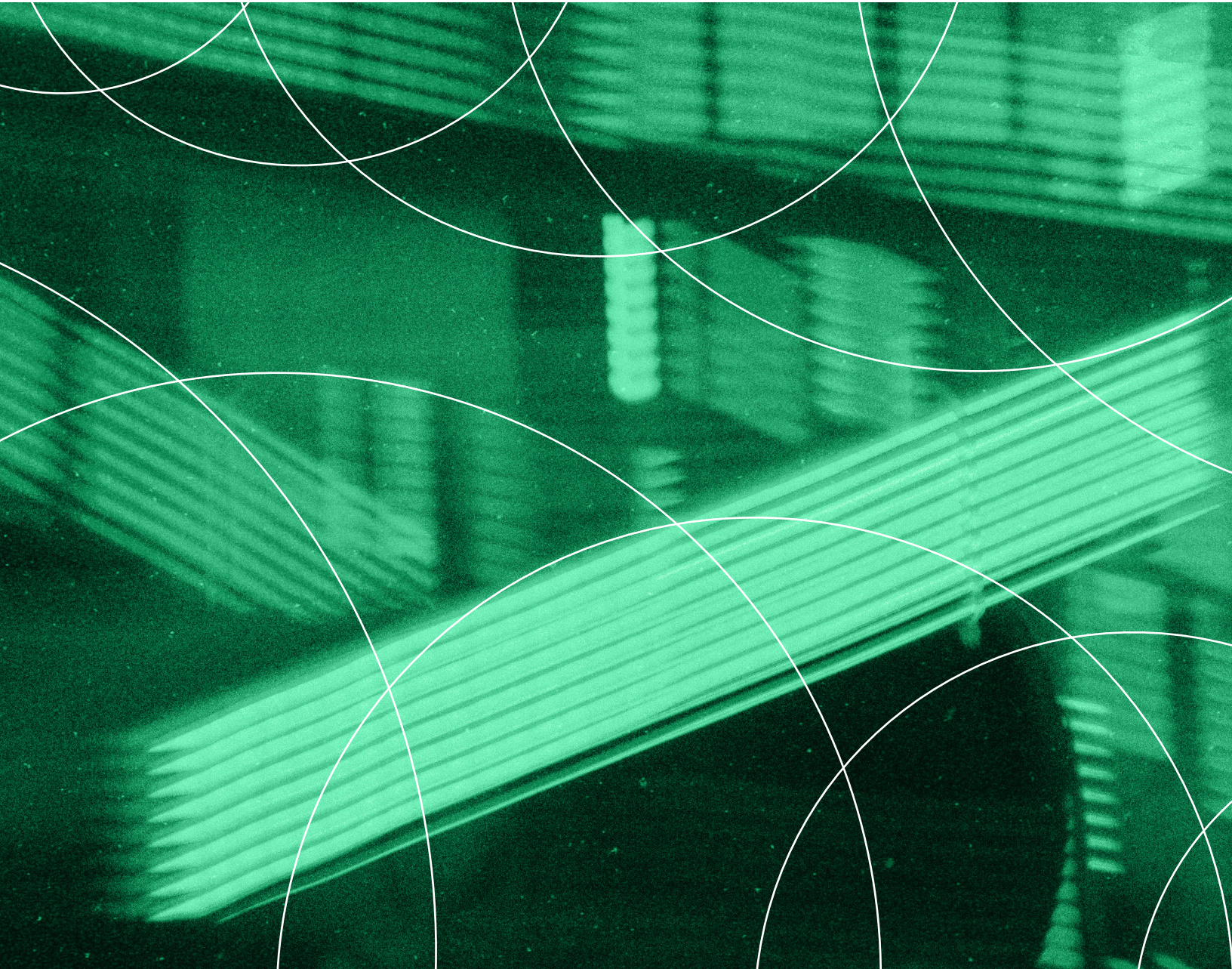


Cracking The Smart Buildings Code: A Spotlight On Retail And Commercial Real Estate

Results From The November 2023 Thought Leadership Paper,
“Cracking The Code: Unleash Your Smart Buildings Strategy
With The Power Of Facility Data”

