



# BOMA New Jersey Annual Sponsors

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# WHAT IS A SMART BUILDING?

# Smart Buildings

A smart building **integrates various technologies**, systems, and processes to create a structure that actively **interacts with its occupants** and adapts to its environment to **optimize operations** and improve overall performance. This **interconnectedness and automation** provide actionable insights and control to property managers, leading to enhanced efficiency, sustainability, and tenant comfort.

# KEY FEATURES OF A “SMART BUILDING”

- **Interconnected Systems:** A smart building has various systems (like HVAC, lighting, security, and energy management) that communicate with each other through a centralized building management system (BMS) or a similar platform.
- **Real-time Monitoring and Data Collection:** Sensors throughout the building collect data continuously. This data can include information on energy usage, occupancy patterns, air quality, and more.
- **Energy Efficiency:** Smart buildings often prioritize energy conservation by dynamically adjusting energy usage based on real-time needs. This not only reduces costs but also aligns with sustainability goals.
- **Predictive Maintenance:** Rather than following a set maintenance schedule or reacting to breakdowns, smart buildings can predict when components are about to fail and alert property managers in advance.
- **Enhanced Security:** Integrated security systems, from cameras to access controls, ensure that property managers can monitor and secure the premises more effectively.



# KEY FEATURES OF A “SMART BUILDING”

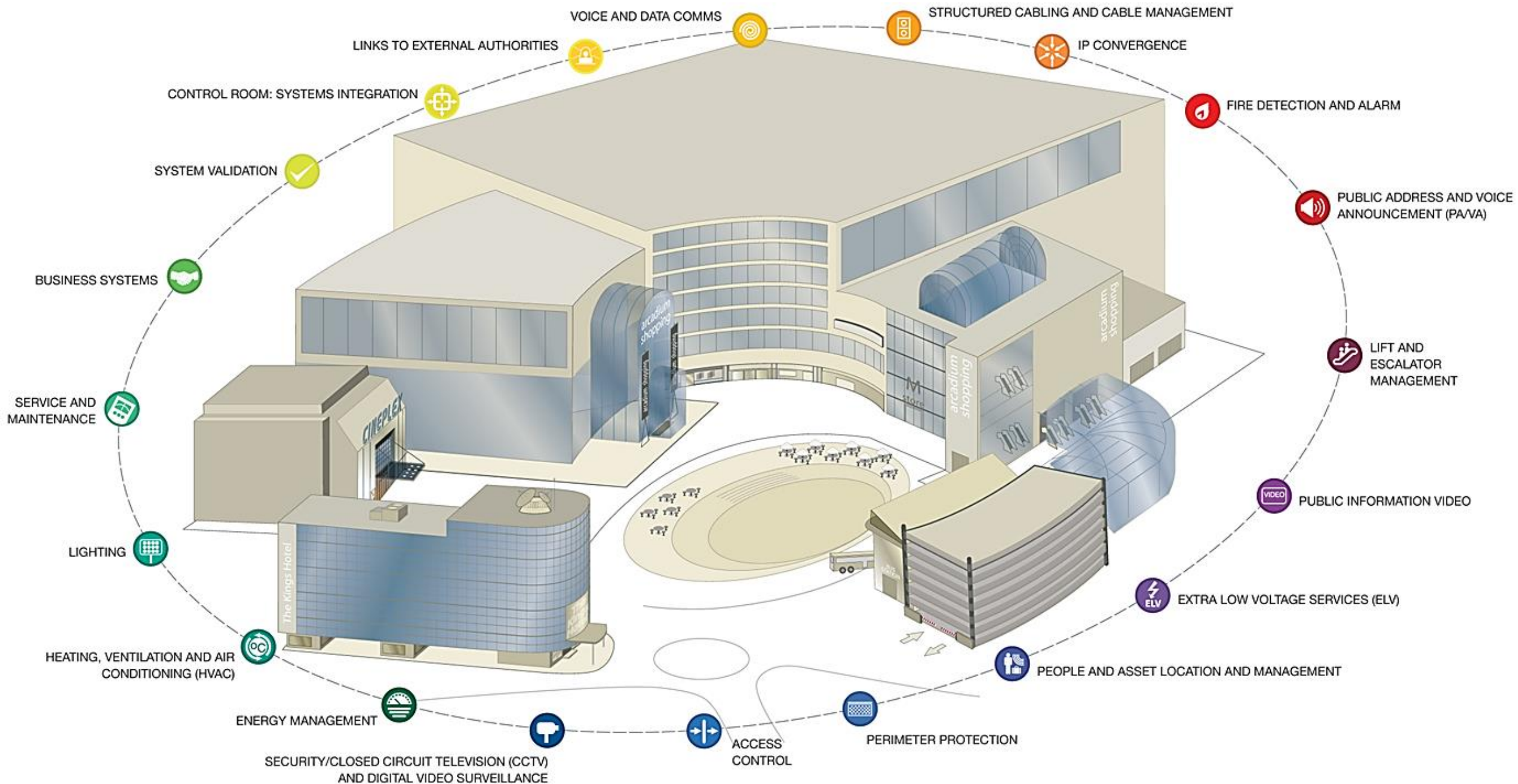
- **Tenant Comfort and Interaction:** Smart buildings can adapt to the preferences of their occupants, enhancing comfort. Furthermore, they may provide interfaces (like apps) for tenants to adjust environmental conditions in their spaces or report issues directly.
- **Data Analytics:** The data collected is analyzed to provide insights into building operations, helping property managers make informed decisions about everything from energy use to space allocation.
- **Environmental and Health Monitoring:** Advanced sensors can monitor factors like air quality, humidity, and temperature, ensuring a healthy and comfortable environment for tenants.
- **Integration with External Systems:** Smart buildings can often integrate with external systems, such as the electrical grid or weather prediction services, to further optimize operations. APIs are often used.
- **Future-proofing and Scalability:** As technology advances, a smart building should have the infrastructure in place to incorporate new innovations and expand its capabilities.

