Fire Safety Design & Technology for Operational Readiness in 2020

Safety Design in Buildings, Kuwait 6th December 2017

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Course Description

The presenter discusses holistic fire safety design, with particular emphasis on sustainable design by integration of operational and end user requirements into the fire strategy design process. All too often designs are purely driven to satisfy code requirements or to obtain approval and ultimately may not meet operator or end user requirements. Many new technologies are now available to support operators manage fire safety in their buildings which can be considered during the design process. The launching of a new operational facility involves complex interactions of people, process, technology and environment - the presenter gives an outline of the technology that can facilitate a greater level of fire safety awareness and implementation.

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Presenter

John Noone

Co-founder | Principal – Joule Group

- John is the co-founder of Joule Group, a boutique Fire Engineering Practice based in Dubai. A Chartered Fire Safety Engineer he holds a BSc Hons in Fire Safety Engineering.
- John has gained a wide range of experience in fire engineering in the Middle East, Africa and Europe.
- John is a visiting lecturer at Trinity College Dublin on the fundamentals of fire safety science and fire dynamics.
- John's passion is for advancing the field of fire engineering in its application into the design and operation of the built environment. He represents Joule Group and the industry in promoting this message on fire safety at targeted fire safety seminars and conferences.

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Learning Objectives

1. *How digital is changing our industry*
2. *Tools for co-ordination of the fire engineering strategy*
3. *Fire safety risk mapping at a city wide level*
4. *Technologies for managing fire events*

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Digital Revolution

Our industry is changing

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Automating our core work processes (travel distance assessments, occupancy loading, material compliance, facade specification etc.) though BIM plug in’s

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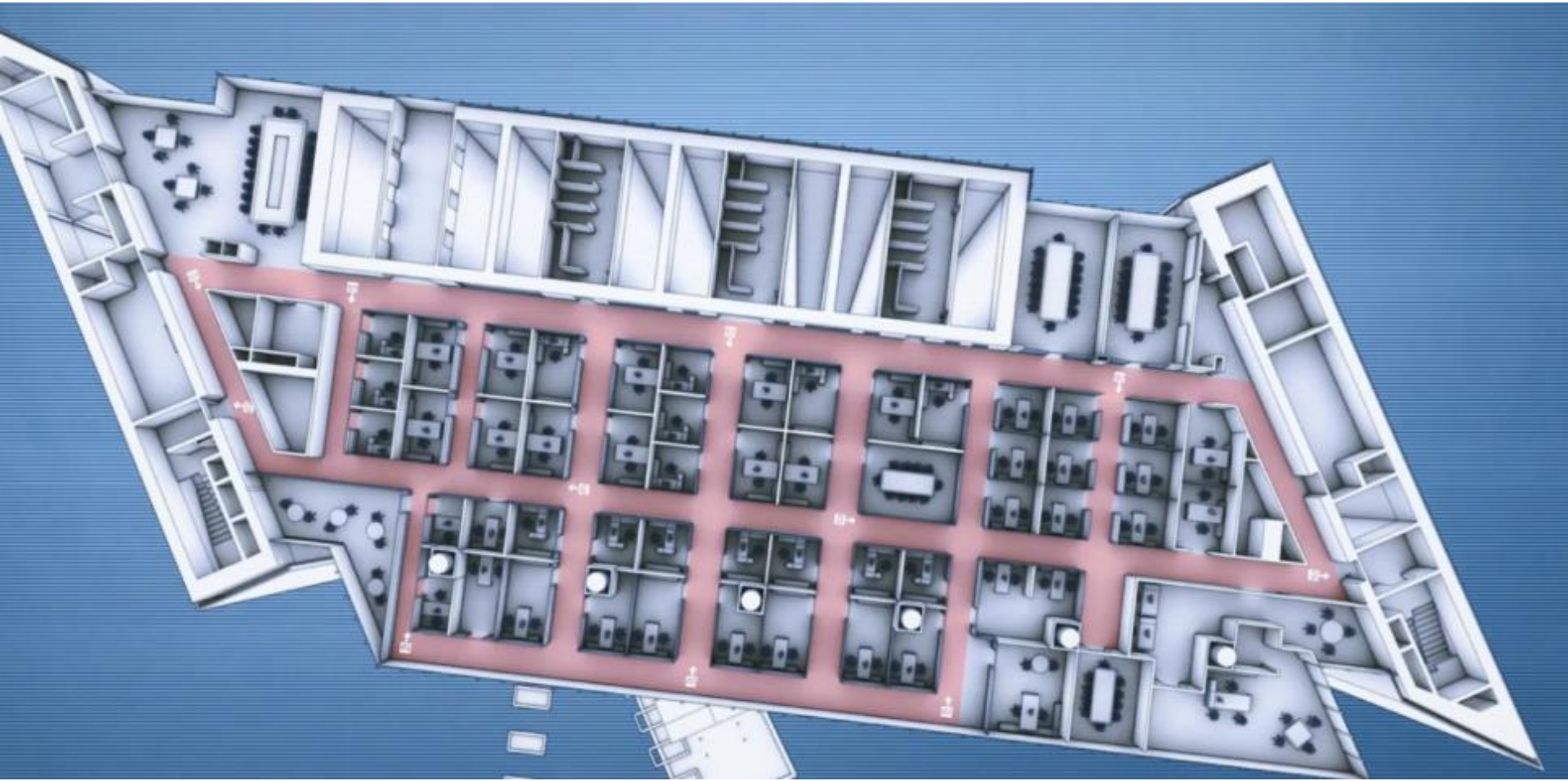


