Managing Fire Safety To Ensure Legislative Compliance

Facilities Management
Ireland
RDS 2013
Presented By
Aidan O’Connor
HSE Estate Manager
Fire Safety
Presentation Objectives

- Background
- Inspecting Agencies
- HSE Approach
- Today’s Seminar
- Implementation
- Benefits to the Organisation
- The Way Forward
Background

- The Past
  - 8/11 Health Boards
  - Independent

- The Present
  - 4 Regions
  - Common Approach

- The Future
  - ???????????? Health Thrusts

- **Common Approach is Key to Success**
Our Aim / Challenge

- We want to create a place of safety that is both fit for purpose for its Patients / Service Users and meets the needs of our Staff to deliver such a service.
Patient arrives in hospital, then requests the use of a commode, she lights a cigarette when on oxygen.
Media & PQ’s

- **Fire Hazards at new schools raise safety concerns** Sunday Independent 15th April 2012

- **Parliamentary Question** P.Q. 19635-12

  To ask the Minister for Health if he will provide details of the fire safety checks that take place on new buildings of his Department and Health Service Executive buildings including hospitals, health centers, nursing home by engineers from his Department who are independent from the contractors employed who carry out the work and if he will provide details of the person who signs off on the fire stopping; and if he will make a statement on the matter.
Inspecting Agencies

- HIQA
- HSA
- Internal Audit Systems
- Local Fire Authority
- Mental Health Commission
HSE Approach

- Best Practice
- Standardisation
- Demonstrate Compliance to External Agencies while implementing a Fire Safety Management System into the HSE.
- Meet our Obligations
- One System to suit All Agencies
- Ensure Buy In from All Stake Holders
Standardisation

- **Fire Safety Register**
  - Residential Unite
  - Acute Hospital Site

- **Fire Safety Risk Assessment Process**
  - Care of the Elderly, Children’s Residential Units
  - Mental Health Hostels, Acute Hospitals

- **Fire Training Syllabus**
  - Specific Areas, E Learning

- **Maintenance Contracts**
  - Fire Alarm, Emergency Lighting & Fire Extinguishers
Standardisation

- Independent Auditing of Systems
  - Fire Alarm Installations
  - Documentation Development
- Pre Fire Planning
  - Drawings / Fire Action Notices
- Passive Fire Protection Course
  - Warrington – ASFP – HSE
- Specification / Scope of Works Development
  - Fire Consultant Engagement (Cradle to Grave)
  - Fire Alarm / Emergency Lighting Specifications
For Today’s Seminar

- Fire Register
- Fire Safety Risk Assessment
  - Care of the Elderly, Children’s Residential, Acute Hospitals
- Passive Fire Protection Course
- Maintenance Contracts
  - National Contract
- Independent Auditing of Systems
  - Third Party Auditing & Document Development
Fire Register
Fire Safety Register