A FORRESTER CONSULTING THOUGHT LEADERSHIP PAPER COMMISSIONED BY JOHNSON CONTROLS, FEBRUARY 2024

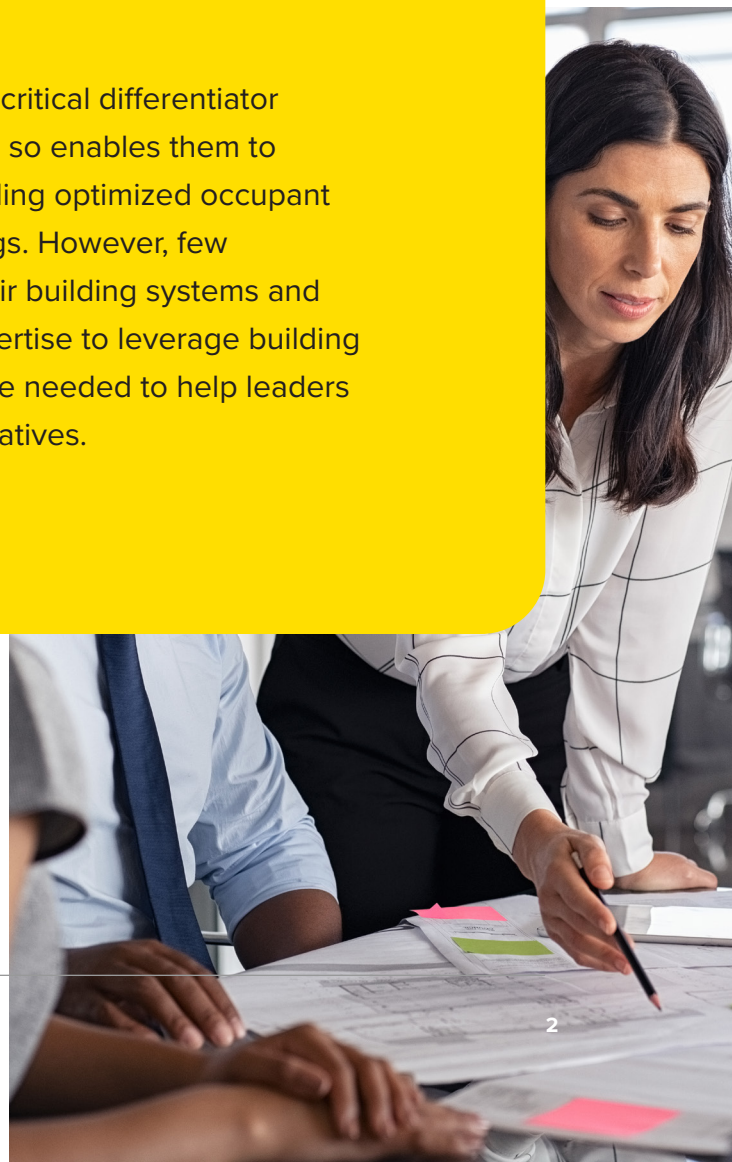


Executive Summary

Commercial real estate revenue expectations have dropped to levels not seen since 2018, leading to an increasing criticality for expense mitigation.¹ Leaders face a deluge of issues including high interest rates, high vacancy rates, increasing crime rates, hybrid work uncertainty, and increasing pressure to reduce carbon emissions. To help solve these challenges, savvy leaders need to invest in making their buildings smarter through better system integration, automation, and intelligence.

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. This spotlight is focused on a subset of 299 smart buildings decision-makers in retail and commercial real estate.

We found that investments in smart buildings are a critical differentiator for retail and commercial real estate leaders. Doing so enables them to reach sustainability and security goals, while providing optimized occupant experiences for all stakeholders using their buildings. However, few organizations operate smart buildings today, as their building systems and data are not fully integrated and many lack the expertise to leverage building system insights. Technical and strategic partners are needed to help leaders fill expertise gaps and advance smart buildings initiatives.



Key Findings

Only 13% of retail and commercial real estate leaders say their building systems and equipment are fully integrated, and it's costing them time, people, and money. While many leaders use some building insights, their decisions are rife with risk due to limited data painting an incomplete picture. This lack of integrated data and insight is reducing operating efficiencies (62%), reducing customer loyalty (59%), and increasing regulatory penalties (57%).

Investing in smart buildings is a competitive differentiator. Smart buildings not only help retail and commercial real estate leaders attain sustainable, secure, and efficient outcomes, but they also competitively differentiate their retail and commercial real estate facilities in the market.

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

Retail and commercial real estate leaders seek smart buildings partners that offer deep integration abilities, the most advanced technology, industry experience, and easy-to-use platforms. Smart buildings solutions unite data from all systems and equipment, and automatically alert and adjust environments for safety and efficiency. These solutions also make it easier to leverage captured insight to guide decisions and recommendations. Selecting a third-party partner with appropriate integration, technology, and platform expertise is often needed for seamless enablement.

Building Insights Are Critical For Retail And Commercial Real Estate Success

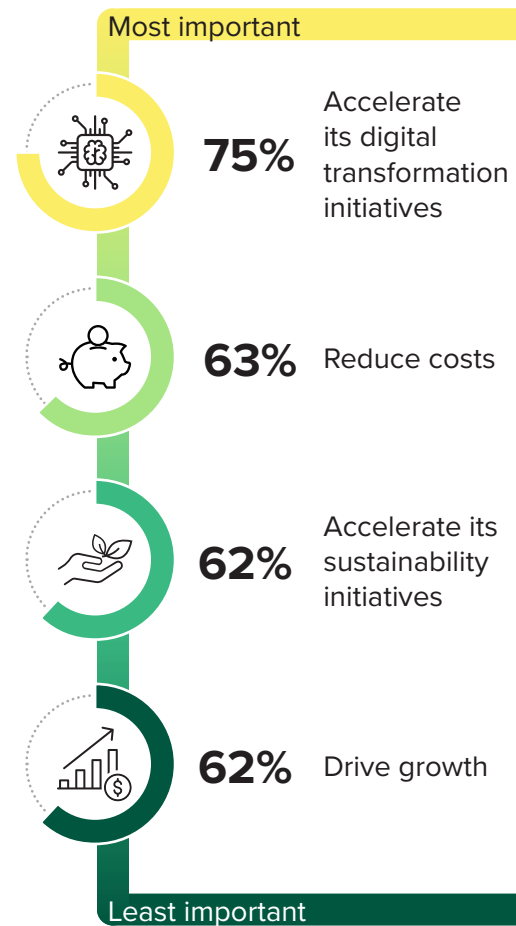
Smart buildings provide retail and commercial real estate leaders with a clearer picture of what’s going on inside their facilities, helping them better manage, monitor, and create efficient, sustainable, healthy, and safe environments — a critical differentiator for both commercial real estate tenants and buyers. 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. In surveying 299 smart buildings strategy leaders in retail and commercial real estate, we found that:

- **Smart buildings help accelerate digital transformation, reduce costs, improve sustainability, and drive retail and commercial real estate business growth.** Three-fourths of retail and commercial real estate leaders say smart buildings are important to achieving the goal of accelerating digital transformation efforts. In addition, nearly two-thirds of respondents also indicate smart buildings are important for reducing costs, accelerating their sustainability initiatives, and driving business growth (see Figure 1).
- **Security, space optimization, modernization, and sustainability are top smart buildings investment drivers.** Retail and commercial

FIGURE 1

Importance Of Smart Buildings Initiatives To Meet Top Business Priorities

(Showing “Important” and “Critical”)



Base: 114 to 215 smart buildings decision-makers at the director level or higher in retail and commercial real estate
Note: Showing top 4 business priorities
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

real estate leaders identified multiple drivers propelling investments to make their buildings smarter. Top drivers include improving security operations (65%), improving physical security (51%), optimizing space management (41%), modernizing buildings (40%), and reducing carbon emissions (39%).