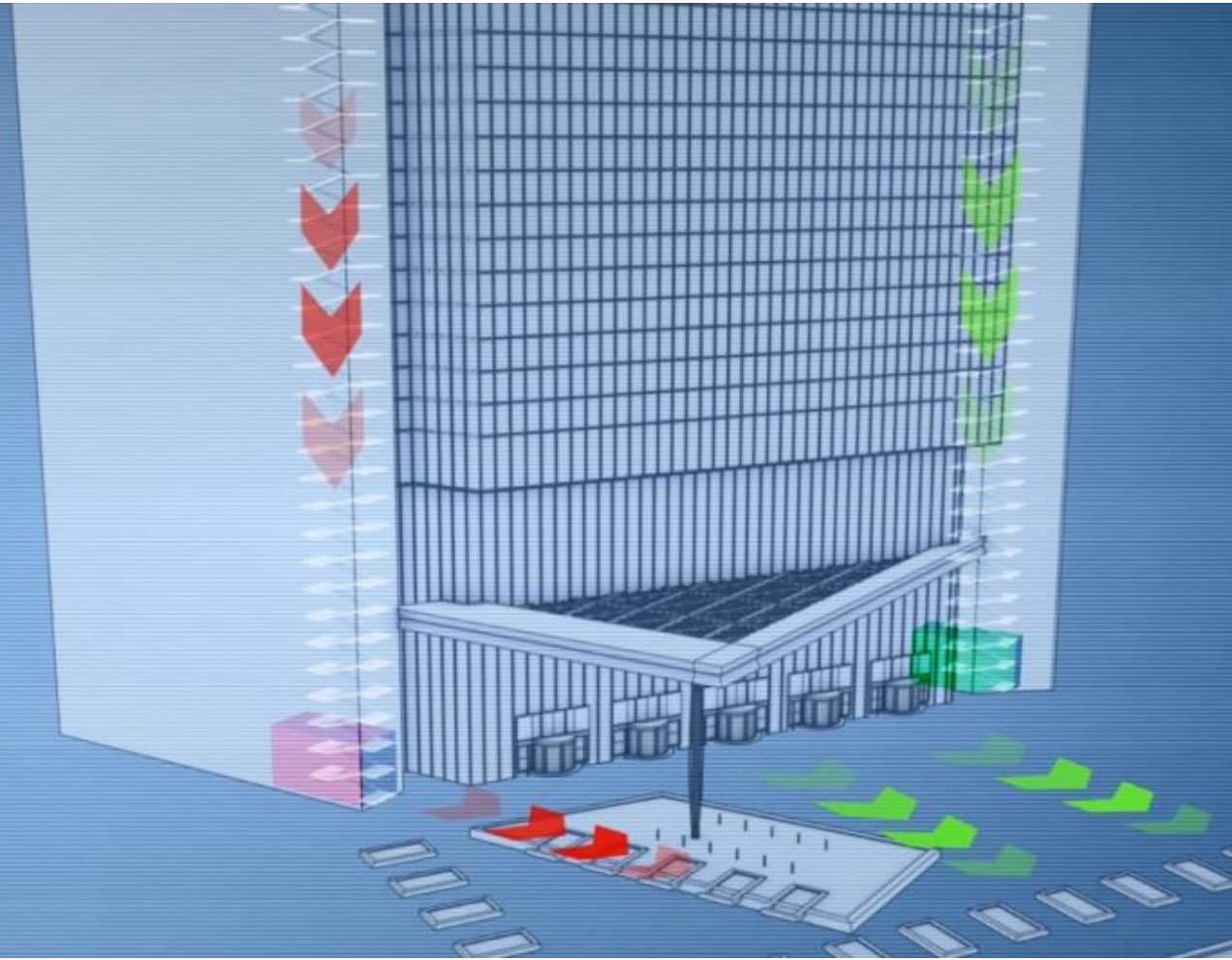

Common Path
of Travel (CPT)

Dead End Corridors

Occupancy Type	Dead End Limit (m)	Maximum Dead End Distance Measured (m)
Business	15	11

Exit Discharge

- Exit stair that discharges into the building Path.
- Exit stair that discharges directly outside the building.

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BIM for virtual design team