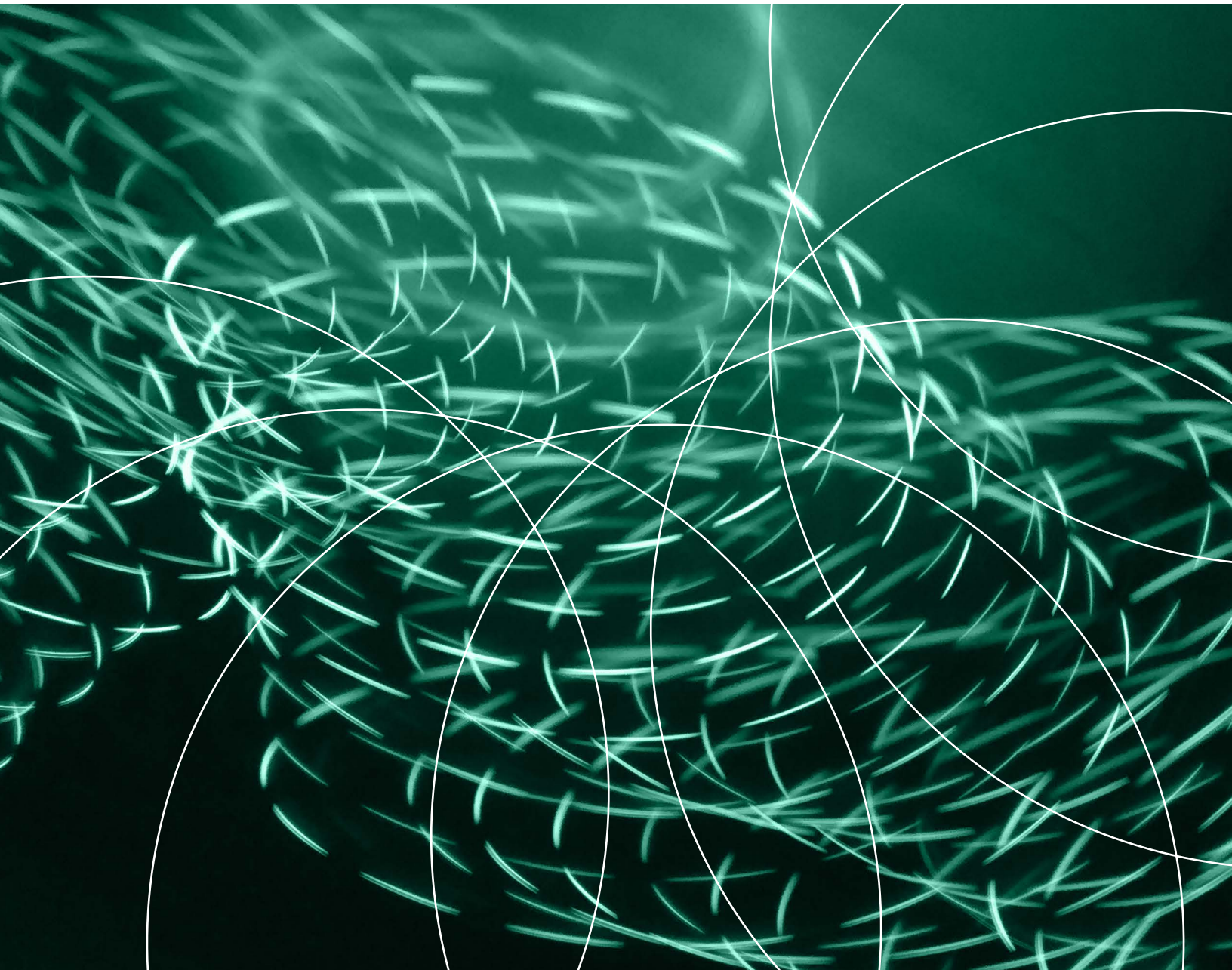# Cracking The Code: Unleash Your Smart Buildings Strategy With The Power Of Facility Data

Successful Organizations Converge Data From All Buildings Systems And Make It Easy For Stakeholders To Access Actionable Insights

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Project Team:

Mandy Polacek,
Senior Demand Generation Consultant

Ben Anderson,
Demand Generation Consultant

Contributing Research:

Forrester's Technology Architecture & Delivery And Security & Risk research groups

Executive Summary

For many industries, building optimization plays a significant role in efficient and sustainable operations, enterprisewide security, and keeping occupants happy, healthy, and safe. Savvy leaders invest in making their buildings smarter through better integration, automation, and intelligence, enabling facility- and executive-level access to accurate and actionable insights to advance top business goals.

In August 2023, Johnson Controls commissioned Forrester Consulting to evaluate the state of smart buildings. Forrester conducted an online survey with 3,445 smart buildings leaders to explore this topic. All leaders were asked high-level smart buildings strategy questions and then more granular questions depending on their level of responsibility for sustainability, security, and/or building environmental systems. Leaders represented organizations in 18 industries and 25 countries. The study was conducted in a double-blind fashion.

We found that few organizations operate smart buildings, as their systems and data are not fully integrated, and they lack the expertise to leverage building systems insights. The most advanced have overcome these challenges. They view smart buildings initiatives holistically and have the infrastructure for connectivity, dashboards that marry data from all building systems, measures in place to protect that data, a centralized mission for data collection, and use machine learning/AI for nearly real-time analytics. This enables them to use building systems data to reduce carbon emissions, optimize building security, improve occupant health and productivity, and optimize building spaces. Technical and strategic partners are needed to help organizations fill expertise gaps and advance smart buildings initiatives.

Key Findings

Only 10% of respondents say their building systems and equipment are fully integrated, and it's costing them time, people, and money. While many leaders use buildings insights, their decisions are rife with risk as their data paints part of the picture. Lack of integration is causing reduced efficiencies (67%), customer loyalty (62%), and revenue (52%).

Building insights are vital to achieving sustainability, security, health, safety, and optimization goals. We found that many departments (e.g., security, sustainability, facilities, experience teams, CEO) rely on building data to inform decisions.

Organizations with holistic smart buildings strategies invest in integration and tools to give leaders easy access to better insights. Advanced organizations are nearly two times more likely to have a central mission for collecting data; invest in integration, automation, and intelligence to provide cross-functional teams easy data access; and experience more benefits, including reduced risk, reduced carbon footprints, and increased regulatory compliance.

Leaders seek smart buildings partners with deep integration abilities, the most advanced technology, and easy-to-use platforms. Smart buildings unite data from all systems and equipment, automatically alert and adjust environments for safety and efficiency, and provide leaders with easy-to-access recommendations. They make it easier for leaders to make smart decisions and the right partner is needed to enable this.

Smart buildings provide leaders with a clearer picture of what's going on inside organization-operated spaces, helping them better manage, renovate, and create new spaces to be more efficient, sustainable, healthy, and safe. For the purposes of this study, we defined smart buildings as those that converge information from various connected systems in a facility (e.g., HVAC, lighting, security, etc.) to provide data-driven insights and measurable information that can be shared across multiple operational technology (OT) and information technology (IT) systems.

HVAC → Smart Buildings Converge Information From Connected Systems ← Building automation systems

Lighting → Smart Buildings Converge Information From Connected Systems

Security → Smart Buildings Converge Information From Connected Systems

Sensors → Smart Buildings Converge Information From Connected Systems
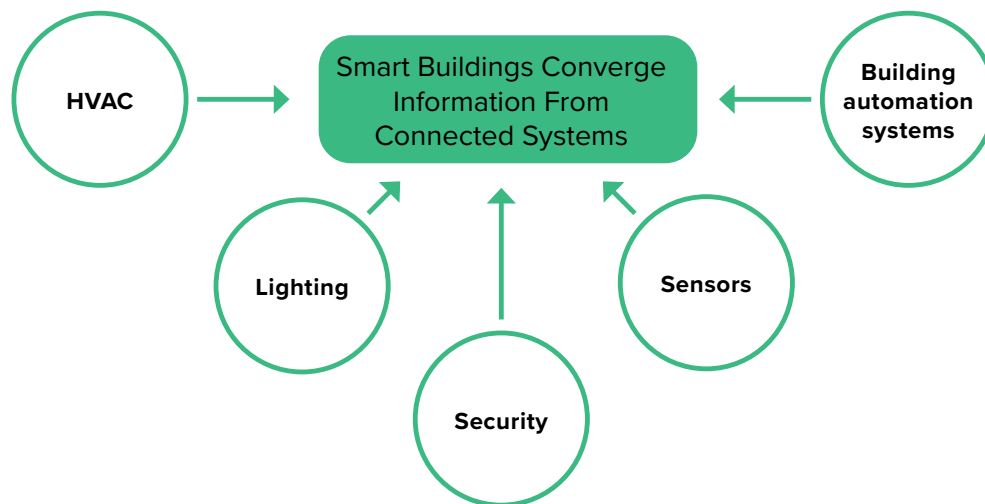
In an ideal state, smart buildings self-manage (e.g., adjust lighting and temperature to improve efficiency and occupant comfort) and provide accurate, real-time insights to, for example, help security correctly identify and address an active threat. This ideal state, however, isn't the reality for most organizations today. While organizations are investing in smart buildings to unearth insights to achieve top goals, a lack of data integration prevents them from doing so successfully. In surveying 3,445 smart buildings strategy leaders, we found that:

A smart building converges information from various connected systems in a facility (e.g., HVAC, lighting, security, etc.) to provide data-driven insights and measurable information that can be shared across multiple operational technology (OT) and information technology (IT) systems.

- **Smart buildings promise to help organizations achieve their top customer experience, digital transformation, and sustainability goals.** Roughly two-thirds of leaders say smart buildings are important in achieving their goals of improving customer experience (CX) and accelerating their digital transformations. Almost three-quarters say smart buildings are important in helping them achieve their goal of accelerating sustainability initiatives (see Figure 1).