- Establish working group
- Identify requirements
  - Acute Hospital
  - Children's Residential unit, etc.
- Review and Evaluate Existing Fire Registers
- Develop HSE Fire Register templates
- Implement for trial period
- Adapt and sign off by management
<table>
<thead>
<tr>
<th>FORM NO.</th>
<th>TITLE</th>
<th>ACTION REQUIRED</th>
<th>FREQUENCY</th>
<th>PERSON RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSR</td>
<td>Centre Details Fire Register</td>
<td>Complete and Update</td>
<td>As Required</td>
<td>Centre Manager</td>
</tr>
<tr>
<td>FSR 1</td>
<td>Fire Duties Assigned to Named Staff Members</td>
<td>Complete and Update</td>
<td>As Required</td>
<td>Centre Manager</td>
</tr>
<tr>
<td>FSR 2</td>
<td>Fire and Evacuation Training</td>
<td>Complete and Update</td>
<td>Annually</td>
<td>Centre Manager</td>
</tr>
<tr>
<td>FSR 3A</td>
<td>Fire Fighting Equipment Annual Inventory</td>
<td>Complete and Update</td>
<td>Annually</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 3B</td>
<td>Fire Fighting Equipment Location</td>
<td>Complete and Update</td>
<td>Annually</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 3C</td>
<td>Fire Fighting Equipment Monthly Inspection</td>
<td>Conduct Inspection Complete Form</td>
<td>Monthly</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 3D</td>
<td>Fire Fighting Equipment Annual Maintenance</td>
<td>Conduct Test Complete Form</td>
<td>Annually</td>
<td>Qualified Contractor</td>
</tr>
<tr>
<td>FSR 4A</td>
<td>Emergency Lighting Weekly Testing</td>
<td>Conduct Test Complete Form</td>
<td>Weekly</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 4B</td>
<td>Emergency Lighting Quarterly Testing</td>
<td>Conduct Test Complete Form</td>
<td>Quarterly</td>
<td>Qualified Contractor</td>
</tr>
<tr>
<td>FSR 4C</td>
<td>Emergency Lighting Annual Testing/Schedule</td>
<td>Conduct Test Complete Form</td>
<td>Annually</td>
<td>Qualified Contractor</td>
</tr>
<tr>
<td>FSR 5A</td>
<td>Fire Alarm System Event Log</td>
<td>Log Event / Complete Form</td>
<td>N / A</td>
<td>Staff on Duty at time event occurs</td>
</tr>
<tr>
<td>FSR 5B</td>
<td>Fire Alarm Certificate of Testing</td>
<td>Conduct Test Complete Form</td>
<td>Quarterly</td>
<td>Qualified Contractor</td>
</tr>
<tr>
<td>FSR 6</td>
<td>Upholstered Seating and Furniture</td>
<td>Inspect Items Complete Form</td>
<td>Weekly</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 7</td>
<td>Weekly Manual Call Point Test</td>
<td>Conduct Test Complete Form</td>
<td>Weekly</td>
<td>Assigned Person</td>
</tr>
<tr>
<td>FSR 8</td>
<td>Daily Checklist</td>
<td>Complete Form</td>
<td>Daily</td>
<td>Staff on Duty</td>
</tr>
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</table>
Fire Safety Risk Assessment
Objectives

- Portfolio of Property
- Issues relating to building stock
- HIQA requirements (Health Act 2007)
- Risk Assessment Methodology
- Implementation
- Findings
- Solutions
Building Portfolio

- Old Cottage Type Homes
  - Nightingale Ward Areas
  - Multi-storey
- Old District Hospital Facility
  - Large Ward Areas
- 1960 Prefabricated Structure
  - Structural Integrity 40 years on
- Community Nursing Units
  - Design Build Program
Fire Safety Risk Assessment

- No standard approach
- Develop approach with Consultants & HSE
- Fire Risk Assessment forms the basis for the completion of the HIQA Compliance Form.
- Fire Risk Matrix consistent with Quality & Risk Matrix
  - Risk Register
- Fire Consultants Panel to be developed Nationally / Regional.
Nursing Home

Lack of Fire Alarm
Emergency lighting
Safe Egress
Defective Equipment etc

Section 19 FSA Potentially Dangerous Building

Building Control Act HSWW Act 2005

Part B Nursing Homes Guide HTM


Fire Safety Risk Assessment

Is it a Potentially Dangerous Building or Not

Post 1992
Fire Safety Certificate
Opinion of Compliance

Fire Safety Risk Assessment

Is it a Potentially Dangerous Building or Not
Audit Tool

- Care of the Elderly
  - HTM 84

- Children’s Residential Units
  - Fire Precautions in Community Based Residence for Mentally Handicapped or Mentally Ill People (DOE)
  - Fire Safety in Care Homes for Older People and Children. (BSI Publication 2003)

- Acute Hospital
  - HTM 05-03
## Risk Assessment Methodology

<table>
<thead>
<tr>
<th>Risk Matrix</th>
<th>Negligible (1)</th>
<th>Minor (2)</th>
<th>Moderate (3)</th>
<th>Major (4)</th>
<th>Extreme (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain (5)</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Likely (4)</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Possible (3)</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Unlikely (2)</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Rare/Remote (1)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### Fire Safety Risk Assessment Report Presentation

