

The Digital Transformation of Commercial Real Estate

How **EcoStruxure** for Commercial Real Estate drives sustainability, resilience, hyper-efficiency, and people-centricity.



Introduction

Although uncertainty is at an all-time high in the commercial real estate industry, one thing remains certain. There is more work to do to prepare our commercial buildings for whatever challenges the future has in store. And the way to get there is through digital transformation of commercial buildings.

This e-guide explores how digital transformation makes commercial buildings more sustainable, resilient, hyper-efficient, and people-centric.



Table of contents

Why go digital?

Making the case for commercial Buildings of the Future

1

Four pillars of commercial Buildings of the Future

What does a Building of the Future look like?

2

Cybersecurity, interoperability, and future-readiness

Preparing buildings for a digital future

3

Why go digital?

Why go digital?

Four pillars of commercial Buildings of the Future

Cybersecurity, interoperability, and future-readiness



The theory and practice of digital buildings

The pandemic is neither the first or the last challenge the commercial real estate industry will face. Whether it's space-as-a-service disruption or increasingly severe weather events, commercial real estate will have to adapt. But how? This e-guide explores the theory and practice of digitally transforming commercial Buildings of the Future.

The theory

Digitalization will increasingly penetrate the construction and buildings sector, which remains one of the least digitalized among 22 broad sectors.¹ There are four critical areas where commercial buildings must provide better outcomes:

Sustainability

39%

of total greenhouse gas emissions derive from buildings ²

Resilience

396

natural and human-caused disasters in 2019 ³

Hyper-efficiency

30%

of energy in buildings is wasted ⁴

People-centric

87%

of our lives are spent in buildings ⁵

The practice: Achieving digitalization

New digital tools allow you to break down silos between IT and operational technology and, instead, manage energy on both sides of the meter. When you connect the two, you gain data-rich visibility across the full array of low- and medium-voltage subsystems:

- Power distribution
- Building management
- IT infrastructure
- Building automation
- Distributed energy resources, microgrids, and renewables.



Putting theory into practice: EcoStruxure for Commercial Real Estate

Integrating all your building's low- and medium-voltage systems (e.g., power distribution, IT, building management, lighting, etc.) used to be nearly impossible due to closed, proprietary platforms. Facilities teams would have to master multiple vendors' technology on an ongoing basis. Granted, there are options for full-facility integration, but they lock users into a closed system and constrain a building's future-readiness. That won't work for many buildings with existing equipment.

That's all changed with EcoStruxure™ for Commercial Real Estate, the first open, interoperable, and IoT-connected platform that connects all building subsystems, whether they use Schneider Electric equipment or not.

What is EcoStruxure?

EcoStruxure, a digital "system of systems," connects your building's infrastructure down to the device level and feeds this data up to edge control software, cloud analytics, and advisory services. With all this actionable data now flowing to a single screen, you'll be able to make the best possible decisions about what to do next.



Location, location, digitalization

The old mantra of real estate gets a twist at 390 Madison, a revitalized 32-story tower in midtown Manhattan. The LEED® Gold-certified building differentiates on its technology, offering tenants EcoStruxure-powered touchless access controls, advanced elevator dispatching, and much more.

- 100% leased prior to construction ending, maximizing rent roll
- 50+% reduction in IT capital expenses for building owner
- Integrated subsystems and digitalization enable predictive maintenance and remote diagnostics

Four pillars of Buildings of the Future

Why sustainability?

Because sustainability is simply good business.

In commercial real estate, sustainability is not only about regulatory or financial compliance. It's about satisfied investors and lower operational costs. Add it together, and the picture becomes clear: sustainability is now simply good business. The statistics speak for themselves: In a 2018 survey, owners of new and retrofitted green buildings reported:

- 5 – 7% higher asset value
- 6 – 7 year paybacks
- 13 – 14% lower operating costs over 5 years⁶

EcoStruxure is the brain of a smart, green building. Whether it's automating lighting controls for changing occupancy or using cloud analytics to pinpoint leaks in HVAC chillers, EcoStruxure attacks energy waste on all fronts.

