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AUSTRALIA2024



# Revolutionising Fire Safety in the Digital Age

Overview of fire safety digitalization approach and solutions

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# Amin Nooranipour

**Fire Safety Division Product Manager**  
Australia & New Zealand

Fire detection systems  
Danger management and cloud-based solutions  
Fire suppression systems  
Aspirating smoke detectors

5 Years with Siemens  
8 Years with Siemens Partner

# Agenda

- Global demographics & statistics
- Global trends
- Sustainability
- Traditional fire safety and modern fire safety
- Utilising “Digital twin” technology
- Cloud based solutions
- Leap into the future
- Q&A



# 9.7bn

people will populate  
our planet by 2050\*

# 90%

of live time spent in buildings\*

# 68%

of the world population projected  
to live in urban areas by 2050\*

\*Source: United Nations



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# 25%

of Australia's emissions are attributed to buildings<sup>1</sup>

# 75%

of all buildings are energy inefficient<sup>2</sup>

# 80%

of Australian office buildings are "mid-tier"<sup>1</sup>

<sup>1</sup> Source: Opportunity Knocks. Accelerating energy efficiency for mid-tier buildings.

<sup>2</sup> Sources: Alliance To Save Energy (ASE), EU, UNEP, EPA.



# Sustainability Challenges



- **Sustainability goals and regulations** need to be met
- Stricter policies from the **Paris Agreement**
- Greater **pressure for action** with high potential in the construction industry as demand of products can decline and CO<sub>2</sub> emission costs may rise
- Sustainable products 
- Businesses can only be **competitive when sustainable**



Global trends and needs are changing the fire market – structurally and profoundly