FIGURE 1

Importance Of Smart Buildings Initiatives To Meet Top Business Priorities

(Showing "Important" and "Very important")
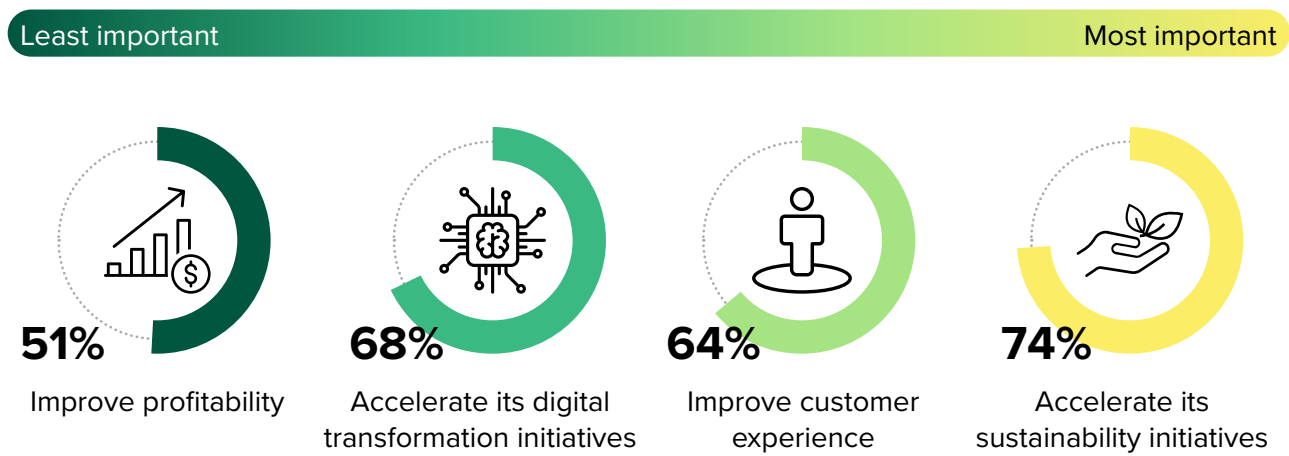
| Least important | | | Most important |

51%
Improve profitability

68%
Accelerate its digital transformation initiatives

64%
Improve customer experience

74%
Accelerate its sustainability initiatives

Base: 3,445 smart buildings decision-makers at the director level or higher for global enterprises
Note: Showing top 4 business priorities
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Security, sustainability, and modernization are top smart buildings investment drivers.** While drivers vary by industry, most leaders say there are multiple drivers behind investing in making their buildings smarter. Top drivers include improving security operations (57%), improving physical security (52%), maintaining business continuity in the face of increased severe weather and other events (41%), reducing carbon emissions/improving building environmental sustainability (41%), and modernizing buildings (40%).

- **Organizationwide leadership relies on buildings data to achieve their goals.** As demonstrated by the many drivers behind smart buildings investments, smart buildings can deliver insights that impact much of the organization. Leaders in this study reported that many departments rely on buildings data to inform strategic decisions, including security (57%), operations (49%), customer (43%) and employee (30%) experience, sustainability (41%), and facility management (35%) — and all the way up to the office of the CEO (32%).

- **Almost no building is smart today: Only 10% of respondents say their buildings systems and equipment are fully integrated**. A smart building is only as smart as the infrastructure that supports it. Comprehensive smart buildings connect all relevant systems and data, but with so many systems in play, managing many partners and achieving the necessary integration is challenging. On a scale of 1 (not at all integrated) to 7 (fully integrated), only 10% of leaders report their systems and equipment are fully integrated today (see Figure 2). Managing the many partners

FIGURE 2

"How well integrated are the digital systems, solutions, services, and connected equipment in your organization's buildings?"

- 1 - Not at all integrated
- 2
- 3
- 4
- 5
- 6
- 7 - Fully integrated

Base: 3,445 smart buildings decision-makers at the director level or higher for global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

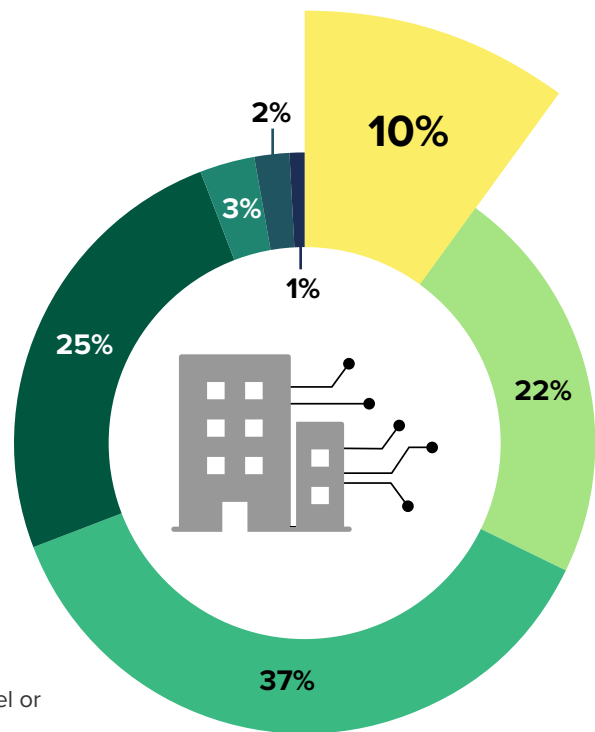involved is also complicated. Roughly two-thirds of leaders work with multiple partners — each specializing in different types of building systems — to get the expertise and insight needed across their portfolio of buildings. Most leaders also face misalignment between their partners (55%) and struggle to get accurate and useful information from them (60%). In addition, 71% of leaders struggle to use captured insights to optimize their building systems and achieve their top goals.

- **Departments have overlapping goals, but siloed data and strategies are hindering progress.** When comparing findings from security, sustainability, and building environment systems decision-makers, we found they are all focused on improving efficiency in operations and doing so securely and sustainably. A top security priority is improving security operations while also being sustainable, but few security and sustainability teams collaborate today. As sustainability decision-makers strive to meet their goals, they are challenged with competing security and sustainability priorities. And building environment systems decision-makers rank improving physical security and improving energy efficiency as their top goals in the next 12 months (see Figure 3). To achieve their security, sustainability, and efficiency goals, organizations must stop treating them as isolated priorities. There is an opportunity to improve the sustainability of security operations and make organization-owned spaces more sustainable without sacrificing safety and security. Doing so will require better collaboration between teams and standardization of the building systems they rely on.

- **This lack of buildings data integration is costing organizations time, people, and money.** Failing to connect and integrate all building systems and collected data impacts corporate operations, revenues, and brand perception. For example, many leaders say their organizations face decreased operating efficiencies (67%), decreased customer loyalty (62%), increased regulatory penalties (58%), decreased revenue (52%), and decreased brand reputation (47%).

FIGURE 3

Building Decision-Makers Have Overlapping Priorities

Building Security Decision-Makers

57%
Finding ways to improve security operations while also being sustainable

Building Environmental Sustainability Decision-Makers*

54%
Competing building environment optimization and/or security priorities

Building Environment Systems Decision-Makers†

59%
Improving energy efficiency/optimizing energy consumption

53%
Improving physical security

Base: 1,175 smart buildings decision-makers at the director level or higher for secure buildings at global enterprises
*Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
†Base: 1,548 smart buildings decision-makers at the director level or higher for building environment systems at global enterprises
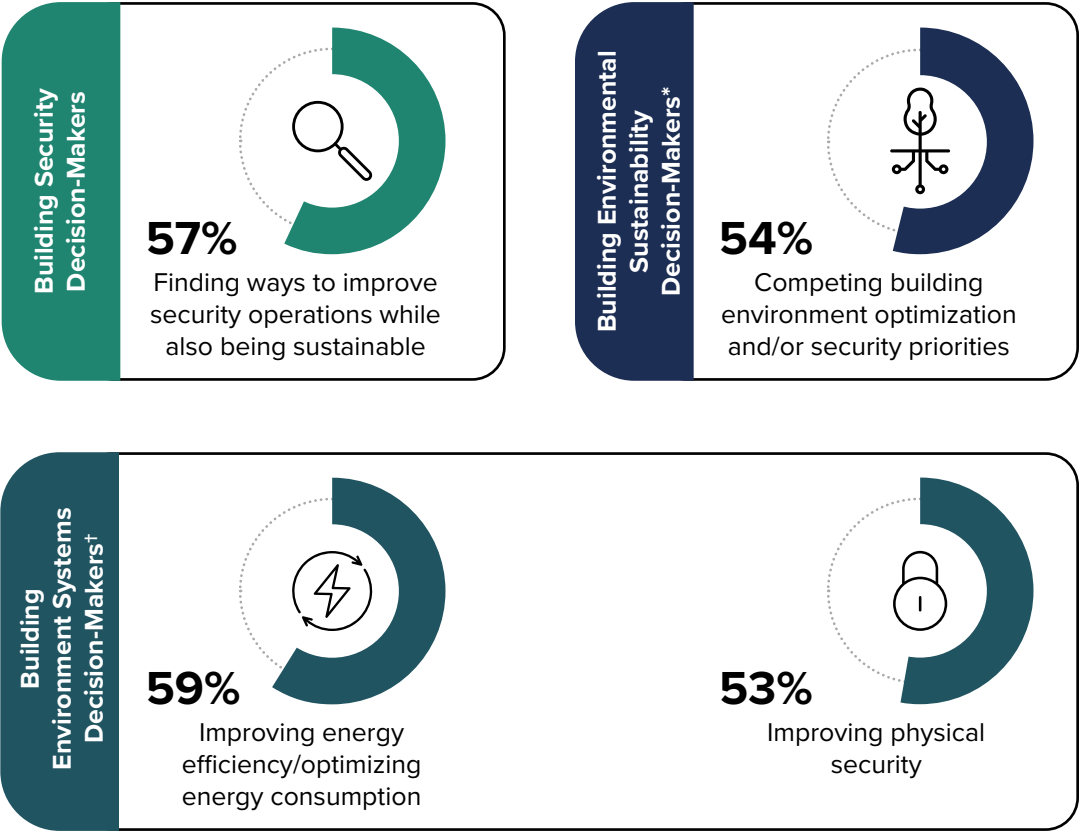Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Sustainability permeates every part of the business, leading the way as a top organizational goal and a top smart buildings investment driver. Buildings represent the physical footprint of many organizations and provide a significant opportunity for firms to reduce carbon emissions. Every connected system, sensor, machine, or piece of machinery can capture and leverage information to help sustainability leaders optimize building environments and operations, as well as achieve their strategic goals. Many leaders' organizations have identified aggressive carbon reduction goals, yet many still need help establishing a comprehensive plan to achieve these goals.