review meetings identify clashes, resolve coordination issues and present a robust design to the tendering contractors…

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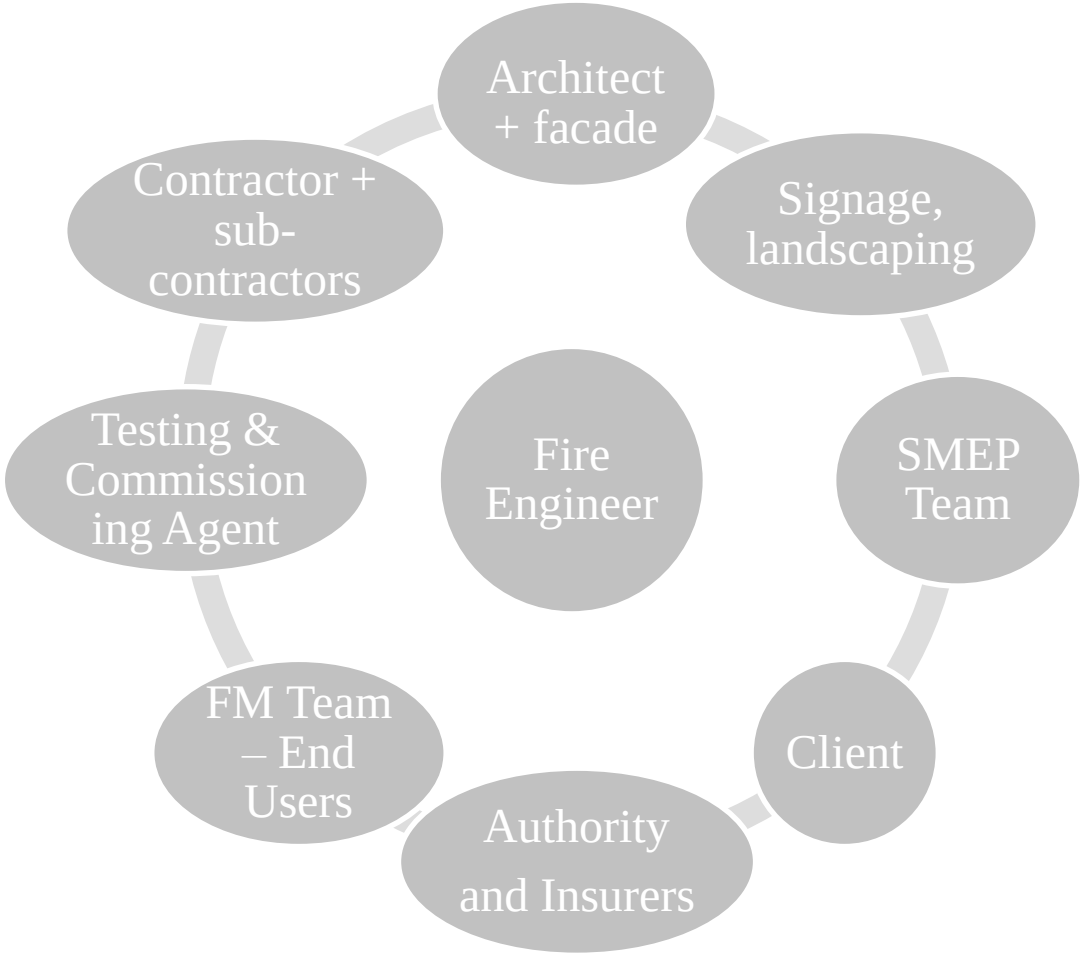
Architect + facade
Signage, landscaping
SMEP Team
Client
Authority and Insurers
FM Team – End Users
Testing & Commissioning Agent
Contractor + sub-contractors
Fire Engineer

