	Present Value cost per statistical life saved (£m)	Overall Net Present Value (£m)
Flat	-£10.8m	£12.4m	7.3	297	£1.5m	£1.6m
Traditional HMO	-£0.1m	£0.1m	0.1	2	£1.1m	£0m
Care home	-£1.9m	£2.3m	0.6	10	£3m	£0.5m
Sheltered flat	-£0.5m	£0.8m	0.4	16	£1.3m	£0.3m

Accommodation Type	**Present Value total costs (£m)**	**Present Value total benefits (£m)**	**Total lives saved**	**Total injuries prevented**	**Present Value cost per statistical life saved (£m)**	**Overall Net Present Value (£m)**
Hall/Dormitory	-£0.9m	£2.3m	0.2	4	£5.5m	£1.5m
Total for subset where cost effective or marginally cost effective	**-£14.2m**	**£18.1m**	**8.6**	**330**	**£1.6m**	**£3.8m**

Note. Values are based on 'central' estimates of costs.

All values in the Table are subject to uncertainty, due to uncertainties in the values for the input data. As an example the Net Present Value for the accommodation where the proposals are cost effective or marginally cost effective (£3.8m) can be expressed as £3.8m ± £2.2m. The value of £3.8m is the 'central estimate' and the value of £2.2m is the uncertainty (1 standard deviation).

In terms of the value of CO_2 saved, the total monetary value is in the region of £17-34k, very small in the context of the NPV.

The total costs to government for Option 2 are likely to be comparable to Option 1.

What is the preferred Option and why?

The preferred option is: the installation of sprinklers in all new residential buildings within the categories covered by the Measure. This option:

- is the clearly expressed will of the Assembly;
- will prevent avoidable death and injury arising from house fires;
- will put Wales at the forefront in reducing fire risk and cutting the number of avoidable deaths and injuries caused by fires in residential properties.

The Welsh Government believes that care is required when considering any policy that has the potential to protect life.

The option is predicted to save 35.5 lives in Wales, and prevent 799 injuries over the lifetime of the sprinkler systems installed during the ten-year period assessed.

Specific impact tests

Impacts on businesses with less than 50 employees
An impact test was undertaken of companies in Wales that are likely to be impacted by the proposal for the installation of residential sprinklers in new buildings.

The companies consulted were:

- A certified sprinkler company.
- A heating and plumbing company.
- A fire and security systems company.
- Two Local Authority Building Control Bodies (LABCs).
- A certification body.
- A water company.
- A sprinkler association.
- A care home provider.
- A college providing student accommodation.

The findings are described in Annex B. The key issues are summarised below.

The certified sprinkler company is already undertaking residential sprinkler installations. It has invested time in training and up-skilling as well as direct certification costs but it hoped to recoup those costs through installation projects. The other two companies had had some experience of sprinkler installations and were assessing the opportunities presented by the proposed Measure. One was looking to pursue the accreditation route, but the other was concerned about the cost. The certification body noted that interest in the accreditation schemes for residential sprinklers was low because there were currently no regulatory drivers.

One of the LABCs had much more experience of residential sprinkler installations and they both stated they were currently rare. They felt sprinklers were useful when dealing with complex layouts and as a compensatory measure. Concerns were expressed about adequacy of mains water pressure which would have to be assessed (this was also raised by the water company), and the strength of roofs to take water tanks was also mentioned. Overall, they felt that there would not be much burden on building control officers.

The care home provider already installs sprinklers in its new premises and has done so for the last few years. These are invariably tank and pump systems and here the main contractor employs a specialist sub-contractor to undertake the sprinkler installation. They are unlikely to retrofit sprinklers to existing care homes because of the cost. Sprinklers are seen as a compensatory measure which can reduce other costs.

The sprinkler association noted that there has been a general rise in interest in sprinkler systems with greater numbers of people attending training courses in their design, installation, maintenance and auditing. Whilst training is primarily of interest to the existing sprinkler community about 20% of attendees are plumbers with no previous experience. To date there has been little demand from Welsh companies or individuals working in Wales which is possibly down to lack of awareness presented by the proposal or they are waiting to see how the Measure will be implemented before committing to training.

