2024 | IoT Smart Building **Predictions**

Stefan Schwab

CEO, Enlighted

Franco Castaldini

Head of Workplace
Essentials, Enlighted

Colm Nee

CTO, Enlighted

In 2023, companies around the globe confronted numerous challenges, but amidst these obstacles, technologies like AI and cloud computing experienced remarkable growth, and the spotlight on sustainability intensified.

Join us as we explore the future of sustainable and intelligent buildings with Enlighted's **2024 insights and predictions**, covering everything from the transformative impact of AI to the crucial role of sustainability. See Enlighted executives' views of the industry's trajectory in 2024 and beyond.

1 **GenAI Enabled IoT Operations**
Creating workplace efficiencies

2 **Shift in Data Center Construction**
AI surge drives sustainable designs

3 **Sustainable Buildings**
The "great divide" continues

4 **Workplace Technology**
Occupancy data informs on workplace trends

PREDICTION 1

GenAI-Enabled Workplace Technology

Workforce efficiency is an early driver for GenAI in smart buildings.

70%

GenAI could enable automation of up to 70% of business activities — across almost all occupations — and add trillions of dollars in value to the global economy between now and 2030.[1]

To address rising energy costs and economic pressures, commercial buildings are turning to AI-enabled IoT workplace tech. This tech collects and analyzes occupancy data to optimize building efficiency and improve the occupant experience. The benefits that GenAI offers building and facility managers are vast, from automating the design and construction of smart buildings to improving the operational and energy efficiency and performance of smart building systems. But we're not there quite yet.

In 2024, we will see building innovators kickstart GenAI adoption as they recognize the opportunities it presents.

AI and optimization have been in play in smart buildings for some time.

Examples include digital twins, predictive maintenance, and energy cost optimization across multiple power sources. The role of GenAI in revolutionizing workflows and creating new efficiencies is only just beginning in 2024.

Initially, natural language queries will analyze IoT sensor data for space and equipment management. Soon, GenAI will automate more complex operational queries, support issue resolution, and encourage proactive equipment management. Capture and continuous learning from existing building management teams serve as a safeguard as they transition toward retirement.

Learn more about Enlighted AI.

"

"GenAI is poised to revolutionize the future of smart buildings. With its advanced AI capabilities and integrated technologies, we can expect a seamless and intelligent environment that continuously learns and adapts to our needs. From equipment management to efficient design decisions and addressing staff shortages. GenAI will lower OPEX and unlock endless possibilities for creating sustainable and innovative space."

– Stefan Schwab
CEO, Enlighted

[1] McKinsey & Company, Investing in the rising data center economy, January 17, 2023 | Article

PREDICTION 2

Sustainable Data Centers: AI's Surge Reshapes Computing

Proliferation of AI puts the focus on sustainability for data centers.

25%

The rise of AI is causing an increased demand for data centers within North America, reaching an all-time high in the first half of 2023 with a 25% increase in data center construction.[2]

Over the last several years, AI technologies have surged in popularity, addressing a wide range of corporate and specialized functions. This demand for AI and its requisite data have led to an increase in the number of large-scale data centers that serve as the backbone of AI.

These massive facilities require expansive power and resources to operate. For instance, demand in the US market is projected to reach 35 GW by 2030, up from 17 GW in 2022, posing questions around environmental impact and how this trend affects corporate sustainability goals.
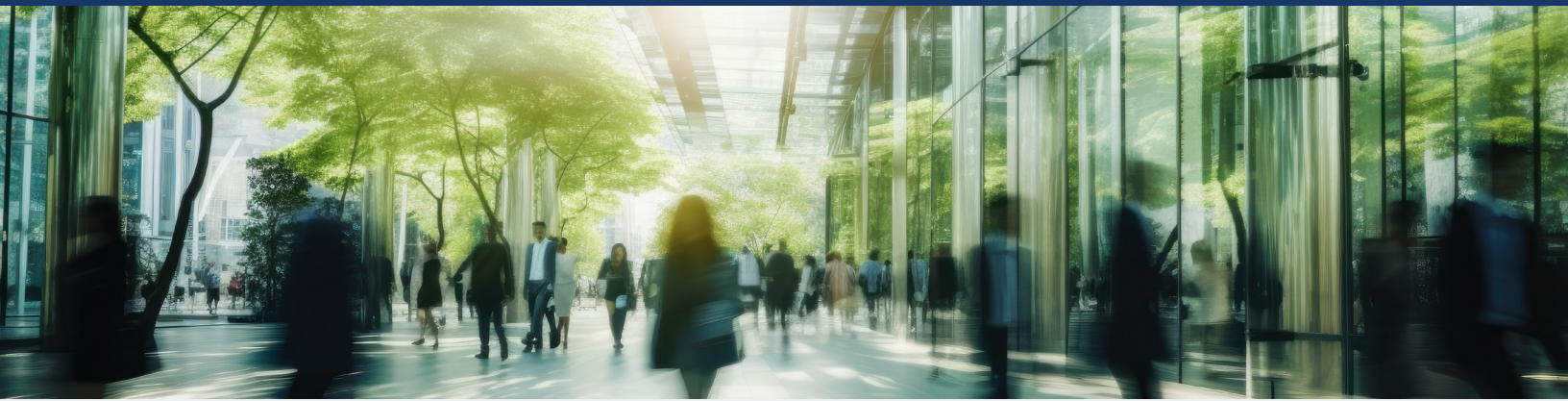
In 2024, the AI trend will continue to grow, leading to new construction of corporate data centers and hyperscaler providers to accommodate the increased demand. To mitigate the environmental impact, sustainable building practices must be incorporated into the initial design phase of these centers. Companies will need to evaluate how to minimize carbon emissions from the massive power demand of data centers through automating systems for efficient lighting, heating, cooling, and humidity control.

