Property protection principles for high rise buildings

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Zurich Risk Engineering
Objectives

- High rise buildings
  - The challenges
  - Building construction

- Methodologies for assessing active fire protection systems
  - Existing systems
  - Proposed installations

- Our three stage approach for existing systems
  - Is it in service?
  - Will it work?
  - Is it designed right?

- Zurich Recognized Solutions
  - Discuss the concept overview

- Zurich Acceptance Criteria
  - Common issues
  - Our stance
High rise buildings

- Buildings are primarily designed to satisfy national Building Regulations, which are aimed at ensuring the safety of occupants and making sure there are suitable means of escape.

- More innovative tall buildings are being erected in the UK using more sustainable construction methods and having improved energy performance.

- Fire risks may be increasing with the use of combustible modern construction materials and methods.

- Fire engineered solutions, which use active fire suppression systems to reduce internal compartmentation, can also increase the risk as they rely on the active systems to always be in service and to operate exactly as planned if the emergency occurs – experience demonstrates this is not always the case.

- High rise buildings, which have a large number of individual tenants, are far more likely to have building alterations and refurbishment works taking place at any given time.
1: Life safety
2: Property protection risk
3: Business resilience risk
4: Business continuity risk
5: Reputational risk
6: Environmental risk
Water mist

- **Primary objectives:**

  - Mitigation of flashover
  - Aid means of escape
  - Life safety
  - Reduce compartment temperature
  - Satisfy the needs of the regulatory authorities
Our basic approach to fire protection systems:

- Is it in service?
- Will it work?
- Is it designed right?
Our approach

- Valves open?
- Power at pump?
- Impairments?
- Solenoid fitted?
- Water in tank?
- Town main water supply available?
Our approach

- Service and maintenance
- Weekly testing
- Pumps achieving rated duty
- Dry systems trip tested
- Pre action systems mechanical and electrical elements tested together
- Deluge systems tested
- Cause and effect matrix tested?
Our approach

Is it in service?  Will it work?  Is it designed right?

Zurich Recognized Testing Laboratory  Acceptable laboratory test protocol

Zurich recognized property protection principles  Manufacturer's guidelines

Zurich Recognized Solution
Listed technology

A product certification body who has been:
- Evaluated by a third-party accreditation body
- Qualified to perform self-accreditation of the product tests they conduct

A test protocol:
- Used for the evaluation of a product
- Which is acceptable to Zurich

A third party codes and standards:
- Recognized by Zurich for property assessment purposes
- Along with additional Zurich insights where provided

Guidelines Acceptable to Zurich for property assessment purposes with sufficient instructions for: design, installation, commissioning, inspection, testing, and maintenance of listed products

The terms approved, certified, and listed are used interchangeably

Image source: Rich Gallagher, The Zurich Services Corporation
Key issues:

• Some premises might have multiple authorities having jurisdiction (AHJs), who might be concerned with life safety, property protection, business continuity, heritage preservation, and environmental protection. Some AHJs might impose additional requirements beyond the British Standard.
Key issues:

- Components
- Test data
- Water supplies
- Objectives
- Dry / pre action systems
- Project management
- Cause and effect matrix
- Certification
- Fundamentals of water mist
- Value engineering
- AHJ’s
- Competency
We support and encourage our customers to exceed life safety codes and standards

<table>
<thead>
<tr>
<th>Understanding the objective</th>
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<tbody>
<tr>
<td>Protection coverage to be 100%</td>
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<tr>
<td>Use of a property protection code or standard</td>
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<td>Property protection system</td>
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<td>Designed and proven for both life safety and property protection</td>
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<td>Includes special requirements for high rise buildings e.g. water supply durations, electrical supplies to pumps</td>
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<td>Consultation with the insurer</td>
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Our position

Zurich guidance:

For property risk assessment purposes use LPC Rules for Automatic Sprinkler Installations Incorporating BS EN 12845 and Technical Bulletins

Is it in service? Will it work? Is it designed right?

Use Zurich Recognised Solutions Methodology

Use BS8489 / BS8458 to satisfy the ‘life safety’ needs of the regulatory authorities
• A reminder of our three stage approach

Is it in service?

Will it work?

Is it designed right?
Listed technology

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Any questions?

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