#ClimateChange

#Digitalization

#RemoteMonitoring

#CloudOffering

#Urbanization

#API-Flexibility

#IoT-Integration

#ResourceScarcity

#ExpertShortage

#Glocalization

#CentralizedSystemManagement

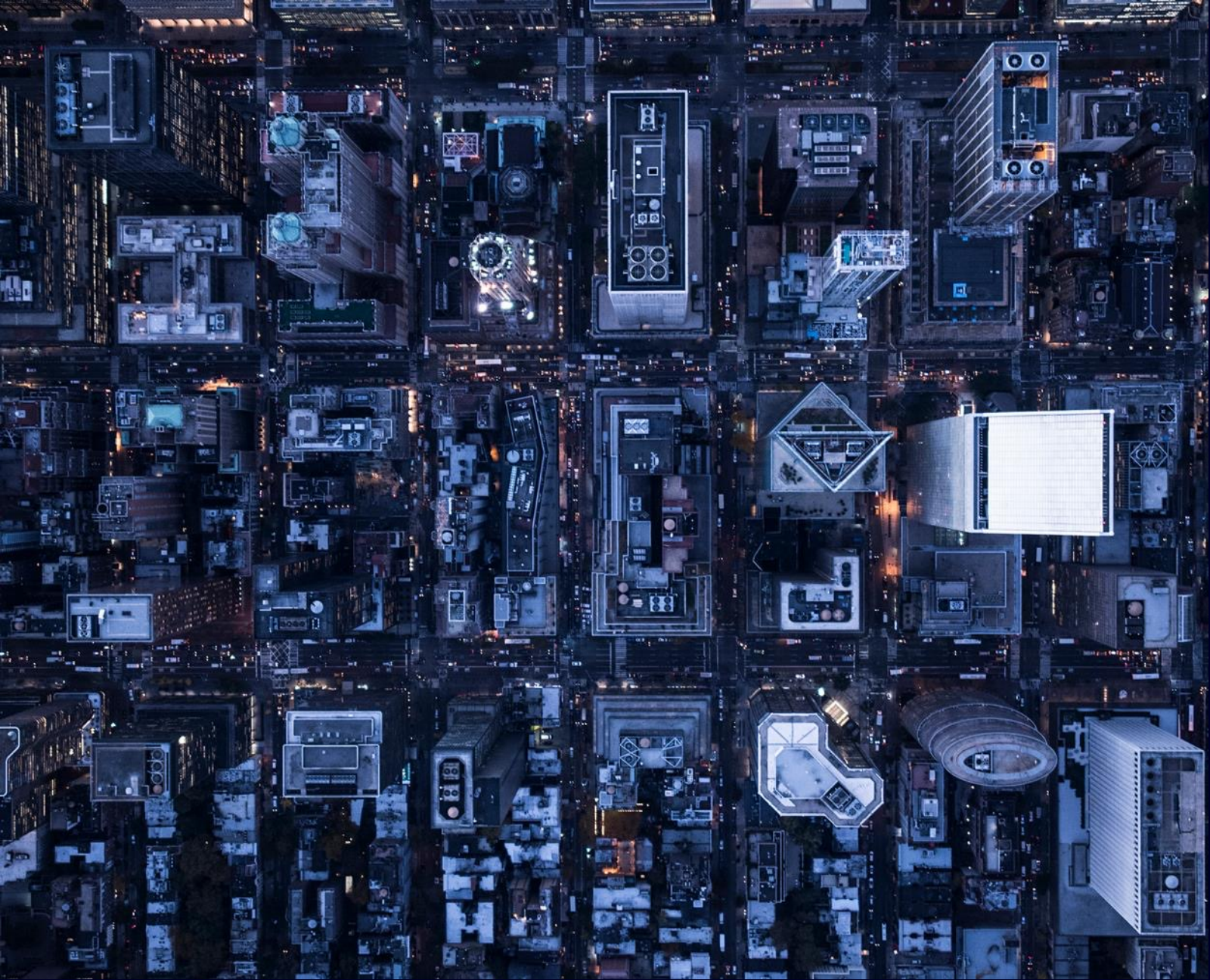
#Usability

#AI

#SmartBuildingSolutions

#DemographicChange





To achieve our energy goals as a society we need to

**leverage** the built environment.

Digitalization will be the

**key enabler**

to handle the challenges in buildings.



**Sustainability is  
clearly important;  
What are we doing  
about it?**





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## Did you know how people used to alert the fire fighters in 1907?

Imagine you'd need to find a policeman to call the fire brigade.

That's how things worked before we had phones in every house.

Fire alarm boxes like this one in Berlin featured a telephone to deliver messages in an emergency in addition to the trigger of the fire alarm. Only policemen and doctors had a key to open the box.

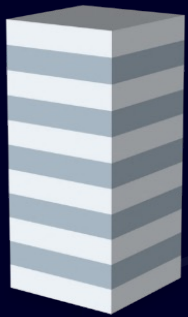


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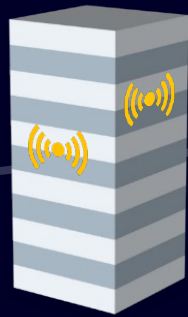
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# Digital transformation

Your journey towards smart and autonomous building safety



Traditional buildings



Automated buildings



Smart buildings



Autonomous buildings

## From ...

- Reactive maintenance & services
- On-site solutions
- Complex integration process

## To ...

- Siloed domain control
- High upfront investments
- Complex integration

- Predictive data driven services
- AI-enabled remote operations
- Simple & easy integration
- Machine learning algorithms

- Holistic digital building system
- Workflow integration
- Optimized, prioritized workflows based on impact
- System assurance & transparency