It suggested that plumbers will undertake a fair proportion of the installations, particularly in the housing sector. However, plumbers may well seek sprinkler expertise in design and sizing of systems, at least initially. Care homes, HMOs and student accommodation would more likely be undertaken by the certified and specialist sprinkler companies.

The association is taking steps to highlight the proposal and facilitate its introduction. A Welsh college is arranging practical vocational training in this field and is looking to create additional training capacity for Wales.

The college supported the concept of installing sprinklers in student accommodation but was concerned about the costs and remained to be convinced of the overall cost benefit case.

Greenhouse gas emissions

The proposed installation of sprinklers will lead to a reduction in the number and size of fires which in turn will lead to a fall in greenhouse gas (GHG) emissions, ostensibly carbon dioxide (CO_2). The methodology used to estimate the impact on GHG emissions is described in Appendix F of the cost benefit analysis report in Annex A.

Overall, in the 10-year period considered, the reduction in CO_2 emissions is very small and only amounts to <0.15 kTonnes which highlights the main benefits of sprinklers are the reduction in the risk of death, injury and property damage.

Estimated impact on land values

In March 2011 a joint industry/Welsh Government report, presented to the Council for Economic Renewal, made the following recommendation: *that the Assembly Government uses the worked examples on land values as a case study for its project to examine the cumulative impact of regulation generally and specifically in relation to the work underway aimed at developing changes to devolved Building Regulations. Other relevant work will include the outcomes of the Registered Social Landlords (RSL) pilot programme aimed at achieving code levels 4 and 5 of the Sustainable Homes.*

As part of the development of the consultation proposals for changes to Part L of the Building Regulations we have considered the impact on the viability of housing development of the options proposed in the consultation on changes to Part L, together with costs of installing domestic sprinklers against a background of current policy requirements. Three local authority areas were considered, Cardiff (an urban local authority), Conwy (a coastal and rural local authority) and Rhondda Cynon Taf (a valleys local authority). Impact was assessed for 5, 25, 50 and 100 dwelling developments.

Analysis of typical development costs and the impact of the proposed increase in standards was undertaken to assess the impact of higher costs on existing developer planning contributions.

The mix of financial contribution and affordable housing provision will be influenced by the characteristics of individual developments including density and site conditions and the economic micro-climate. Assessments were therefore made of planning contributions based on local plan and supplementary planning guidance taking account of actual development data obtained from house builders and planning authorities. The Three Dragons toolkit was used to assess the impact on Affordable Housing contributions and land values. Costs were assessed against a baseline of current sustainable buildings planning policy as set out in Technical Advice Note 22 with/without domestic sprinklers (as a proposed new Welsh government requirement).

Analysis was based on historic information from the National House Building Council (NHBC) percentile values for the year 2010:

- Detached: 30%
- End Terrace: 38.5%
- Mid Terrace: 10.5%
- Apartments: 21%

The estimated reduction in land value, from sprinklers, for the 5, 25 and 50 dwelling development options are shown below. These are based on the assumed development mix and achieving a viable scheme. The approach taken has been to vary the affordable housing level to produce the minimum decrease in land value. Actual affordable housing contributions are shown in brackets. In practice a lower developer return combined with a reduction in land value may be required to provide a level of affordable housing and secure a viable scheme. Changes have been rounded to the nearest whole percentage point.

% land value reduction, from sprinklers, against current policy			
	Rhondda Cynnon Taf	Conwy	Cardiff
5 dwelling development	**3%** (0%)	**9%** (30%)	**2%** (0%)
25 dwelling development	**10%** (0%)	**4%** (30%)	**2%** (0%)
50 dwelling development	**4%** (0%)	**0%** (3%)	**2%** (0%)

The conclusions were that sprinklers are responsible for 3-4% of reduction in land value. In many situations, based on viability considerations, developers have already negotiated lower levels of affordable housing than required by the local plan or supplementary planning guidance.