Beyond the demand side, EcoStruxure offers unprecedented access to renewable energy procurement, including both power purchasing services and on-site microgrids. It makes intelligent decisions on switching to on-site sources when grid power is expensive or unavailable. EcoStruxure optimizes energy use on both sides of the meter.



A sustainability strategy that's paying dividends

The Blackstone Group™, one of the world's largest private equity groups, uses EcoStruxure to track sustainability progress. Some key highlights:

- Tens of millions of dollars in energy savings
- 15% reduction in carbon emissions
- 20 portfolio companies tracked

[Watch how](#)

Expanding access to renewables

Not only is Schneider ranked as the world's **most sustainable corporation in 2021**,¹⁵ we're also the world's largest global consultant on corporate renewable purchasing.

100+ utility-scale power purchasing agreements

128M tons of CO₂ emissions avoided through EcoStruxure offers

8,000 MW of renewable energy contracted worldwide

We collaborate with our clients to report to all major global ESG frameworks.

Why resilience?

Because the future is more uncertain than ever.

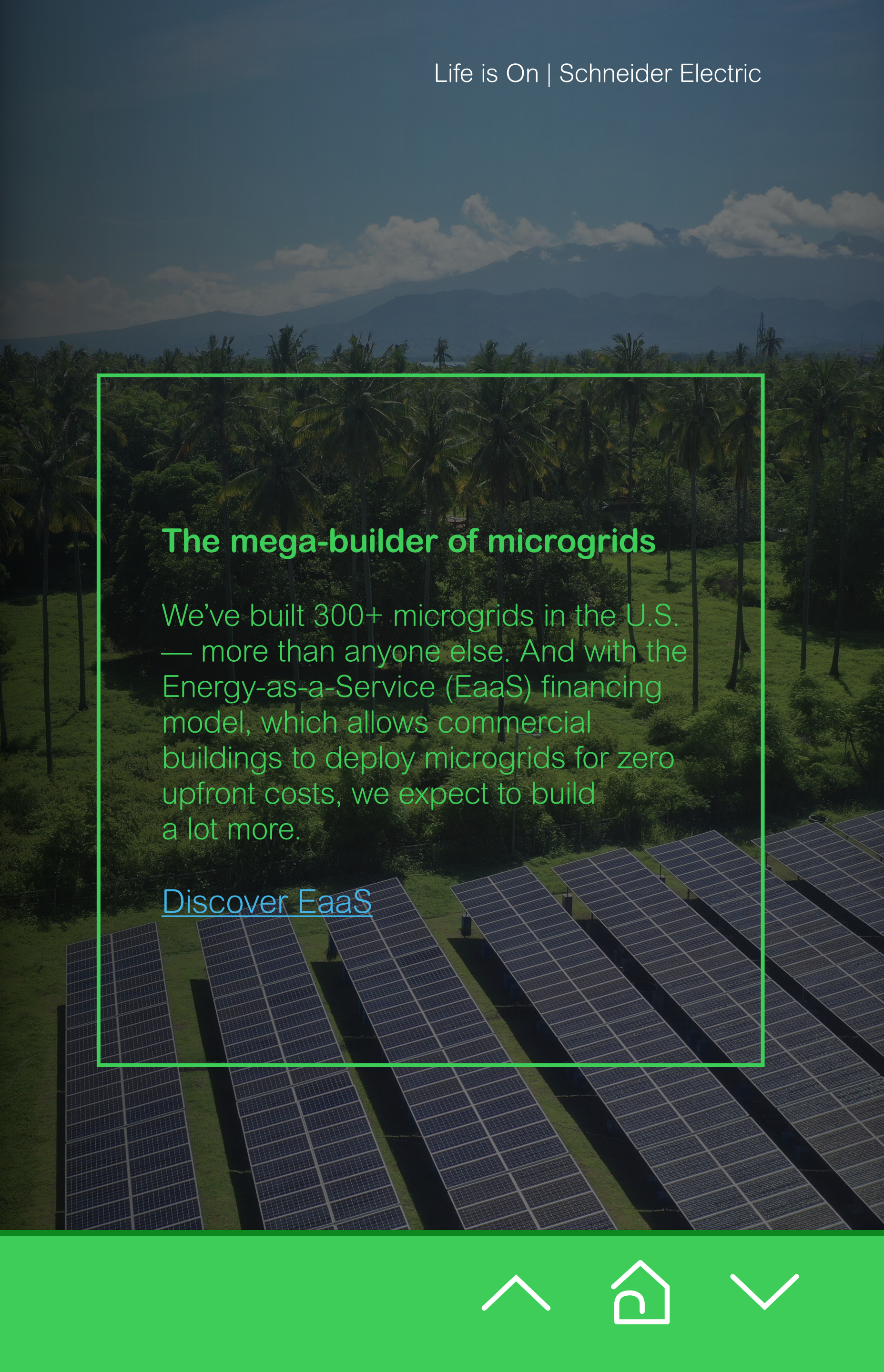
The pandemic wasn't the only disruption in 2020. In fact, there were 16 U.S. weather and climate events that each cost at least \$1 billion ⁷ — and 53 events globally. ⁸