> While two-thirds of leaders are on track to meet their carbon reduction goals, another one-third realize they must accelerate sustainability efforts to stay on track.

Johnson Controls delved into smart buildings synergies with sustainability in two commissioned studies with Forrester Consulting during the past few years. In this year's study of 3,445 surveyed leaders, 1,537 are responsible for their organization's sustainability strategies. The earlier study, conducted in 2021, focused solely on the state of sustainability strategies among global organizations.[1] In analyzing relevant sustainability trending data from the 2021 and 2023 studies, we found that:

- **The urgency to address sustainability continues to accelerate.** When comparing results from the 2021 study commissioned by Johnson Controls, sustainability remains a top business priority, indicating that despite a more volatile economic and political climate globally, there is urgency to continue accelerating sustainability efforts. This is driven by both regulatory pressures and efficiencies already realized from those sustainability efforts. In addition, there are other leading indicators that show organizations are taking sustainability more seriously. For example,

> Technical and strategic partners are greatly needed to help organizations fill expertise gaps to stay on track to meet organizational goals.

Forrester's research shows a growth in named sustainability leaders among Fortune 200 organizations, with 58% of organizations having a named sustainability leader in 2021 increasing to 61% in 2022.[2]

- **Siloed data and a lack of operational integration threatens to derail progress toward sustainability goals.** In 2021, 55% of leaders said their organizations set a goal of getting above a 75% carbon reduction by 2030. In 2023, 64% of leaders report the same. We found that two-thirds of leaders are on track to meet these aggressive goals, but notably there is another one-third who worry their organization is underperforming towards meeting these goals (see Figure 4). There's also a discrepancy between various stakeholders participating in these sustainability initiatives. While 49% of respondents with a sustainability title say their organization has a carbon reduction goal of 75% or more across their portfolio of buildings, 80% of IT leaders and 67% of CEOs report the same (see Figure 5). These significant differences indicate there is a lack of a single source of truth for many organizations when it comes to visibility of this high-level sustainability goal, let alone more granular metrics.

FIGURE 4

Performance Toward Meeting 2030 Carbon Emissions Reduction Goal

- Significantly overperforming
- Overperforming
- On track to meet its goals
- Underperforming
- Significantly underperforming
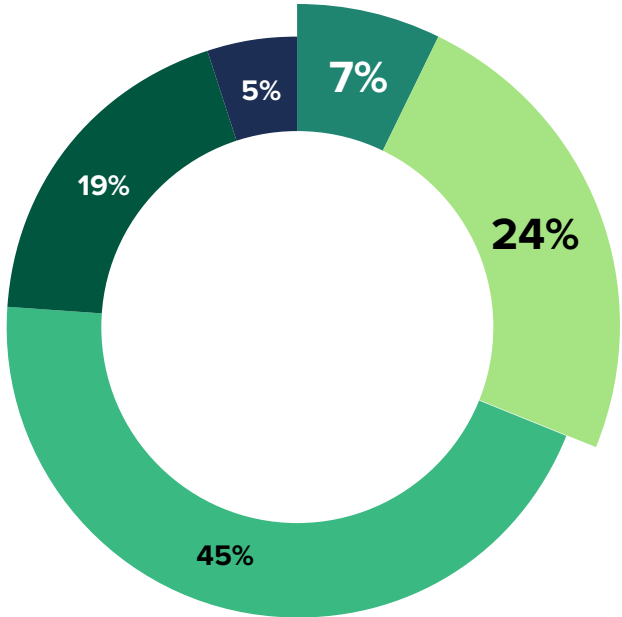
5% 7% 24% 45% 19%

Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

FIGURE 5

Most Aggressive 2030 Goals For Reducing Carbon Emissions/Energy Consumption By Role
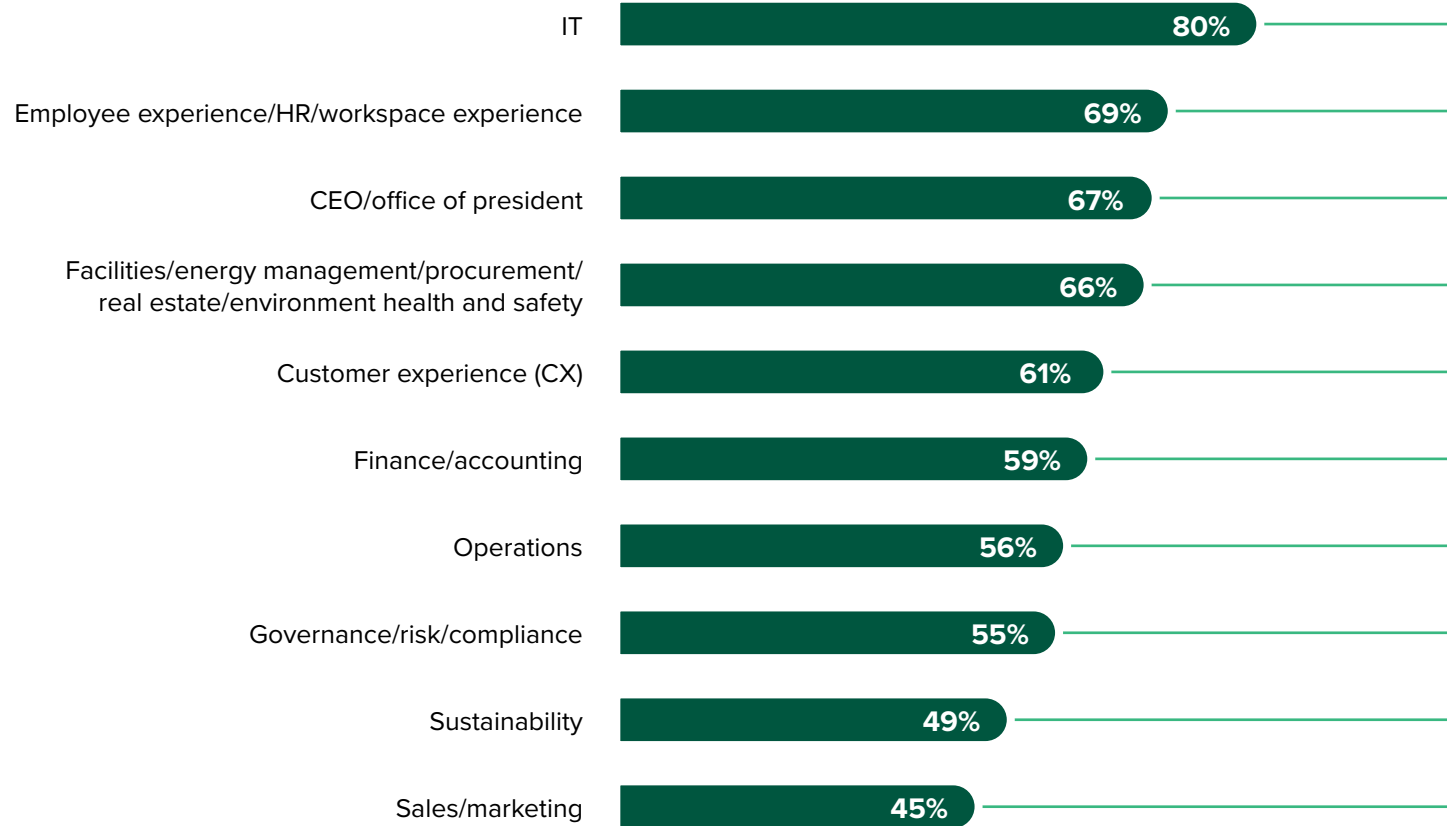
Role	Percentage
IT	80%
Employee experience/HR/workspace experience	69%
CEO/office of president	67%
Facilities/energy management/procurement/ real estate/environment health and safety	66%
Customer experience (CX)	61%
Finance/accounting	59%
Operations	56%
Governance/risk/compliance	55%
Sustainability	49%
Sales/marketing	45%

Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Showing respondents who report their organizations have carbon reduction goals of 75% or higher
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Customers, employees, and partners demand progress and transparency in reporting.** We found that customer-required reporting, public reporting, and supply chain compliance reporting are more common in 2023 vs. 2021. All three of these segments (customers, employees, and partners) want to see progress made towards achieving identified sustainability goals (see Figure 6). The EU's Corporate Sustainability Reporting Directive (CSRD) will be in effect by 2024 and other reporting regulations have been passed in North America, requiring more transparency, consistency, relevancy, and accessibility from companies in their public reporting.

FIGURE 6

"Which of the following types of environmental sustainability reporting does your organization use or plan to use?"

● 2021
● 2023*

Customer-required reporting
- 58%
- 46%

Public reporting
- 42%
- 31%

Supply chain compliance reporting
- 49%
- 42%

Base: 1,029 global sustainability decision makers at organizations prioritizing corporate sustainability
Source: A commissioned study conducted by Forrester Consulting on behalf of JCI, September 2021
*Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
*Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023
Note: Showing types of environmental sustainability reporting with positive deltas between 2023 and 2021

- **Ensuring resiliency of sustainability initiatives requires partners and solutions that deliver cost savings and help the bottom line.** The urgency to address sustainability continues to accelerate. However, factors outside of leaders' control that could impact budget have the potential to affect their organizations' abilities to maintain sustainability goals. In fact, while one-third of surveyed leaders state their organization would be able to fully maintain its environmental sustainability strategy and carbon reduction goals if faced with a 10% budget cut, another two-thirds predict their organization would have to adjust its current sustainability strategies and/or goals. To account for factors outside their control, it's clear organizations need help building resiliency into their sustainability strategies. Strategic partners and/or technology solution providers can help organizations identify areas of opportunity for short- and mid-term savings. This can include investments in energy efficiency solutions and water and waste reduction.

