LEEDS BECKETT UNIVERSITY, 12TH JULY 2018 SAFETY N HOUSING **CONFERENCE 2018**









Chair's Welcome

Paul Smith

Group Health and Safety Manager

Coast and Country







Regulatory View

Harold Brown

Senior Assistant Director, Investigation and Enforcement

Regulator of Social Housing





Consumer Regulation

Harold Brown Senior Assistant Director Investigation & Enforcement



July 18

Outline of the session

- 1. Overview of regulation our role and our approach
- 2. What we saw last year and findings of breach/serious detriment
- 3. The regulator's view of health and safety

The Regulator of Social Housing

- Our aim to promote a viable, efficient and well-governed social housing sector able to deliver homes that meet a range of needs.
- Parliament has given us an economic objective and a consumer objective
- Consumer objective is to:
 - support the provision of housing which is well-managed and of appropriate quality
 - ensure tenants are given an appropriate degree of choice and protection
 - ensure tenants of social housing have the opportunity to be involved in its management and to hold their landlords to account
 - encourage registered providers to contribute to the well-being of the areas in which their homes are situated.
- Co-regulation: responsibility lies with providers' boards and councillors to ensure compliance

Consumer Regulation

- Consumer standards apply to **all** registered providers (including local authorities)
- Our role is reactive only.
- The regulator may only act:
 - where there has been a **breach of a standard**
 - which has, or may, cause serious detriment (serious harm) to tenants or potential tenants
- The consumer standards are:
 - Home (quality of accommodation and repairs & maintenance)
 - Neighbourhood & Community
 - Tenancy
 - Tenant Involvement & Empowerment

Social housing green paper

- A wide-ranging, top-to-bottom review of the issues facing the sector, the green paper will be the most substantial report of its kind for a generation.
- It will kick off a nationwide conversation on social housing.
- What works and what doesn't work.
- What has gone right and what has gone wrong,
- Why things have gone wrong and most importantly – how to fix them.



Consumer regulation and individual complaints

- We receive referrals from tenants, representatives, registered providers and others.
- Legislation sets a high bar for regulatory action. Focus is on potential systemic failure many individual referrals do not indicate a systemic failure.
- We consider all information received to consider whether it represents a breach of our standards. But...
- We do not seek to resolve individual complaints. That is the role of the Housing Ombudsman.
- In April 2017 we published an MoU with the Housing Ombudsman setting out how we work together.

Our approach – breach of standards

- We reach judgements no box ticking or thresholds
- Must be proportionate and reasonable
- Consider why the issue arose was it systemic or isolated? Short or long term?
- Not always straightforward....
- Health and safety must be a breach of statutory duty
- Where there is no breach, even if there has been harm to tenants, we cannot act

Our approach – serious detriment

- Harm / risk of harm might include:
 - risks to tenants' health & safety
 - loss of home
 - discrimination
 - financial loss
- Judgements take into account: the number of tenants affected, the seriousness of the issue, and the duration of the failure
- Even if we find a breach of the standard, if there has not been serious harm, or risk of serious harm to tenants, we cannot act.

Our approach – regulatory action

- Transparency: publish a Regulatory Notice setting out our findings.
- If a provider takes effective action to resolve problems, we will give it the time and space to do so.
- We can take enforcement action (for example directing action, fines, removing directors from Boards)
- BUT we have never had to take enforcement action under the current regime for a breach of consumer standards

Our approach – implications for governance

- Where we find a breach and serious detriment, we always consider what this means for our view of provider's governance
- (Except for local authorities not subject to the G&FV standard)
- We consider:
 - whether this is a one-off rogue event or symptomatic of a wider malaise.
 - whether the board was in control?
 - whether systems of internal control were in place and effective
 - how the provider has responded and managed the risk

Consumer regulation in 2017/18

- Around 500 referrals relating to the consumer standards
- Looked in detail at about 200 referrals
- Investigated around 70 referrals
- Found breach and serious detriment in 5 cases
- Will be summarised in our annual Consumer Regulation Review published in July 2018
- Breaches mainly relate to the Home standard including gas safety, fire safety, electrical safety and Legionella.
- And, one case where we found a breach of the Tenancy standard.

Gas safety and fire safety

- Breach/serious detriment in two gas safety cases (Creative Support and Vivid Housing).
- Breach/serious detriment in one fire safety case (Central and Cecil).
- For gas safety, in each case there were a number of properties without valid certificates, and properties without certificates for a long time.
- For fire safety, there were a large numbers of Fire Risk Assessments which had not been completed within the recommended timescales
- We do not set out details of exactly how many, for how long want to avoid 'trigger thresholds'
- Problems were caused by poor design and implementation of processes and poor data i.e. poor internal control systems and poor governance

Electrical safety and water safety

- For the first time, we found that a registered provider had breached both electrical safety and water safety requirements (Raven).
- Regarding electrical safety, the provider had carried out electrical safety inspections
- ...but had failed to complete the recommended remedial actions, some of which had been overdue for a number of years.
- For water safety, the provider had omitted a number of properties from its water testing schedule and so had failed to carry out risk assessments.
- The regulator found there had been a risk to tenants arising from both failures.

The regulator's view (1)

- Non-compliance has implications for registered providers' reputation
 - Reputation is easy to lose and hard to win back
 - Putting things right can be a big drain on money, time and focus
 - Better to not get it wrong in the first place
- Ensuring tenants are safe is the fundamental responsibility of a provider.
 - Understanding what you are required to do
 - Understanding who is responsible/accountable for doing it
 - Know your stock what properties you own/manage and what they need.
 - Understanding what the data says about
 - And how reliable is that data?

The regulator's view (2)

- The importance of effective internal controls and board oversight.
- Robust data and asset management systems are very important
- Where a problem comes to light, it is essential that effective action is taken.
- To remedy the issue and ensure compliance
- To understand why the problem occurred and what can be done to prevent a recurrence
- Transparency with the regulator is essential if a registered provider suspects a breach.





Fire Safety

Keith McGillivray

Chief Executive



British Automatic Fire Sprinkler Association batsa Benefit of Retrofitting AFSS in Social Housing

Keith MacGillivray MBE MA BSc Chief Executive

Protecting people, property and the environment

What Are Sprinklers?

