

Grenfell and the other factors behind UK sprinkler market growth

Alan Brinson
Safety Expo 2019

Agenda



UK sprinkler organisations



Sprinkler campaigns and successes



The role of standards



Grenfell



EUROPEAN FIRE
SPRINKLER NETWORK



UK sprinkler organisations

British Automatic Fire Sprinkler Association

British Automatic Fire Sprinkler Association

bafsa

- Members – installers, manufacturers
- Participation in standards
- Educational seminars for
- Training programmes for
- Presentations at conferences
- Accurate cost information

British Automatic Fire Sprinkler Association
bafsa

Sheffield Low Rise Sprinkler Installation

A report into a major
retrofit project

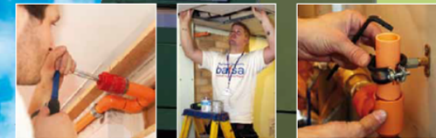
www.bafsa.org.uk

bafsa
British Automatic Fire Sprinkler Association

Safer High-rise Living

*The Callow Mount Sprinkler
Retrofit Project*

A Report from the Sprinkler Coordination Group



National Fire Sprinkler Network



- Members – every UK fire service, some installers, manufacturers and insurers
- Exchange information about sprinklers
- Promote sprinklers at local level – lobbying local politicians and proposing sprinklers as a solution for specific projects
- Focus on sprinklers for life safety

National Fire Sprinkler

- Produced reports on injuries in sprinklered buildings from every fire in a sample
- Showed sprinklers control or extinguish fires
- Also showed 70% fewer deaths in sprinklered buildings

Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data



Incidence of Deaths and Injuries in Sprinklered Buildings: A Supplementary Report March 2019



Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data



May 2017



Business



➤ Memb

➤ Focus

➤ Funde

The Impact of Automatic Sprinklers on Building Design

COMMERCIAL SECTOR APPLICATION – OFFICES

SEPTEMBER 2017

A fire engineering review



Economic impact of

Direct and indirect economic impact of fire sprinklers in warehouse buildings without

An Environmental Impact and Cost Benefit Analysis for Fire Sprinklers in Warehouse Buildings

Final report

Prepared for:
The Business Sprinkler Alliance
10 Dominion Street
London
EC2M 2EE

19th December 2013

Business Sprinkler Alliance



- Members – BAFSA, EFSN, FM Global, FPA, NFCC, NFSN
- Focus on sprinklers in industrial and commercial buildings
- Funded research reports
- Lobbying of national and local government
- Presentations, trade articles

These organisations are often supported by



And this group has been very effective

House of Commons - Register Of


+

← → ↻

https://publications.parliament.uk/pa/cm/cmallparty/180718/fire-safety-rescue.htm

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Register Of All-Party Parliamentary Groups [as at 18 July 2018]

Fire Safety Rescue

Title	All-Party Parliamentary Fire Safety Rescue Group	
Purpose	To meet and discuss topical fire safety and rescue issues with appropriate specialists in these fields.	
Category	Subject Group	

Officers		
Role	Name	Party
Chair & Registered Contact	Sir David Amess	Conservative
Vice Chairman	Chris Davies	Conservative
Vice Chairman	Mary Glendon	Labour
Secretary	Jim Fitzpatrick	Labour
Treasurer	Peter Aldous	Conservative



Sprinkler campaigns and successes



AN FIRE
R NETWORK

Care homes

- Easy to understand that evacuation will not work
- Make emotional and economic argument for sprinklers
- Some fire services and politicians agreed (one proposed legislation) but no change
- Inevitably, there were tragedies
 - ❖ Rosepark care home fire in Glasgow, Scotland in 2004: 14 dead
- **A year later, sprinklers required in new Scottish care homes!**

Care homes

- 2007: England & Wales required either sprinklers or self-closing fire doors on every care home bedroom (similar cost)
- Some care home owners decided voluntarily to fit sprinklers
- Meanwhile a politician in Wales was pressing for more sprinkler requirements, including in care homes
- 2014: new care homes in Wales must have sprinklers



Schools

- Largest annual source of insurer fire losses: €70 million/year
- No deaths but huge disruption when children have to go to other schools, often far away
- Supported by insurers, by Fire Chiefs and teachers
- Meetings with Ministers, questions in Parliament
- 2007: guidance for England recommends sprinklers – initially 70% of new schools fitted sprinklers – not enforced by subsequent governments and now only 35%

Schools

- More successful in Scotland, where 31 out of 32 local governments were persuaded to fit sprinklers in new schools
- 2010: Scottish Government passed legislation to require all new schools to have sprinklers
- Soon after, Welsh government made sprinklers a condition of funding for new schools
- The campaign continues in England!

