Build SMART, Not Hard… The Application of Technology in Today's Smart Building Environments

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TODAYS' DISCUSSION POINTS

What is a Smart Building? What is Smart Building Design?

Where is Smart Building Design Implemented?

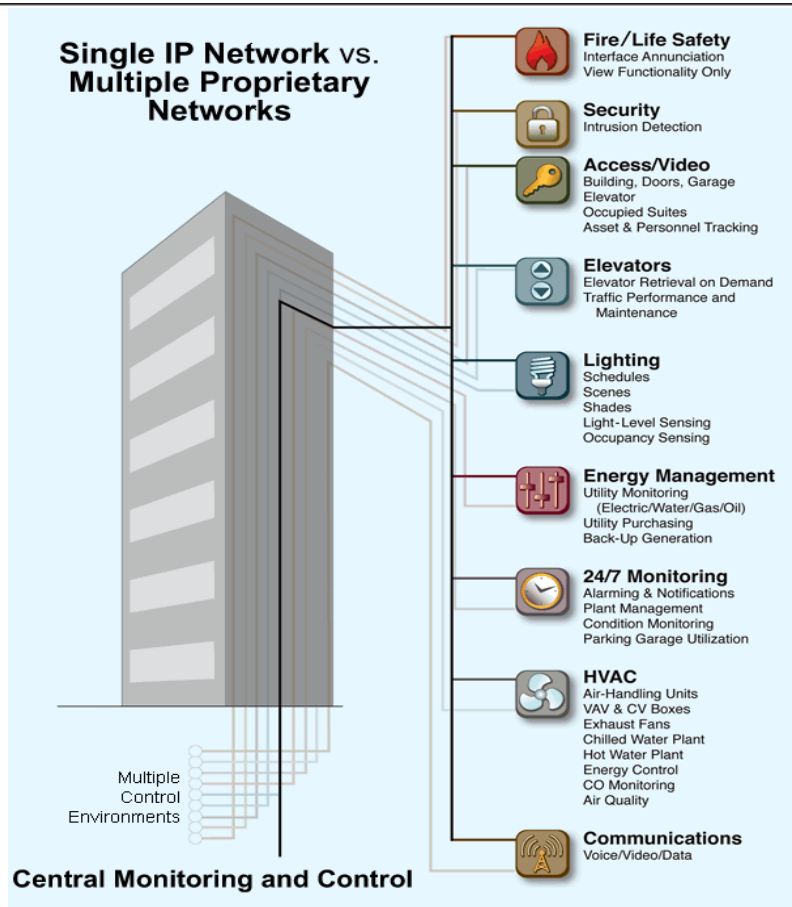
How does Smart Building Design Work?

Who Benefits from Smart Building Design?

Why Should Smart Building Design be Entertained?

