



SAFETY
DESIGN
IN
BUILDINGS

Automating Fire Safety

Presented By:
David Black

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Course Description



- The presentation will discuss how fire and life safety within operational buildings can be significantly improved through the use of digital tools.
- Despite laws & regulations human error is putting us at higher fire risk on a daily basis because 'passive assets' (non-digital fire systems) such as fire doors, fire escapes, stairways & fire extinguishers amongst others are often being overlooked.
- We put our faith in the BMS systems / CAF-FM software platforms to manage these assets, but despite technology these checks are still largely done via laboursome & often unreliable paperwork exercises.
- Critical checks are more often than not being overlooked with no responsibility or accountability. We often don't have visibility of who is doing what checks and when.
- The Answer – We need to have more transparency on how passive fire assets are managed & checked building to building.
- This can be achieved through the use of Digital Platforms consisting of a digital dashboard & app that simplifies the fire safety management process to ensure a holistic view of passive fire safety assets & ensure the same are fire compliant.
- And this is just the beginning. The same tools can be used to track the “smarter” fire safety systems, such as fire alarms, fire pump controls, etc. and all be integrated under one simple dashboard providing real-time feedback on the fire health status of the building.

Presenter



David Black

Director – Middle East Operations – Joule Group

David is the Middle East Director of Joule Group, a boutique Fire Engineering Practice based in Doha, Dubai and the UK. A Principal Fire Safety Engineer he holds an MSc in Fire Protection Engineering.

David has gained a wide range of experience in fire engineering in the Middle East, Asia and Europe.

David'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.

Learning Objectives



- 1.The importance of continuous monitoring and maintenance of all fire safety assets within the building.
- 2.The driver behind regular management of fire safety assets, i.e. code compliance.
- 3.How digital tools can be used to drive compliance, visibility, accountability and fire safety within buildings.



Technology



Design



Procurement



Manufacturing



Construction



SoftBank Group



AN INDUSTRY ON THE MOVE

Construction start-up Katerra gets \$865M in Softbank's latest mega-round

Bloomberg Associates

Bloomberg announces \$200 million American Cities Initiative as antidote to White House 'impotence'

GOOGLE TECH TRANSPORTATION

SIDE WALK LABS

Alphabet's Sidewalk Labs aims to transform 16 cities into tech-friendly laboratories