- Do they make fires worse?
- Do they put fires out?
- Do they use more or less water than the Fire service?
- Are they easy to install?
- Can they be retrofitted easily?
- Could you drown?
- Could you catch Legionella?

Grenfell Tower, London – 14 June 2017

- 71 Fatalities
- No Sprinklers
- Small Fire in Fridge
- Extinguished by Fire & Rescue Service
- Had already ignited cladding
- Unstoppable

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 \Rightarrow Public enquiry

 $\implies \text{Review of Regulations}$



Was This A One Off or Was It Predictable?





Before and After



No, Not A One Off, Very Predictable







British Automatic Fire Sprinkler Association

London

Seems Familiar, Irvine 1999 1 Fatality



Springburn Glasgow 2015 1 Fatality



Waddell Court, Glasgow 2009 1 Fatality



Lille, France 1 Fatality



Delft, Netherlands



Dubai Sprinklered No Fatalities



Melbourne Sprinklered No Fatalities



Istanbul Sprinklered No Fatalities



Fire Safety in High Rise Blocks: Guidance on Sprinklers

- BRE Research 2004 Report on effectiveness of sprinklers
 in residential premises
 - Cost effective in buildings 11 storeys and over
 - Possibly cost effective 6 storeys and over
- Scottish Building Standards
 - Requirement for sprinklers in Hi-Rise over 18m also Open Plan
- CFOA-sponsored (part-BAFSA Funded) review of cost benefits of sprinklers by BRE; published November 2012
- Most recent study by Scottish Government has shown that Student Halls of Residence and Social Housing flats would benefit from sprinklers.

High Rise Fire Risks and Impact

Fire Risk Assessment reports

- Experience suggests passive measures are not being maintained
- Failure to ensure compartmentation not breached by installation of other services and damage
 - Fire development in some fires supports this belief
- Dry risers and fire equipment 'often unavailable'
- Potential for fire growth and spread
 - Risks to other occupants of building
 - External cladding 'often a factor'
 - Risks to fire-fighters Shirley Towers fatalities
 - Arson a common cause of fires often in communal areas
- Financial and social impact of incidents
 - Authorities
 - Residents
 - Community
 - Liability for owners

The case for retrofitting sprinklers in social housing

- Limited activity prior to 2009 Lakanal Report
- Callow Mount retrofit : major report 10000 copies + DVD circulated
- Provided evidence for authorities to consider the potential cost benefits of using sprinklers
- Housing authorities and associations now using a targeted approach in both high and low rise premises:
 - Vulnerable residents and extra care facilities
 - As part of major refurbishment programmes
 - To address specific fire safety concerns such as single staircases
 - Compare benefits with other fire safety measures
 - Some installations are F&RS funded




Scottish Fire and Rescue Service Data 2009-2017 Fires in High Rise Flats

- Numbers of fires have fallen from high of 499 in 2009/10 to 238 in 2015/2016
- 98% of these fires were in unsprinklered flats, resulting in 15 deaths
- There were 56 fires in flats with sprinklers with no deaths
- One fire in a sprinklered flat resulted in a single injury

Year	Total number of deaths in high rise fires	Number of deaths in high rises with sprinklers
2009/10	4	0
2010/11	5	0
2011/12	0	0
2012/13	2	0
2013/14	4	0
2014/15	0	0
2015/16	0	0
2016/17	0	0

Application of BS 9251 in UK



Initial Considerations



Fire sprinkler systems for domestic and residential occupancies – Code of practice Before undertaking the design of a BS 9251 residential sprinkler system for a specific property, the designer should evaluate the following factors before starting work on the project, obtaining specialist advice where necessary:

- the risks to be protected, including the fire loading
- the type of occupancy of the property
- the water supply requirements and availability
- any special circumstances
- Whether the system is being used as a form of alternative compliance

NOTE 1 In some buildings or parts of buildings, a higher level of protection might be required than that provided in BS 9251



...making excellence a habit."

Application of BS 9251 to new build in UK

- Legislative Requirements
 - Welsh Regulations all new domestic and residential properties
 - All new high rise flats over 18m,open plan living flats, care homes and sheltered housing in Scotland
 - All new high rise flats over 30m in England
 - Loft conversion and open plan layouts
- Housing Association and local authority policies







Types of Residential Sprinkler Head



BS 9251 Extent of sprinkler protection

Sprinkler protection should be provided in **all parts** of the premises. However, unless required by a fire strategy or risk assessment, the following **may** be excluded:

- bathrooms with a floor area of less than $5m^2$;
- cupboards and pantries with a floor area of less than 2 m² or where the least dimension does not exceed 1m;
- attached buildings such as garages and boiler houses without direct access from within the protected building;
- crawl spaces;
- ceiling voids;

- external balconies permanently open to the outside;
- uninhabited loft/roof voids.

BS 9251 Water supplies

Sprinkler systems should be connected to a reliable and sustainable supply, for example:

- mains water supply:
 - mains pressure only;
 - mains water supply boosted by a pump;
- stored water supply:

British Automatic Fire Sprinkler Association

batsa

- pump supplied from a water tank;
- regulated pressurized vessel;
- gravity-fed stored water system.

Clauses 5.8.3 to 5.8.5 cover the technical recommendations for these types of supply.



Skid-mounted pump unit with tank over

Pipework



- Pipework can be:
 - Black steel
 - Copper
 - CPVC (approved for sprinkler use)
 - CPVC should be installed only by company competent to do so

BS 9251 Frost Protection

- Antifreeze is flammable. It has to be sufficiently diluted and thoroughly mixed. Only approved premixed solutions that can be evidenced as suitable for sprinkler systems should be used.
- Only glycerine-based anti-freeze solutions may be used with plastic pipe and fittings. Glycol-based anti-freeze solutions should not be used in CPVC systems as it can damage the plastic.
- The water supply company should be consulted regarding the fluid categorization and the suitability of backflow prevention arrangements prior to installation.

Note: Lagging and trace heating remain as the most viable options



Corgarff Castle , Aberdeenshire



BS 9251 Alarm



- Connected to independent internal alarm, or:
- Interfaced with automatic fire detection and alarm system, this interface should comply with the relevant part of BS 5839.
- Sprinkler alarm should be clearly distinguishable from fire detection system
- Vulnerable persons alarm should have remote monitoring, sprinkler system activation should be treated as a confirmed fire.