Apartments and houses

- After political pressure, encouraged by Fire Chief, the British Government funded a three-year research project on residential sprinklers
- Concluded residential sprinklers save lives
- Concluded they are cost effective in:
 - ❖ Care homes and apartment buildings >30 m
 - ❖ And probably in apartment buildings >18 m



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England 2007

Scotland 2005



Apartments and houses

- Wales had the worst fire safety record in UK
- Ann Jones, a politician who used to be an official in Fire Brigades Union led a campaign for sprinklers in all new Welsh housing
- And Won!
- Since 2016, sprinklers are required in ALL new houses and apartments in Wales



Lakanal House fire

- 3 July 2009: social housing apartment fire in London
- Six dead and 20 injured, none of those who died lived in the apartment where the fire started
- Fire spread up, down and sideways
- Combustible panels and compartmentation failure
- Coroner's letter to government, "*It is recommended that the Home Office and the Department encourage providers of high rise residential buildings... to consider the **retro fitting of sprinkler systems.***"





The role of standards

The role of standards

- If residential sprinklers are to be used, regulators need standards:
 - ❖ BS 9251 for residential sprinkler systems (superseceded)
 - ❖ BS 9252 for residential sprinklers (to be superseded)
- BS 9991 fire safety in the design, management and use of residential buildings – Code of practice
- First edition 2011, introduced many sprinkler i
 - ❖ Open-plan apartments
 - ❖ Longer travel distances
 - ❖ Restricted fire service access



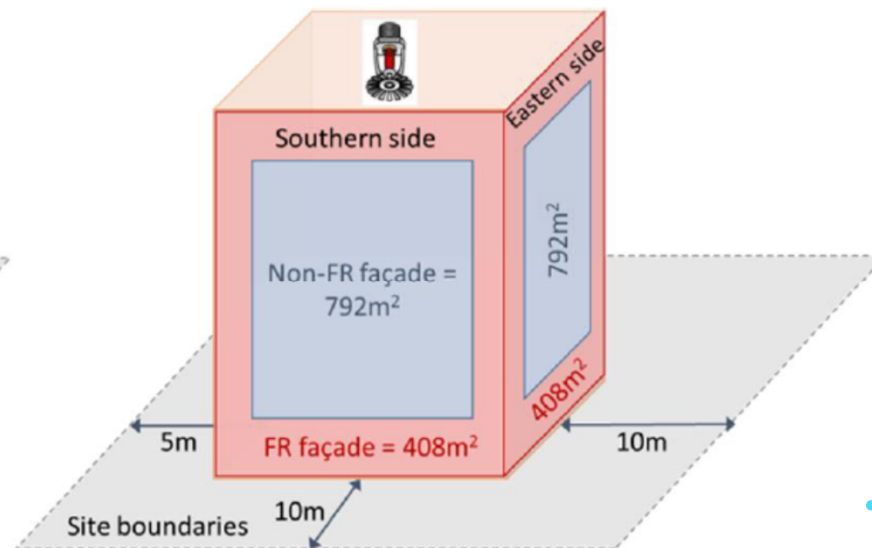
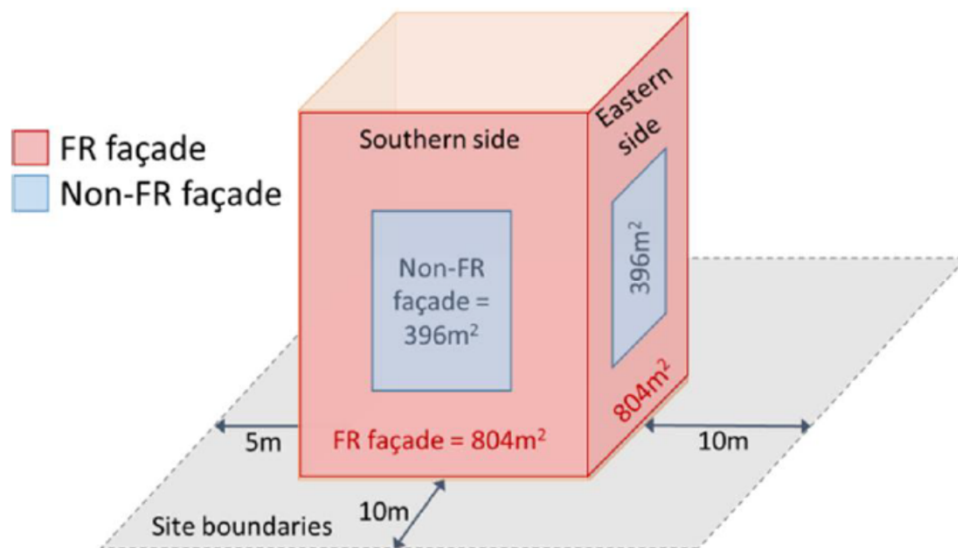
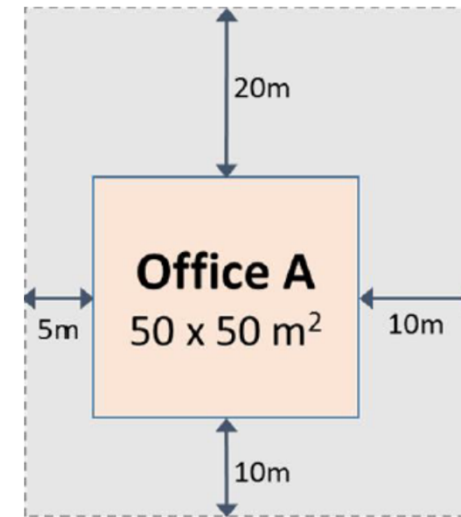
The role of standards