<u>Sustainable development</u>
The measure is consistent with sustainable development as the Welsh Government's central organising principle. It fully reflects the following principles which underpin the proposed legislation on sustainable development:

- **Long-term thinking**; ensuring a greater emphasis on long-term outcomes – the Measure fully reflects the need to safeguard lives and property over the long term;
- **Integration**: the Measure integrates:

  - social issues, through saving lives and preventing injury, and through improving fire safety in properties such as new care homes;
  - environmental issues (minor contributions to reduced CO_2 emissions, and small positive impacts on air quality and reduction in water pollution incidents from water run-off); and
  - economic issues (through balancing the positive impact on the fire sprinkler industry against the increase in costs for developers).

- **Working across organisational boundaries**; the proposed implementation of the Measure reflects a whole Government view, in particular through working with other divisions and departments reflecting policy interests in social housing, fire safety, health, social services, and higher education.
- **Focusing on prevention;** the Measure is focused of preventing harm to life and property.
- **Engagement and involvement:** the proposed implementation of the Measure will be informed by a technical working group, representing all stakeholders from the fire sprinkler industry, house builders, fire and rescue services, care homes, higher education, and the water supply industry.

Wider environmental issues

The proposal has been assessed with respect to its possible wider impacts on the environment, specifically on: waste; air quality; material change to landscape or townscape; water pollution, water abstraction and flood risk; noise; living species and ecosystems; and whether it will be vulnerable to the predicted effects of climate change. In all cases it is felt there would be no environmental impacts, and there may even be small positive impacts in terms of improved air quality and reduction in water pollution incidents (from water run-off) on account of a reduction in the number of fires.

Health and well-being

The number of lives saved and injuries prevented through the installation of sprinklers under Options 1 and 2 has been presented in section 6 of the cost benefit analysis report in Annex A. Over the whole life of the sprinkler systems (40 to 50 years) for all new residential premises constructed during a 10-year window (2013 to 2022), Option 1 will save 35.5 lives and prevent 799 injuries in Wales and Option 2 will save 8.6 lives and prevent 330 injuries in Wales.

Human rights

It is envisaged that the proposals will have no impact on human rights. There will also be no additional burdens on the justice system.

Rural proofing

It is generally acknowledged that rural areas possess a range of attributes and constraints, which differ significantly from those in urban areas. They provide a unique landscape of high environmental quality, an historic settlement pattern and a wide range of social, economic and cultural facilities for the whole of Wales. At the same time there are issues of deprivation and market failure arising from factors such as:

- long term decline in the rural economy;
- on-going social and cultural change - including an ageing and more isolated population, and;
- relatively poor access to services - including affordable housing.

Reviewing the issues (e.g. service provision and availability, delivery costs, economies, communities etc.) where there could be a disproportionate impact in rural locations the only area where there might be an impact is on local infrastructure where, specifically, water mains pressure might not be adequate. However, given installations will require tank and pump solutions, then this issue is addressed.

In conclusion, it is felt that there are no specific impacts that will impact disproportionately in rural areas in Wales.

Competition assessment

The four OFT competition filter questions have been assessed and it is suggested that there will be no adverse effects on competition, and that there is no need to complete a full competition assessment. Specifically, the proposal will not limit the number of installers or product suppliers either directly or indirectly, it will not limit the ability of suppliers to compete and it will not reduce suppliers' incentives to compete.

Some smaller companies might perceive the costs to achieve accreditation under the UKAS listed schemes for sprinkler installations covering systems installed to BS 9251 to be onerous. Indeed, only two companies in Wales are currently accredited to BS 9251. However, there is no requirement for companies to be third party accredited, they just need to be judged as 'competent' by a LABC. Indications from the small firms' impact test suggest that companies are looking to upgrade their skills to install sprinklers if the Measure were to be implemented and may pursue the accreditation route, the costs of which can be recouped once installations proceed. The sprinkler association mentioned that partnership arrangements are used to hand hold to new entrants.

Welsh language

It is not envisaged that the proposals will have an impact on the Welsh language.

Statutory equality duties

It is not envisaged that the proposal will have any negative impact on equality in Wales (including equality issues concerning age, disability, faith, gender, race, sexual orientation or transgender), or a negative impact on diversity, social inclusion or human rights, including the rights of children.