System data label

A label or notice should be attached or fixed adjacent to or on the sprinkler riser next to the main sprinkler stop valve as a permanent record of a system's design data.

Sprinkle	r system data			
Installed at:	123 Main Street,			
	Town,			
	County,			
	Postcode			
Installation date	month/year			
Design specification				
Code of practice	BS 9251:2014			
Category of system	Category 1			
Hydraulic data				
Sprinklers operating	2 No.			
Flow/pressure demand	100 L/min @ 2.5 bar			
Installing contractor				
Name	Contract Reference No.			
Address	AB1234			
Logo				
Third party certification body, if appropriate	Name			
Certificate URN	CD5678			

Example of system data label

Maintenance

- Maintenance for AFSS is relatively simple and low cost.
- Annual check to ensure water supplies are still appropriate
- Visual inspection to ensure sprinkler heads have not been obstructed or painted
- Self-testing systems are available with real time reporting of conditions
- Landlords' staff can be trained to undertake the reviews





Sheffield Low Rise Project



Design and preplanning

- Sprinkler Installation relatively straightforward to BS 9251:2005
- Major focus on routing of main risers
 - Some blocks had service area at rear others more complex
- Eight different designs for the various flat layouts
 - Utilised between 8 15 sprinkler heads depending on layout
- Use of preformed "Pendoc" boxing
- Electrical connections to sounders and strobe



Installation Process

• Surface mounted pipework

- Minimises drilling required dust vacuuming to reduce dust
- High level control to ensure all joints cemented



 Use of CPVC pipework assists in speed of installation but requires high level control to ensure all joints correctly glued – temperature and humidity are important



Follow on trades

• Preformed 'Pendoc' boxing provides high quality finish







• Electricians connect sounders and flow switches





Commissioning and Handover

- Liaison staff end of day contact with residents
 - Ensure satisfaction and interim arrangements if over run
- Handover Pack for each property
 - Pressure and NICEIC Tests
 - Installation Inspection
 - Tenant Induction
 - Handover Complete
 - Signed off by of Morgan Sindall and owner
 - Pack for Morgan Sindall and owner
 - Do's and Don'ts sheet for residents
- 12 month warranty from Armstrong Priestley
 - Ongoing maintenance by trained Sheffield staff





Completed Installation



Variations adding costs – Sheffield Low Rise

- Construction, design and layout
 - Floor and staircase design and presence of asbestos
- Inclusion of other fire protection improvements
- Over specification and use of consultants to design and/or manage contract
- Use of lead contractors and other trades
- Water Supplies
 - Requirement for pump and/or tank and excessive costs of connection
- Size and layout require more heads
 - 8 -15 per home compared with 5 in Callow Mount
 - Cost per head comparison 'in line with Callow Mount'
 - Total cost of sprinklers £810,000 (excluding builders' work)
 - Builders' work (council's nominated contractor: £341,450
 - Total cost per home = $\pounds 2132$

Costs of Installation

Location	Total System Cost	Cost per Flat/Home	Comments
Callow Mount	£55,134	£1148	5 heads per flat Includes bin store, communal room and office
Bryn Arfon	£80,000	£1150	5 - 7 heads per flat Includes communal areas, bin and cycle store and rooftop pavilion
Sheffield Low Rise	£1,152,450	£2132	8 - 15 heads per home – includes 1, 2 and 3 bedroom units

HOME FIRE TIMELINE



And they work!





British Automatic Fire Sprinkler Association

50% of the cost of the carpets



More information available from: www.bafsa.org.uk

Protecting people, Firefighters, property and the environment





Introduction to Behavioural Safety and Cultural Safety

Quentin Emery

Principal Consultant

Ryder Marsh OCAID Ltd.





Organisational Culture & Individual Development

Introduction to Behavioural Safety and Cultural Safety®

Developed by RyderMarsh OCAID Limited Presented by Quentin Emery

Aims:

- To discuss Behavioural Safety and Cultural Safety[®]
- To investigate human error, why we get it wrong!
- To explore the best ways that a safety leader can communicate to improve safety culture.



Behavioural Safety Leadership

- Getting out and about often enough and at the right time
- Asking the right questions about the right things in the right way
- Finding out what they are doing and why rather than just who's doing it.

The importance of praise



"For a player, for any human being, there is nothing better than hearing 'Well done!' Those are the two best words ever invented."

Sir Alex Ferguson



RyderMarsh OCAID Cultural Safety®









What is Culture?





The human brain is fantastic at collating information but it is also flawed!


Fast or System 1 thinking



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17 x 24

Slow or System 2 thinking



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Are the lines the same length?





How good are your observation skills?





Example Analytical Questions

• Ask open questions

• If in doubt ... have **TED in your head**: Tell, Explain, Describe.

• "If I was working with you today, what would I need to do/ know, to be safe?"

• Ask in the third person: *"why would someone do the job like that?*

what will you do personally to CREATE safety?



Thank You!

Quentin Emery RyderMarsh OCAID Limited

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Panel Session and Questions from the Audience



Professional Practice Sessions



I) Radon Gas – Reducing Natural Risks in your Home **Tweed Room (This Room)**

Anthony O'Neil, Area Sales Manager (North), Air Tech

2) Fire safety – Understanding Responsibility – Denim Room

Matthew Reynolds, Fire Safety Manager, Northwards Housing







Radon Gas – Reducing Natural Risks in your Home

Anthony O'Neil

Area Sales Manager (North)

Air Tech





Radon Reducing Natural Risks in Your Home





Just in case you don't know what radon is:

It is a natural, colourless, odourless, radioactive gas

It is formed by the radioactive decay of the small amounts of uranium that occur naturally in all rocks and soils

It can cause lung cancer particularly if you are a smoker

Estimated over 1100 deaths per year due to radon in the UK

'Affected Areas' have been identified in most areas in the UK

UK average radon level in homes20 Bq/m³UK recommended Action Level in homes200 Bq/m³UK (BRE) highest average level in a house24,000 Bq/m³UK (BRE) highest room/cellar level96,000 Bq/m³PHE Target level100 Bq/m³



Why is it a risk to our health?