wework®

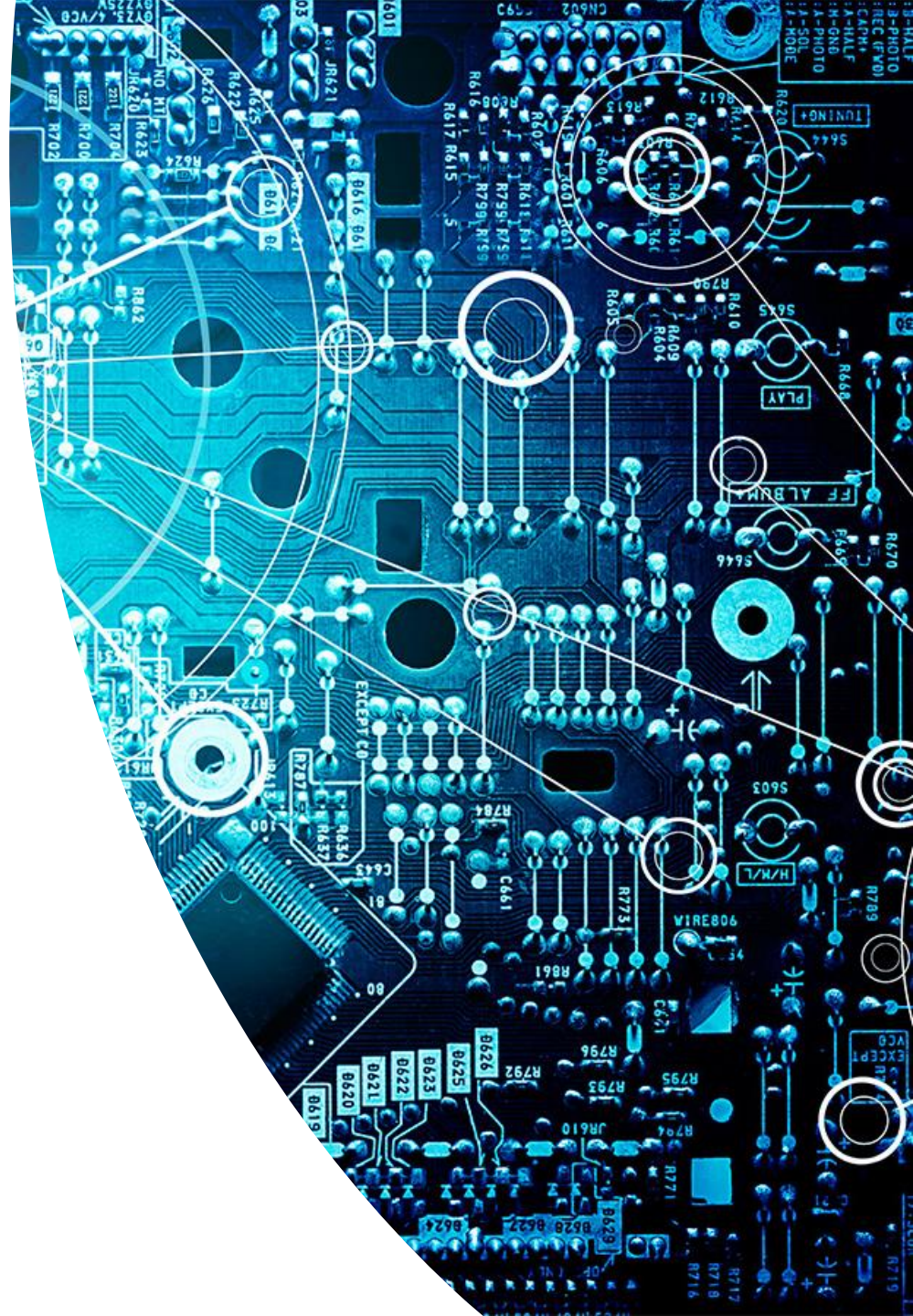
WeWork Becomes World's Fifth Most-Valuable Startup

JOULE GROUP

“Technology has advanced more in the last 30 years than it has in the previous two thousand. The exponential increase in advancement will only continue”

Neils Bohr - Physicist

1885 – 1962

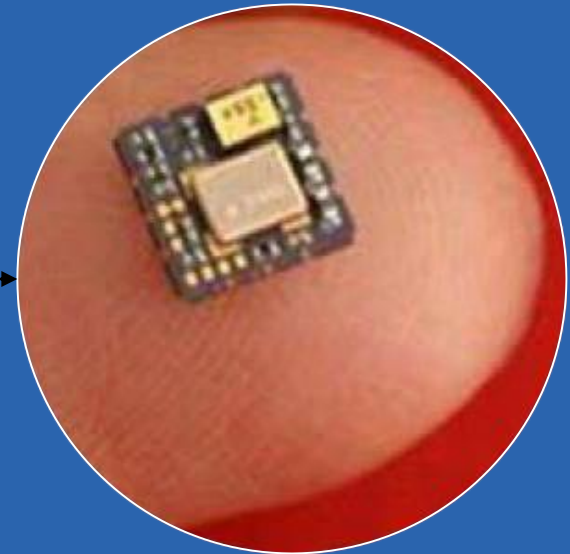


Exponential Growth



1st commercial GPS receiver in 1981

Weight: 53 lbs; Cost: \$119,900



Single-chip GPS receiver in 2010

<\$5 each

Disruption



Changes in Industry Landscape

- *Advancements in Technology have significantly impacted the construction industry*
- *Cloud & Mobile Applications facilitate Stakeholder Collaboration and Communication*
- *BIM (Building Information Modelling) has resulted in the lines between digital and physical being much less defined.*

Changes in Industry Landscape

- *Virtual Reality – Creating the ability to provide fully interactive and immersive experiences.*
- *Augmented Reality – Using Tablet or Mobile Devices, Interacting with Real World Components Through a Screen.*
- *AI & Predictive Data Analytics – Analyzing Risk Factors based on historical data.*

