The Value of Holistic Smart Building Assessment

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Agenda

- What defines a Smart Building?
- Why is “holistic” important?
- Who benefits and how?

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A fragmented market for connected Smart Buildings

The smart building market is currently worth over $47 billion (USD).

What defines a smart building?

How can investment strategies be developed without better industrywide understanding of smart buildings?

Greater market needs are driving the race to add modern technologies and customizations to attract end users and improve environmental and health challenges.

Vendors concentrating on offering innovative products and solutions to optimize energy consumption and provide a high degree of automation

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Minimal Agreement: Definition and value of Smart Buildings

Smart for Multi-Tenant Design

Technology: Traditional physical security, complex system architecture, disconnected systems

Smart for Materials Optimization

Technology: RFID based construction, disconnected systems, energy metering

Smart for Sustainability

Technology: Digital twins, complex IT/OT integration, tenant experiences

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A Smart Building is future-ready..

- **digitally capable** built environment (adapted to the type: office, industrial, medical, retail, educational, hospitality, or multi-tenant residential)

- **produces smart outcomes** such as better asset value, optimized operations, healthier and more productive environments, sustainable practices, cybersecurity, reduced risks,

- **better aligned** with the mission of the business it houses.

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Holistic and objective Smart Building assessment

Connectivity: Capability to transmit internal and external data and adapt to the needs of future innovations within intelligent buildings.

- Media
- Coverage
- Security
- Expansion
- Building Resilience

Power & Energy: Capability of a building to monitor and manage power and energy both within its own boundaries and with the local electric utility grid.

- Energy Use Management & Analysis
- Demand Response & Grid Interoperability
- Distributed Energy Resources

Health & Wellbeing: Capability to monitor and react to indoor environmental quality conditions.

- Indoor Air Quality
- Thermal Management
- Visual Comfort/Light and Noise
- Control
- Water Management
- Waste and Odor Management

Life & Property Safety: The extent to which smart building technologies may optimize the safety of buildings.

- Building Emergency Plan
- Integrated System Performance
- Situational Awareness
- Distributed Energy Resources

Cybersecurity: Uses the NIST CSF 5, a voluntary framework consisting of standards, guidelines and best practices to manage risk, organized by sections

- Identify
- Protect
- Detect
- Respond
- Recover
- Best Practices

Sustainability: Assesses smart sustainable building concepts by evaluating

- Water/Waste Management
- Building Lifecycle & Operations
- Smart Integrations & Tools
- Awareness & Engagement

Building Rating

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Segmented reporting aids in understanding