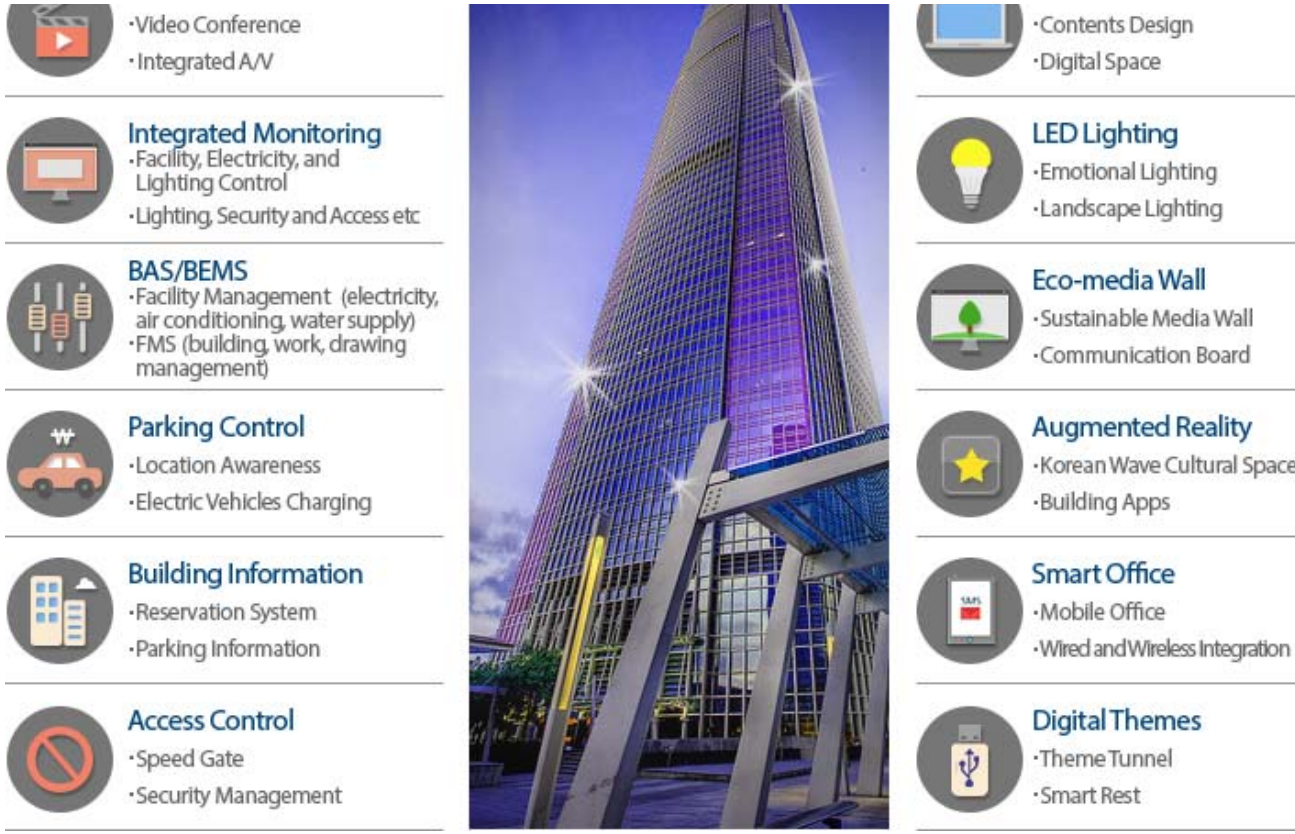
What is a Smart Building?

What is Smart Building Design?



A Smart Building is:

Also referred to as an Intelligent Building. It is a building that provides a productive and cost-effective environment by optimizing four basic components: structure, systems, services, and management …. and the interrelationships between them.



Systems That Can Utilize the Same Network Architecture:

- Network
- CCTV
- Access Control
- Building Automation
- Lighting Control
- Shade Control
- Information Displays
- IP Video
- HVAC Control
- WiFi
- Mobile
- Paging/Soundmasking/Mass Notification

Where Can Smart Building Design Implemented?

ANYWHERE

High Rise / Mixed Use

Airports

Commercial Office

Commercial Buildings are Evolving

Building/Ops Services

- Lighting
- HVAC
- Energy/Metering
- Physical Security
- Access Control
- Sensors
- …

Tenant Services

- Smart Meeting Spaces
- Personalized Space
- IP Telephony
- Wireless
- Video
- Digital Signage
- …

Major Trend of

Low-voltage Connected Devices, IP Convergence, IoT-enabled Applications

AIRPORT SYSTEMS – to name a few

Aircraft Docking System
Augmented Reality
Automated Passport Control
Information Displays (xIDS)
Parking Guidance and Tracking System
Self Service Kiosks
Bluetooth Beacons
Common Use Self Service
Boarding Control (Self-Boarding Gates)
Mobile Passport Control

Point-of-Sale
Parking Revenue
Access Control
Video Surveillance
Duress
Wayfinding
WiFi
Local Area Network
Parking Spot Reservations App
Ground Transportation

So How Does This All Work?

Analyze usage over time to identify trends, or get an update of live data from the whole facility from specific zones to individual rooms.

Lighting, air conditioning, security and other systems pass data back and forth, leading to higher efficiency, more safety and comfort, and lower cost operation of the facility

Who Can Benefit From This? And How?

Building Owners/Managers

Stakeholders

Facilities

Employees

Tenants in Leased Spaces

- Reduced Energy Consumption
- Lower Utility Cost
- Lower Emissions
- Lower Capital Cost from Increased Equipment Life
- Decreased Unplanned Downtime
- Lower Risk of Equipment Failure
- Ability to Repurpose Floor Space to Increase Revenue

- Comfortable Working Environments
- Reduced Stress
- Better Mood
- Happier and More Collaborative Atmosphere
- Higher Productivity

Why Should Smart Building Design Be Entertained?