Annex A – BRE Technical Cost Benefit Analysis report

Attached separately

Annex B – Small firms' impact test

Certified sprinkler company

This is a small private company (19 employees, £1m annual turnover with perhaps £50k focussed on sprinklers) traditionally involved in fire protection (e.g. electrical such as alarms, emergency lighting etc., extinguishers, wet and dry risers etc.)

Over the last two to three years, the company has developed a capability in residential sprinklers (investing £40 to £50k) which includes achieving certification through FIRAS at a first year cost of £4.5k. It was aware of the proposed legislation and sees this as an opportunity, although only one or two companies in Wales are currently registered under the FIRAS scheme.

It has been traditionally involved in the existing stock and its cyclical maintenance rather than new build which is the focus of the proposed legislation. However, the company is now seeing a return on its investment through involvement with installation of sprinklers at a 20-unit (and communal areas) sheltered housing scheme for a housing association worth about £45k. It has also installed sprinklers in two single dwelling units.

It would usually use a tank and pump system, but not exclusively and the respondent cited a recent case where FIRAS assessment meant that the mains pressure was adequate.

There are other up and coming installations where the company is installing sprinklers in 12 town house properties in Swansea where it will look to install a communal tank underground to serve all of them. Town houses will generally need tank and pump solutions because of their height, but this is an advantage because it is a compensatory measure and removes the need for a secondary means of escape.

The annual cost for renewing its certification is £2.5k, and recent projects appear to indicate that the company will recoup its initial investment.

The company has made applications to the Welsh Government for funds to help it upskill and tool up for sprinkler installations but these do not appear to have been successful.

Heating and plumbing company

This is a family run business with 27 employees including 18 engineers. It currently delivers heating and plumbing primarily in the domestic market (housing, care homes, caravans etc.) as part of clients' cyclical maintenance programmes, although it has undertaken some new-build work. It has also done work under the Welsh HEES and is currently going through MCS accreditation for solar thermal, biomass, ASHP and GSHP installations. Turnover is estimated to be about £3 million per annum.

The company has completed a few sprinkler installations in plant rooms where there is a high risk of fire as well as a domestic loft conversion to protect means of escape in order to meet planning and building control requirements.

It is looking to upskill the workforce should the proposal become a requirement and has already done some background research and attended a training course on the subject looking at technical requirements for design and installation of sprinkler systems such as pipework, location, spray patterns etc. It has not yet looked at the requirements of certification but this is something that it would pursue.

Fire and security systems company

This is a small firm of 30 employees of which 18 are engineers with turnover of £1.8m. Its focus is on emergency lighting, detection, alarms etc.

It has not done any work on residential sprinklers although it has one employee that has attended a training course and who is investigating the topic as a business opportunity. It has also talked to manufacturers of sprinkler products.

The respondent's concern and 'the feeling in the industry' is that when builders/developers request residential sprinklers, manufacturers provide certified components which a plumber (who is not specifically trained or certified as a sprinkler installer) would install as a system. A certified design would be provided by the manufacturer. The building control body would accept this solution at meeting the requirements of the building regulations. The respondent cited the parallel situation where (mains wired) smoke detectors are provided and these are installed by electricians.

He felt that this might be the model going forward as it was the cheapest solution to meet the requirement, although there is the issue of whether building control would accept this. He made the suggestion that Gas Safe could provide an additional module for the installation of residential sprinklers that plumbers could take. For example, there is already one for high pressure water tanks for showers. Therefore, he was currently reluctant to go down the certification route because of the expense involved.

Local Authority Building Control Body 1

This is one of the largest building control bodies (BCBs) in the UK covering some 330,000 people in an area of 13 miles by 7 miles.

The respondent has had experience of residential sprinklers, although his department only deals with a handful of installations per year. Sprinklers are rare in the case of single dwelling houses where they might be installed in the case of loft conversions to protect means of escape.