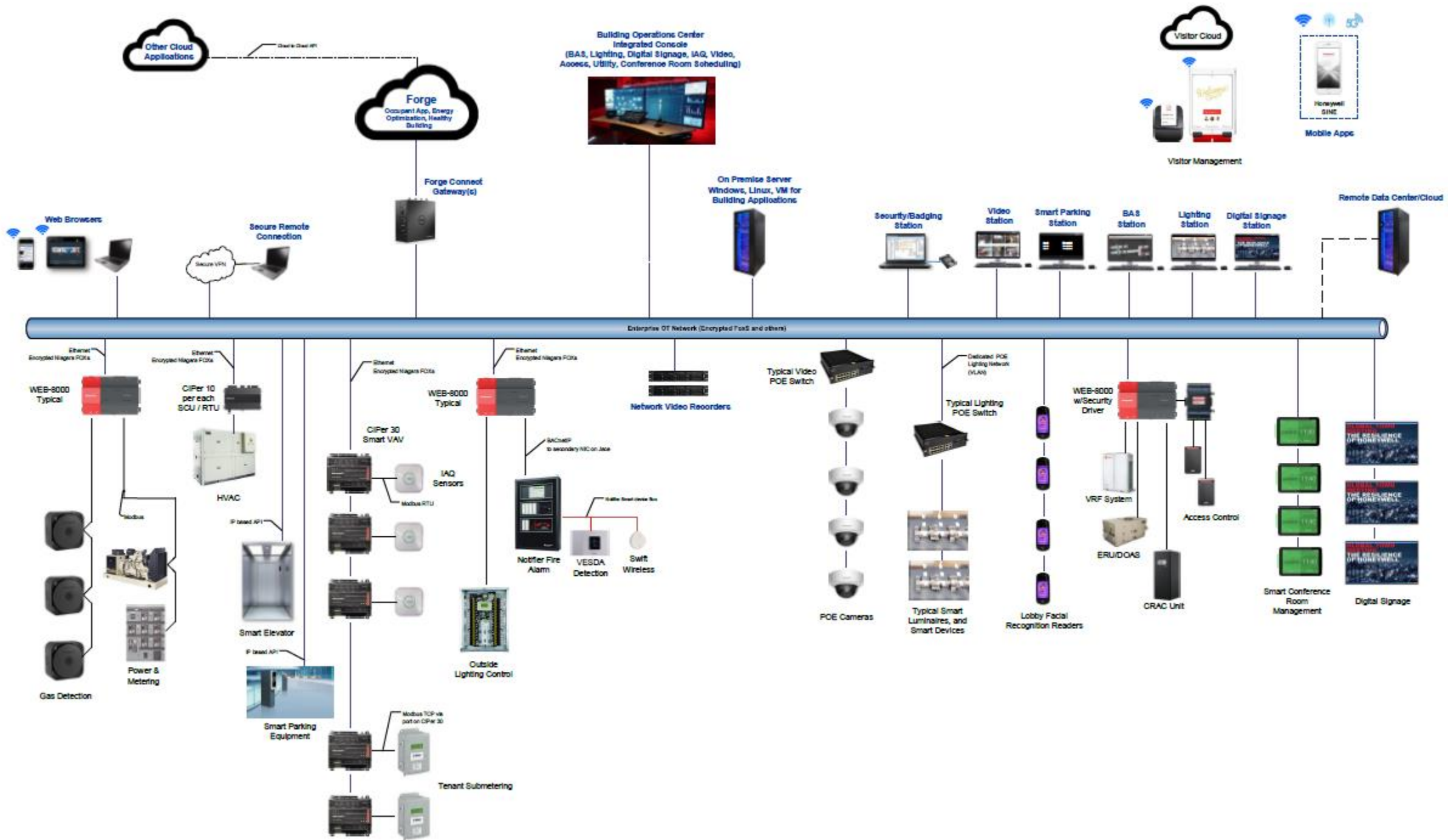
For a commercial real estate property manager, a smart building represents an opportunity to drive operational efficiencies, reduce costs, enhance tenant satisfaction, and increase the overall value of the property.