- **Most organizations can only measure and report on carbon emissions once a year or quarter, which limits incremental progress.** The ability to measure carbon emissions in near real time is key to identifying the most accurate recommendations on how to optimize building systems for carbon emissions reduction and adjusting processes accordingly. However, our survey results show that very few organizations can implement near-real-time reporting today. Once-a-year or once-a-quarter carbon reporting is much more common, with 53% of respondents noting their organizations measure and report on carbon emissions at these intervals (see Figure 7).

FIGURE 7

Carbon Emissions Reporting/ Measurement Cadence

- Real time
- Daily basis
- Weekly basis
- Monthly basis
- Quarterly basis
- Yearly basis

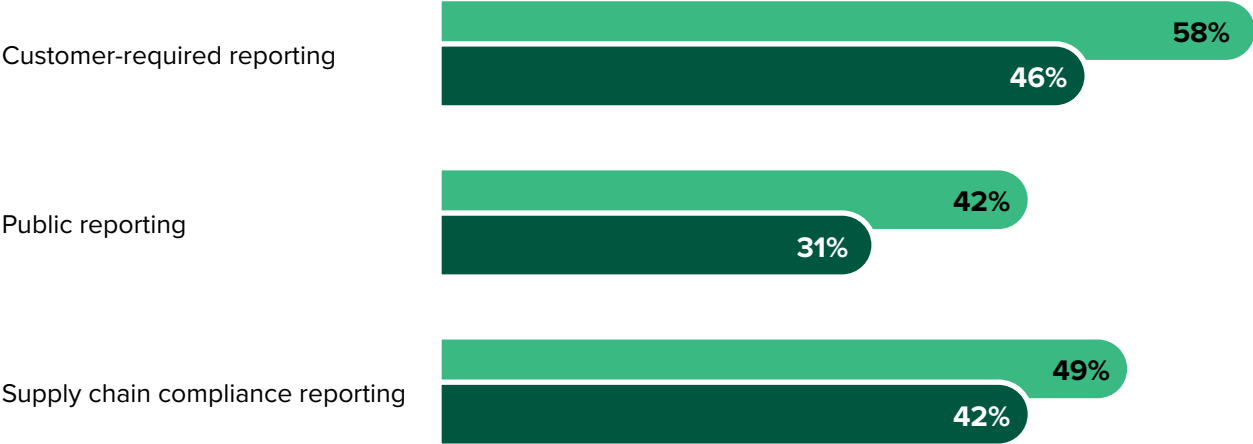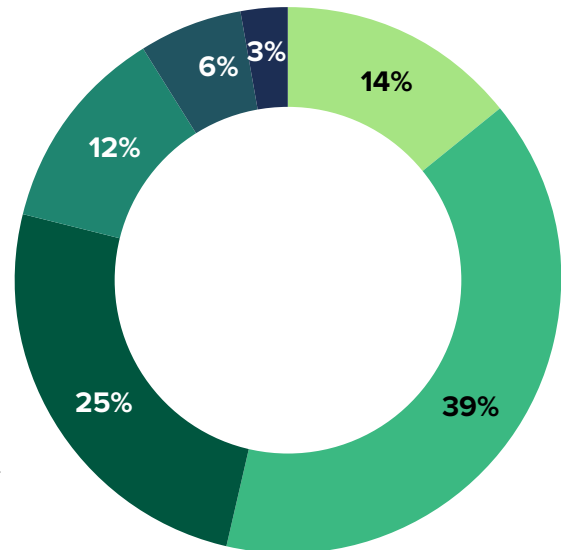Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Environmental impact reporting is fragmented and far from standardized.** The most used reporting standard is the Global Reporting Initiative (GRI), which allows for more reporting flexibility than other frameworks, and nearly 30% of organizations are reporting on more than three identified standards. Of the leaders whose organizations have climate transition plans in place, only 1% can report on all four Task Force on Climate-Related Financial Disclosures (TCFD)-recommended areas of governance, strategy, risk management, and metrics and targets (see Figure 8).[4] This indicates that reporting is far from standardized and that organizations lack comprehensive climate transition plans.

FIGURE 8

"Which of the following does your company report on/plan to report on relating to its climate transition plan?"

Strategy

58%

Impacts of climate-related risks and opportunities on business, strategy, and financial planning, including supply chain management

Risk management

49%

The process for identifying, assessing, and managing climate-related risks

Metrics and targets

41%

Metrics and targets used to assess and manage climate-related risks and opportunities

Governance

35%

Management of climate risk and opportunities at board and leadership level

⚠ Just 1% report on all 4 categories

Base: 1,417 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises who have a climate transition in place or are developing one
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

• **Technical and strategic partners are often needed to help organizations fill expertise gaps.** Seventy-three percent of sustainability leaders say their organizations lack the technical expertise to optimize building systems, and 40% lack the internal skills to measure their environmental impact. Other top challenges include not understanding the next most impactful steps to take to meet sustainability goals (58%),

struggling with competing organizational priorities (54%), and high costs related to executing on sustainability priorities (44%). To succeed in digitally transforming their buildings and achieving their goals, organizations need partners to fill internal expertise gaps and help build the foundation or strengthen their carbon emissions reduction roadmaps.

- **The most impactful building sustainability initiatives start with upgrading, digitizing, and automating systems to improve efficiency.** Sixty-nine percent of leaders say smart buildings are important in helping their organization accelerate its sustainability initiatives. Leaders indicate replacing old equipment to improve efficiency and cost savings, adding/upgrading building automation controls and digital technologies, and upgrading air-quality/emissions monitoring equipment are having the most impact on their organizations' abilities to improve sustainability of owned or leased spaces. Based on the results from the 2021 study commissioned by Johnson Controls, many organizations started their smart buildings sustainability journeys by upgrading old equipment to improve efficiency and enabling air-quality and emissions monitoring. With the foundation in place, AI will drive further efficiency and give leaders access to more actionable sustainability insights. Roughly one-third are now investing in AI for predictive maintenance and a holistic view of resource use to accelerate their progress toward carbon reduction goals (see Figure 9).

- **Organizations should prioritize creating comprehensive climate transition plans.** Staying on track to achieve 2030 sustainability goals requires organizations to develop comprehensive strategies and roadmaps. Significant differences are evident when comparing those leaders whose organizations report on at least three of the following TCFD-aligned climate transition plan categories (i.e., strategy, risk management, metrics/targets, or governance) to those who report on none or one category.[5] Those organizations with comprehensive climate transition plans in place are much more likely to report on a greater number of sustainability reporting standards, including industry-specific regulatory requirements, International Integrated Reporting Council (IIRC), and TCFD. These organizations are more likely to have a chief

sustainability leader or an equivalent in place, have more leadership roles that have sustainability goals, and they are more likely pursing net-zero or carbon-negative goals (see Figure 10).

FIGURE 9

Most Impactful Sustainability Investment Areas

61% Upgrading old systems to improve efficiency (e.g., upgrading lighting, HVAC, etc.)

45% Upgrading air quality and/emissions and water infrastructure monitoring equipment

56% Adding/upgrading building automation controls

42% Adding/upgrading digital building technologies to optimize energy use

37% Energy, emissions, water, and waste analysis using AI/ML technology that learns from operational data to recommend actions and/or model energy use under different scenarios

31% Predictive maintenance using AI/ML technology that prevents downtime and optimizes efficiency

Smart Buildings Maturity

Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Showing select investment initiatives
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

FIGURE 10

Profile Of Companies With Established Climate Transition Plans

● 0 to 1 climate transition plan categories reported on

● 3 to 4 climate transition plan categories reported on

NUMBER OF REPORTING STANDARDS USED

41%
21%
59%
79%

0 to 2 standards | 3 to 6 standards

PRESENCE OF A CHIEF SUSTAINABILITY OFFICER (CSO)

Have chief sustainability officer

56%
75%

C-LEVEL ROLES WITH SUSTAINABILITY GOALS*

62%
34%
38%
66%

0 to 2 roles | 3+ roles

BUILDING CARBON EMISSIONS REDUCTION GOALS

7%
14%
22%
27%

Carbon negative | Net zero

Base: 694 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises

*Base: 433 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises who have a chief sustainability officer or equivalent role

Note: Comparing decision-makers at organizations who indicate they report on at least three of the following climate transition plan categories compared to those who report zero to one category. Categories include strategy, risk management, metrics/targets, and governance.

Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Of the 3,445 smart buildings leaders surveyed, 1,548 are responsible for their organization's building environment systems strategies. As stewards of their organizations' facilities, we found these leaders prioritize the health and safety of the occupants (e.g., customers, employees, patients, students, etc.) of these spaces and the operational efficiency, as buildings are a significant cost driver and carbon reduction opportunity for many organizations. We found that:

- **Improving occupant safety, occupant experience, the ability to attain health and wellness certifications, and operational efficiency are top building environment system priorities.** To address these priorities, leaders are most focused on initiatives to improve energy efficiency (59%), physical security (53%), design flexible building operating models (50%) and indoor air quality (IAQ) (45%) (see Figure 11).