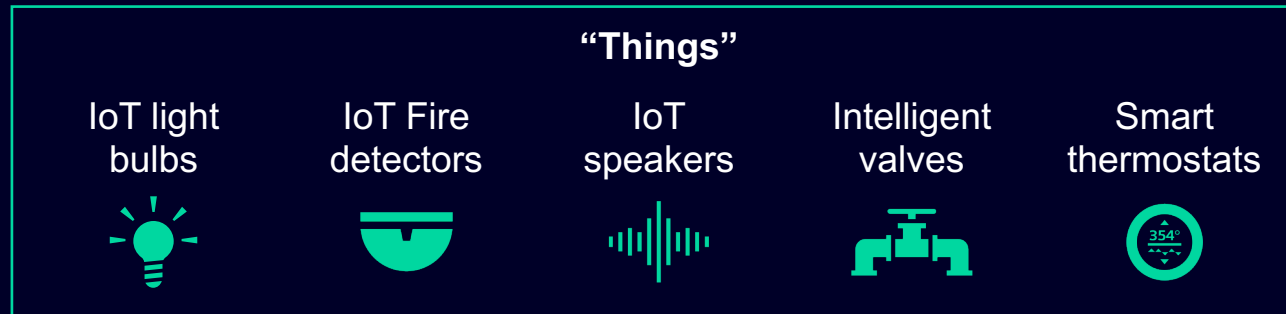
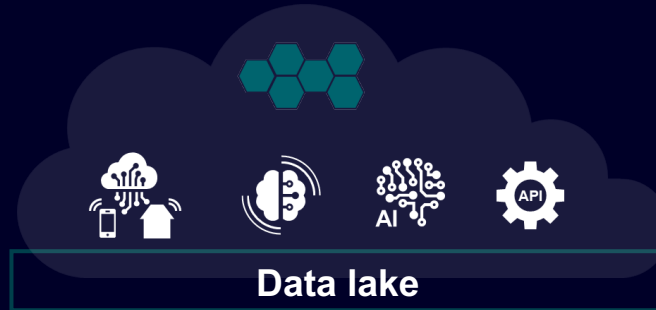
# IoT

More than just “things”!

Applications

Network

Devices



Use case

Automatically update device firmware

Use case

Provide smart device services, e.g., detectors sends notification when dirty!