Radioactive elements decay and emit radiation/radioactive dust.

- radioactive dust in the air we breathe

The dust is trapped in our airways and emits radiation that damages the inside of our lungs. - This damage, like the damage caused by smoking, increases our risk of lung cancer.







Why is it a risk to our health?





Landlords responsibilities

Landlords have a responsibility to their tenants under Duty of Care and the Housing Act to provide a safe home.

Radon is identified as a potential hazard in dwellings in the Housing Act 2004

The latest set of indicative maps published by Public Health England (PHE) show that radon can be found nationwide.

Areas where estimates show more than 1% of properties will contain high levels of radon are classed as radon Affected Areas.



Approximation of radon gas areas in England, Wales, Scotland and Northern Ireland



Landlords responsibilities

Housing Health and Safety Rating System (HHRS) applies a numerical score to the different hazards depending on their overall risk to the occupant.

Rauulinauliy labic									
Radon	Likelihood	Rating	Rating						
Bqm-³	1 in	score	band						
800	277	3,285	В						
400	518	1,757	С						
200	1,000	910	D						
150	1,322	688	D						
100	1,961	464	Е						
50	3,902	233	Е						
25	7,853	116	F						

Dados/ratios table

Bands A-C classified as Category 1 hazards

Bands D-J classified as Category 2 hazards

Average likelihood, outcomes and HHSRS score for radon for persons aged 60 to 64 years in all dwellings, following lifetime exposure



The Natural Effects



Usually a slight lower pressure than the surrounding atmosphere.



How to test for Radon

Testing is the only way to find out the actual levels of radon inside a property.

The preferred method is to test over a 3 month period.

Typically 2 detectors, one for the living area and the other for the bedroom.

After 3 months the detectors are returned.

Detectors are then analysed and results issue.

	G	н	1	I.	К	I.	М
de	Del (L)	Result (By)	Del (B)	Result (By)	SA Average (By)	Placed	Collected
	63118	216	63049	89	122	16/02/2018	24/05/2018
	63163	95	63158	85	75	16/02/2018	24/05/2018
	63060	75	63116	94	71	16/02/2018	24/05/2018
	63117	71	63132	84	65	16/02/2018	24/05/2018
	63109	91	63053	55	59	16/02/2018	24/05/2018





Remediation

Seal gaps in floors/unblock vents





Under floor ventilation



Positive Pressure System (PPS/PIV)



Active/Passive Radon Sump





Remediation



For houses with a mixed floor type a combination of the above can be used. *The level of 500 bq/m³ is an approximate guide

Aftercare



It is important following and remediation works that immediately following 3 month testing is carried out to ascertain the effectiveness of the works, 12months testing thereafter.

Mechanical ventilation should be maintained, serviced and kept in good working order.

Tenants should be educated on the correct use of ventilation equipment



Thank you for your attention









Lunch and Networking



Professional Practice Sessions



3) Stairlift Compliance – **Tweed Room (This Room)** Terence Clark, Regional Sales Manager, Stannah Stairlifts Eddie Kirkhum, Technical Support Manager, Stannah Stairlifts

4) Using Data to Demonstrate Compliance – Denim Room Devinder Singh, Head of Business Support (Compliance), Together Housing Group Michael Jeffery, HCI Limited

5) Asbestos Management – What makes an excellent asbestos management plan - Wool Room

Tom Byers, Head of Compliance, Pennington Choices Ltd Andy Brown, Operations Manager, Pennington Choices Ltd







Eddie Kirkum Technical Support Manager (Stannah Lift Services Ltd) 12th July 2018

Stairlift Directives and Standards

- What's applicable?
- Stannah approach?
- Specific examples
- Future changes



Introduction

- Eddie Kirkum
- Technical Support Manager
- Stannah Lift Services Ltd
- Worked at Stannah for 22 years
- 21 of those years in stairlift design, changing last year to the sales and installation side of the business and my current technical support role.
- I now use my knowledge of product compliance and design to provide technical advice and validate suitability of not only Stannah Stairlifts but other manufacturers products that we have in our portfolio, such as hoists, step lifts and homelifts.



Stairlift Directives and Standards

- What's applicable?
- Stannah approach?
- Specific examples
- Future changes



- A stairlift is not a medical device it is a machine.
- The direct association from the harmonised European stairlift standard EN81-40 to machinery directive 2006/42/EC is clear.

Relationship between this European Standard and the Essential Requirements of the EU Directive 2006/42/EC

This European standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to essential requirements of the New Approach Directive 2006/42/EC.



- The Declaration of Conformity
- In Stannah products as with many others it is found in the user manual and must be left with the user on completion of installation, satisfactory commission testing and product handover.
- The declaration of conformity will list the various directives, standards and any independent certification the product has.











• **Directives** are regulations written into law applicable across the European Economic Area. At Stannah Stairlifts our DC powered products must show compliance to...

✓ ESHR of 2006/42/EC Machinery Directive

✓ 2014/35/EU Low Voltage Directive

- ✓ 2014/30/EU Electro Magnetic Compatibility Directive
- ✓ General product safety regulations 2005
- ✓ Compliance enables us to affix the CE mark to our products.





- **Standards** can be of different types,
 - Type A general standards applying to all machines
 - Type B those designed to promote safety
 - Type C those specific to the type of machine.
- Harmonised European standard EN81-40 is specific for stairlifts and inclined lifting platforms intended for persons with impaired mobility. The Standard represents good engineering practice and "state of the art" It is far more detailed and far more prescriptive than the machinery directive alone.
- Stannah Stairlifts are fully compliant to EN81-40:2008