- **Only 13% of retail and commercial real estate leaders say their building 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. However, due to the diverse array of connected building systems, managing many partners and achieving necessary technology integration is challenging. On a scale of 1 (not at all integrated) to 7 (fully integrated), only 13% of retail and commercial real estate leaders report their systems and equipment are fully integrated today (see Figure 2).

FULL BUILDING SYSTEM INTEGRATION

13%

Average for retail and commercial real estate

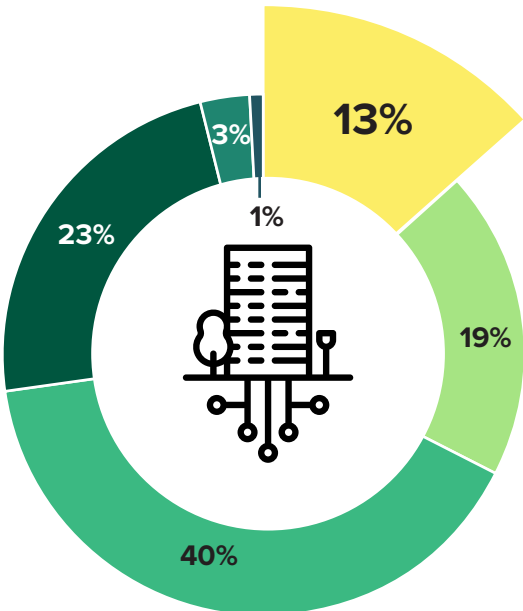
10%

Average across all 18 industries surveyed

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: 299 smart buildings decision-makers at the director level or higher at global enterprises in retail and commercial real estate
 Note: Percentages may not total 100 due to rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Managing the many partners involved with retail and commercial real estate facilities is also complicated.** Nearly two-thirds of surveyed leaders work with multiple partners — each specializing in specific types of building systems — to get required insight into their retail and commercial real estate facilities. Many leaders also face misalignment between their partners (56%) or struggle to get accurate and useful information from them (65%). In addition to working with a diverse array of partners, most (72%) of retail and commercial real estate leaders also struggle with using captured insights to optimize their building systems and achieve their top goals.
- **Lack of retail and commercial real estate facility data integration is costing organizations time, people, and money.** Gaps in captured building data and integrated building systems have negative impacts on retail and commercial real estate operations, revenues, and brand perception. For example, many leaders say their organizations face decreased operating efficiencies (62%), decreased customer loyalty (59%), increased regulatory penalties (57%), decreased revenue (47%), and decreased brand reputation (45%).
- **Retail and commercial real estate leaders need smart buildings partners with breadth and depth of expertise.** Deploying a smart building often requires engaging with partners that have a breadth and depth of expertise to advance smart buildings initiatives. Leaders in this study seek partners that use the latest technology, offer one digital platform across all sites and use cases, enable ease of use across stakeholders, enable seamless integration into all building systems, have end-to-end expertise (e.g., can offer designing and planning, system/equipment implementation, consultancy services, maintenance and system optimization, etc.) and have experience in the retail and commercial real estate industry, among other characteristics (see Figure 3).

FIGURE 3

Importance Of Smart Buildings Partner Attributes

(Showing “Valuable” and “Extremely valuable”)



Base: 299 smart buildings decision-makers at the director level or higher at global enterprises in retail and commercial real estate

Note: Showing six responses

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

Sustainability In Retail And Commercial Real Estate Requires Technical And Strategic Smart Buildings Partners

Sustainable buildings are the foundation of future success for retail and commercial real estate companies. Their ability to design and retrofit sustainable and efficient buildings is already a determining factor for the demand and, subsequently, the market value of their real estate portfolio. For example, US LEED-certified office buildings command an average of a 3.7% rent premium compared to non-LEED certified spaces.² The level of reporting capabilities in buildings is a vital criterion for many investors; nearly 50% of global real estate leaders indicate the greatest material risk to investing in sustainable real estate is maintaining real estate asset valuations that do not appropriately consider climate related risk.³ Smart buildings offer a solution that can help retail and commercial real estate leaders advance building sustainability goals while also making their footprints more attractive to tenants and buyers. We found that:

- **Urgency to address sustainability in retail and commercial real estate continues to accelerate.** When comparing 2023 retail and commercial real estate survey respondent results to results from the 2021 study commissioned by Johnson Controls, we found that sustainability remains a top business priority in this sector.⁴ Although the retail and commercial real estate sector currently faces a more volatile economic and political climate across the globe, there continues to be an urgency to accelerate sustainability efforts (see Figure 4). The 2023 study shows that 72% of retail and commercial real estate leaders set their organization's carbon reduction goal to above 75% by 2030 across its portfolio of buildings. This result is above the overall average of 64% across all surveyed leaders from 18 industries. This momentum is driven by regulatory pressures and efficiencies realized from prior sustainability efforts, along with the ability