<table>
<thead>
<tr>
<th>Risk Item Number</th>
<th>Risk Item Description</th>
<th>Photo</th>
<th>Recommended Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>X.1</td>
<td>Description in words of the unacceptable Risk Item</td>
<td>Photograph illustrating the Risk Item (where appropriate)</td>
<td>Description of remedial action or actions required. In some instances there may be a short term and a longer term recommendation. In those cases the Consultant is to set out the basis for the 2 stage approach. Columns 5 to 8 are to be colour coded red, amber or green according to the Overall Risk rating and as per Table 2.3 above</td>
</tr>
</tbody>
</table>

**BUILDING XXXXXXXXXXX**

**FLOOR LEVEL X**

<table>
<thead>
<tr>
<th>Impact Rating</th>
<th>Likelihood Rating</th>
<th>Overall Risk Rating</th>
<th>Intervention Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Y</td>
<td>XY</td>
<td>A, B, C</td>
</tr>
<tr>
<td>Risk Item Number</td>
<td>Risk Item Description</td>
<td>Photo</td>
<td>Recommended Intervention</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------</td>
<td>-------</td>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>GENERAL ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1A</td>
<td>Several fire exit doors were blocked with equipment and/or furniture. In the event of a fire the escape route will be reduced or access may be restricted for egressing occupants. This may lead to extended evacuation times.</td>
<td><img src="image1" alt="Photo" /> <img src="image2" alt="Photo" /> <img src="image3" alt="Photo" /></td>
<td>Immediate Necessary to provide a clear access route to final exits; therefore all items which restrict access to the door should be removed. Solution Staff should be informed of any housekeeping requirements with regards to fire safety. This should be enforced by the management of the building by carrying out routine inspections.</td>
</tr>
<tr>
<td>1B</td>
<td>Combustible material stored within several stair cores throughout the hospital. Combustible material should not accumulate in building escape routes as this may affect the means of escape by a fire in the stair preventing egress. Items in the staircase may also impede the means of escape of occupants in an evacuation by reducing the width available. Steps should also be checked to determine if they are compliant with Part E of the Building Regulations which provides requirements for stairways, ramps and guards.</td>
<td><img src="image4" alt="Photo" /> <img src="image5" alt="Photo" /> <img src="image6" alt="Photo" /></td>
<td>Immediate All stair cores should remain sterile areas. All combustible materials should be removed from within these areas. Solution Staff should be informed of any housekeeping requirements with regards to fire safety. Designated storage areas should be identified. This should be enforced by the management of the building by carrying out routine inspections.</td>
</tr>
</tbody>
</table>
Issues Arising Infrastructure

- **Fire Stopping**
  - Services
  - Attic Spaces

- **Fire Dampers**
  - Ventilation
  - Door transfer Grills

- **Fire Doors**
  - Hinges, Closers
  - intumescent

- **Ward Size**
  - 8/10 Bed

- **Travel Distances**
  - Dead ends

- **Door Widths**
  - Bed Evacuation
  - Patient Movement

- **Fire Alarm / Emergency Lighting**
Solutions

- Detailed survey
  - Services / compartment lines
  - Cavity Barriers
- Door schedule
  - Condition report
  - Upgrade program
  - Door replacement program
- Additional cross corridors
- Final Exit Doors, External Paths & Hard Stand Areas.

- Sub divide larger wards
- Suppression systems into wards
- Increase door openings
- Final Exit Door details developed / Access Control
- Fire Alarm upgrade
- Emergency lighting upgrade
- Suppression systems in kitchens
Passive Fire Protection Education

- ASFP & Exova Warrington
- 1 Day Introduction
  - Project Staff, Estates Staff
- 2 Day Installers
  - Project Managers, Trades, Clerk of Works
- Competent independently Certified Installers
- Framework developed in 2013
Program To Date

- Fire Safety Risk Assessments completed on 180 Care of the elderly premises.
- Intervention Rating ‘A’ & ‘B’ works completed and signed off. June 2012
- Funding to date
  - 2011 €9.2 Million
  - 2012 €7.3 Million
- Children’s Residential Units & Mental Health Hostels on site
- Acute Hospital Sites identified
Code Of Practice Development

- Revision Part B.
- Purpose Group Classification
  - Children's Residential Home, Low / Medium Support Mental Health Hostel
- Working Group
  - HSE, CFOA, DOE, Service User, Fire Consultants
- Time Scale April to October
Maintenance Contracts
Fire Alarm & Emergency Lighting Maintenance Contracts.