- **EN81-40** references many other standards....
- EN 81-1:1998, Safety rules for the construction and installation of lifts Part 1: Electric lifts
- EN 349, Safety of machinery Minimum gaps to avoid crushing of parts of the human body
- EN 953, Safety of machinery Guards General requirements for the design and construction of fixed and movable guards
- EN 12385-4, Steel wire ropes Safety Part 4: Stranded ropes for general lifting applications
- EN 60204-1:2006, Safety of machinery Electrical equipment of machines Part 1: General requirements (IEC 60204-1:2005, modified)
- EN 60529, Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)
- EN 60664-1:2007, Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests (IEC 60664-1:2007)
- EN 60695-11-10, Fire hazard testing Part 11-10: Test flames 50 W horizontal and vertical flame test methods (IEC 60695-11- 10:1999)
- EN 60747-5 (all parts), Discrete semiconductor devices and integrated circuits Part 5: Optoelectronic devices EN 60947-1:2004, Low-voltage switchgear and control gear Part 1: General rules (IEC 60947- 1:2004)
- EN 60947-4-1, Low-voltage switchgear and control gear Part 4-1: Contactors and motor-starters Electromechanical contactors and motor-starters (IEC 60947-4-1:2000)
- EN 60947-5-1, Low-voltage switchgear and control gear Part 5-1: Control circuit devices and switching elements Electromechanical control circuit devices (IEC 60947-5-1:2003)
- EN 60950-1, Information technology equipment Safety Part 1: General requirements (IEC 60950- 1:2005, modified)
- EN 61249-2-1, Materials for printed boards and other interconnecting structures Part 2.1: Reinforced base materials, clad and unclad Phenolic cellulose paper reinforced laminated sheets, economic grade, copper clad (IEC 61249-2-1:2005)
- EN 61508-2, Functional safety of electrical/electronic/programmable electronic safety-related systems Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems (IEC 61508-2:2000)
- EN 61508-3, Functional safety of electrical/electronic/programmable electronic safety-related systems Part 3: Software requirements (IEC 61508-3:1998)
- EN 61558-1:2005, Safety of power transformers, power supplies, reactors and similar products Part 1: General requirements and tests (IEC 61558-1:2005)
- EN 62326-1, Printed boards Part 1: Generic specification (IEC 62326-1:2002) EN ISO 9773, Plastics Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source (ISO 9773:1998)
- EN ISO 12100-1:2003, Safety of machinery Basic concepts, general principles for design Part 1: Basic terminology, methodology (ISO 12100-1:2003)
- EN ISO 12100-2:2003, Safety of machinery Basic concepts, general principles for design Part 2: Technical principles (ISO 12100-2:2003)
- EN ISO 13850, Safety of machinery Emergency stop Principles for design (ISO 13850:2006)
- EN ISO 13857:2008, Safety of machinery Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)
- EN ISO 14121-1, Safety of machinery Risk assessment Part 1: Principles (ISO 14121-1:2007)
- ISO 606, Short-pitch transmission precision roller and bush chains, attachments and associated chain sprockets
- ISO 9772, Cellular plastics Determination of horizontal burning characteristics of small specimens subjected to a small flame
- ISO 7000:2004, Graphical symbols for use on equipment Index and synopsis
- IEC 60417-DB-12M (2002-10), Graphical symbols for use on equipment



• IEC 60617 (all parts), Graphical symbols for diagrams

- We know some manufacturers do not get their products assessed to EN81-40 choosing to certify only against the machinery directive.
- This is not illegal but does open them up to challenges. If the standard exists for this type of product why haven't you used it?
- At Stannah we are lucky enough to have a competitor room where the majority of our competitor products are installed. It can be seen that not all are entirely equal in terms of function and safety.


What's applicable?

- EN81-40 specifies many limits to improve safety
- Maximum ride height from stairs. You can see the Stannah 260 on left uses a bespoke rail to keep ride height low. The competitor product on right uses modular rail and this is their solution.







Stannah Approach

- Every Stannah design has a requirements document, merging what features are needed with the regulations controlling them.
- We then go further using our knowledge and years of data we add **our own tests and requirements** ensuring the product not only complies to applicable Standards and Directives but also performs to Stannah expectations.





Stannah Approach

Engineering design rules have evolved over the years, all new designs or evolutions of designs must adhere to these rules. They detail exactly how we test for compliance to specific clauses. This provides a consistent and repeatable guide to the design engineers and allows us to demonstrate exactly how we validated the design.



Stannah Approach

 Stannah then independently certify our products. This not only reaffirms that we have designed the model appropriately but gives our dealers and purchasers an extra degree of assurance. In recent years we have used Intertek for both our European and North American approvals.







Specific Examples

- Resistance to operating forces **EN81-40** clause 5.1.7.1 requires a safety factor of 2.5x rated load, no permanent deformation.
- Machinery Directive 4.1.2.3 Mechanical strength: must be designed and constructed to withstand overload without permanent deformation using static test coefficient 1.25
- However neither of these documents detail exactly how to test. Our Stannah **engineering design rules** describe multiple versions of load test, with central loads, offset loads, loads applied over rail joints, rails at different angles, chairs at different heights, chair in run position, chair in swivelled position, loading on footrests and hinge rails.
- For materials that may have a sudden failure such as a cast aluminium footrest, Stannah apply much higher F.O.S and components are not only subject to FEA but also destructive testing.



Specific Examples

- EN81-4 clause 5.1.7.3 all load bearing components and joints to withstand 50,000 load cycles.
- Machingry directive 4.1.2.3 Mechanical Strength: machinery designed to undergo without failure dynamic tests carried out using maximum working load multiplied by dynamic test coefficient of 1.1
- Stannah have created a range of dynamic tests including running tests at 1.1x maximum load, cyclic fatigue tests where pneumatic cylinders apply and remove 1.1x max load to seat, shock load testing where a load is dropped onto seat simulating users falling into the seat. Powered swivels are operated while subjected to 1.1x rated load, retractable rails have load applied and removed after each deployment.



Specific Examples





Future Changes

- EN81-40:2008 will be updated. The standard is controlled by the CEN committee. (Comité Européen De Normalisation)
- Changes were expected in 2017 but they did not materialise.
- Stannah Stairlifts have staff who sit on the CEN committee, so we are in a position to be aware of the proposed changes and anticipate the effects on our existing models.
- It is likely that there will be a period for manufacturers to achieve compliance once the revised standard is published.





Summary

- The **Declaration of Conformity** tells you much of what you need to know about the compliance of the product.
- Look for the **directives**, for evidence of **standards** and any evidence of **independent certification**.
- EN81-40:2008 sets out very specific clauses for stairlift design. The machinery directive is more generalised
- **EN81-40** is likely to change and manufacturers will then have a changeover period in which to demonstrate compliance to the new release.
- Stannah Stairlifts are fully compliant to EN81-40 and independently certified.