Most of his experience is in apartment blocks where their large size or complex layout necessitates the provision of sprinklers. There is an issue of the cost and the 'Hollywood problem' (i.e. a whole array of sprinklers are set off simultaneously when normally only one is triggered) to overcome but usually the installation proceeds when the client realises that sprinklers can allow greater design freedom and costs can be brought down (£1,500-£1,800 per unit). The BCB might work with the local fire and rescue service to facilitate this process.

Cost is obviously a key driver for clients. A more cost-conscious client might proceed down the mains water pressure route rather than tank and pump. If a client sub-contracts to an M&E contractor then often they will install a tank and pump system as described in BS 9251.

The respondent has seen mains fed systems used and here the client is required to demonstrate adequate pressure (in accordance with the standard) by relevant testing usually in conjunction with fire and rescue service and/or local water company.

In the same way as commercial installations, he would expect to see certified products, design and installation to ensure compliance with building regulations. Moving forward he sees no real problems/burdens for BCBs, provided there is a level playing field. If there are wide ranging compliance costs then clients might migrate towards Approved Inspectors (AIs).

Local Authority Building Control Body 2
This BCB covers a population the size of 300,000 with ten building control officers.

It has very little/zero experience of residential sprinklers so the respondent did not have too much to contribute.

His main concerns were storage of water in tanks if this was solution (including structural concerns) or maintaining an adequate pressure if this route was adopted. He would expect to see installations by competent persons to demonstrate compliance, and would not expect to see the requirements to place an undue burden on his officers.

Certification body
This certification body has two schemes: one for all types of sprinklers (industrial, commercial, residential etc.) and another, which uses BS 9251 as a template for the design, installation, commissioning and maintenance of residential sprinklers. It currently has 90 companies for the former but none for the latter (which has been in existence for the last 2-3 years).

The respondent suggested that the reason for lack of uptake for the residential scheme is that there are no drivers. Companies currently certified under the other scheme are already able to undertake residential sprinklers. Smaller companies who might be interested in the residential one are unlikely to follow the other route as the costs are too onerous (perhaps an additional £3k) but in the absence of drivers there is little interest. He is aware of ‘non-competent’ persons undertaking residential sprinkler installations.

The respondent also expressed concern that there have been partial protection installations, for example sprinkler protection of hallways for extensions/loft conversions rather than the whole house as called for by the British Standard.

He noted that the Welsh Government has called for independent third party installations which will mean that installations will need to be LPCB or FIRAS certified.

Water company
The main areas of concern of the water companies are already discussed in the main body of the RIA.

A key issue for the company is guaranteeing sufficiently high mains pressure to ensure sprinklers work, and where the liability lies if a sprinkler system does not operate as intended. There is also an economic impact because it has to manage leaks from the network.

Therefore, it prefers prefer a tank and pump solution but there are issues of legionella and contamination so it is keen to ensure that there is a maintenance programme to reduce this risk. Mains fed systems are not necessarily immune to such problems as the separate feed to the system will still hold stagnant water.

Sprinkler association
The sprinkler association noted that there has been a general rise in interest in sprinkler systems with greater numbers of people attending training courses in their design, installation, maintenance and auditing. Whilst training is primarily of interest to the existing sprinkler community about 20% of attendees are plumbers with no previous experience. To date there has been little demand from Welsh companies or individuals working in Wales which is possibly down to lack of awareness presented by the proposal or they are waiting to see how the Measure will be implemented before committing to training.

Moving forward, it suggested that plumbers will undertake a fair proportion of the installations, particularly in the housing sector. However, plumbers may well seek sprinkler expertise in

design and sizing of systems, at least initially. Care homes, HMOs and student accommodation would more likely be undertaken by the certified and specialist sprinkler companies. This is a more mature market in light of experience particularly following Scottish legislation introduced in 2005 which requires all new care and residential homes to be fitted with sprinkler protection.

There is currently some confusion in the industry that all sprinkler systems need to be installed by certified installers. This is dependent on individual LABCs' interpretation of 'competent person' and whether this entails third party certification.

It does not feel that the costs and process of certification are that onerous for companies and is seeing many plumbing companies expressing interest in sprinkler installation as well as existing fire detection and extinguisher companies looking to diversify. The challenge is for such companies to demonstrate competence on the first few installs and often they will work in partnership with more experienced organisations at first.