FIGURE 11

Building Environmental System Initiatives

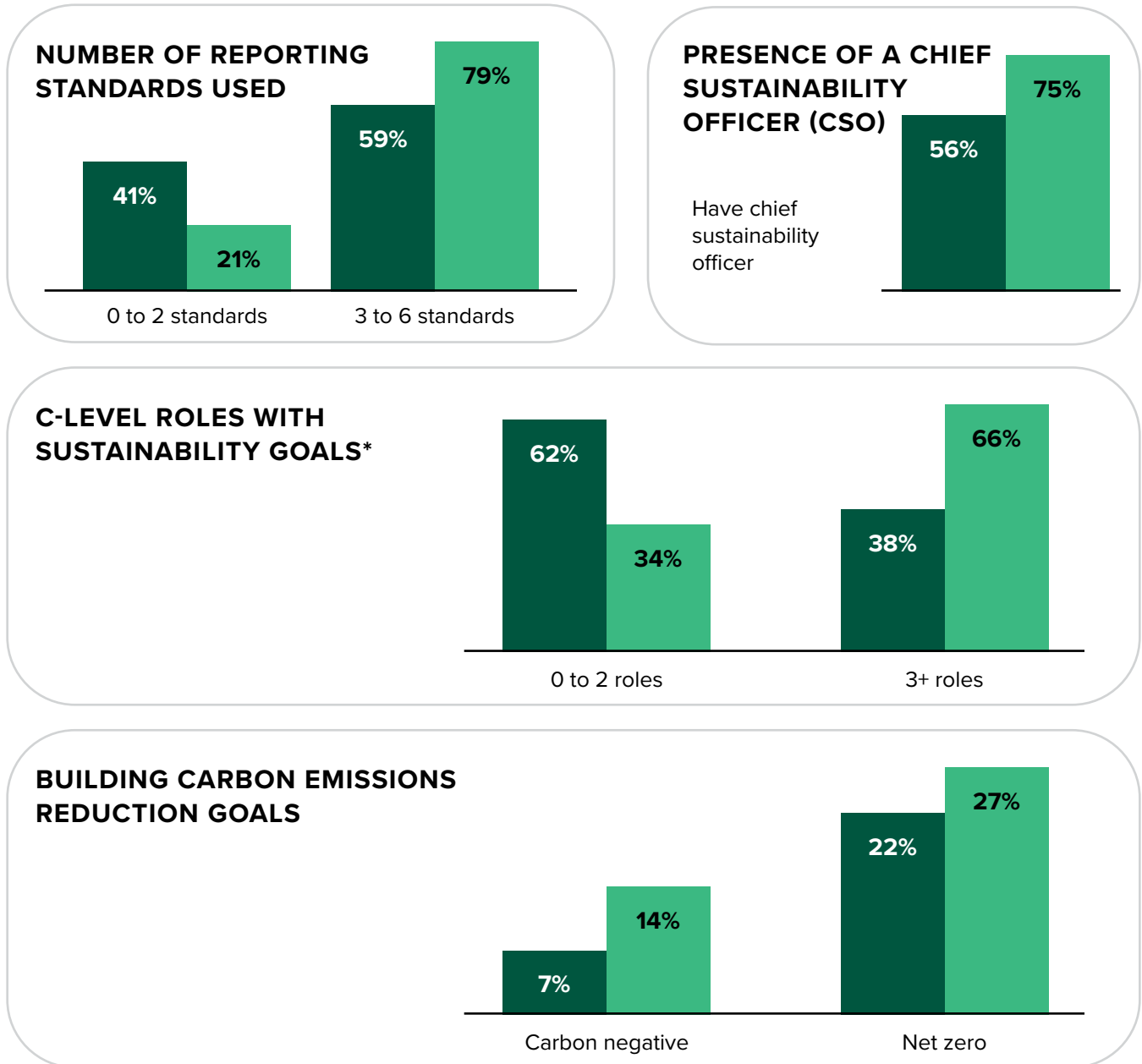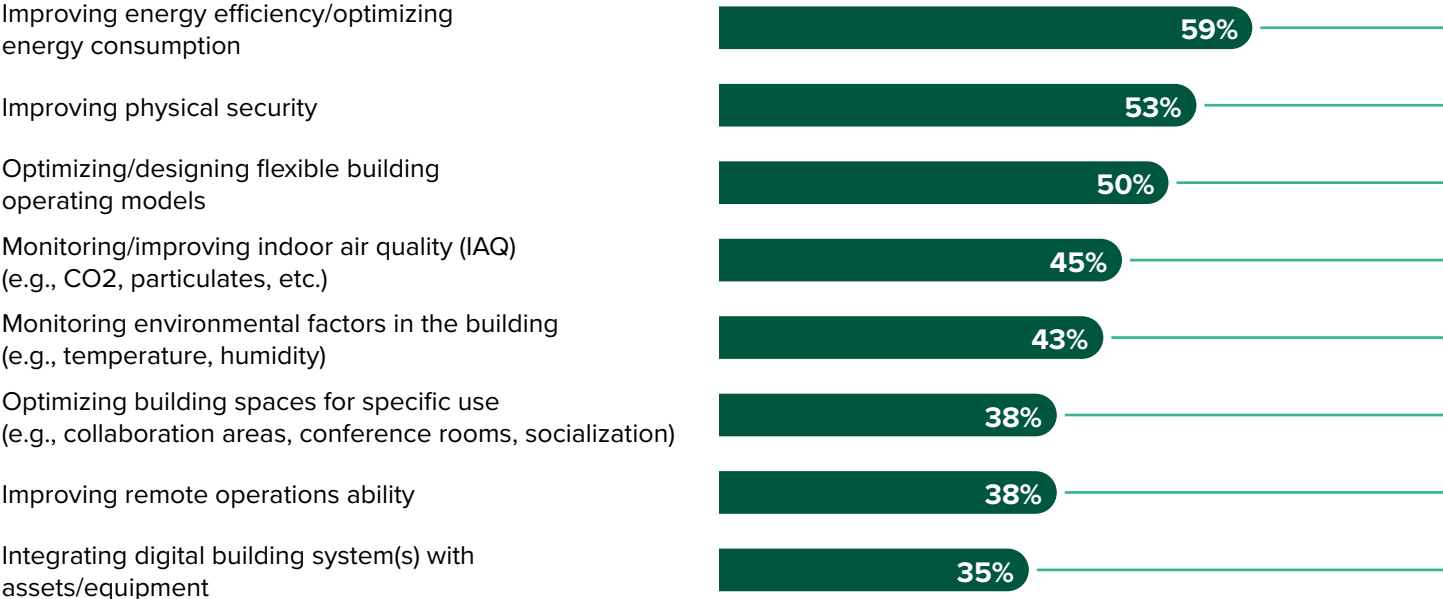| Initiative	Percentage
Improving energy efficiency/optimizing energy consumption	59%
Improving physical security	53%
Optimizing/designing flexible building operating models	50%
Monitoring/improving indoor air quality (IAQ) (e.g., CO_2, particulates, etc.)	45%
Monitoring environmental factors in the building (e.g., temperature, humidity)	43%
Optimizing building spaces for specific use (e.g., collaboration areas, conference rooms, socialization)	38%
Improving remote operations ability	38%
Integrating digital building system(s) with assets/equipment	35%

Base: 1,548 smart buildings decision-makers at the director level or higher for building environment systems at global enterprises
Note: Showing top 8 responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **To meet their goals, leaders need help monitoring and improving air quality and predicting building usage levels.** Leaders indicate their organizations are most challenged with optimizing asset performance/efficiency (30%), monitoring outdoor air quality (25%), and monitoring and improving IAQ (25%). Organizations need the most help with integrating IAQ into their digital building systems, along with predicting building usage levels to reduce energy consumption (see Figure 12).

FIGURE 12

Capabilities Organizations Rely On External Partners For

Capability	Percentage
Integrating IAQ into digital building systems	60%
Helping predict building usage levels to reduce energy consumption	52%
Managing and staying on top of changing indoor air quality regulations/certifications	46%
Helping with integration and interoperability between building environment systems and building management systems (including analytics and reporting)	40%
Managing IAQ 24/7 remotely, reducing staffing resources required on building sites	36%
Advising the organization on ways to optimize its environment systems for improved health and wellness in its buildings	32%
Managing all of the organization's building health and wellness priorities	28%
Managing all aspects of IAQ in my organization's buildings	25%

Base: 1,548 smart buildings decision-makers at the director level or higher for building environment systems at global enterprises
Note: Showing top 8 responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