# INTERNET OF THINGS

A network diagram consisting of numerous red circular nodes connected by thin, glowing lines in shades of green and blue. The nodes are scattered across the frame, with a higher density on the right side, creating a sense of a complex, interconnected system.





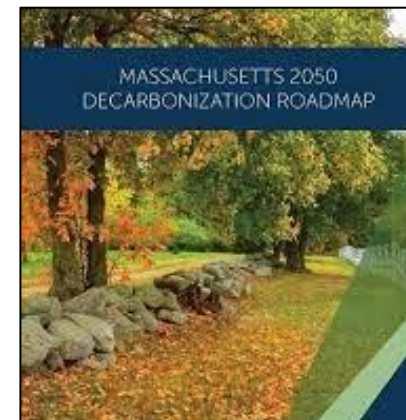
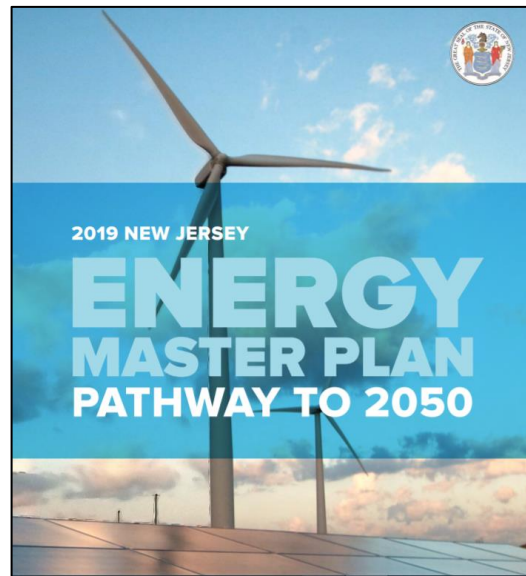
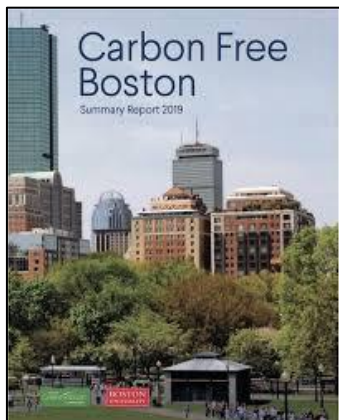