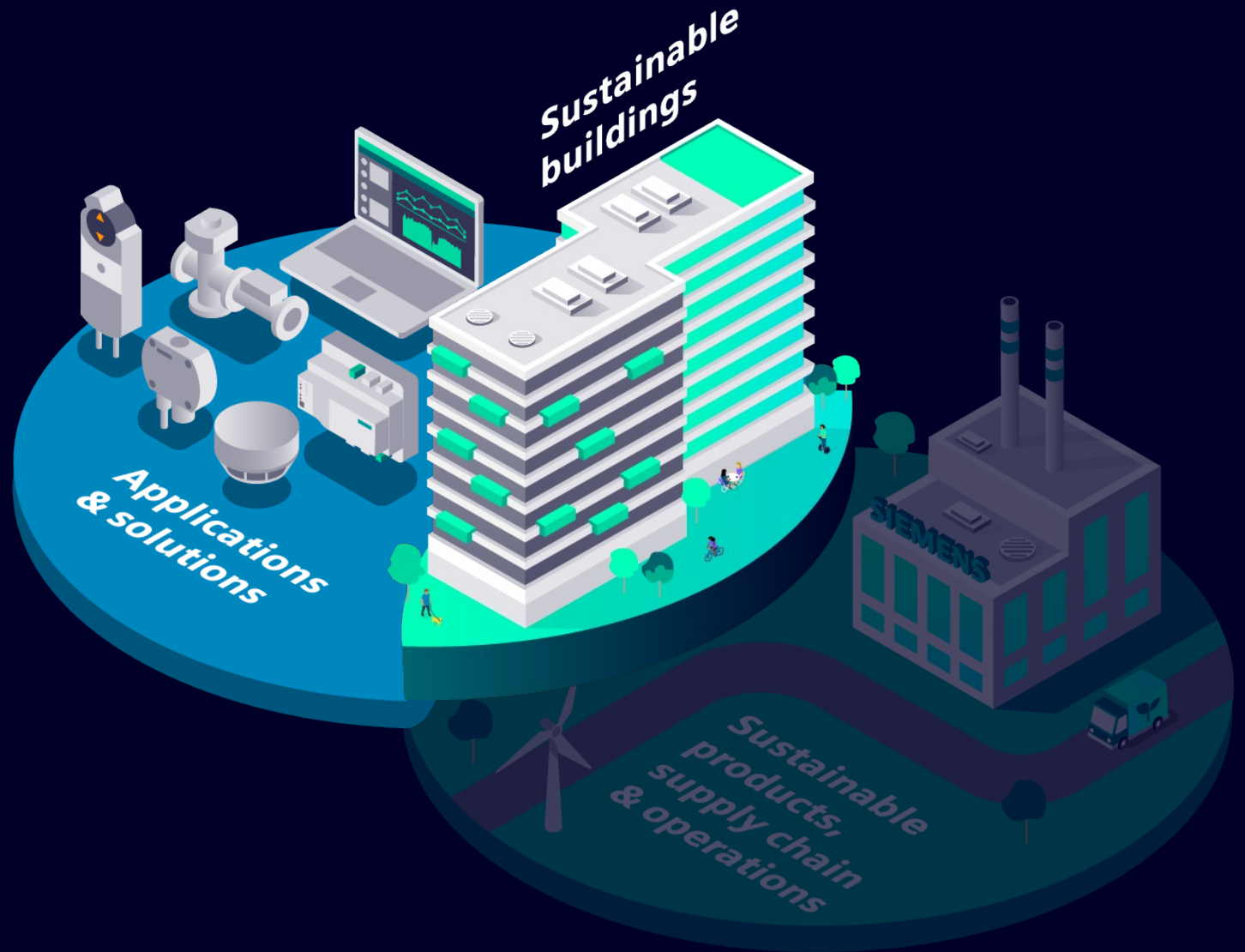
Use case

Provide end-to-end applications, e.g., Fire brigade evacuation map generated upon alarm from a detector

# Applications & solutions

Siemens supports customers in **decarbonizing their buildings**.

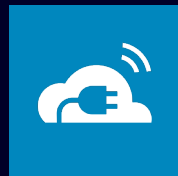
Through **building automation solutions** that leverage latest technologies, we enable energy efficiency in new and existing buildings.



Cloud



Edge



IoT



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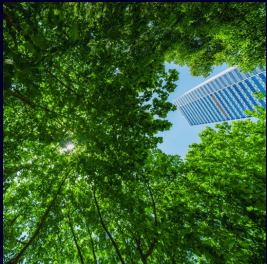
# Changing how people live and work by making smart buildings real



**People Health,  
Comfort & Safety**



**Performance of Building Assets  
& Efficient Operations**



**Sustainability & Energy Saving**

# We make smart buildings real

by combining the real and the digital worlds to create sustainable, innovative value for people, businesses and the generations to come.