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BIM providing key buildability solutions with an integrated team of client, consultant, contractor and subcontractors

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With automation we can focus on better outcomes to improve the quality of our advice and the solutions we deliver

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Critical thinking and alternative fire engineering design will become more important (automation may cover core fire strategy code compliance)

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Integration of tools such as evacuation, radiation and smoke control software

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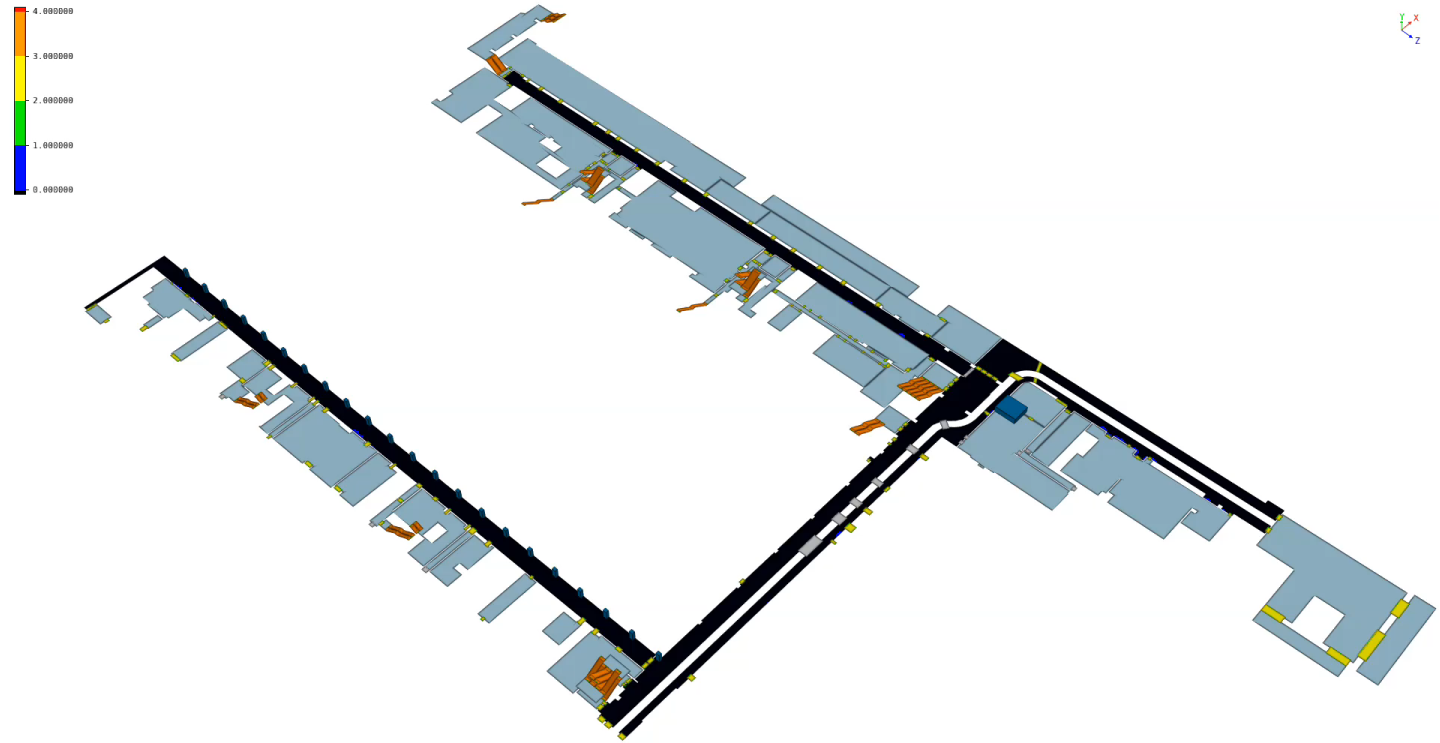
4.000000
3.000000
2.000000
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Y
X
Z
Population: 0
Time: 00:00:00

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Augmented reality to test designs (i.e. evacuation route planning and placement of exit signs), present to Civil Defence for approvals, for operational readiness trials etc.

