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Safe & Compliant Residential High Rise

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TRUST IN YOUR LIFE SAFETY SYSTEM

SCA – leading voice of the smoke control industry

The SCA are pioneers in promoting and enhancing the design, manufacture, installation and maintenance of life safety smoke ventilation systems. All SCA members that carry out site installation work are third party accredited, under varying smoke control requirements for each and every building and have suitable PI Insurance.

Find out more at
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Overview – Safe & Compliant High Rise Residential

- The development of high rise residential in the UK
- Building standards – Legislation, Regulation and Guidance
- Emerging themes
- Legacy Buildings
- Case study – Upgrading legacy single stair high rise with a pressurisation system



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Historic Background



- Need for housing
- First modern 10 storey block 1951 in Harlow
- Government policy in 1950/60
- WW2 to 1990 6,544 multi storey blocks 6 floors and over
- Post war to 1960's 300,000 council flats added to stock in London
- Construction Quality/Design Flaws/ Poor Maintenance/Robustness
- Tenant issues/Management Issues
- Rehousing/Privatisation/Demolition



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Historic Practice

- Why do we have standards/regulation/legislation
- Historic practice
- Building standards
- CP3
- Government funded research - BRE



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Development of Legislation, Regulation and Guidance



- Legislation vs Regulation vs Guidance
- ADB
- Harmonised BS EN Standards (EN12101)
- Construction Products Regulation (CPR)
EN12101 Smoke and heat control systems.
 - Part 1 Specification for smoke barriers
 - Part 2 Specification for natural smoke and heat exhaust ventilators
 - Part 3 Specification for powered smoke and heat exhaust ventilators
 - Part 6 Specification for pressure differential systems. Kits
 - Part 7 Smoke duct sections
 - Part 8 Smoke control dampers
 - Part 10 Power supplies



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Development of Legislation, Regulation and Guidance



- Legislation vs Regulation vs Guidance
- ADB
- Harmonised BS EN Standards (EN12101)
- Construction Products Regulation (CPR)
- BS9999 Code of practice for fire safety in the design use and management of buildings
- BS9991 Fire safety in the design use and management of residential buildings
- BS7346-8 Components for smoke control systems
- Smoke Control Association Guides



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Development of Legislation, Regulation and Guidance – Emerging themes

- Tragically loss of life - 6 people died in the Lakeland House fire in 2009 and the 2017 Grenfell Tower fire killed 72 people
- Everyone has had to sit up and take stock
- The Grenfell Enquiry is ongoing and positive steps forward are being made
- Expect more regulation and guidance



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Development of Legislation, Regulation and Guidance – Emerging themes

Hot topics with respect to smoke control systems

- Building Safety Bill
- The London Plan Policy D12
- Single stair buildings
- Defend in place
- Competence



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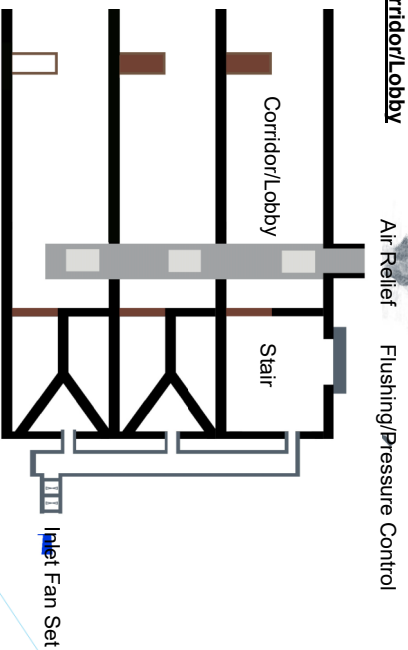
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Development of Legislation, Regulation and Guidance – Emerging themes