Opportunities

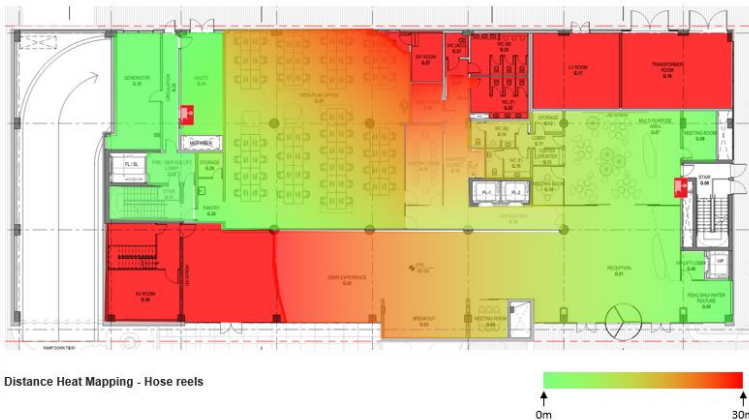
It is time such forward thinking was implemented in the Fire Engineering Sector of the Construction industry.

We now have the opportunity to modernize our approaches to how:

- *Information is Collected;*
- *Data is Organized & Analyzed;*
- *Strategies are Presented;*
- *Buildings are Monitored Through Their Life Cycle*

Automating our Core Work Processes

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



Automatic Occupancy Calculation and Visualisation

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

Automating our **core work processes** (travel distance assessments, occupancy loading) through BIM plug in's

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

Digital Fire Safety Management

No Longer “Nice to Have” Now a “Must Have”

“Doing nothing is easy but risky. The Hackitt Review recommends Digital Fire Safety Management solutions which help building owners use and share digital data to support compliance and regulation”

A Message of Caution

93% of fire deaths and 95% of fire-related property damage occur when a fire isn't put out in the early stages. (NFPA)'s Mar 9, 2016

Passive Fire Assets such as fire hoses & fire extinguishers are very often the 1st line of fire defense & suppression – are these assets inspected regularly to ensure they are present & are fire compliant?

A Message of Caution

At work, do you know how you'd escape in case of emergency?

What about when you're staying at a hotel – do you take time to identify the nearest exits?

Blocked exit routes pose a significant risk to life safety.

Clear exits are critical



We are at Risk!

- Despite laws & regulations human error is putting us at higher fire risk on a daily basis because **‘passive assets’ (non-digital fire systems)** such as fire doors, fire escapes, stairways & fire extinguishers amongst others are often being overlooked.
- We put faith in the Building Owners & Operators / FM Co’s / fire protection systems & AMC’s that provide them. We put our faith in the BMS systems / CAF-FM software platforms to manage these assets but despite technology these checks are still largely done via laboursome & often unreliable paperwork exercises.
- All of the above do their best to ensure fire compliance & ensure they get the relevant ‘fire safety certification’
 - *After all without Certification who is willing to take the risk to insure the building(s).*
 - *But even with certification do you know if the building is compliant or safe throughout the year?*
- With so many moving parts & parties involved major weaknesses have been identified on the reporting & management of these critical passive assets.
- Critical checks are more often than not being overlooked with no responsibility or accountability. **We often don’t have visibility of who is doing what checks and when.**

Digital Landscape

Technology.
Data.
Analytics.

All transforming the regulation and compliance world – this is driving a new need for Visibility, Accountability and Insight

The Answer – We need to have more transparency on how passive fire assets are managed & checked building to building.

The Solution – Digital Fire Safety Tools

- Development of new Digital Platforms designed by fire people for fire safety.
- Digital dashboards & apps that simplify the fire safety management process to ensure a holistic view of passive fire safety assets & ensure the same are fire compliant.

Digital Fire Safety Tools

- With **Digital Fire Safety Tools** the Asset Owner/manager has full visibility of checks & corrective action taken by:
 - In-House Fire Wardens/Security
 - Out-Sourced Facilities Management (FM)
 - Out-Sourced Fire Maintenance (AMC's)
- The **Digital Fire Safety Tool** allows the Asset Owner to share with all the sub-contracted parties working on that building also. No limitation to no. of users.
- Each passive asset is RFID Tagged and can be scanned using a hand held device.
- The app can scan, check & be configurable to any type of asset (fire safety device) .
- Since there is no paperwork the data gathered from checks are uploaded to the cloud and are accessible via a dashboard.
- The App has a built-in scheduler that allows you to set tasks and checks to be done.