# WHY WOULD I WANT A SMART BUILDING?

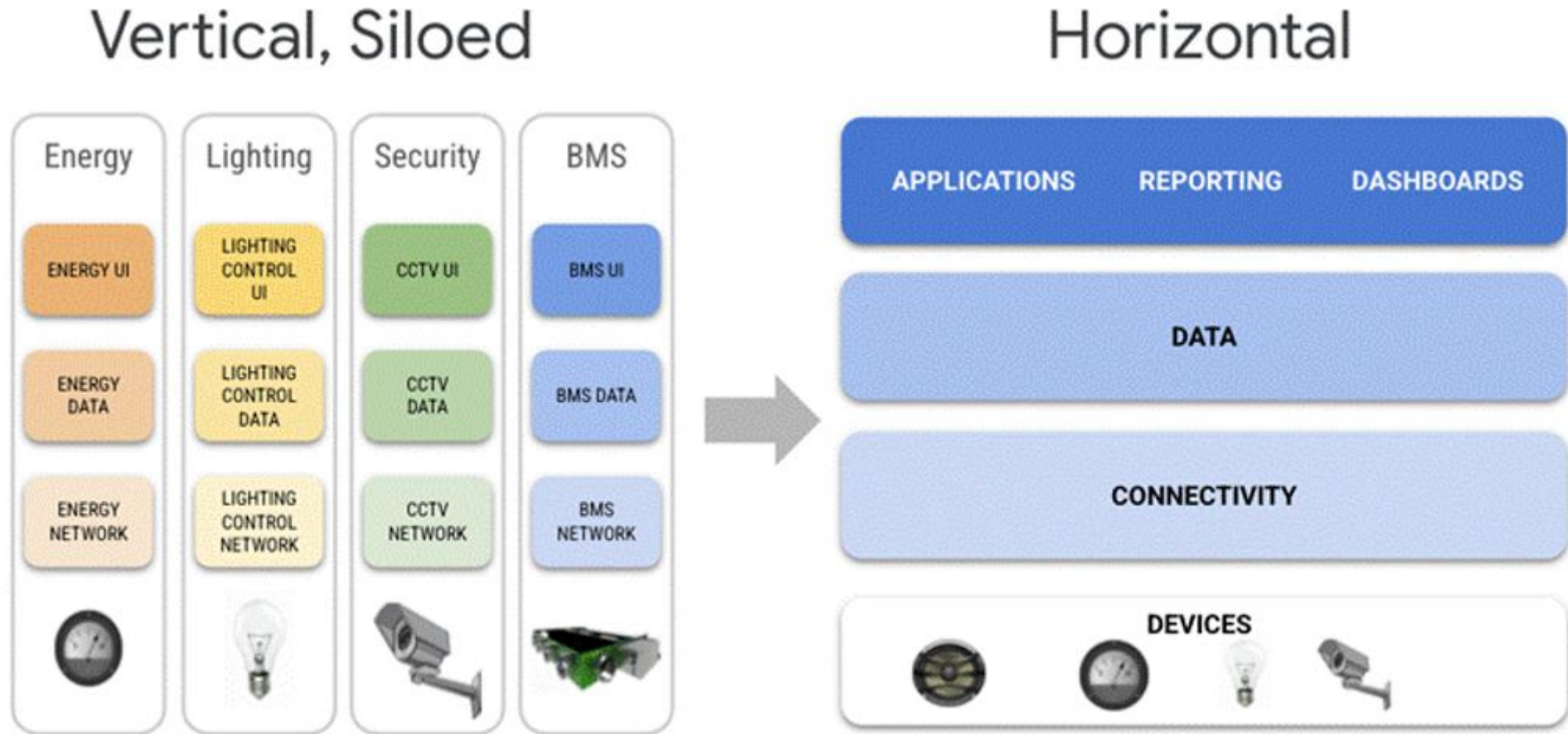
A network diagram with red nodes and blue lines on a dark background. The nodes are connected by thin blue lines, forming a complex web of connections. The nodes are scattered across the frame, with a higher density in the lower right quadrant. The lines are thin and light blue, creating a subtle grid of connections.

# Building Decarbonization

## 80X50 PLANS



# Big Tech Approach: Independent Data Layer & Smart Buildings



# CUSTOMERS ARE FACING INCREASING CYBER THREATS

- Professional hackers
- Accidental insiders
- Script kiddies
- Corporate spies
- Ideological hackers
- Malicious insiders
- Criminal hackers
- Disgruntled employees