Thank you for listening

Any questions?











Electrical Safety and Software Innovation

Ryan Dempsey

Chief Executive Officer

The Compliance Workbook



Electrical Safety in Social Housing and Software Innovation





The Future of Compliance Management Take the First Step

Ryan Dempsey FIET CIHM

Chief Executive Officer

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www.thecomplianceworkbook.com

What we'll cover today

Technical in Social Housing

Myths around Electrical Testing

Process for Electrical Testing

The Future of Compliance Management

Technical in Social Housing



Systems Emerger Data Demand PPPU HRA Management response Ana Spend Standards Competence Electrical Capital control Leaders **BS** cover Asset Stock Chain funds Housing Compliance Condition SMT Strategic Proactive Health Audit Supply Reactive Stakeholders ISO **Risk Ring** ICT Assurance Safety fenced later Legislation

There is a difference between Electrician in Social Housing and Electrician managing Social Housing

Let me explain...



There are so many people and teams within organisations and yet the important aspect of Safety and Asset Management can only be determined by your ability to educate!

Where do you fit?

Asset Management Decision-Making	Capital Investment Decision-Making	Strategy & Planning	Asset Management Policy
	Operations & Maintenance Decision-Making		Asset Management Strategy & Objectives
	Lifecycle Value Realisation		Demand Analysis
	Resourcing Strategy		Strategic Planning
	Shutdowns & Outage Strategy		Asset Management Planning
Risk & Review	Risk Assessment & Management	Lifecycle Delivery	Technical Standards & Legislation
	Contingency Planning & Resilience Analysis		Asset Creation & Acquisition
	Sustainable Development		Systems Engineering
			Configuration Management
	Management of Change		Maintenance Delivery
	Asset Performance & Health Monitoring		Reliability Engineering
	Asset Management System Monitoring		Asset Operations
	Management Review Audit & Assurance		Resource Management
	Management Neview, Addit & Assurance		Shutdown & Outage Management
	Asset Costing & Valuation		Fault & Incident Response
	Stakeholder Engagement		Asset Decommissioning & Disposal

It becomes more complicated...





Regulations & Acts

An Electrician obviously know everything!

BRITISH STANDARD

Requirements for Electrical Installations

BS 7671:2008

incorporating Amendment 1:2011 Corrigendum 2013 Amendment 2:2013 Amendment 3:2015 is awarded to Ryan Dempsey

Awarded 04 May 2011

who attended Wakefield Skillcentre Ltd

and was successful in the following 2 modules

Technical Knowledge of the Inspection, Testing and Certification of Electrical Installations Practical Application of the Inspection, Testing and Certification of Electrical Installations Pass

Ofqual

NER O

040511/2391-10/038872/5XG9507/M/22/02/82

Electrician Interpretation of risk based on personal experience and knowledge???

So how can an electrician tell an Electrician he/she is wrong?

It's all about trust...

Remember it goes both ways though.... You wouldn't pay thousands for a legal team to back you in court and then defend yourself.

Electrical Testing Myths





Who defines it?

Saying you're an electrician does not make you an Electrician!

You can take steps - applied assurance



Next Inspection...

Recommendation not Instruction

I. NEXT INSPECTION

I/We recommend that this installation is further inspected and tested after an interval of not more than

5 YEARS

(Enter interval in terms of years, months or weeks, as appropriate)

CHAPTER 65

PERIODIC INSPECTION AND TESTING

651 GENERAL

651.1 Where required, periodic inspection and testing of every electrical installation shall be carried out in accordance with Regulations 651.2 to 651.5 in order to determine, so far as is reasonably practicable, whether the installation is in a satisfactory condition for continued service. Wherever possible, the documentation arising from the initial certification and any previous periodic inspection and testing shall be taken into account. Where no previous documentation is available, investigation of the electrical installation shall be undertaken prior to carrying out the periodic inspection and testing.

651.2 Periodic inspection shall be carried out without dismantling, or with partial dismantling, as required, supplemented by appropriate tests and measurements from Chapter 64, to provide for:

- (i) the safety of persons and livestock against the effects of electric shock and burns
- (ii) protection against damage to property by fire and heat arising from an electrical installation defect
- (iii) confirmation of correct rating and setting of protective devices required by Chapter 41
- (iv) confirmation of correct rating and setting of monitoring devices
- (v) confirmation that the installation is not damaged or deteriorated so as to impair safety
- (vi) the identification of installation defects and non-compliances with the requirements of the relevant parts of BS 7671, that may give rise to danger.
- NOTE 1: A generic list of examples of items requiring inspection is given in Appendix 6.
- **NOTE 2:** Existing installations may have been designed and installed to conform to previous editions of BS 7671, applicable at the time of their design and erection. This does not necessarily mean that they are unsafe.

Where a circuit is permanently monitored by an RCM or an IMD it is not necessary to measure the insulation resistance if the functioning of the RCM or IMD is correct.

The functioning of the RCM or IMD shall be verified.

651.3 Periodic inspection and testing shall not cause danger to persons or livestock and shall not cause damage to property or equipment even if the circuit is defective.

Measuring instruments and monitoring equipment and methods shall be chosen in accordance with the relevant parts of BS EN 61557. If other measuring equipment is used, it shall provide no less a degree of performance and safety.

651.4 Details of any damage, deterioration, defects or dangerous conditions shall be recorded in a report.

651.5 The periodic inspection and testing shall be carried out by one or more skilled persons competent in such work.

652 FREQUENCY OF PERIODIC INSPECTION AND TESTING

652.1 The frequency of periodic inspection and testing of an installation shall be determined having regard to the type of installation and equipment, its use and operation, the frequency and quality of maintenance and the external influences to which it may be subjected. The results and recommendations of previous certificates and condition reports shall also be taken into account.

652.2 In the case of an installation under an effective management system for preventative maintenance in normal use, periodic inspection and testing may be replaced by an adequate regime of continuous monitoring and maintenance of the installation and all its constituent equipment by one or more skilled persons competent in such work. Appropriate records shall be kept.

653 REPORTING FOR PERIODIC INSPECTION AND TESTING

653.1 Upon completion of the periodic inspection and testing of an existing installation, an Electrical Installation Condition Report based on the model given in Appendix 6 shall be produced.