Hot topics with respect to smoke control systems

- Stair pressurisation vs Lobby extract vs Hybrid fire engineered options

Pressurisation Simple Corridor/Lobby



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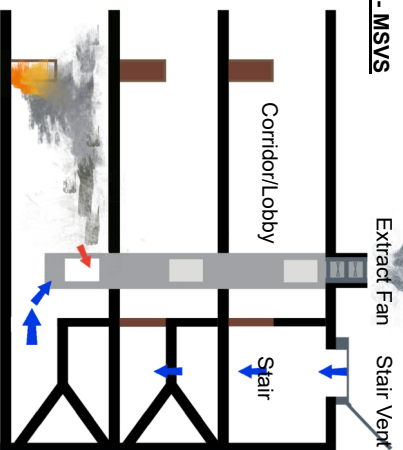
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Development of Legislation, Regulation and Guidance – Emerging themes

Hot topics with respect to smoke control systems

- Stair pressurisation/Lobby extract/Hybrid fire engineered options

Corridor/Lobby Extract - MSYS



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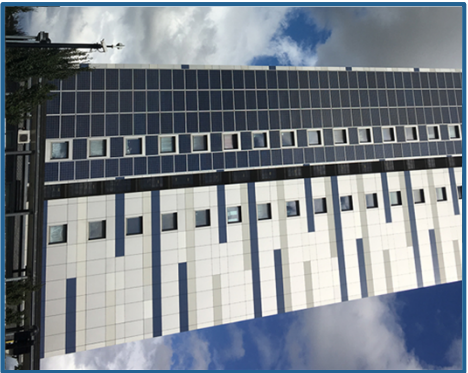
Development of Legislation, Regulation and Guidance – Emerging themes

Hot topics with respect to smoke control systems

- Stair pressurisation/Lobby extract/Hybrid fire engineered options
- Fire service intervention/Automatic operation
- Opportunity for self evacuation
- Maintenance by competent persons

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Legacy Buildings – The issues



- Safe when built
- Built to standards of the time
- Wind problems
- Building stock has evolved due to
 - Maintenance/Damp/Faults
 - Green agenda
 - Increased expectations
 - Beautification
 - Ill thought-out changes
- Less safe than built or unsafe by modern judgement

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Legacy Buildings – The issues

- Privatisation and mixed ownership
- Tenant responsibility for work/Section 20 notices
- Buy to let influences
- Developer and builder responsibilities
- Commercial interests
- How long is Legacy?

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What Do We Do With Legacy Buildings?



- What is a home?
- What if they fall short of expected fire safety standards?
- Constraints can't knock them all down.
- Options
 - Temporary provisions
 - Longer term provisions
- Retrofitting is never an easy option but necessary



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Case Study Fire And Smoke Solutions/Paradigm Housing



- Ex local authority block
- Accommodation over Ground plus 14 floors
- Single stair building 42m
- Common lobby & circulation space with 2 lifts
- 6 flats per floor of lobby
- Mixture Private and Social and Supported Housing
- Inherited with its own history
- No cladding



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Case Study Fire And Smoke Solutions/Paradigm Housing



- Smoke ventilation removed due to wind problem to improve common areas to increase size of flats
- Top level commitment to do the right thing and not cut corners
- Commitment to providing safe homes
- Prepared to support changes with budget and management
- Recognised something was wrong and needed help



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Case Study Fire And Smoke Solutions/Paradigm Housing



- Duty and standby supplies required
- Insufficient electrical distribution
- New incoming mains
- Two mains supplies not possible
- Generator not possible
- UPS – Uninterruptable Power Supply



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Case Study

Fire And Smoke Solutions/Paradigm Housing

Key challenges for project team and observations

- Smoke control and fire engineering requirements
- Power supply and distribution requirements
- Building modification requirements
- Scaffolding
- Tenant management/Tenant engagement/Disruption
- Delivering the project

Specialist expertise necessary to design and deliver upgrade to acceptable level of fire safety

Only point of contact for many housing associations and social housing providers is a fire alarm or general facilities management company



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Take Home Points

Home – Safe Secure Stable

Learn from history – Strive for better

Systems to protect escape routes from smoke ingress must be functional and maintained
Restoring or upgrading building to acceptable level will require persistence, commitment and budget

Specialist input is required for smoke control systems design, installation and maintenance

Smoke control systems are not a few window actuators hanging off a fire alarm interface



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Thank you - Please post questions



on the conference message board



to Smoke Control Association at www.smokecontrol.org.uk



or myself at ian.doncaster@fireandsmokesolutions.co.uk



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