# CLOUD APPLICATIONS & SMART BUILDINGS

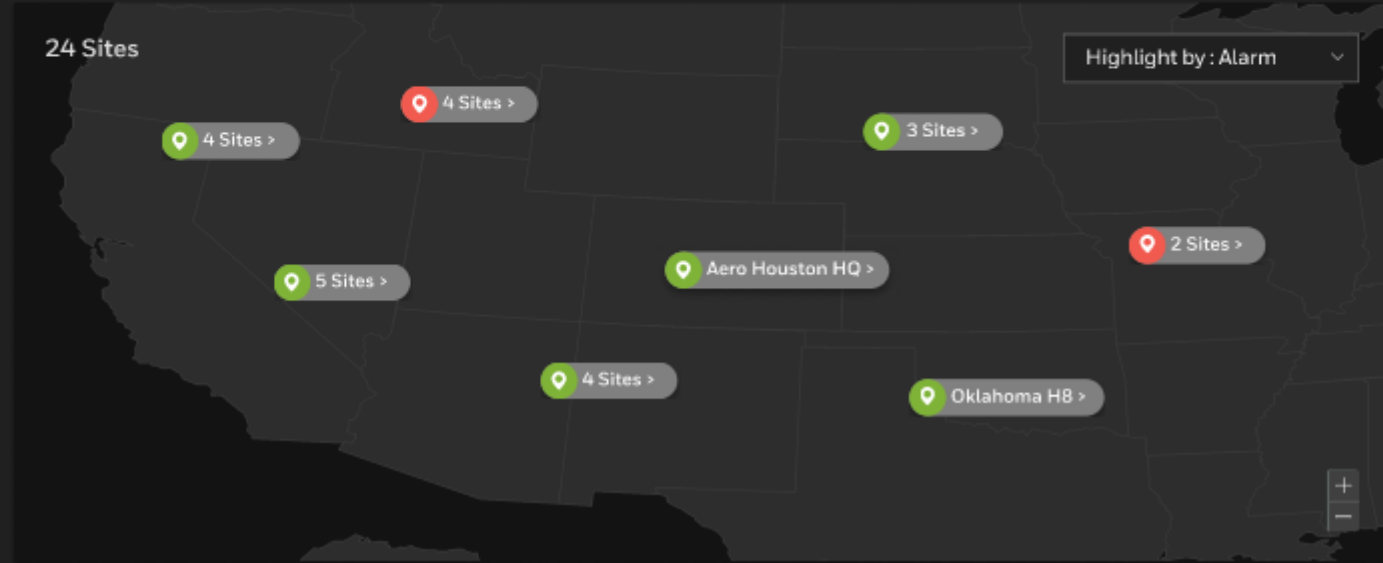
A network diagram with red nodes and green/blue lines on a dark background. The nodes are connected by thin lines, forming a complex web of connections. The nodes are scattered across the frame, with a higher density in the lower right quadrant. The lines are thin and have a slight glow, connecting the nodes in a non-uniform pattern.



Honeywell



Date from 28-06-2022



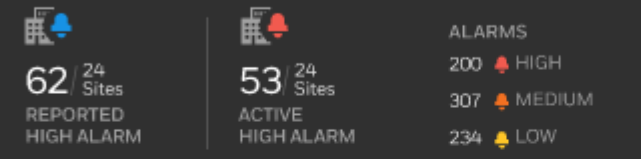
### Healthy Building



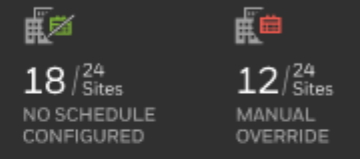
### Site Rank (Healthy Building Score/5.0)

Site Rank (Healthy Building Score/5.0)	Rank
Arlington H1	2
Aero Houston HQ	3
Chesterfield H3	3
HPS Charlotte HQ	4
Melville H5	4

### Alarm



### Schedules & Override



### Carbon (CO2e) Energy EUI



### Site Rank ( Active Alarms )

Site Rank ( Active Alarms )	Rank
Aero Houston HQ	98
Arlington H1	65
Melville H5	47
Cicero H9	42
HPS Charlotte Hq	29

### Site Rank (Override Duration)

Site Rank (Override Duration)	Rank
Melville H5	32 h
Arlington H1	7 h
HPS Charlotte Hq	5 h
Aero Houston HQ	3.5 h
Cicero H9	2.2 h

### Breakdown by sites

Breakdown by sites	EUI (kWh/sqft)	Change
HBT Atlanta HQ	35.80	0.72 (2.0%)
Deerfield H3	35.80	0.18 (0.5%)
HPS Charlotte HQ	--	1.77 (5.3%)
Cicero H9	35.43	0.64 (1.8%)
Aero Houston HQ	35.41	1.42 (4.2%)



NC01-CHARLOTTE

01/01/2021 - 01/06/2021



Energy Usage for Jan - Mar 2023



VIEW DETAILS

SUMMARY

**BUILDING**

ASSETS

		ENERGY CONS. (MWh)	BASELINE CONS. (MWh)	CHANGE (%)
23		42.32	45.32	1.5%
22		12.26	13.43	1.3%
21		8.15	9.48	0.5%
20		12.29	14.30	1.5%
19		12.89	7.80	1.2%
18		9.78	10.23	0.1%
17		13.46	15.23	1.5%
14		49.56	51.81	0.1%
13		42.32	45.32	1.5%
12		12.26	13.43	1.3%
11		8.15	9.48	0.5%
10		12.29	14.30	1.5%
09		12.89	7.80	1.2%
08		9.78	10.23	0.1%
07		13.46	15.23	1.5%