653.2 The Report shall include the following:

- details of those parts of the installation that have been inspected and tested
- any limitations of the inspection and testing
- any damage, deterioration, defects or dangerous conditions
- any non-compliance with the requirements of BS 7671 which may give rise to danger

There is no set Frequency of Periodic Inspection

Satisfactory to a sparky is in no way a Satisfactory to a Duty Holder!

DECLARATION

I/We, being the person(s) responsible for the inspection and testing of the electrical installation (as indicated by my/our signatures below), particulars of which are described on page 1, having exercised reasonable skill and care when carrying out the inspection and testing, hereby declare that the information in this report, including the observations and the attached schedules, provides an accurate assessment of the condition of the electrical installation taking into account the stated extent of the installation and the limitations on the inspection and testing.

I/We further declare that in my/our judgement, the overall assessment of the installation in terms of its suitability for continued

use is

SATISFACTORY / UNCATIOFACTORY

at the time the inspection was carried out, and that it should be further inspected as recommended within the time interval below.

* An 'Unsatisfactory' assessment indicates that dangerous (CODE C1) and/or potentially dangerous (CODE C2) conditions have been identified, or that Further investigation without delay (FI) is required

INSPECTION, TESTING AND ASSESSMENT BY:

Let me explain...

System tested day 1 = Insulation resistance >200

System tested day 30 = Insulation resistance 100

System tested day 60 = Insulation resistance 20

3 ohms per day

6.6 days to failure!!!!

This electrician gave 10 years!?

TABLE 61 – Minimum values of insulation resistance

Circuit nominal voltage	Test voltage d.c.	Minimum insulation
		resistance
(V)	(V)	$(M\Omega)$
SELV and PELV	250	0.5
Up to and including 500 V with the exception of the		
above systems	500	1.0
Above 500 V	1000	1.0

Having this specified in tenders or specification is actually a breach of procurement Rules and Regulations.

the procurement documents. Specifications must not be written so as to restrict or distort competition, and the specification must not refer to trade names or patents, unless it is essential to describe what is required. The specification may refer to a performance or functional specification or to a standard. In which case priority EAS 15-362 Rev A

IET

ELECTROTECHNICAL ASSESSMENT SPECIFICATION FOR USE BY CERTIFICATION AND REGISTRATION BODIES

July 2015

- NOTES: 1 This EAS (July 2015) replaces the previous EAS (February 2015). Principally a new appendix has been added to cover the requirements for those undertaking the role of Qualified Supervisor or responsible person.
 - 2 References to BSEN 45011 have been removed and replaced with ISO/IEC 17065, and Appendix 8 has been revised.

UKAS Accredited Competent Person Schemes.

They all have to meet the same standards to be able to run the scheme.

If we consider our Duty Holder responsibilities, only one provides a confident level of assurance, in my opinion.

Electrical Testing

What should it look like?



How old is the system?

Asset Management Process in place?

Reactive and Emergency Maintenance and Repairs?

Updated Specification and Policy?

Signed Tenancy Agreements?

Some considerations

Forget EAW89 - That's the act people use to scare duty holders!!

Landlord and Tenants Housing Act HHSRS Defective Premises Consumer Protection Health and Safety at Work Environmental Protection (Statutory Nuisance)

SOCIAL HOUSING IS DIFFERENT!!!

Some considerations

Create a process to slot your assets into frequency categories:



Systems pre 1993, High risk & Vulnerable tenants - HIGH

High - 3 Years Medium - 7 Years Low - 10 years



03

Post 1993 / pre 2008 - Partial RCD protection - MEDIUM

Post 2008 - Full RCD protection -LOW By doing this you promote cost savings associated with safer and up to date installations.



The Future of Compliance Management




We're naturally moving into the world of Technology and Software Innovation.

We have to accept that the way we do things now is not how we will do them tomorrow.

We need to be cautious around technology. Timely ROI is important.



A mass of data which could be used to manage budgets, frequencies, lifecycles and SAFETY.

Yet we're trapped by the dogma which means we accept only 10%.

What if we could do more than scratch the surface....



Each piece of data that we collect has it's place and is connected to strings of data that can impact THE BIGGER PICTURE

To the right =

HRRB with 15 Consumer Units and 215 Circuits



System Criticality is just one example



What if the whole buildings Fire Protection was power from here?



The ability to use 100% of the data and then teach a computer to understand and flag risk..!

Machine Learning which spots inconsistencies with system layout, readings, testing methods and specific geographical or engineering mishaps



We need to use data to spot the things we need to manage





BigChange[®]



Compliance?



Thank you

www.thecomplianceworkbook.com

If you enjoyed this presentation please comment on social media and tag #e5





Legionella

Ian Kershaw

Legionella Team Leader

Hartlepool Borough Council



Legionella & Water Hygiene

12th July 2018

Ian E Kershaw BSc, FWMSoc Legionella Team Leader Hartlepool Borough Council



Hartlepool Borough Council

2003:

Mechanical services in-house. TMV servicing Cleaning & disinfection Water softener servicing Legionella monitoring in-house.

External company for cooling tower chemicals and Legionella risk assessments. Hartlepool Borough Council

2004 – RAs taken in-house. Staff having undertaken City & Guilds RA course(s)

2006 – Cooling tower de-commissioned.

2013 – TMV servicing, softener servicing & cleaning & disinfection services taken into Legionella team.

ACOP L8 & HSG274 Parts 2 & 3

- L8 (Fourth edition) Published 2013
 Has special legal status, sets the minimum standard of best practice
- HSG274 Part 2 Published 2014

Control of legionella bacteria in hot and cold water systems

• HSG274 Part 3 – Published 2014

Other risk systems

HSG282

- The control of legionella and other infectious agents in spapool systems
- Published 2017 (several revisions already)
- Replaces the HSE/HPA spa-pool guidance

What must you do:

Identify & assess sources of risk
 If appropriate, prepare a written scheme
 Implement, manage & monitor
 Keep records (5 years)
 Appoint a competent person

Myths & Legends – ACOP L8 & HSGs:

1. Clean & disinfect showers

- Table 2.1, page 32 <u>clean & de-scale</u>
- 2. Clean & disinfect CWSC annually
 - Table 2.1, page 32 Inspect annually and carry out remedial work <u>where necessary</u>
- 3. Routine Legionella sampling
 - Paragraph 2.120 'where there is doubt...'
- 4. General microbiological monitoring (TVCs)
 - Paragraph 2.119 'is not usually required...'