The association mentioned that care homes, in particular, can realise other benefits from installing sprinklers and suggested that in Scotland the sector is now much more receptive. For example, there are cost savings with respect to levels of night time staffing as this can be reduced in light of the provision of sprinklers. This is agreed in conjunction with local fire and rescue services as part of a care home's fire risk assessment.

The Housing Act gives local authorities powers to license premises and to require sprinklers. It mentioned that Aberystwyth was one of the first to require sprinklers in student accommodation and could see benefits in terms of reduced decanting costs as damage to buildings will be limited.

It suggested that there were significant differences in approach of water companies towards the provision of sprinklers. Some were not willing to support mains fed installations so that many would have to be tank and pump systems. However, with larger estates, there was greater scope to ensure adequate mains pressure was achieved.

The association is taking steps to highlight the proposal and facilitate its introduction. For example, it is producing leaflets (including some written in the Welsh language), organising conferences and generally engaging with the industry to raise awareness and provide guidance. In particular, a Welsh college, is arranging practical vocational training in this field and is looking to create additional training capacity for Wales. Association members, particularly manufacturers and suppliers, are assisting with equipment and other resources. In addition, the association is exploring the possibility of securing nationally recognised approvals and vocational qualifications for persons working in the industry.

<u>Care home provider</u>
Currently manages 15 residential homes for older people: six in Cardiff, four in Torfaen, two in the Vale of Glamorgan, two in Bridgend and one in Caerphilly. In the last two years, it has developed two large residential and nursing homes in Bridgend and Caerphilly. Overall, it employs some 1,200 people, many of these working in the care homes.

For its new homes, it installs residential sprinklers as a matter of course, a decision it took some 6 to 7 years ago. There is an expectation by local fire and rescue services that sprinklers are installed to ensure the safety of residents. The homes it has recently constructed are examples of this. Tank and pump systems were installed and the main contractor employed a specialist sub-contractor to undertake the sprinkler installation.

There was the intention that installing sprinklers could be a compensatory measure which would mitigate the need for other measures (e.g. door closers which some old people find difficult to negotiate) but local building control departments are reluctant to accept this and so closers are

retained. Sprinklers do mean that they can reduce the provision of portable fire fighting equipment although this is still provided in higher risk areas such as kitchens etc. Staff are therefore able to focus on helping residents to escape in the event of fire.

The company has acquired existing care homes but they are unlikely to retrofit sprinklers in these buildings because the disruption and decanting required would severely distress residents. It is also unlikely to acquire large manor-type houses and convert these to care homes.

Overall, the proposal is unlikely to have much impact on the care home business of the company. It does however have a social housing arm and so there would be a cost impact on any new housing it constructed which was estimated to be £4k to £5k per unit.

College providing student accommodation

Director of Estates and Facilities responsible for all aspects of the University. In total, it covers 90,000m^2 which consists of a mixture of 1960s and 1990s buildings all of which is low rise (<4 storeys). The University is just completing a £50m five-year building programme which is adding a further 8,000-9,000m^2. He is a member of a committee of directors of university accommodation which meets regularly to discuss common issues.

Specifically, the University has two accommodation complexes each numbering 500 beds, one a 1960s building located on the teaching campus and another 1990s building located half amile from the campus. None of these are currently sprinklered. There is an estimated shortfall of 400 beds but this is readily addressed by the private rented sector in the city. There is the possibility that the University could construct further accommodation units if space becomes available.

Whilst he supports the concept of installing sprinklers for protection of life and property in student accommodation, he remains to be convinced of the cost-benefit case. This is the general view held by the committee he is a member of, and it has informed the Welsh government of its views. Over the last ten years there have been no deaths arising from fires and only one significant fire, although this did lead to major damage.

The concerns revolve primarily around the capital cost of installation as well as annual maintenance. This could ultimately lead to increases in student rents. There is also the issue of students setting off sprinklers and causing damage. It was felt that there were not significant savings in terms of compensatory measures as the layout of the accommodation units was relatively fixed, i.e. clusters of up to eight rooms/flats which are favoured by students as this promotes social groupings.