NC01-  
**CHARLOTTE**

Energy Usage

**4.34** kWh  
▼ 16 kWh (2.5%)

Actual Consumption / Baseline  
7.34 GWh / 4.81 GWh

GHG Emissions

**77.23** kton  
▼ 16 kton (25%)

Actual Emissions / Previous  
77.23 mtCO2e / 93 mtCO2e

Utility Cost

**477.23** dollars  
▼ 7 dollars (0.5%)

Actual Utility Cost / Previous  
\$ 477.23 / \$ 484

Power

**3,415** kW  
as on 06/28/2022  
at 11 a.m.





NC01-CHARLOTTE > EV Dashboard

01/12/2022 - 31/05/2023



NC01-CHARLOTTE  
ELECTRIC VEHICLE  
01 DEC 2022 - 31 MAY 2023

TOTAL CONSUMPTION  
**49.60** MWh

Cost  
**\$13.80k** Cost

GHG Emissions  
**39.74** mtCO2e

DLM Savings  
**\$1.14k** cost

EV Station Overview

Demand (DLM)

Port Status ⓘ

20 Total

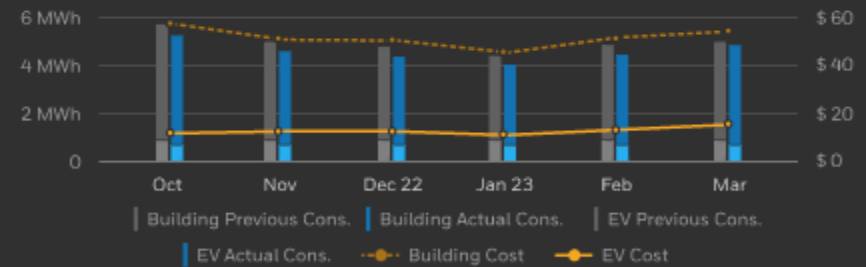
- 4 Available
- 12 Charging
- 1 Fault
- 1 Suspended
- 1 Reserved
- 1 Offline

Current Power ⓘ

**228** KW  
Power Demand

Available Power  
**124** KW  
352 KW Configured Power

Energy Overview



Utilization

**75%** Ports Utilization

- 90% Most Utilised
- 28% Least Utilised

Charging Sessions

**125** Sessions Today

Total Sessions  
**2331** Jan to Till Date



# API INTEGRATIONS

A network diagram with red nodes and green lines on a dark background. The nodes are connected by thin green lines, forming a complex web of connections. The nodes are scattered across the frame, with a higher density of connections on the right side.

# Application Programming Interface (API)

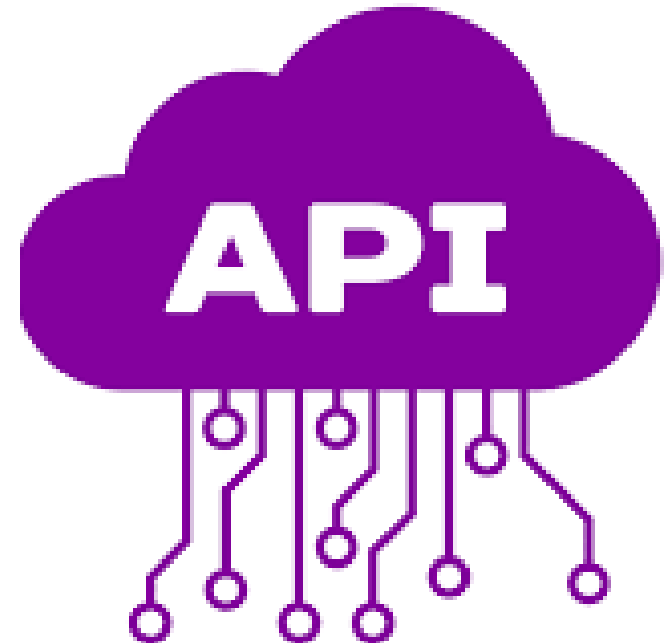
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## What is an API?

API is the acronym for application programming interface — a software intermediary that allows two applications to talk to each other. APIs are an accessible way to extract and share data within and across organizations.

APIs are all around us. Every time you use a rideshare app, send a mobile payment, or change the thermostat temperature from your phone, you're using an API.

Used commonly in Smart Building applications to integrate systems data. Facial recognition and other access/security technologies will use APIs to integrate to other systems. JSON, REST, HTTP, etc.



# PRINCETON IDENTITY