Digital Fire Safety Tools

- **Missed Checks or Incident Flags:** Alerts and escalation procedures can be customized to specific user requirements, depending on severity or failure to clear alerts, for example.
- With the Cloud & Dashboard the Asset owner will have 'near real-time' visibility of building(s) status in terms of fire safety status.
- With the **Digital Fire Safety Tool** the asset owner is 'audit ready' in accordance with national fire compliance code be it QCDD, HSE, NFPA, or operator brand standards. Audit Reports along with daily, weekly, quarterly, annually checks are all stored safely on the cloud.
- The **Digital Fire Safety Tool** will also provide valuable data analytics and provide insights to improve overall fire safety. Future versions have the potential to incorporate the use of machine learning/AI and AR.



Digital Solutions

- A closer look

The Mission

“To digitise and simplify the fire safety management process, drive overall improvement in regulatory compliance, and increase fire safety in buildings”

Technology
Data
Analytics

Visibility

Challenge

Can building management monitor when fire safety checks and drills are completed at all your sites?

Can building management see which fire safety assets have faults?

Do building management know which fire safety tasks need to be completed next?

Do building management have the insights needed to keep improving fire safety efficiency?

Digital Fire Safety Tool solution

Monitor all assets from one cloud-based dashboard

Get a list of known faults in seconds

Receive alerts for important tasks

Get recommendations based on advanced data analytics



Risk

Challenge

Do building management have a plan for meeting current and changing fire safety standards?

Can building management prove that their business has acted properly on fire safety?

Are properties and tenants at higher-than-necessary risk from fire?

Digital Fire Safety Tool solution



A complete solution, tailored to individual buildings or groups of assets by fire safety engineers

Automatically maintain a secure off-site digital record of fire assets

Improved checks and maintenance processes help reduce fire risk

Compliance

Challenge

Do building management have the right tools to meet regulatory compliance goals?

Can building management produce the required reports and audits efficiently?

When new safety regulations ask you to provide digital data, will you be ready?

Digital Fire Safety Tool solution

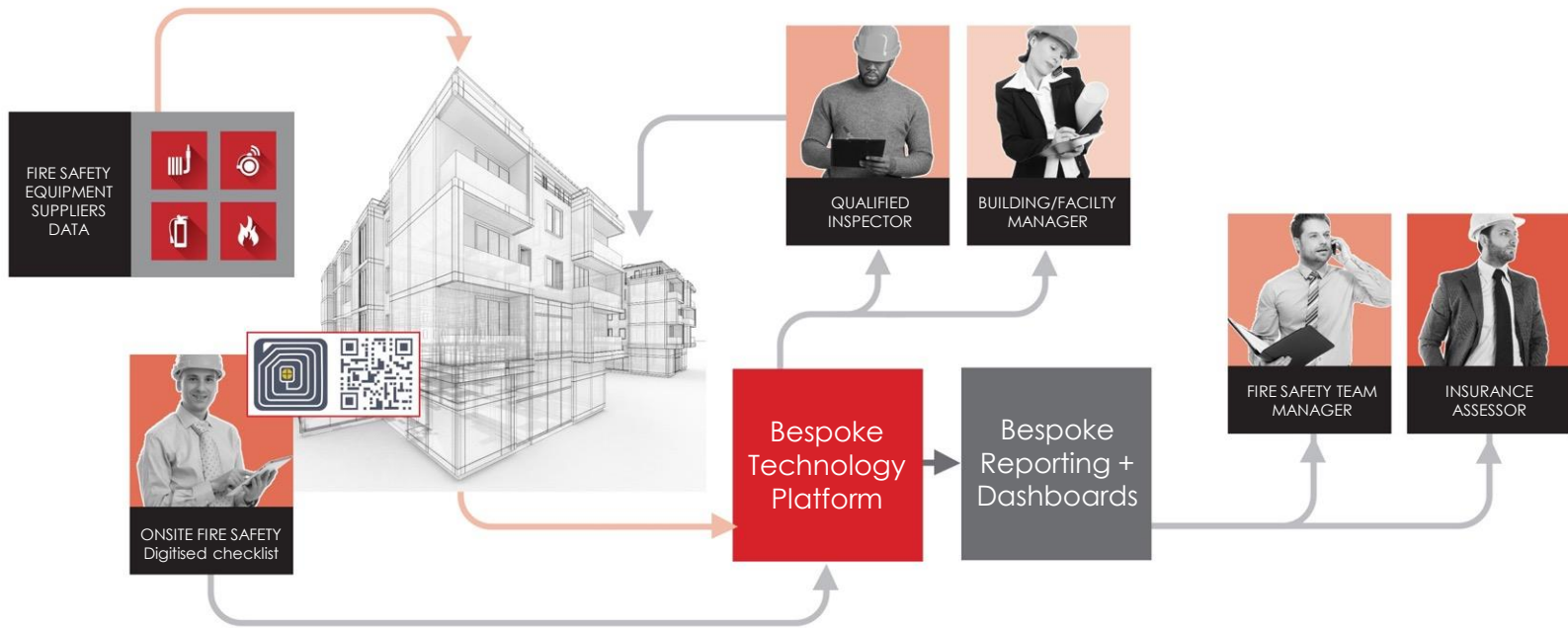
Digital Fire Safety Tool solution is customised to fit specific goals for each client