**2030 CARBON REDUCTION
GOAL OF 75%**

72%

Average for retail
and commercial real
estate organizations

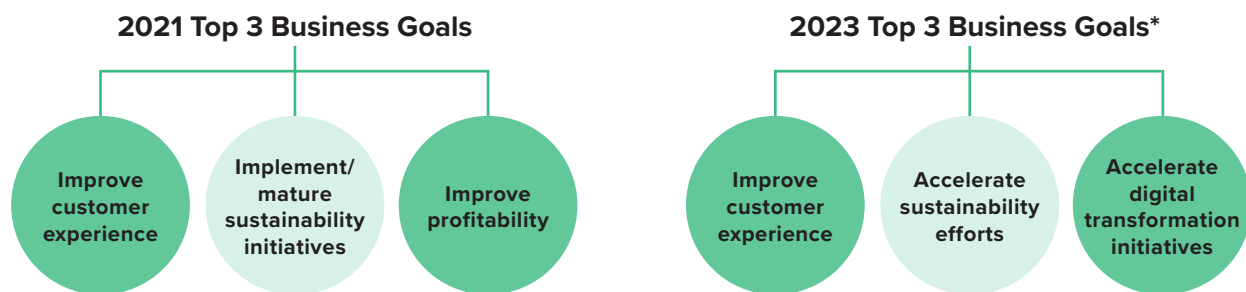
64%

Average across all 18
industries surveyed

to increase competitive differentiation in the market as more Class A office spaces become vacant. Retail and commercial real estate leaders with buildings that have green certificates or energy efficiency labels in their footprint see an average of 6.3% higher rental incomes, 6% higher occupancy rates, and 14.8% higher sales prices compared to their peers without green certificates and/or labels.⁵

FIGURE 4

Top Business Goals For Retail And Commercial Real Estate



Base: 179 sustainability decision-makers at global enterprises prioritizing corporate sustainability in retail and commercial real estate

Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, September 2021

*Base: 299 smart buildings decision-makers at the director level or higher at global enterprises in retail and commercial real estate

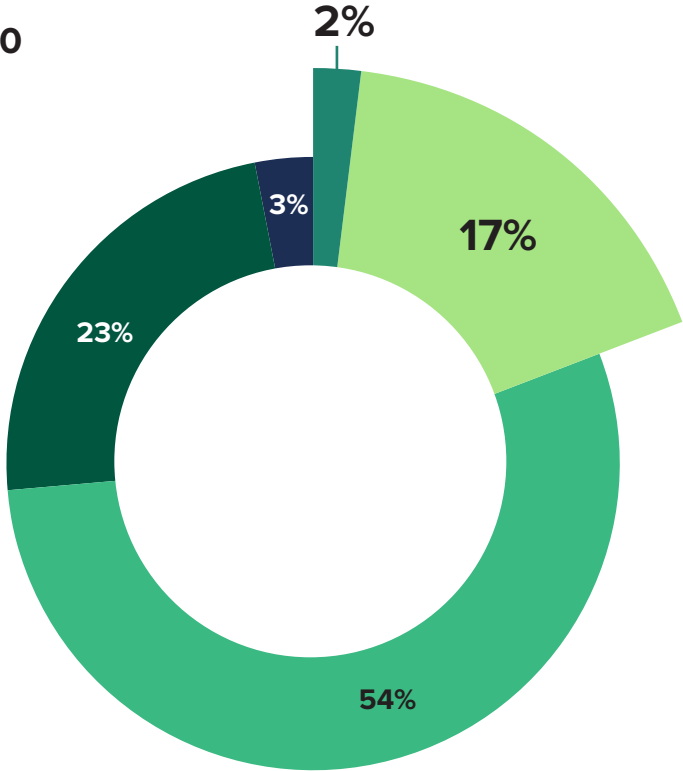
*Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- Siloed data and a lack of operational integration threatens to derail progress toward sustainability goals.** Nearly three-fourths of retail and commercial real estate leaders are on track to meet their aggressive 2030 carbon reduction goals, but notably another 26% worry their organization is underperforming on the path towards meeting these goals (see Figure 5). While we don't have a large enough sample to analyze at the industry level, in the broader study, we found there are also discrepancies between 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

FIGURE 5

Performance Toward Meeting 2030 Carbon Emissions Reduction Goal

- Significantly overperforming
- Overperforming
- On track to meet its goals
- Underperforming
- Significantly underperforming



Base: 162 smart buildings decision-makers involved with environmental sustainability at the director level at global enterprises in retail and commercial real estate
Note: Not showing “Don’t know”
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

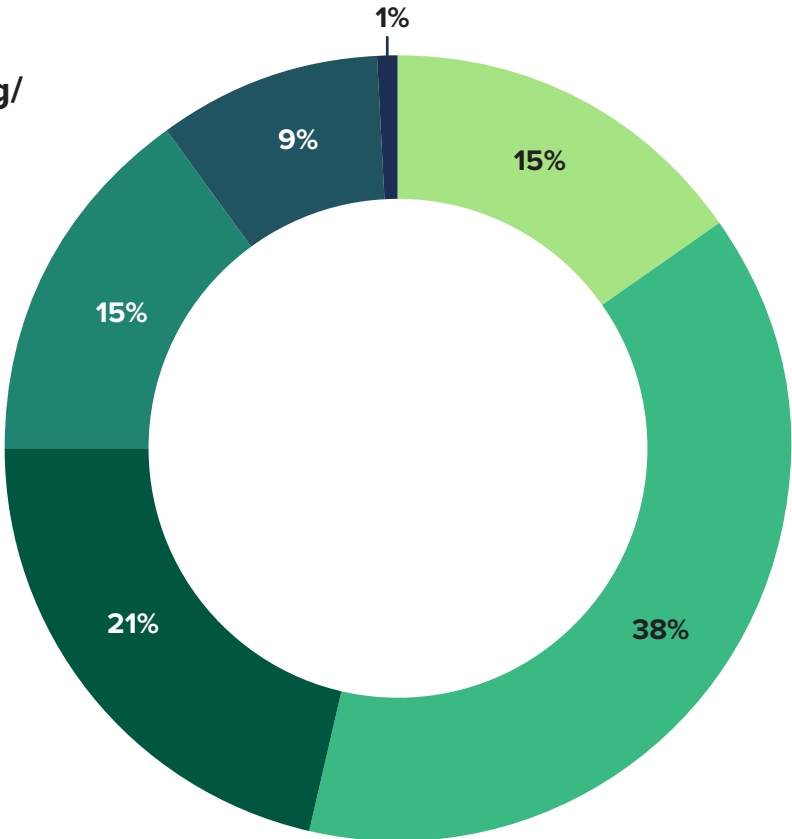
report the same. These significant differences indicate there is a lack of a single source of truth for many organizations when it comes to visibility of this high-level sustainability goal, let alone more granular sustainability metrics.