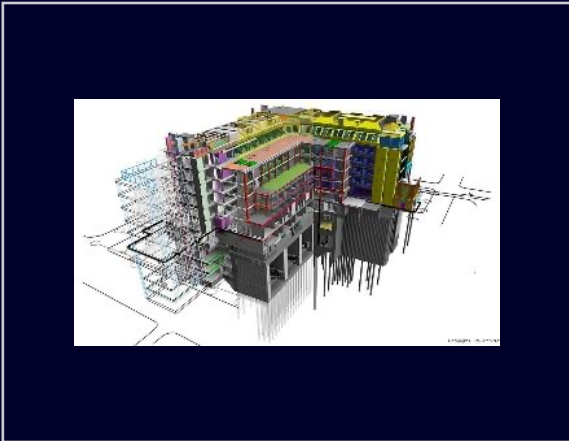
# Digital Twin

Efficient building operations through digitalization



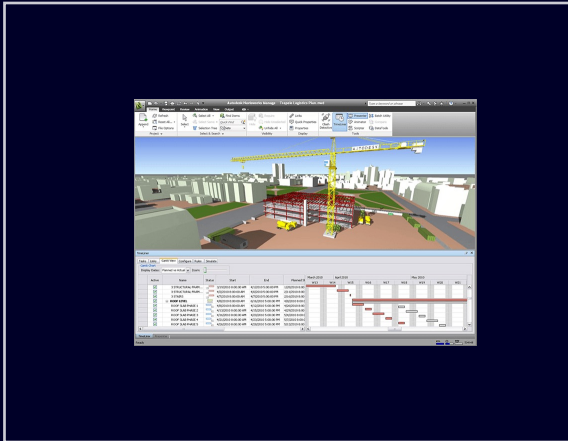
**2000**

2D Plans



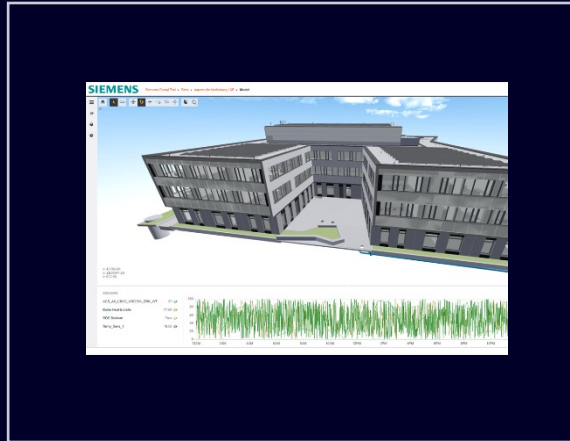
**2010**

Just 3D Models –  
Architects



**2015**

3D and Information –  
Construction Companies



**2023+**

**Digital Twin for building operation** –  
Owner and Operators

# Interoperable and future proof portfolio SaaS applications, platform and connectivity enabling digital services

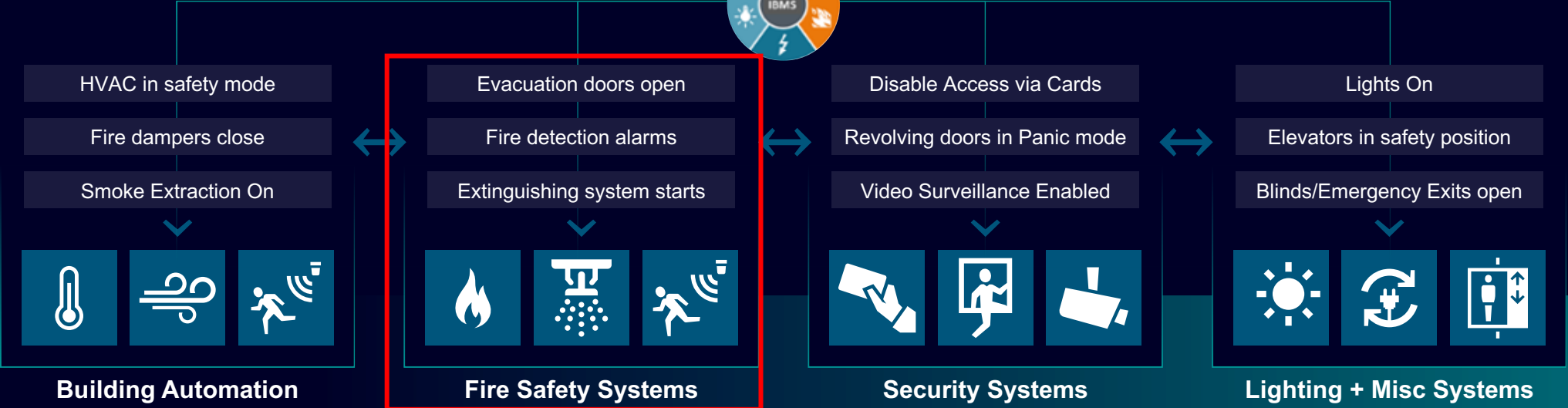




CYBER LAYER



CYBER-PHYSICAL LAYER



PHYSICAL LAYER



# Current solution: Building X Fire Apps, **the answer to your Fire Safety needs**



Facility manager



Solution & service provider



Building owner



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# Fire safety

## Smarter Protection Matters



### Protecting all year-round

Comprehensive solution (detection, alarming & evacuation, extinguishing, graphics and Cloud)

### Connecting with purpose

Cloud based real-time monitoring and incident notification of multiple sites

### Sustaining undisturbed spaces

Advance technologies like:

Disturbance free testing

Utilising advance algorithms to prevent false alarms!