Data-driven reports and audits are quick and easy to produce

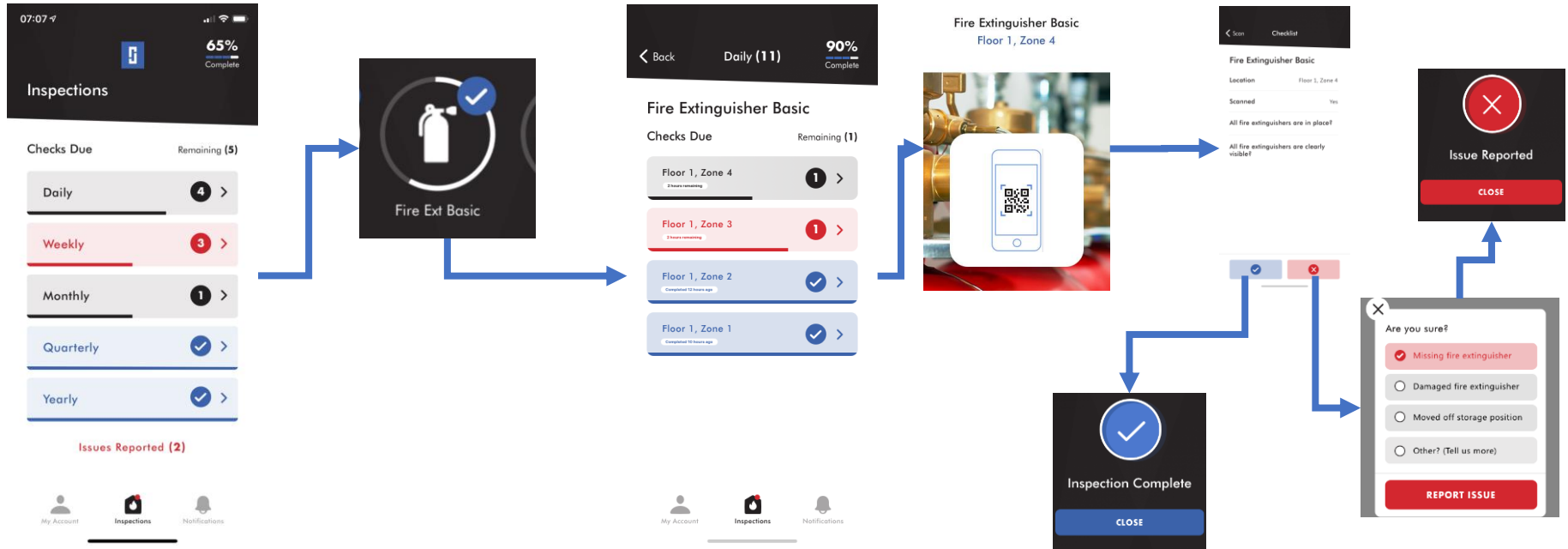
You have the only digital, cloud-based solution designed by fire safety engineers



Building - Ecosystem



Managing High Volumes of Assets



Multi-Site Ecosystem

Actionable insight

Increase accuracy and efficiency with app-based monitoring.

Monitor whole estate in real-time by building, city or region

Realise the value of fire safety data with advanced analytics

Built-in scheduler that allows you to set and receive alerts for key tasks to resolve issues.

Gain insights to continuously improve efficiency and safety





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Thank you