- 5. Your risk assessment is due!
 - Paragraph 14 '<u>review the assessment</u> <u>regularly</u>'
- 6. Monthly monitoring
 - Info box 2.2 Low risk systems
 - Paragraph 14 'although no further action..'
- 7. TMVs
 - Paragraph 2.75 informed by a comparative risk assessment

What you shouldn't see!

ltem Numbe	r Recommendations to reduce the risk	Priority	System Risk Rating	Associated System	Budget Cost
19	Install a drain valve to the vessel	1	L	WH 02	£250
20	Install a drain valve to the vessel	1	L	WH 01	£250
21	Carry out annual unvented service of the water heater	2	L	WH 02	£150 per unit
22	Carry out annual unvented service of the water heater	2	L	WH 03	£150 per unit
23	Replace the galvanised steel drain valve with a WRAS approved alternative	2	L	WH 03	£250
24	Ensure that the flexible hoses in use are WRAS approved.	2	L	Miscellaneou s	£35 Per hour
25	Carry out annual unvented service of the water heater	2	L	WH 01	£150 per unit
26	Consider removing infrequently used outlets and cutting back pipework	3	М	MCWS 01	£140 Per Unit
27	Consider implementing an annual clean & disinfection programme	3	М	Cistern 01	£450





Compliance made easy!

- Keep the hot water hot
- Keep the cold water cold
- Keep it clean
- Keep it moving

What does the tenant need to know?

Information leaflet on 'water hygiene' not Legionnaires' disease.

Flushing is key!

NECLFG

- Meets quarterly
- Morning technical presentations
- Q&As
- Lunch
- Closed afternoon session
- Next event:

6th September, Radisson Blu, Durham



Any Questions?

Ian E Kershaw BSc, FWMSoc Legionella Team Leader Hartlepool Borough Council 0777 157 3948 Ian.Kershaw@Hartlepool.Gov.UK

Interactive Session



Ward Hadaway – When the Inspector Calls

Stephen Graham

Partner, Head of Licensing and Regulations

Ward Hadaway



Northern Housing Consortium - Health & Safety in Housing 2018 'When the Inspector Calls'

Stephen Graham, Partner



- » All work activities are covered by Health and Safety law.
- » Employer responsibilities are to be found in the primary legislation, the Act, the secondary regulations and the published guidance.
- » If you manage contractors you need to be familiar with the requirements of the:
 - » Health & Safety at Work Etc. Act 1974
 - » Management of Health and Safety at Work Regulations 1999
 - » Control of Substances Hazardous to Health Regulations 2002



- » It shall be the duty of every employer to ensure so far as is reasonably practicable the health, safety and welfare at work of its employees [s2]
- » It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not exposed to risks to their health and safety [s3]



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» Where an offence under any of the relevant statutory provisions committed by a body corporate is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of, any Director, manager, secretary or other similar officer of the body corporate or a person who was purporting to act in any such capacity, he as well as the body corporate shall be guilty of an offence and shall be liable to be proceeded against and punished accordingly [s37]



- The Management Regulations apply to everyone at work and encourage employers to take a more systematic approach to dealing with health and safety by:
 - » Assessing the risks which affect employees and anyone who might be affected by your work, including contractors [a risk assessment]
 - » Setting up emergency procedures
 - » Providing training
 - » Co-operating with others on health and safety matters e.g. contractors who share your site
 - » Providing temporary workers, such as contractors, with health and safety information



- » The Regulations specifically state that where two or more employers share a workplace whether temporary or on a permanent basis - each employer shall:
 - » Cooperate with the other employers
 - » Take reasonable steps to coordinate between other employers to comply with legal requirements
 - » Take reasonable steps to inform other employers where there are risks to health and safety



- » Control of Substances Hazardous to Health Regulations 2002 [COSHH]
- » These Regulations aim to protect the health and safety of people who may be exposed to hazardous substances on site
- » The Regulations require an assessment to be carried out on all jobs where there is a risk of exposure to hazardous substances
- » The assessment should generally be written down together with any further action



- » HSE Inspectors have the power to:
 - » Enter premises
 - » Inspect and investigate
 - » Take measurements, samples and photographs
 - » Require an area or machine to be left undisturbed
 - » Seize, render harmless or destroy dangerous items; and
 - » Obtain information and take statements





» Issue a Notification of Contravention

» Issue an Improvement Notice

» Issue a Prohibition Notice



Newcastle | Leeds | Manchester


» DO:

- » Follow investigation of incident, complaints and claims policy
- » Do it quickly prompt action
- » Capture the evidence :
 - » Photographs
 - » CCTV
 - » Documents
 - » Statements
 - » Common sense

» DON'T

- » Obstruct the HSE Inspector's investigation
- » Refuse to provide lawfully requested documents / access to computers
- » Obstruct access to employees for the purpose of taking statements
- » Destroy or cancel evidence in any form





- » Notice of Contravention fees
- » Improvement Notice
- » Prohibition Notice
- » Sections 2 / 3 criminal prosecutions
- » Section 37 criminal prosecution of Directors or managers



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- » The sentencing guidelines require a structured approach involving 9 specified steps that must be followed in every case:
- » Step 1. Determining the offence category culpability and harm
- » Step 2. Starting point and category range
- » Step 3. Check whether the proposed fine based on turnover is proportionate to the overall means of the offender
- » Step 4. Consider factors that may warrant adjustment to the proposed fine



- » Step 5. Consider any factors which indicate a reduction, such as assistance to the Prosecution
- » Step 6. Reduction for a guilty plea
- » Step 7. Compensation
- » Step 8. Totality principle
- » Step 9. Reasons



» What has been the practical impact of the sentencing guidelines ?



Any questions?



Stephen Graham Partner | Head of Regulation

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Chair's Closing Remarks

Paul Smith

Group Health and Safety Manager

Coast and Country



Thank you for Attending

LEEDS BECKETT UNIVERSITY, 12TH JULY 2018 SAFETY N FOUSING **CONFERENCE 2018**