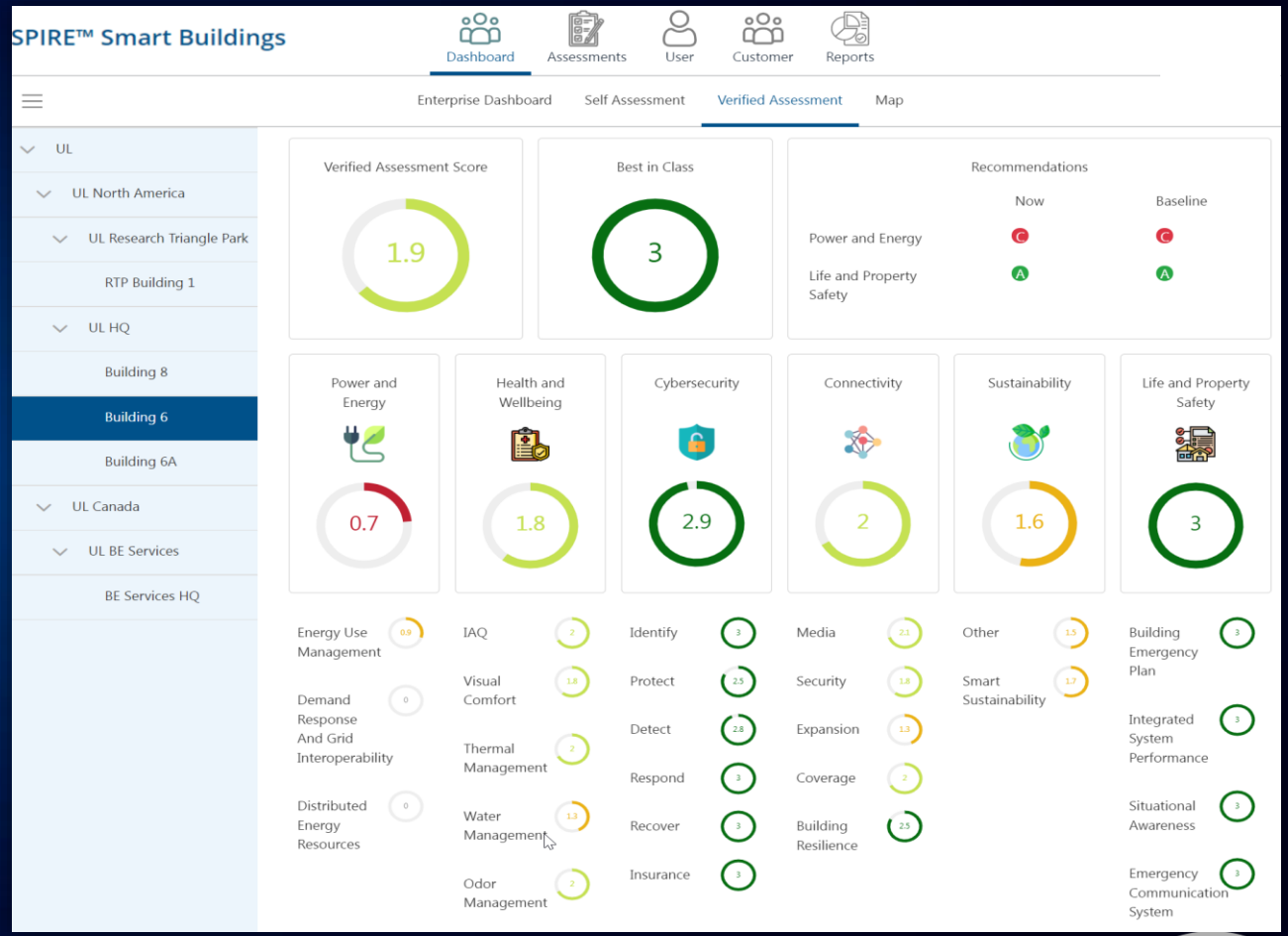
Beneficial characteristics:

Free self-assessment: for initial (limited) evaluation, determine interest or suitability for a Verified Assessment

Benchmarking with visibility at multiple levels – building, campus, region etc.

Intuitive dashboards and scores for each criteria and section

Detailed report after Verified Assessment providing a roadmap for enhancements



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Flexibility to expand as the ecosystem grows

Capable of addressing emerging needs or new technologies

Smart Building Design & Operations

Smart Products & Solutions

Smart Implementations

Installer and system integrator programs

Adding different facility types – i.e. data centers

Smart Compliance

Working with authorities & insurers

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A comprehensive program creates value for different stakeholder groups

	Examples	Stakeholder Benefits
Asset Owner/ Operator	• Large enterprises • REITs • Asset Management Cos • Public institutions • FM companies • Iconic buildings	• Increased asset value • Reduced operating cost • Enhanced compliance, risk management, and sustainability • Improved occupant experience • Better future readiness • Greater brand value
Influencer	• Agencies • Utilities • Insurers • Architects • Consultants	• Better compliance • Improved program deployment – e.g., demand response • Simplified underwriting • Contemporary and technology enriched design • Service provider verification
Enablers	• OEMs • Tech Companies	• Better insights into their product/system usage • Validation of market claims and performance

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A comprehensive program creates value for Building Owners

Facility Management & Operations

- Identify gaps in the way client facilities are managed
- Equip with detailed insight aimed to improve building technology & operational roadmaps
- Independent assessment results to highlight building performance, effectiveness, & improvement over time
- Benchmarking against buildings around the globe or within the portfolio

Building Portfolio & Asset Value

- Deep insight into building performance across enterprise portfolio
- Enables better portfolio planning across building assets
- Increases value of building assets

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A comprehensive program creates value for Building Buyers

- Identify the right building for their needs
- Choose the right systems
- Facilitate the system integration
- Achieve organizational goals
- Enhance occupant satisfaction and productivity

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Summary

- Smart Buildings have evolved from early interpretations with increasing complexity.
- A holistic approach that mimics smart building development by integrating previously separate systems forms a better program.
- The whole ecosystem (owners, buyers, operators, enablers, influencers) benefit from collaborative developments and updates.

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