- **Retail and commercial real estate stakeholders demand progress and transparency in reporting.** Study results show customer-required reporting, supply chain compliance reporting, and country-required reporting are the most common reporting types in retail and commercial real estate. However, most organizations can only measure and report on carbon emissions once a year or quarter, which limits reporting of incremental progress (see Figure 6). Measuring carbon emissions in near real time is key to identifying accurate recommendations to optimize building systems or to adjust processes to reduce carbon emissions.

FIGURE 6

Carbon Emissions Reporting/ Measurement Cadence

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



Base: 162 smart buildings decision-makers involved with environmental sustainability at the director level at global enterprises in retail and commercial real estate

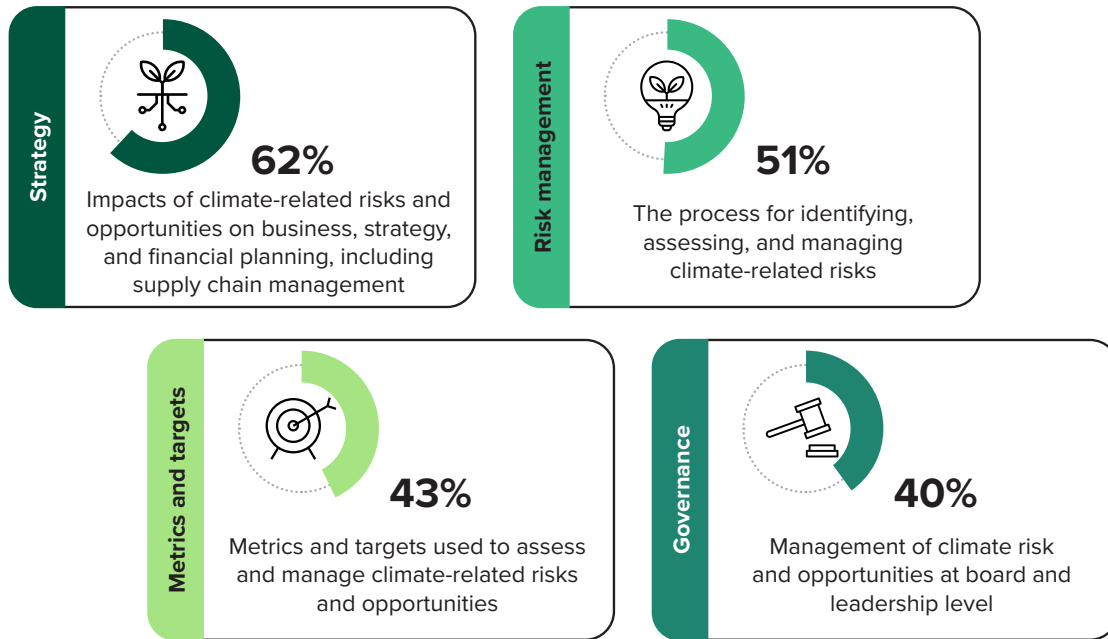
Note: Percentages do not total 100 because of rounding.

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

- **Environmental impact reporting in retail and commercial real estate is fragmented and lacks a commonly used standard.** Retail and commercial real estate organizations use many different types of reporting options. The Global Reporting Initiative (GRI) standard is used most often and provides retail and commercial real estate organizations with more reporting flexibility compared to other reporting frameworks. Among retail and commercial real estate organizations with climate transition plans in place, only 2% can report on all four Task Force on Climate-Related Financial Disclosures (TCFD) areas of governance, strategy, risk management, and metrics and targets (see Figure 7). This result shows reporting is far from standardized and remains fragmented.

FIGURE 7

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



! Just 2% say their company reports on all four categories.