# Fire safety

## Key innovations



### ASA technology

- Fire detectors with application specific parameter sets and **Advanced Signal Analysis (ASA)**
- Distinguish between real fires and deceptive phenomena
- False alarms costs building owners thousands of dollars each year!!!

Find out more 



### DFT technology

- Alarm devices conduct daily **disturbance-free tests** of acoustic, electronic and beacon components ensuring the safety of people without the need for manual testing
- Detectors conduct daily **disturbance-free tests** of the hardware, correct software operation and communication to the panel ensuring safety without any disturbance of the building occupants and business processes
- Regulations

Find out more 



**Our solution**  
**Building X Fire Apps**



24/7 secured visibility  
of your connected sites




Remotely access  
your site to fix issues





Efficient maintenance  
planning, execution  
and reporting

# Building X Fire Apps Benefits

## SERVICE PROVIDER

 Service 10% more customers with the same number of employees


 Save traveling time by avoiding multiple site visits


 Save at least 1 on-site trip per year by having the information on hand


 30% faster maintenance testing using the Fire Connect mobile app




## END CUSTOMER

 Live overview of fire protection systems

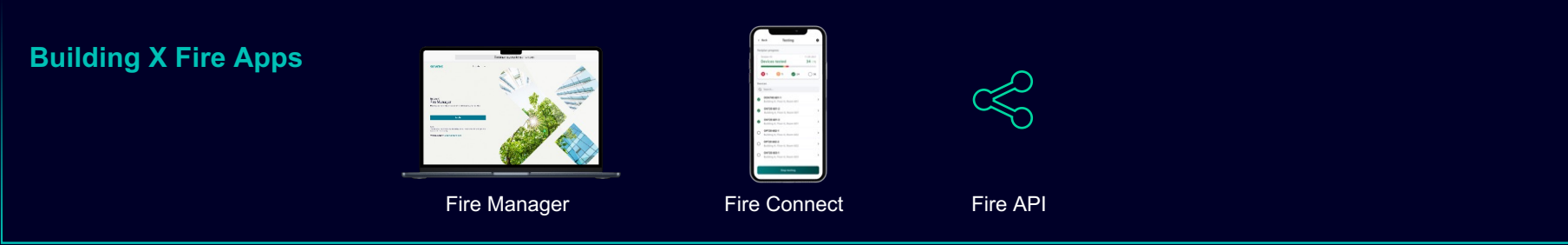
 Quick response to incidents

 Instant notification of incidents

 Ensured business continuity



# Building X Fire Apps Topology



User Level

## Platform Level

Account Service. | Device Services.  
Data Set-up | Analytics/Rules



## Connectivity level

X200/X300



## System & Field Level





# What will the future of fire safety look like?



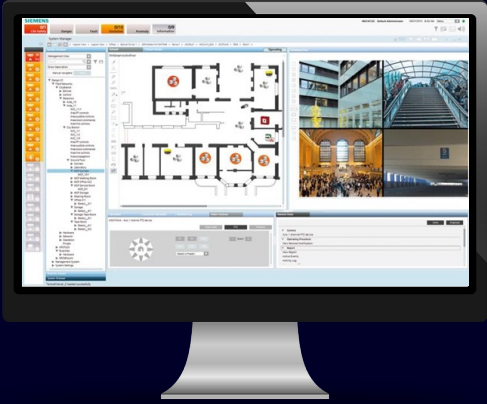
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# Current and upcoming solutions

## On premises solution

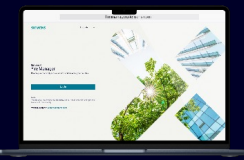
Danger Management System (Graphics)