(Construction Budget)
(LEED)
What else?

- Achieve more powerful and granular energy management, control, analytics, and integration capabilities.
- Operational Savings
- Energy Efficiency

Cost Savings

Reduces the initial construction costs by 10-15% and up to 30% for the construction (cabling and pathways infrastructure) of a modern intelligent building.

Savings varies based on geography. Material costs may be slightly higher, but labor costs can typically be reduced by 50%.

DIGITAL CEILING

What is it?

The combination of multiple building networks, such as lighting, heating, cooling, IP video, IoT sensors, etc. over a secure and intelligent converged network platform.

DIGITAL CEILING

How does it work?

The Digital Ceiling uses IP to connect disparate networks, linking building services over a single, converged IP network across a facility into a secure, distributed, standards-based architecture delivering building intelligence at the edge.

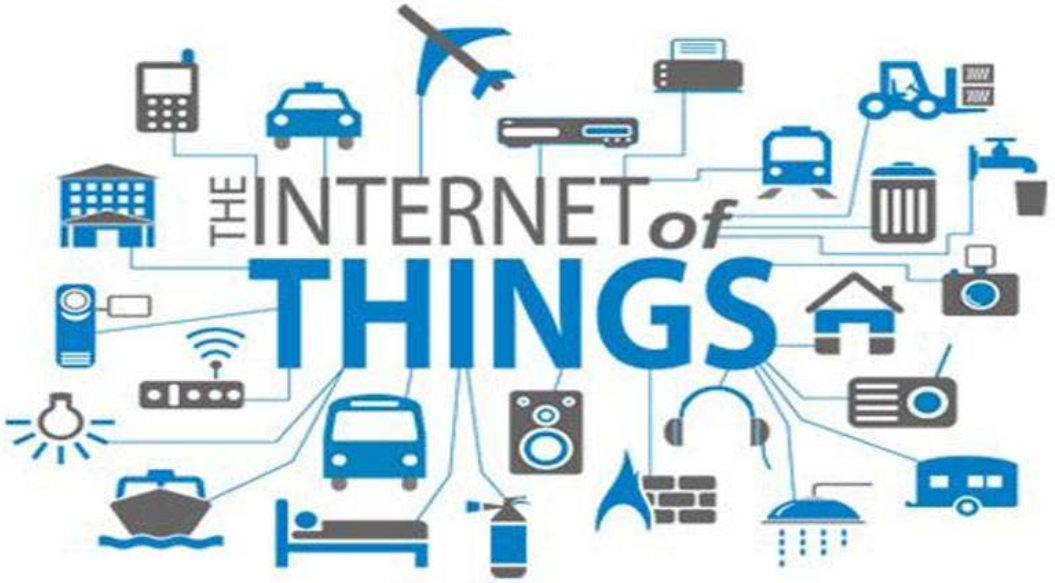
It lowers facilities' operating costs, allows a facility to be more efficient by monitoring and controlling usage, and gives better insight into the environment to help make better business decisions.

DIGITAL CEILING

Benefits

- Create a central hub of intelligence:
  - Add sensors
    - Proximity
    - Temperature
    - Carbon Dioxide
    - Visual Light Communication (Li-Fi)
    - Bluetooth Low Energy
    - Presence

INTERNET OF THINGS



Machine to Machine Communication

Data Gathering Sensors

Sensor to Machine

Cloud Computing and Applications

Reasons to Integrate Multiple Building Systems onto One Network Architecture:

- They use the same data network architectures and IP-based Ethernet controllers.
- They can be web-based, centralized, remote controlled, and accessed from a PC, tablet, or smart phone.
- Better manageability and analytics
- Reduced infrastructure installation cost
- Interoperability and communication between historically disparate systems

CONCLUSION

Businesses, organizations, and technologies continue to evolve becoming one overall system requiring new levels of efficiency, management, control, interoperability, and sustainability opening up endless possibilities of data acquisition and communication for a more eco-friendly, and Smart, world!

Questions?