EcoStruxure solves the resilience equation. Empowered with full visibility into operational conditions, EcoStruxure users report 43% faster recovery times for operational issues. ⁹

Backup power and remote monitoring

One key benefit is the ability to keep buildings powered during grid outages through various options: intelligent switchgear that toggles between grid and on-site backup power; IoT-connected battery systems; and complete microgrids all connect to the EcoStruxure platform.

EcoStruxure-driven resilience goes beyond backup power. Another important benefit is remote monitoring, which enables you to manage and control your building operations from anywhere, at any time, regardless of fluctuating occupancy due to hybrid work practices.



The mega-builder of microgrids

We've built 300+ microgrids in the U.S. — more than anyone else. And with the Energy-as-a-Service (EaaS) financing model, which allows commercial buildings to deploy microgrids for zero upfront costs, we expect to build a lot more.

[Discover EaaS](#)

Resilience, recreated

In 2012, Montgomery County, MD experienced a derecho, a rare inland storm that produced hurricane-force winds. Afterward, the county government resolved to invest in resilient power distribution for its critical buildings.

Using our Energy-as-a-Service financing model, the county installed two advanced microgrids and modernized their aging switchgear — **without capital costs.**

[Watch how](#)

Why hyper-efficiency?

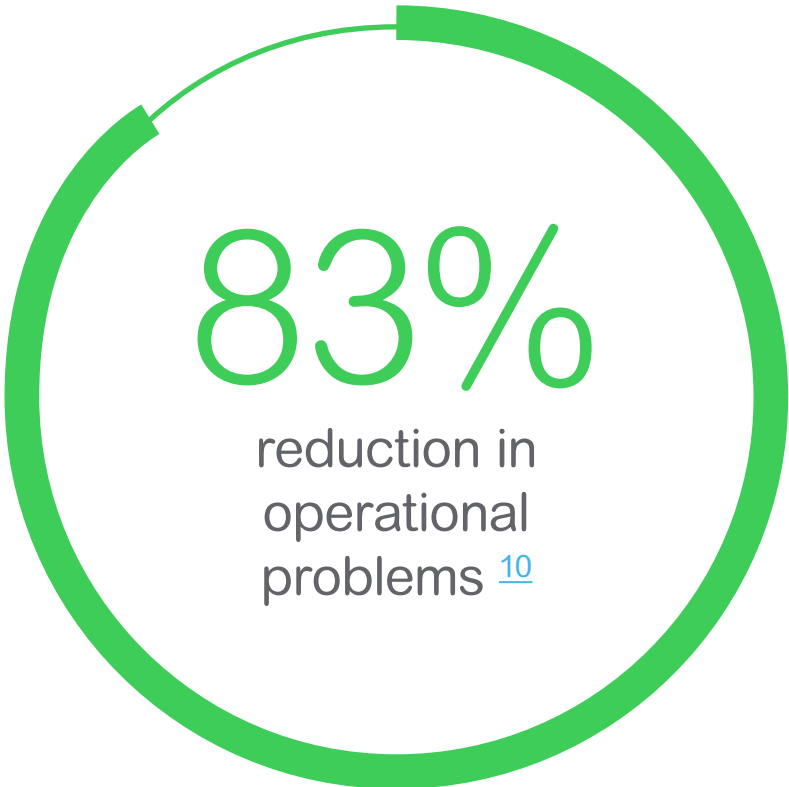
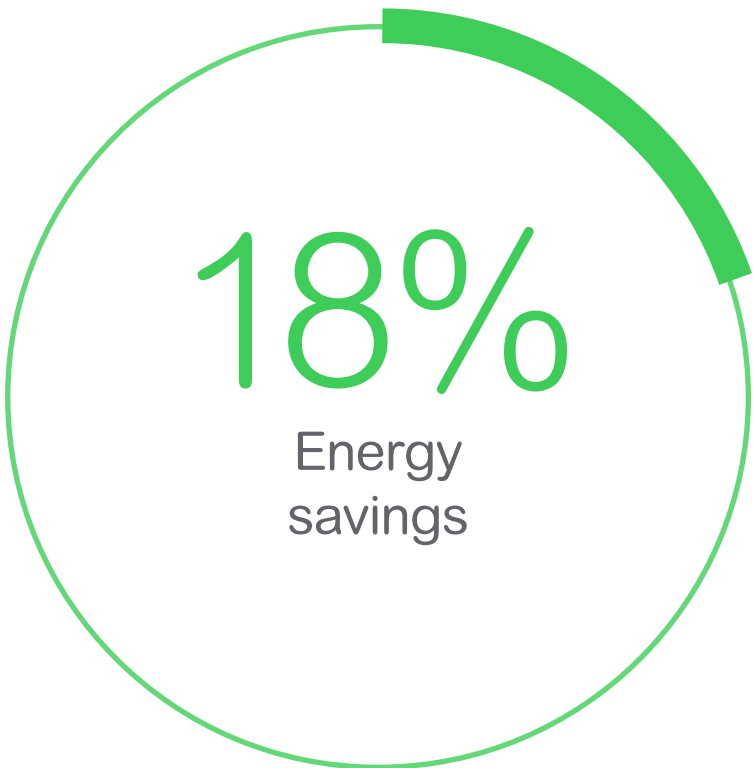
Because regular efficiency won't cut it anymore.

In a world where costs are measured by the square foot and productivity is paramount, it's time to get smarter — and more digital — about how you're using space, energy, labor, and other resources.