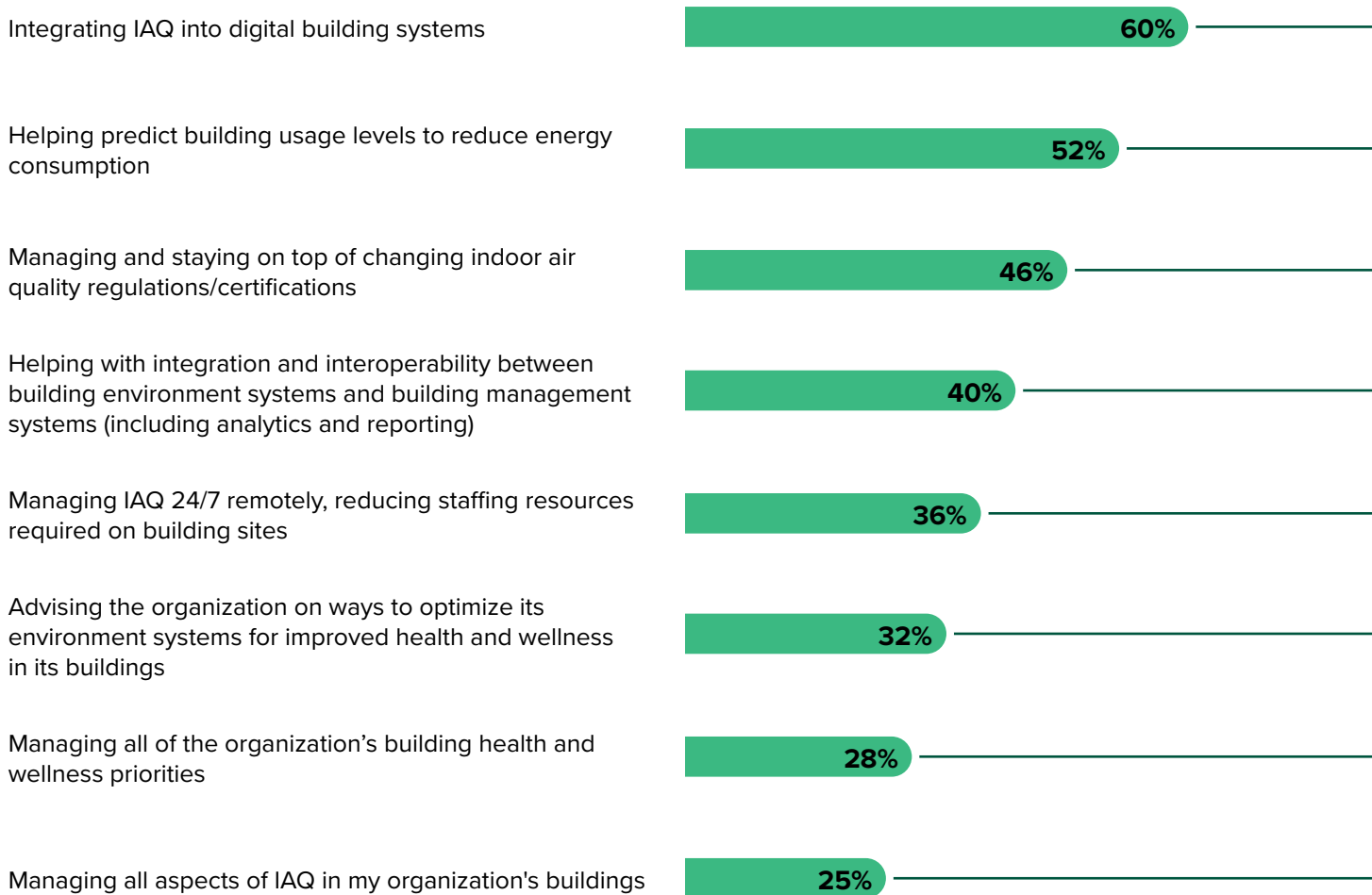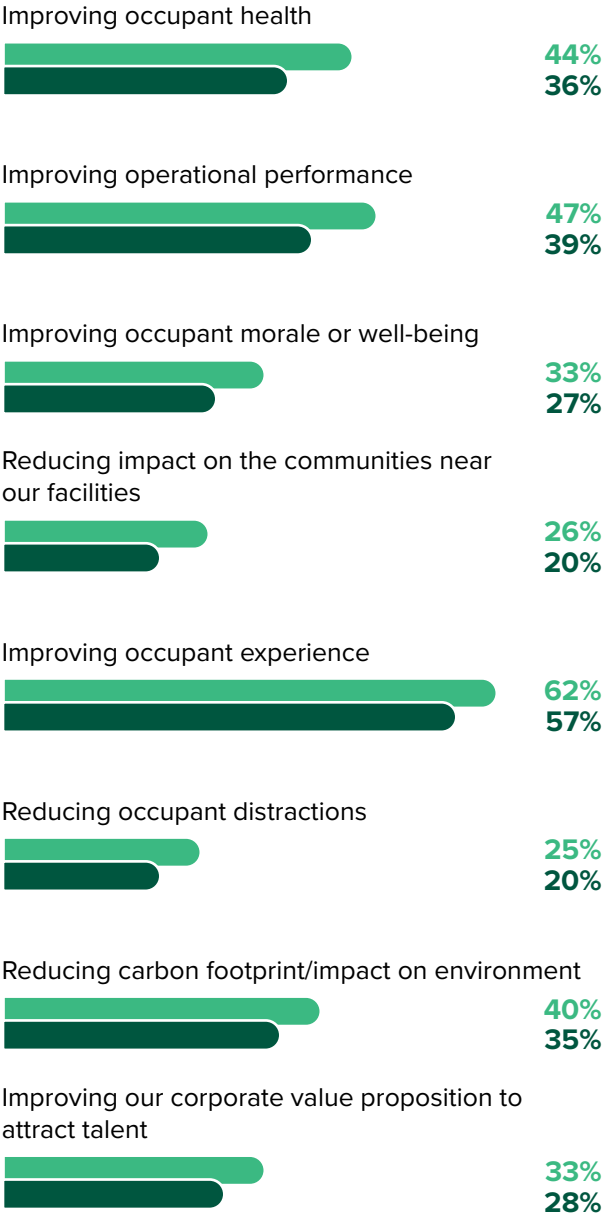- **Ownership of building environment system priorities is spread across departments, requiring tailored analytics and standardized reporting on shared metrics.** Different parts of the organization own different building systems initiatives. For example, IT is the most common owner of improving occupant productivity, HR is the most common owner of improving occupant morale or well-being, and environmental health and safety is the most common owner of improving occupant health and safety and reducing carbon footprint. To ensure insights are most useful, organizations would ideally tailor analytics and reporting to accommodate specific departments, while standardizing reporting on shared metrics and goals.

- **Organizations with broader building environment strategy remits are guided by higher-level business outcomes and value strategic partners with breadth and depth.** We compared leaders whose organizations have broader building environment system priorities to those who have more limited priorities (e.g., those who connect building environment systems with everything from occupant health and experience to reducing their carbon footprint to reducing community impact vs. those who are mainly tracking efficiency). Results showed that those organizations with broader building environment strategy remits are more likely to be guided by higher-level business outcomes, such as improving occupant health, operational performance, and corporate value propositions, to attract talent. They also turn to partners for help with their many building environment initiatives and are more likely to value a partner with depth and breadth to assist them with meeting their goals (see Figure 13). Specific areas of partner assistance include integrating IAQ infrastructure into their digital building systems, integrating analytics and reporting, enabling interoperability between building environment systems and building management systems, and staying on top of changing air quality standards and certifications.

FIGURE 13

Characteristics Of Organizations With Broader Building Environment System Strategies

● At least 7 initiatives of focus
● 0 to 5 initiatives of focus

BUILDING ENVIRONMENT SYSTEM PRIORITIES

Improving occupant health
44%
36%

Improving operational performance
47%
39%

Improving occupant morale or well-being
33%
27%

Reducing impact on the communities near our facilities
26%
20%

Improving occupant experience
62%
57%

Reducing occupant distractions
25%
20%

Reducing carbon footprint/impact on environment
40%
35%

Improving our corporate value proposition to attract talent
33%
28%

PARTNER CAPABILITIES RELIED ON

Integrating IAQ into digital building systems
65%
48%

Helping with integration and interoperability between building environment systems and building management systems (including analytics and reporting)
42%
37%

Managing and staying on top of changing indoor air quality regulations/certifications
47%
42%

Managing IAQ 24/7 remotely, reducing staffing resources required on building sites
39%
36%

Helping predict building usage levels to reduce energy consumption
52%
50%

Advising the organization on ways to optimize its environment systems for improved health and wellness in its buildings
34%
31%

Base: 1,548 smart buildings decision-makers at the director level or higher for building environment systems at global enterprises
Note: Showing top responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Of the 3,445 smart buildings leaders surveyed, 1,175 are responsible for their organization's building security strategies. In addition to protecting their organizations' facilities, occupants, and assets, security's physical and cyber operations have a key role to play in improving efficiencies and reducing an organization's carbon footprint. In surveying building security leaders, we found that:

> Given the importance of scaling their security operations in a sustainable way, there is significant value in using external partners with security and sustainability expertise.

- **Integrated SOCs and systems are needed to better detect and respond to threats.** Cyberattacks are multidimensional, yet most security teams lack visibility into all those dimensions. Physical and cyber teams tend to report into different parts of the business, and most (57%) lack 24/7 visibility into all security systems. For many, this leads to issues getting information from all necessary systems, which prevents them from appropriately understanding and responding to facilities threats (see Figure 14). Insights are needed across both physical and cyber because attacks may target both systems, such as trying to disable the cameras before breaking into a building or even stealing or copying an employee's badge and using that to enter a facility and plant malware on a machine or use a USB drive to steal data off a system.

- **Smart buildings can help security teams improve operations in a sustainable way.** A significant gap remains with sustainability being a top organization goal and only 26% of security leaders note they collaborate with sustainability teams today (see Figure 15). Moving forward, 49% of security leaders say they must collaborate more with sustainability and 57% say they must find ways to improve security operations while also being sustainable. Smart buildings can help them achieve this. For example, smart lighting and motion sensors can drive energy efficiencies while improving threat deterrence and detection. More broadly, physical security systems can provide insights like

occupancy data; if organizations know where people are in a building, they can be more sustainable in their use of energy, power, and lighting in that building. Hitching onto enterprisewide objectives like smart buildings and sustainability can help security leaders get the funding and resources they need to protect their facilities and occupants.

FIGURE 14

Characteristics Of Organizations With Broader Building Environment System Strategies

- ● The team does not have access to alerts/ monitoring from building systems
- ● The team has access during business hours to alerting/monitoring from most building systems, but not all
- ● The team has access during business hours to alerting/monitoring from all building systems
- ● The team has 24/7 access to alerting/ monitoring from most building systems, but not all
- ● The team has 24/7 access to alerting/ monitoring from all building systems

6%

6%

15%

42%

57%

30%
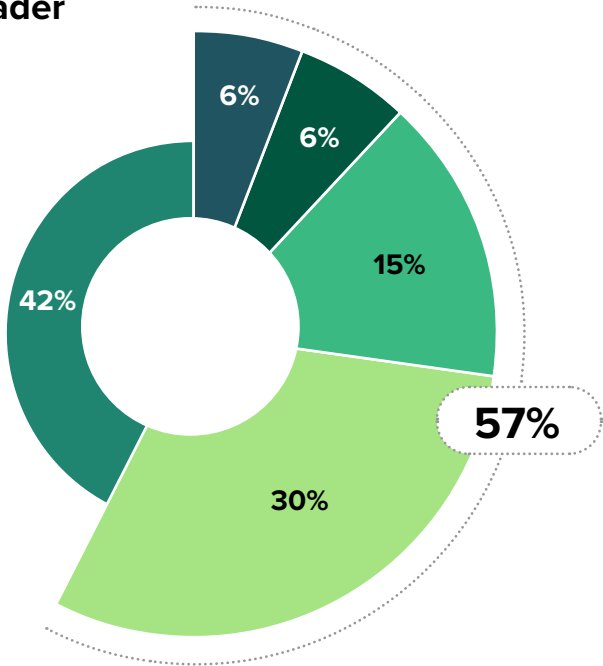
65% My organization often struggles with getting information from all necessary systems for full context of security threats.