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Software development to take data from buildings and map risk at a city wide level

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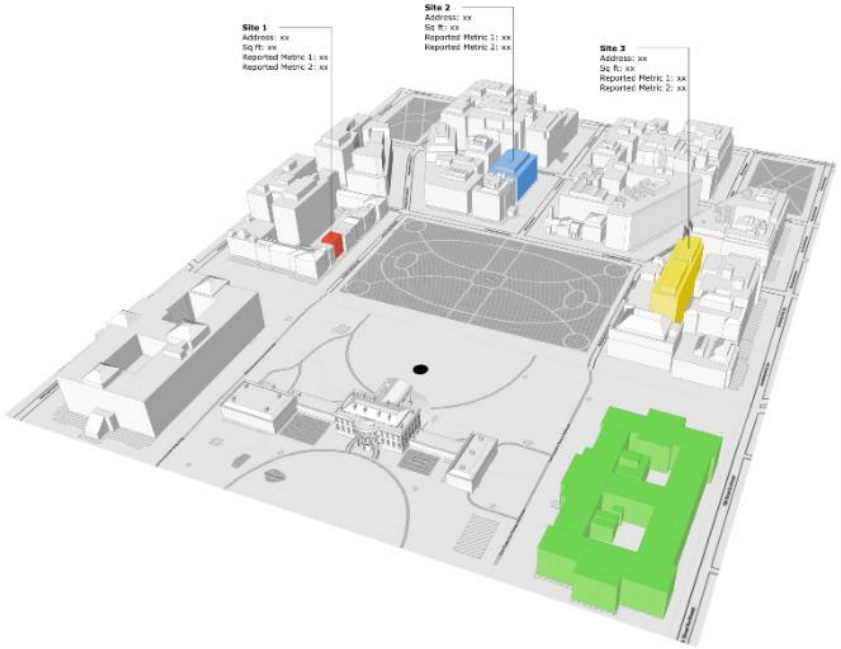
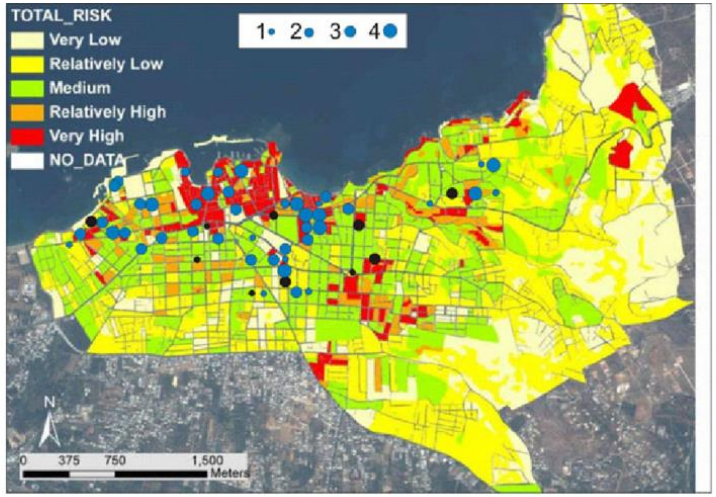

Site 1
Address: xx
Sq ft: xx
Reported Metric 1: xx
Reported Metric 2: xx
Site 2
Address: xx
Sq ft: xx
Reported Metric 1: xx
Reported Metric 2: xx
Site 3
Address: xx
Sq ft: xx
Reported Metric 1: xx
Reported Metric 2: xx


TOTAL_RISK
Very Low
Relatively Low
Medium
Relatively High
Very High
NO_DATA
1 2 3 4
N
0 375 750 1,500
Meters

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Use the same software during construction to monitor construction progress and quality retaining these records through life time of building

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Work Orders
Work Orders

Command and Control Centres for operators and civil defence to manage incidents en-route to the fire and onsite

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Courtesy of Honeywell

Concluding Remarks

- Embrace the technologies that are available
- Use these tools for better design and co-ordination
- Automation – efficiency and cost effectiveness
- Technology to support operator and Civil Defence manage incidents

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Thank You

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