Learn more about Enlighted's solutions for data centers.

> "
>
> *"The proliferation of AI is driving an unprecedented demand for data centers, and it is essential to ensure their efficiency and sustainability to address the environmental impact. By adopting energy-efficient technologies, we can strike the right balance between the growing demand for AI and a sustainable future."*
>
> *— **Colm Nee***
> *CTO, Enlighted*

 [2] Building Design Construction, Pre-leasing rates exceed 70%, September 21, 2023 | Article

PREDICTION 3

Sustainability

A "great divide" on how executives lean into sustainability will continue into 2024.

60%

Sixty percent of executives are not confident about meeting decarbonization targets in 2024.[3]

The great divide in sustainability progress among companies and countries is evident. Recent Siemens research shows that only 40 percent of executives are confident about meeting their decarbonization targets for the year ahead. Additionally, less than half have set targets for Scope 1 and 2 emissions (47 percent). Given this scope and complexity, no country or company can solve the sustainability challenges we face alone. With economic uncertainty continuing in 2024, executives must prioritize optimizing building energy efficiency to balance sustainability and costs. Sustainable practices not only drive economics but also provide long-term business value and cost reductions.

For companies prioritizing sustainability, proving the economic value of their efforts is crucial. Retrofitting and renovating existing buildings will be a crucial approach to improve energy efficiency and sustainability without new construction. Reusing and retrofitting can save between 50–75% of carbon emissions compared to constructing new buildings. Measures such as upgrading heating and cooling systems, lighting, and appliances help reduce energy consumption and costs. Retrofitting is the preferred solution for occupiers and governments striving to achieve net-zero commitments due to the high demand for sustainable buildings.

Learn more about Enlighted's Lighting Solution to see how occupancy-based lighting and temperature controls can drive sustainability.

"

"The sustainability divide requires immediate attention. Companies and countries must take action to meet decarbonization targets. Building energy efficiency is critical for balancing sustainability and costs. Sustainable practices deliver long-term value and cost reductions, making energy-efficient buildings essential for a sustainable future."

– Stefan Schwab
CEO, Enlighted

[3] Siemens, The great divide on the path to net zero, 2023 | Report

PREDICTION 4

Workplace Technology

Companies turn to occupancy data to keep pace with workplace trends.

78%

By 2025, 78% of the workforce will continue to navigate the complexities of in-person or hybrid work structures.[4]

The landscape of return-to-work policies is constantly evolving, with in-person, hybrid, and remote work options reshaping the traditional office. Merely bringing employees back to the office without considering the physical workspace is a missed opportunity to improve employee satisfaction, retention, and occupant experience. This is where smart building data becomes invaluable.

In 2024, smart building technology and workplace experience apps, along with data analysis, will be essential for meeting employee needs in the office. Companies that leverage this data to create comfortable environments where employees feel supported will foster better company cultures and higher employee engagement. Sensor-equipped lighting and thermal controls will track activity, such as traffic flows, and provide insights on how occupants interact with the space and each other.

Learn more about transforming your workplace with our [Flexible Spaces Solutions](#).

"Rethinking the workspace and leveraging smart building data are essential for adapting to the evolving return-to-work landscape. In 2024, utilizing smart technology and data analysis empowers companies to create supportive environments that drive engagement, improve company culture, and boost employee satisfaction. Sensor-equipped systems offer valuable insights on occupant interactions and traffic flows, enabling organizations to optimize the workspace."

– Franco Castaldini
Head of Workplace Essentials, Enlighted

[4] Gartner®: *Market Guide for Workplace Experience Applications*, by Tori Paulman, Janel Everly, Romita Datta Chaudhuri, Mujtaba Shamin, January 2023. Gartner is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved.

Imperatives for 2024

Leaders who manage commercial buildings in every industry are striving for efficiency by streamlining workflows and searching for every opportunity to reduce costs in the face of economic headwinds. Throughout 2024, businesses worldwide will look to smart building technologies to help them achieve their goals, leveraging IoT data, occupant experience data, AI advancements, and new innovative building applications.

The prioritization on sustainability will be addressed by varying degrees, influenced by local regulations and societal pressures. It is, however, important to recognize that sustainability goals are not in conflict with economic sustainability; in fact, the two can work hand in hand with the right technology solutions.

To learn how you can prepare for configuring and managing your new workplace, **contact us** at **info@enlightedinc.com**.

Turn Everyday Spaces into Extraordinary Places

Wherever space, people and work meet, Enlighted empowers organizations with the technology to transform real estate spaces into regenerative places that fuel positive impact for people, portfolio, and our planet.

Email: info@enlightedinc.com | **Website:** www.enlightedinc.com

Building Robotics, Inc.,
a Siemens Company