58% My organization's security teams struggle to understand the full context of threats/risks to facilities.

Base: 1,175 smart buildings decision-makers at the director level or higher for secure buildings at global enterprises
Note: Total percentages may not equal 100 due to rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

FIGURE 15

"Which department(s) does your security organization work with today? Which should your organization work with more?"

● Work with today
● Should work with more

Department	Work with today	Should work with more
IT	70%	64%
Operations	55%	56%
Sustainability	26%	49%
Customer experience	63%	42%
Marketing	38%	41%
Finance/accounting	49%	36%
Facilities	42%	34%
Human resources	31%	32%
Governance, legal, risk, and compliance	21%	29%
Employee experience	47%	29%

Base: 1,175 smart buildings decision-makers at the director level or higher for secure buildings at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Advanced organizations rely on partners to help scale and sustainably improve their operations.** We looked at leaders whose organizations currently have 24/7 visibility into all their security systems and found these leaders' organizations are more likely to have global security operations centers (GSOCs) in place, and they have a strong appetite to engage external partners to manage their operations. Given the importance of scaling their security operations in a sustainable way, there is significant value in using external partners with strong security and sustainability expertise.

While many departments rely on buildings insights to inform strategic decisions, their access to the right data and ability to use that data is limited. In other words, most organizations are not operating smart buildings today. Better systems and data integration and intelligent solutions are needed to give each stakeholder access to the insights they need. Doing this successfully starts with the right strategy. There is a strong correlation between organizations with holistic smart buildings strategies and the ability to access and use data to achieve their goals. We compared those leaders whose organizations have strategic initiatives to improve occupant health and productivity, optimize space management, optimize building equipment performance, optimize enterprise building security, and reduce carbon emissions/improve sustainability to those with strategies inclusive of only some departments' goals and buildings data. We found that:

Leaders at advanced organizations have more comprehensive strategies in place, giving them a stronger foundation to build on.

- **Decision-makers at organizations grouping different building priorities under one smart buildings strategy are more likely to have a holistic view of all building systems and data.** To ensure our findings weren't biased to one unit in the organization, we did separate high-maturity cuts of building security decision-makers, building sustainability decision-makers, and building environment systems decision-makers. Across all these roles, we found that leaders working for organizations that take a holistic approach to smart buildings strategy have a more complete view of what's happening within and across their organizations' buildings. For example, 58% of security leaders from advanced organizations have integrated dashboards that combine data from all building systems compared to only 35% of their less advanced peers. The same applies to those in sustainability (53% advanced vs. 39% less advanced) and building environment (53% advanced vs. 39% less advanced). Cross-functional leaders at advanced organizations are also

much more likely to have the option to feed building system data into an enterprisewide view of buildings. Leaders at these advanced organizations are much more likely to have the necessary underlying infrastructure in place and intelligence built on top of these systems (see Figure 16).
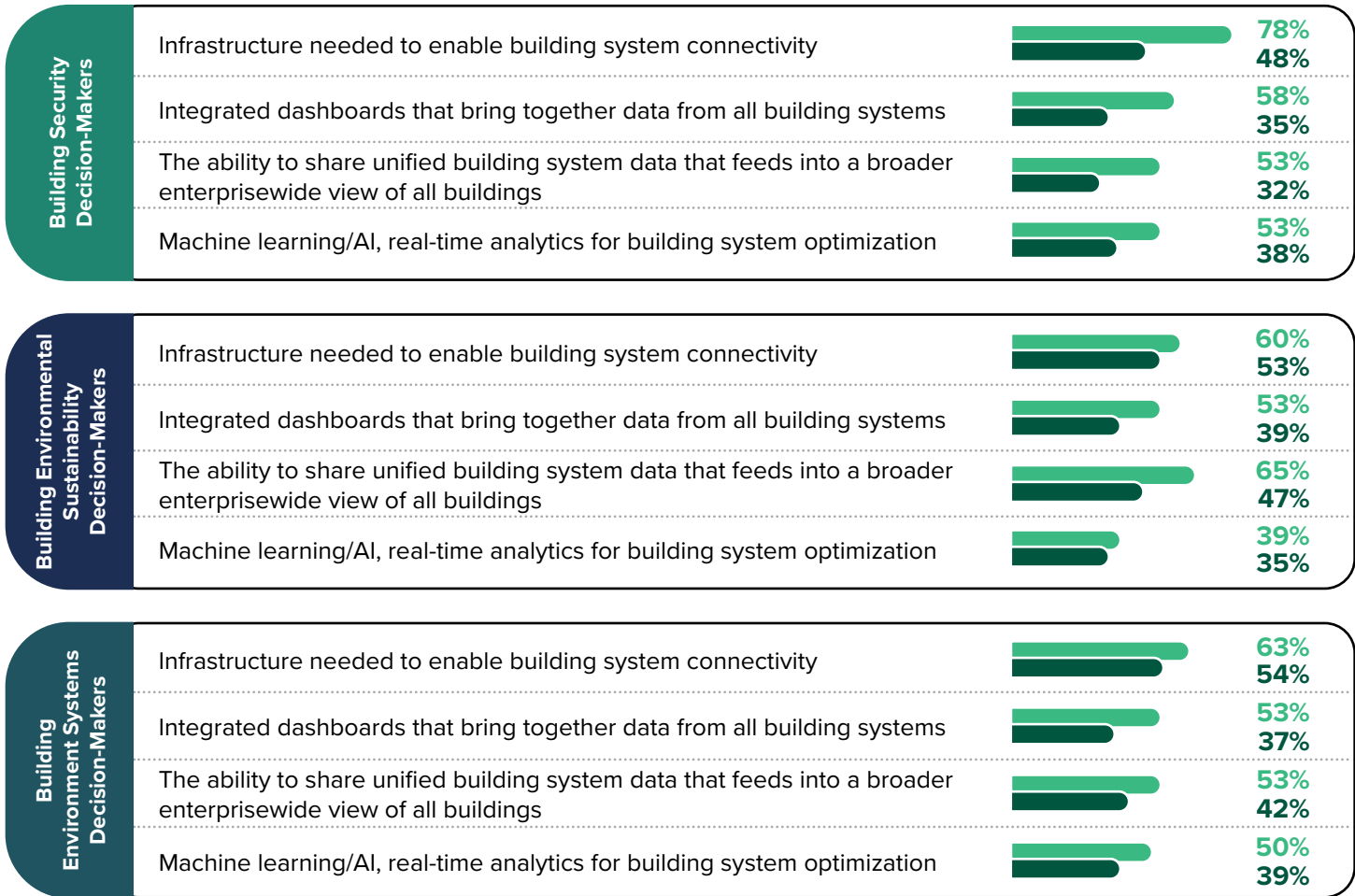
There is a strong correlation between organizations with holistic smart buildings strategies and their ability to access and use data to achieve their goals.

FIGURE 16

Implementation Of Capabilities Enabling The Ability To Connect And Leverage Building Data

(Showing "Working on fully implementing across all building" and "Fully implemented across all buildings" combined)

● Less advanced
● Advanced

Building Security Decision-Makers

	Advanced	Less advanced
Infrastructure needed to enable building system connectivity	78%	48%
Integrated dashboards that bring together data from all building systems	58%	35%
The ability to share unified building system data that feeds into a broader enterprisewide view of all buildings	53%	32%
Machine learning/AI, real-time analytics for building system optimization	53%	38%

Building Environmental Sustainability Decision-Makers

	Advanced	Less advanced
Infrastructure needed to enable building system connectivity	60%	53%
Integrated dashboards that bring together data from all building systems	53%	39%
The ability to share unified building system data that feeds into a broader enterprisewide view of all buildings	65%	47%
Machine learning/AI, real-time analytics for building system optimization	39%	35%

Building Environment Systems Decision-Makers

	Advanced	Less advanced
Infrastructure needed to enable building system connectivity	63%	54%
Integrated dashboards that bring together data from all building systems	53%	37%
The ability to share unified building system data that feeds into a broader enterprisewide view of all buildings	53%	42%
Machine learning/AI, real-time analytics for building system optimization	50%	39%

Base: 185 building security decision-makers, 270 building environmental sustainability decision-makers, and 286 building environment systems decision-makers at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Decision-makers at advanced organizations are more likely to have visibility into data leveraged for monitoring and optimization of different building system outcomes.** Leaders at advanced organizations are nearly twice as likely to have access to enterprisewide buildings data related to top organization goals (i.e., everything from carbon emission reduction to workspace optimization to productivity improvement to optimizing security). These organizations have invested in system and data connectivity across their portfolio of buildings to provide cross-functional leaders with access to comprehensive insights, enabling smarter and faster decisions.

- **Advanced organizations experience greater benefits from achieving their smart buildings goals.** Almost every leader surveyed noted that their organization has seen some benefit from pursuing its smart buildings goals, but advanced organizations outpace their peers in benefits realized. Security decision-makers at advanced organizations report reduced operational risk, reduced carbon footprint, and improved operational performance. Sustainability leaders report reduced operational risk, improved ability to attain health and wellness certifications, and improved employee experience. Building environment leaders report an enhanced ability to meet regulatory requirements, improved employee experience, and reduced carbon footprint (see Figure 17).

- **Their success is underpinned by a clear mission and providing all stakeholders with easy access to the right insights.** Access to data is meaningless unless that data is connected to a clear mission, strategy, and goals. Advanced organizations are nearly two times more likely to have a centralized/purposeful mission for the collected building system data. To ensure stakeholders can easily use to data to inform decisions, advanced organizations are partnering with smart buildings solution providers who promise ease of use for cross-departmental stakeholders and have experience architecting data for their industries' use cases.