- Contract may include Small Install Works
- National Framework Developed
  - Companies Pre Qualified
  - Agreed Specification
- Country divided into lots.
  - 67 lots in total.
- Mini competitions run
  - Technically Evaluated Locally
  - Service Lever Agreement set up
- Buying power of the HSE.
- Standard Approach
Fire Alarm / Emergency Lighting Maintenance Contracts

- All contracts awarded
- Cost saving of €3.2m over 4 Years
- Comprehensive Audit of All Systems
  - Fire Alarm Survey. System Category, Compliance IS 3218
  - Emergency Lighting Compliance IS 3217
- Savings being reinvested into
  - Fire Alarm Upgrade, (Autronica replacement)
  - Emergency Lighting Upgrade / New Install
    - LED Addressable Type Systems.
- Contracts being externally audited
System Auditing / Inspection
Third Party Auditing / Evaluation

- **Fire Alarm installations**
  - **Design**
    - Category, Cause & Effect, Zoning, Variations,
  - **Installation**
    - Quality, Cable Type, Clipping, Device Spacing/Selection
  - **Commissioning**
    - Interfaces, Text Confirmation, Sound Levels, Battery Calculations, Certification
  - **Hand Over**
    - Zone Charts, As Installed Drawings, Device Listing & Text, User Instructions, User Training,
  - **Maintenance**
    - Access, Service Report, Device List.
Audit Compliance

- Compliance with relevant standards
- Correct Device **Location Text**
- Correct positioning of
  - devices,
  - detector position and coverage.
- Ensuring adequate fire cover
  - escape routes,
  - voids, light wells.
- Ensuring appropriate
  - Sound levels (staff alarm evacuation alarm)
  - Appropriate cause & Effect
  - Appropriate detection methods
Void Over 800mm NO Cover
30mm Hole drilled through metal panel. No protection except a piece of tape. Mains supply trapped between metal panel and wall. Potential shock hazard. 220AC supply
Conduit fitted for mains cable / loop

Un switched spur fitted 220AC
**Fire Alarm Compliance Report Form**

<table>
<thead>
<tr>
<th>Ref</th>
<th>Clause IS.3218</th>
<th>Comment</th>
<th>Requirement from IS.3218</th>
<th>Action Required</th>
<th>NA</th>
<th>C</th>
<th>NC</th>
<th>A</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5.12.3.4</td>
<td>Panels mounted to low</td>
<td>The height of the display and indications shall be a minimum of 1.4 m and a maximum of 1.8 m from finished floor level.</td>
<td>Relocate as appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

*Image: Fire alarm panel mounted too low.*
Documentation Development

- Certification I.S.3218 (Design, Installation, Commissioning, Handover)
- Specification (fault tolerant network)
- Cause & Effect Strategy
  - Phased Evacuation
  - Selective display
  - Third Party Interface
- Zone Charts
- As Installed Drawings
- Device Text
Benefits to the Organisation

- Standardised National Approach
- Meet our Statutory obligations
- Professional Approach
  - Annual reports
  - National Statistics available
- Fire safety management system in place
  - Externally audited
  - Evaluated internally and externally
The Way Forward

- Proactive Approach
- Standard Risk Assess
- Identification & Development of PPPG’s
- Consultation with Agencies
  - HIQA
  - Local Authority
  - Dep. Of Environment

- Competency
  - In house educational modules
    - IS3218 Fire Alarms,
    - IS3217 Emergency Lighting
    - Fire Code, Fire Doors, Fire Stopping.

- Top Down Bottom Up Approach
- Buy in from all Parties
Thank You
For Your Attention