- BS 9999 fire safety in the design, management and use of buildings – Code of practice
- First edition 2008, introduced many sprinkler issues
 - ❖ Longer travel distances
 - ❖ Less wide stairs
 - ❖ Reduced fire resistance
 - ❖ Restricted fire service access and facilities
- Coming soon: BS 9992 railway buildings
 - ❖ Reduced fire resistance in underground buildings



Financial impact of incentives— six-storey office, London

- Office 50 m x 50 m
- Height 24 m
- Separation distances
- Glazed façade
- 4 staircases
- Impact of sprinklers on FR façade



Impact of sprinklers on fire protection measures for an office

OFFICE	WITHOUT SPRINKLERS	WITH SPRINKLERS
Fire-rated façade area required	<ul style="list-style-type: none"> Northern side (17%) = 204 m² Southern side (67%) = 804 m² Eastern side (67%) = 804 m² Western side (80%) = 960 m² 	<ul style="list-style-type: none"> Northern side (0%) = 0 m² Southern side (34%) = 408 m² Eastern side (34%) = 408 m² Western side (60%) = 720 m²
Stairs minimum width	<p>1276 mm</p> <p>Stairs area 61.25m² per floor</p>	<p>1120 mm</p> <p>Stairs area 53.75m² per floor</p>
Structural fire protection rating	90 minutes	60 minutes
Dry risers	3	2

Cost analysis of incorporating sprinklers in office A

OFFICE A	WITHOUT SPRINKLERS	WITH SPRINKLERS
Sprinkler cost	-	£328,750
Façade cost	Non FR façade = $2,028\text{m}^2 \times £600/\text{m}^2 = £1,216,800$ 90min-FR = $2,772\text{m}^2 \times £2,200/\text{m}^2 = £6,098,400$ Total = £7,315,200	Non FR façade = $3,264\text{m}^2 \times £600/\text{m}^2 = £1,958,400$ 60min-FR = $1536\text{m}^2 \times £1,700/\text{m}^2 = £2,611,200$ Total = £4,569,600
Structural fire protection cost	90min-FR = $15,000\text{m}^2 \times £44.38/\text{m}^2$ = £665,700	60min-FR = $15,000\text{m}^2 \times £21.57/\text{m}^2$ = £323,550
Rental yield from increased net internal area	-	$45\text{m}^2 \times £650/\text{m}^2/\text{yr} = £29,250/\text{yr}$
Dry risers costs	$3 \times £1,500/\text{landing} \times 6 \text{ floors} = £27,000$	$2 \times £1,500/\text{landing} \times 6 \text{ floors} = £18,000$
Total costs	£8,007,900	£5,239,900 - £29,250/yr
Total cost impact of sprinklers	Capital cost impact = £2,768,000 saved by including sprinklers Rental yield = £29,250/yr greater income by including sprinklers	



Grenfell





H+ 60% 13:52



11:00 - 13:00

BBC Newsroom Live

13/09/2017

↺ Restart Programme



ALAN BRINSON
European Fire Sprinkler Network



BBC NEWS 12:48 ON'S FIRE COMMISSIONER SAYS THE GRENFELL 12:48

We had laid the groundwork

- Sprinklers required since 2007 in new high-rise apartments
- Lakanal House fire 2009 revealed problems, led to sprinkler retrofit recommendation – some local authorities were retrofitting sprinklers
- After Grenfell this became a deluge:
 - ❖ Over 1,000 buildings to be retrofitted (hundreds already done)
 - ❖ Developers voluntarily fitting sprinklers in all new apartments
 - ❖ Public refusing to buy new apartments without sprinklers
 - ❖ Mortgages refused without sprinklers

Still to come

- 2021: Scotland will require sprinklers in all new apartments and all new social housing (including single-family houses)
- Review of English regulations is under way – this would not have happened without Grenfell
 - Widespread assumption there will be more sprinkler requirements
 - But the details are still unclear



6-7 May 2020
you!

Alan Brinson



EUROPEAN FIRE
SPRINKLER NETWORK

www.eurosprinkler.org

Fire Sprinkler Europe

Roma, 23 Marzo 2021