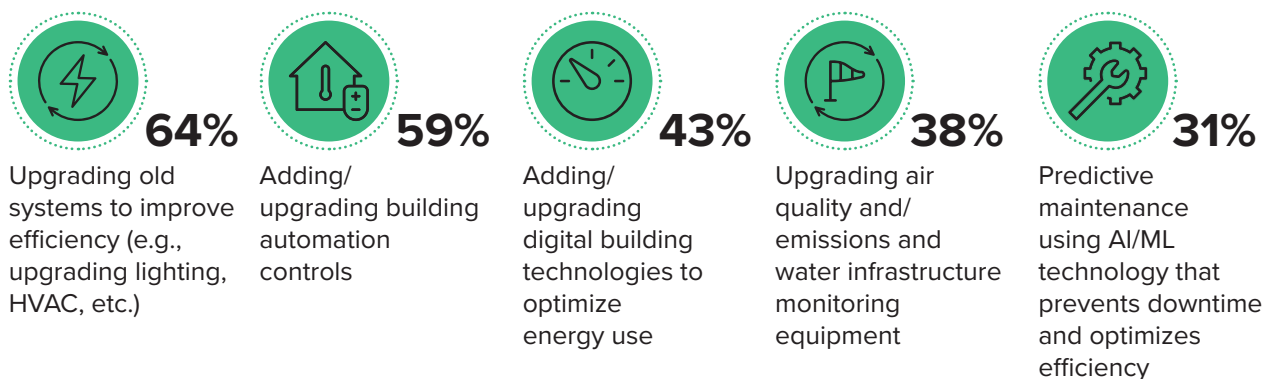
Base: 154 smart buildings decision-makers involved with environmental sustainability at the director level or higher at global enterprises in retail and commercial real estate that have a climate transition plan in place or are developing one
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Technical and strategic partners are often needed to help fill expertise gaps.** Seventy-three percent of retail and commercial real estate sustainability leaders say their organizations lack the technical expertise to optimize building systems using insights collected, and 45% lack internal skills to measure their organization’s environmental impact. Other top challenges include not understanding what the next most impactful steps are to meet sustainability goals (59%); struggling with competing organizational priorities (64%); and the high costs of executing on sustainability priorities (46%). To digitally transform buildings successfully and achieve sustainability goals, retail and commercial real estate organizations need partners to fill internal expertise gaps and strengthen their foundation and roadmaps to reduce carbon emissions.

- High-impact retail and commercial real estate building sustainability initiatives often start with upgrading, digitizing, and automating systems to improve efficiency.** Sixty-two percent of retail and commercial real estate leaders say smart buildings are important to accelerating their firm’s 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 have significant impact on their organizations’ ability to improve sustainability of owned or leased spaces. Comparing these results to the 2021 study commissioned by Johnson Controls shows many organizations started their smart buildings sustainability journeys by upgrading old equipment to improve efficiency and enabling air-quality and emissions monitoring.⁶ With the foundation in place, artificial intelligence (AI) insights can be used to drive further efficiency and give leaders access to more actionable sustainability insights. Roughly 31% of retail and commercial real estate leaders say their firm currently invests in AI for predictive maintenance, and 28% invest in a holistic view of resource use to accelerate their firm’s progress toward carbon reduction goals (see Figure 8).

FIGURE 8

Upgrading, Digitizing, And Automating Systems Set The Foundation For Smart, Sustainable Buildings



Base: 162 smart buildings decision-makers involved with environmental sustainability at the director level at global enterprises in retail and commercial real estate
 Note: Showing smart building investment initiatives with most significant impact on improving building sustainability
 Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Smart Buildings Help Retail And Commercial Real Estate Leaders Optimize Building Environments

As retail and commercial real estate companies continue to differentiate themselves in the market, the building environments and occupant experiences they can offer all building users, such as improving productivity and well-being, are increasingly important for attracting tenants and buyers; organizations with the WELL certifications see nearly 30% improved overall occupant satisfaction.⁷ What's more, healthy building environments help increase the value of real estate assets; certified or registered Fitwel and WELL spaces command a 4.4% to 7.7% rental premium over non-healthy-certified/registered buildings.⁸ Smart buildings can help retail and commercial real estate leaders manage and optimize facilities, but many need third-party partner assistance to realize the full potential of smart buildings. We found that:

- **Improving operational efficiency, the ability to attain health and wellness certificates, and occupant safety are top retail and commercial real estate building environment priorities.** To address these priorities, leaders are most focused on initiatives to improve energy efficiency (53%), improve physical security (53%), monitor/improve indoor air quality (IAQ) (47%), design flexible building operating models (45%), and optimize building spaces for specific use (44%).
- **Space optimization initiatives can help improve employee experiences and efficiencies.** Just 56% of US employees are satisfied with the physical layout of their office/workspace, and just 28% of employees who work at least partly from home like being in the office.⁹ What's more, CBRE's 2023 to 2024 Global Workplace Insights Report found that space occupancy rates at companies globally have on average exceeded 100%, meaning companies are allocating more people to an office/workspace than the number of desks/workstations their office has.¹⁰ Yet, office/workspace utilization rates — the actual number of people using the space — remained under 40% in 2023 compared to 64% before the COVID-19 pandemic.¹¹ As a result, space optimization is an increasingly important lever for leaders when it comes to improving

office/workspace utilization rates by creating spaces that attract employees while maximizing the use of space for optimal efficiency. Top building portfolio optimization goals include increasing space sharing, disposing of underutilized space, and accommodating headcount growth within their existing portfolio of buildings.¹²

- To improve competitive market differentiation, retail and commercial real estate leaders need help monitoring and improving air quality and predicting building usage levels.** Leaders indicate their organizations are most challenged with monitoring outside air quality (31%), optimizing asset performance/ efficiency (30%), integrating digital buildings systems with assets/ equipment (25%), optimizing lighting (25%), designing flexible building operating models (23%), optimizing building spaces for specific use, and monitoring/improving IAQ (22%). Retail and commercial real estate organizations particularly look to external partners for help with integrating IAQ into their digital building systems, predicting building usage levels to reduce energy consumption, and managing and staying on top of changing IAQ regulations and certifications (see Figure 9). These initiatives allow leaders to provide tangible data and evidence on how their buildings are performing, which is becoming an increasingly critical market differentiator.
- Ownership of building environment system priorities in retail and commercial real estate is spread across departments, requiring tailored**

FIGURE 9

Capabilities Organizations Rely On External Partners For



Base: 148 smart buildings decision-makers involved with building environment systems at the director level at global enterprises in retail and commercial real estate
 Note: Showing top 8 responses
 Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

analytics and standardized reporting on shared metrics. Different parts of retail and commercial real estate organizations own different building systems initiatives. For example, facilities departments are most commonly identified as owners of initiatives to reduce the impact on communities where facilities are located. Improving occupant safety and reducing carbon footprints are most commonly owned by environmental health and safety, while improving operational performance and the ability to address and meet regulatory requirements is most commonly owned by IT. To ensure insights are relevant and useful, retail and commercial real estate firms should tailor analytics and reporting to accommodate department needs and standardize the reporting on shared metrics and goals.