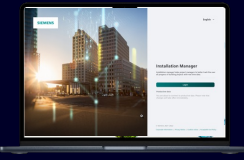
FDCIE

## Remote solutions

Building X Fire Apps



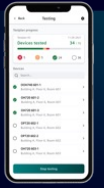
Fire Manager



Installation Manager



Fire Connect

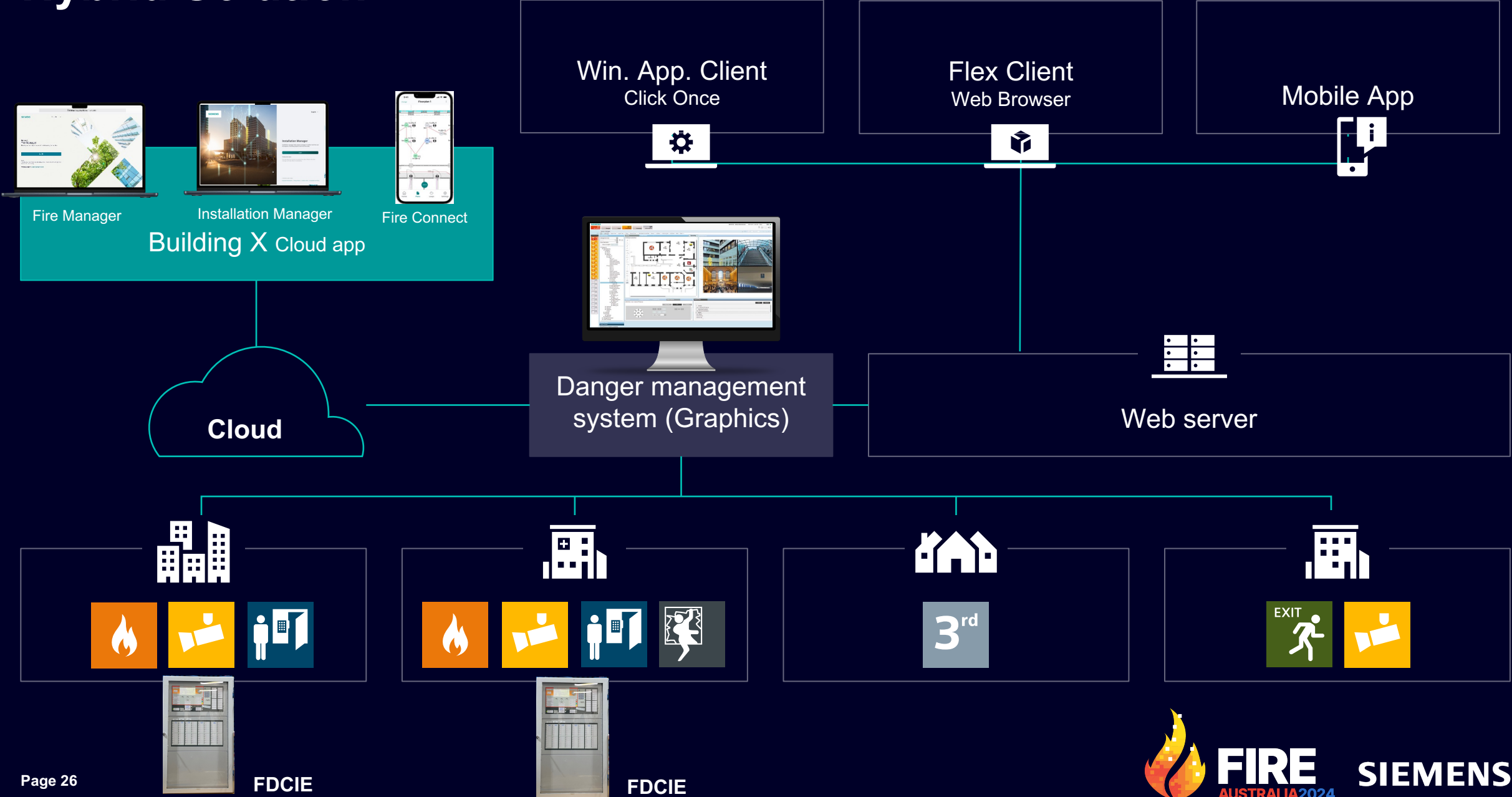


Fire API



FDCIE

# Hybrid Solution



- No more cabling and wiring...?
- No more fire control panels!!!?
- Less site physical test intervals?
- Gen-AI supported graphic?
- Hologram generating detectors?
- Your thoughts?



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ASE?

No way! How can you trust that?!!!