FIGURE 17

Benefits Realized/Expected To Realize As A Result Of Achieving Smart Buildings Goals

(Showing "This is a benefit we have already realized" and "This is a benefit we expect to realize" combined)

● Less advanced
● Advanced

Building Security Decision-Makers

79%
66%
Reduced operational risk

94%
84%
Reducing carbon footprint/ impact on environment

92%
84%
Improving operational performance

Building Environmental Sustainability Decision-Makers

86%
73%
Reduced operational risk

77%
69%
Improving the ability to attain health and wellness certifications

74%
66%
Improving employee experience

Building Environment Systems Decision-Makers

86%
73%
Enhancing ability to address/meet regulatory requirements

77%
65%
Improving employee experience

89%
81%
Reducing carbon footprint/ impact on environment

Base: 185 building security decision-makers, 270 building environmental sustainability decision-makers, and 286 building environment systems decision-makers at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023
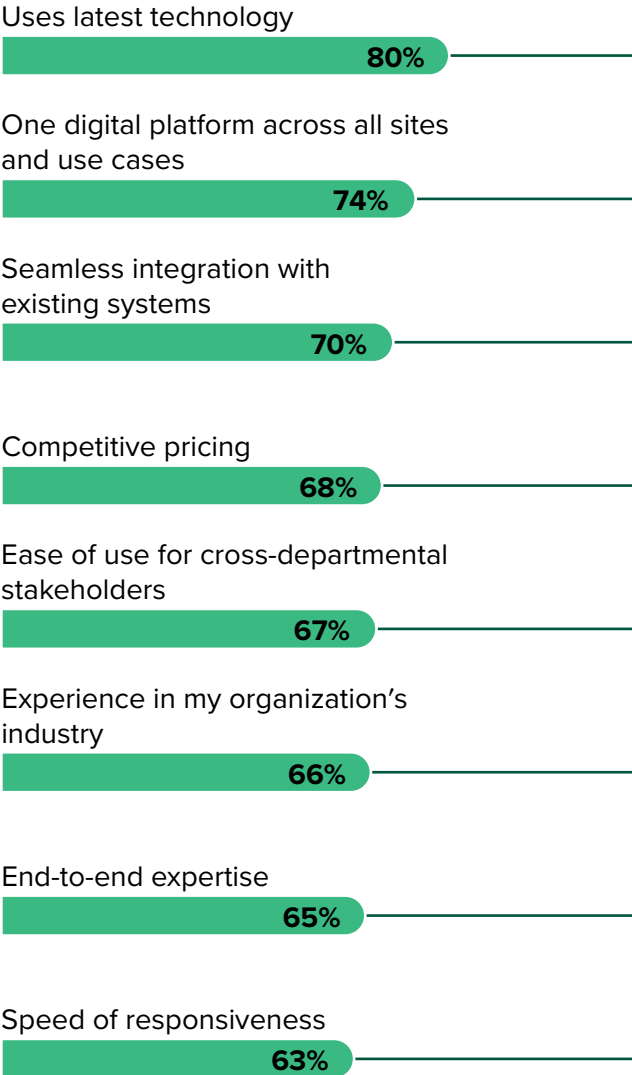
When diving into security, sustainability, and building environment systems leaders' priorities, it's clear these departments collectively serve a higher purpose in helping their organizations achieve their top goals. There is an overarching appetite for cross-functional collaboration and for everyone to have easier access to relevant insights to inform decisions.

More advanced organizations take a more comprehensive approach to smart buildings strategy by connecting the data they're collecting to a purposeful mission, investing in deep integration into all their buildings systems, accessing integrated dashboards to bring together enterprisewide data, and leveraging built-in intelligence to automatically optimize building systems and provide stakeholders with access to actionable insights. Doing this at all — let alone doing it well — is no easy feat.

A smart building by nature requires breadth and depth of expertise and engaging partners with both will be key to advancing smart buildings initiatives. Leaders in this study seek partners who use the latest technology (80%), can provide one digital platform across all sites and use cases (74%) that's easy to use for cross-departmental stakeholders (67%), has seamless integration into all building systems (70%), and end-to-end expertise (65%) (see Figure 18).

FIGURE 18

Importance Of Smart Buildings Partner Attributes

Uses latest technology
80%

One digital platform across all sites and use cases
74%

Seamless integration with existing systems
70%

Competitive pricing
68%

Ease of use for cross-departmental stakeholders
67%

Experience in my organization's industry
66%

End-to-end expertise
65%

Speed of responsiveness
63%

Base: 3,445 smart buildings decision-makers at the director level or higher for global enterprises
Note: Showing top 8 "Valuable/Extremely valuable" responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Key Recommendations

Building systems offer stakeholders spanning many roles the ability to capture actionable insights to enhance operational processes, optimize the health and safety of employees, and address corporate sustainability initiatives. Forrester's in-depth survey of 3,445 smart buildings leaders about their building initiatives and priorities, including sustainability, security, and building environmental initiatives, yielded several important recommendations:

Treat smart buildings as strategic assets to help address corporate priorities.

Smart buildings can address a range of corporate priorities including improving occupant safety, enhancing occupant experience, attaining health and wellness certifications, improving sustainability, and optimizing operational efficiency. Initial smart buildings initiatives often focus on energy efficiency, enhancing the physical security of occupants, and monitoring indoor air quality. Consider the role of your organization's smart buildings environments to address critical building priorities and top strategic initiatives.

Ensure stakeholders across many roles identify opportunities to capture and leverage smart buildings insights.

Stakeholders from many departments and operational processes benefit from building system data and insight. Proactively engage with key stakeholders spanning processes including security, operations, technology, employee experience, sustainability, and facility management to identify opportunities to enhance processes, inform strategic decisions, enhance operations, and address sustainability goals.

Establish a roadmap of near-term to long-term strategic building initiatives.

Organizations must establish a roadmap of smart buildings initiatives and priorities. Some organizations focus on using captured data to address specific security initiatives (e.g., providing cybersecurity teams with visibility

into building systems, using a managed GSOC) or to enhance healthy building processes (e.g., optimizing indoor air quality, enhancing physical security). Other organizations seek combined benefits and synergies from optimizing facility operations and energy usage with corporate sustainability goals to reduce carbon emissions.

Seek partners to assist with capturing relevant building system data and insight.

Integrating smart buildings data into actionable insight is complex, requiring seamless integration across buildings systems and security processes, dashboards highlighting relevant insight, and intelligence to automatically optimize key operational processes. Look for partners with demonstrated technology expertise, a single digital platform spanning all sites, easy-to-access insights for stakeholders, and seamless integration into all building systems.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 3,445 leaders at organizations in 18 industries across 25 countries to evaluate the current state of building system integration, data connectivity, and the ability to share and leverage data collected across the organization for building system optimization. Survey participants must have indicated decision-making authority in smart buildings in addition to building environmental sustainability, building security, and/or building environment systems. Questions provided to the participants asked high-level smart buildings questions and then asked more granular questions depending on the leader's level of responsibility for building sustainability, building security, and/or building environment systems. Respondents were offered a small incentive as a thank-you for time spent on the survey. The study was conducted in a double-blind fashion. The study began in July 2023 and was completed in August 2023.

Appendix B: Demographics

REGIONS	
North America	**27%**
Central Europe	**10%**
United Kingdom and Ireland	**8%**
Hong Kong	**6%**
Southeast Asia	**6%**
Australia and New Zealand	**6%**
Latin America	**6%**
Middle East and Africa	**5%**
China	**5%**
Singapore	**5%**
South Korea	**5%**
Japan	**5%**
India	**5%**

INDUSTRY	
Data centers	**9%**
Healthcare	**9%**
Government	**8%**
Education	**7%**
Energy, utilities, waste management	**6%**
Financial services/insurance	**5%**
Travel and hospitality	**5%**
Electronics	**5%**
Consumer packaged goods	**5%**
Manufacturing and materials	**5%**
Mixed use residential/ commercial real estate	**5%**
Media and leisure	**5%**
Business/professional services	**5%**
Transportation and logistics	**4%**
Agriculture, food, beverage	**4%**
Construction	**4%**
Chemicals/metals	**4%**
Retail	**4%**

BUILDING RESPONSIBILITY AREA	
Building environment systems	**45%**
Building environment sustainability	**45%**
Building security	**34%**

DEPARTMENT	
IT	**37%**
Facilities (e.g., energy management, procurement, real estate, environmental health and safety)	**23%**
Employee experience (e.g., HR, workplace experience)	**7%**
Operations	**7%**
Sustainability	**6%**
Governance/risk/compliance	**6%**
CEO/office of president	**5%**
Finance/accounting	**5%**
Customer experience	**2%**
Sales/marketing	**1%**

ORGANIZATION SIZE	
2 to 499 employees	**2%**
500 to 999 employees	**31%**
1,000 to 4,999 employees	**40%**
5,000 to 19,999 employees	**19%**
20,000 or more employees	**9%**

TITLE	
C-level executive	**14%**
Vice president	**33%**
Director	**52%**

Note: Percentages may not total 100 due to rounding.

Appendix C: Supplemental Material

RELATED FORRESTER RESEARCH AND OTHER RESOURCES

"IoT Solutions Transform Smart Buildings Into Strategic Productivity Assets," Forrester Research, Inc., August 2, 2021.

Abhijit Sunil and Ian Bruce, "Generative AI Will Supercharge The Green Market Revolution," Forrester Blogs.

"CIOs: Take Five Actions To Kick-Start Your Firm's Environmental Sustainability Agenda," Forrester Research, Inc., May 19, 2023.

March 30, 2023, "The Role Of Sustainability In Responding To Today's Global Uncertainty," Webinar.

"The State Of IT Environmental Sustainability, 2023," Forrester Research, Inc., March 29, 2023.

Appendix D: Endnotes

[1] Source: "The Race To Decarbonization," a commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, November 2021.

[2] Source: "The State Of Environmental Sustainability In The Fortune Global 200, 2022," Forrester Research, Inc., October 11, 2022; "Pandemic Automation – A Quiet But Powerful Environmental Upside," Forrester Research, Inc., July 11, 2022.

[3] Source: "Green Market Revolution Forecast, 2023 To 2050 (Global)," Forrester Research, Inc., June 23, 2023.

[4] Source: "TCFD Recommendations," Task Force On Climate-Related Financial Disclosures, June 2017.

[5] Ibid.

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