Smart Buildings Are Critical For Securing Retail And Commercial Real Estate Facilities

Retail and commercial real estate leaders are experiencing an increasing onslaught of physical threats in the form of crime, violence, and theft to their stores and facilities. As “smash and grab” crimes have become a daily news occurrence, levels of shrink in the US retail industry have continued to mount to the tune of \$112.1 billion in 2022.¹³ Forrester predicts that in 2024 retailers will be forced to analyze and fund concrete measures to address these extreme and growing risks to their operations.¹⁴ Smart buildings security technologies like computer vision, store lockdown features, communication tools, and self-identification technology will play a critical role in helping companies address these growing threats.¹⁵ Fifty-two percent of US retailers have already increased funding for security technology and software solutions over the last year.¹⁶ We found that:

- **Smart buildings can help retail and commercial real estate security teams improve operations in a sustainable manner.** A significant gap exists between security and sustainability. Sustainability is a retail and commercial real estate organization goal; however, only 18% of security leaders collaborate with sustainability teams today (see Figure 10). To address this gap, 56% of security leaders say they must collaborate more with sustainability stakeholders, and 59% say they must find ways to improve security operations while also being sustainable. Smart buildings can help these stakeholders achieve these goals. Smart lighting and motion sensors can drive energy efficiencies, while improving threat deterrence and detection. More broadly, physical security systems can provide occupancy data insights; if organizations know where people are spending time in a building, they can manage the use of energy, power, and lighting in a sustainable manner. Participating in enterprisewide smart buildings and sustainability objectives can help retail and commercial real estate security leaders get the funding and resources necessary to protect their facilities and occupants.

FIGURE 10

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

● Work with today
 ● Should work with more



Base: 100 smart buildings decision-makers at the director level or higher for secure buildings at global enterprises in retail and commercial real estate
 Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

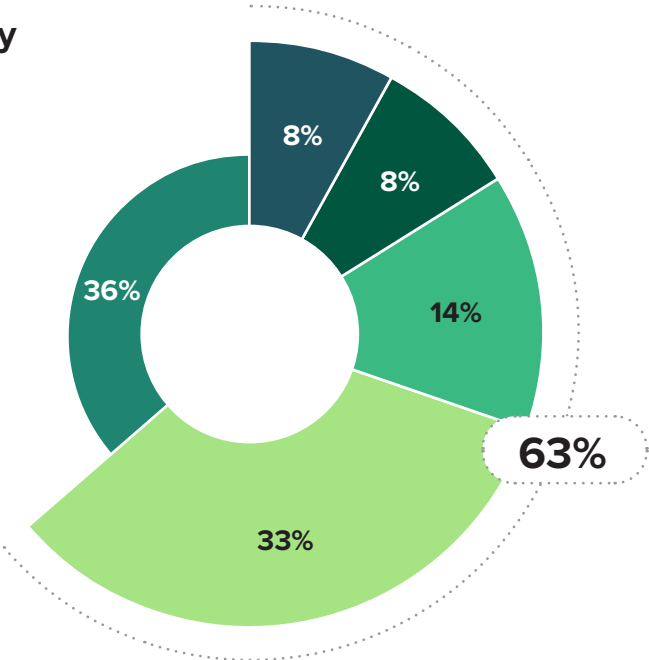
- Integrated security operations centers (SOCs) and systems are needed to better detect and respond to threats against retail and commercial real estate facilities.** Cyberattacks are multidimensional, yet most retail and commercial real estate security teams lack visibility into all those dimensions. Physical and cyber teams often report to different parts of retail and commercial real estate organizations. In fact, most retail and commercial real estate leaders (63%) say their organization lacks 24/7 visibility into all security systems. This leads to many issues with getting

information from all necessary systems, often preventing appropriate understanding and response to facilities threats (see Figure 11). Both physical and cybersecurity insight is needed because attacks may target both systems. For example, disabling cameras before breaking into a building, or stealing or copying an employee’s badge, using it to enter a retail or commercial real estate facility, and planting malware on a machine or using a USB drive to steal data off a system.

FIGURE 11

Most Organizations Lack 24/7 Visibility Into All Security Systems

- 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



75%

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

65%

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

Base: 100 smart buildings decision-makers at the director level or higher for secure buildings at global enterprises in retail and commercial real estate
 Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Key Recommendations

Enterprises spanning various types of office and commercial real estate environments are investing in smart buildings technologies to enhance efficiencies and transform tenant experience. In specific real estate environments, such as retail, it is important to specifically assess the impacts of smart buildings initiatives on in-store customers, store associates, and store operations. Forrester's in-depth survey of 299 retail and commercial real estate smart buildings leaders about their building initiatives and priorities, including sustainability, security, and building environmental initiatives, yielded several important recommendations.

Seek partners to assist with capturing relevant building system data and transforming them into insights.