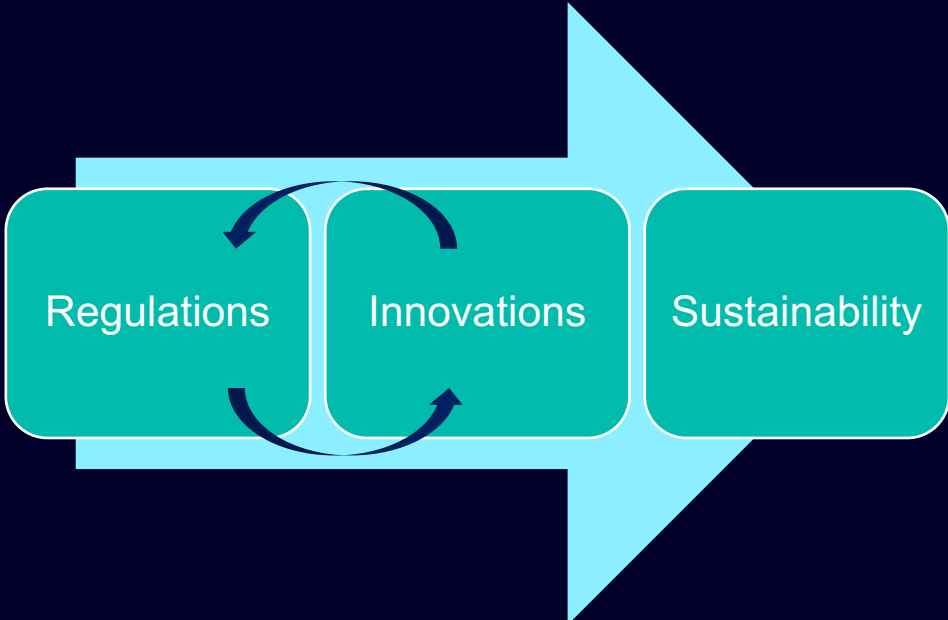
The advancement happened anyway!



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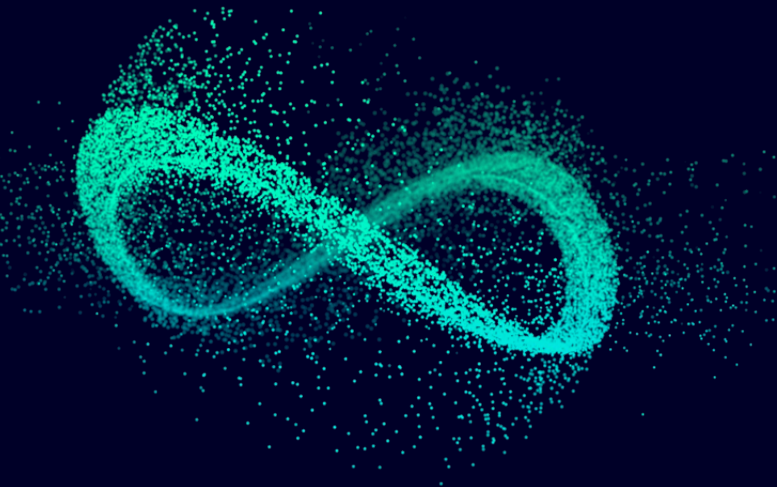
// Do regulations support innovations!?



# By combining the real and the digital worlds in a smart way, we may master the prevalent sustainability challenges

- Automotive Manufacturing
- Airports
- Electronics Industry
- Water and wastewater Industry
- Data Centers
- Machinery and Plant Production
- Food and Beverage
- Chemical Industry
- Municipalities and DSOs
- Cranes
- Intralogistics
- Aerospace
- Battery Manufacturing

Real world



Digital world

- Glass Production
- Pharmaceutical Industry
- Campus
- Tire Industry
- Mining Industry
- Cement
- Transportation and Logistics
- Panel Building
- Wind Energy
- Pulp and Paper
- Life Science
- Healthcare
- Oil and Gas Industry

| Listen to the wind of change...



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# Thank you!

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