Capturing smart buildings data and transforming into actionable insight is complex, requiring seamless integration across building systems and security processes, dashboards highlighting relevant insight, and intelligence to automatically optimize key operational processes. Just 13% of leaders say their buildings are fully integrated today meaning 87% do not have buildings optimized for smart buildings software. Start by working with your existing building system partners to identify opportunities to activate existing connected building system components in each building environment. Prioritize your smart buildings initiatives to address critical issues (e.g., optimizing costs, enabling energy efficiency, monitoring critical systems). Look for smart buildings partners who can fill in potential skill set gaps related to assessing technology roadmap upgrades and benefits assessments, as well as demonstrate technology expertise, a single digital platform spanning all sites, easy-to-access insights for stakeholders, and seamless integration into all building systems. In addition, retail operations stakeholders will factor industry expertise into the mix.

Treat commercial real estate as strategic assets to help address corporate priorities.

Smart buildings help commercial real estate stakeholders address priorities including improving occupant safety, enhancing occupant experience and well-being, improving sustainability, and optimizing operations. Smart buildings insight also helps identify issues quickly. For example, store operations managers can find out if there is a correlation between low lighting to save energy and theft ratios in certain portions of the store.

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

Proactively collaborate with stakeholders across a broad spectrum of processes to address smart buildings initiatives enabling sustainable, safe, and productive experiences in commercial real estate environments. A cross-functional team of stakeholders from real estate management, facility management, IT, security, operations, employee experience, and sustainability often participate in identifying opportunities to enhance operations, ensure tenant safety, inform strategic decisions, optimize operations, and address sustainability goals. In the retail arena, retail operations and customer experience executives may also be needed to bring industry-specific requirements to light.

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

It is important to create a roadmap of near-term and long-term smart initiatives to address return-to-work and sustainability initiatives that impact many corporate real estate tenants. The initial focus in commercial real estate is often achieving energy efficiency, enhancing the physical security and well-being of occupants, and optimizing the use of critical resources (e.g. lighting, HVAC, etc.) to achieve efficiencies and address sustainability goals. In retail, the comfort, safety, and well-being of in-store customers and store associates are key priorities.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 3,445 decision-makers at organizations in 18 industries across 25 countries, including 299 retail and commercial real estate decision-makers 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.

To read the full results of the 2023 study, please refer to the Thought Leadership Paper commissioned by and developed in collaboration with Johnson Controls titled, “Cracking The Code: Unleash Your Smart Buildings Strategy With The Power Of Facility Data.”

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

Appendix B: Demographics

REGIONS	
North America	39%
Central Europe	10%
United Kingdom and Ireland	7%
India	6%
Hong Kong	6%
Latin America	5%
Japan	5%
Australia and New Zealand	4%
Southeast Asia	4%
Middle East and Africa	4%
China	3%
Singapore	3%
South Korea	3%

INDUSTRY	
Mixed use residential/ commercial real estate	57%
Retail	43%

ORGANIZATION SIZE	
500 to 999 employees	35%
1,000 to 4,999 employees	42%
5,000 to 19,999 employees	14%
20,000 or more employees	8%

DEPARTMENT	
IT	38%
Facilities (e.g., energy management, procurement, real estate, environmental health and safety)	20%
Operations	9%
Employee experience (e.g., HR, workplace experience)	7%
CEO/office of president	9%
Governance/risk/compliance	4%
Sustainability	6%
Finance/accounting	4%
Customer experience	2%
Sales/marketing	1%

TITLE	
C-level executive	16%
Vice president	28%
Director	55%

BUILDING RESPONSIBILITY AREA	
Building environment systems and strategy	49%
Building environmental sustainability strategy	54%
Building security systems and strategy	33%

Note: Percentages may not total 100 due to rounding.

Appendix C: Supplemental Material

RELATED FORRESTER RESEARCH

[“Predictions 2024: Retail,”](#) Forrester Research, Inc., October 25, 2023.

[“Predictions 2024: The Future Of Work,”](#) Forrester Research, Inc., October 26, 2023.

[“The Top 10 Trends In Edge Computing And IoT, 2023,”](#) Forrester Research, Inc., December 8, 2023.

[“IoT Solutions Transform Smart Buildings Into Strategic Productivity Assets,”](#) Forrester Research, Inc., August 2, 2021.

[“Planning Guide 2023: Technology Architecture & Delivery,”](#) Forrester Research, Inc., August 23, 2022.

RELATED FORRESTER RESEARCH

James McQuivey (host, VP, Research Director) and J.P. Gownder (host, VP, Principal Analyst), [“What Is The Future Of The Office?”](#) What It Means, March 16, 2023.

Michele Pelino, Alexander Soley, [“The Top 10 Edge Computing And IoT Trends That Matter In 2023,”](#) Forrester Blogs.

J.P. Gownder, [“Predictions 2024: An EX Recession And An AI Revolution Reshape The Future Of Work,”](#) Forrester Blogs.

Appendix D: Endnotes

- ¹ Source: Jeffrey J. Smith, Kathy Feucht, Renea Burns, and Tim Coy, “[2024 commercial real estate outlook: Finding terra firma](#),” Deloitte Center for Financial Services, 2023.
- ² Source: Richard Barkham and Alex Wang, “[Green Is Good: The Enduring Rent Premium of LEED-Certified U.S. Office Buildings](#),” CBRE Research, October 26, 2022.
- ³ Source: Jeffrey J. Smith, Kathy Feucht, Renea Burns, and Tim Coy, “[2024 commercial real estate outlook: Finding terra firma](#),” Deloitte Center for Financial Services.
- ⁴ Source: “The Race To Decarbonization,” a commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, November 2021.
- ⁵ Source: Niina Leskinen, Jussi Vimpari, and Seppo Junnila, “[A Review of the Impact of Green Building Certification on the Cash Flows and Values of Commercial Properties](#),” MDPI, March 31, 2020.
- ⁶ Source: “The Race To Decarbonization,” a commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, November 2021.
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- ¹¹ Ibid.
- ¹² Ibid.
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