EcoStruxure drives hyper-efficiency by uniting all building subsystems under a single management platform. It uses IoT-connected devices that feed data to both human and machine intelligence. This added intelligence predicts when filters need replacing, pinpoints leaky valves, detects imminent fan failures, identifies underutilized space, and more. These incremental tweaks all add up to hyper-efficiency.

IDC survey finds that EcoStruxure for Commercial Real Estate fuels:

[Learn more](#)



Why people-centricity?

Because high performers seek high-performance buildings.

Because of the pandemic, commercial building HVAC and workspace management have become front-page news. In a recent survey, 80 percent of companies expect healthy buildings initiatives will shape their real estate strategies over the next three years. [11](#)

Fortunately, healthy buildings principles have been around for a while — and EcoStruxure is designed to optimize them. EcoStruxure users report 11% fewer occupant complaints. [12](#) At one of our own sites in Seneca, SC, we reduced occupant comfort issues by 33% with EcoStruxure. [13](#)

Occupant comfort through better building management is just the start. Offices are transforming from sites of solitary work to vibrant spaces focused on collaboration and congregation. The pandemic has accelerated this trend. Our EcoStruxure workplace solutions, such as the Engage Enterprise app, are built to manage hot-desking, optimize flexibility in floor layouts, and give occupants control over environmental conditions.

Productivity gains from people-centric buildings

5% from enhanced ventilation and temperature controls

6% from improved acoustics

5.5% from better lighting and views

6% from elevated ergonomics and privacy [14](#)



Cybersecurity, interoperability, and future-readiness



Buildings of the Future: Cybersecure and interoperable

A typical commercial building has thousands of IoT-connected devices, built by various third-party vendors. Keeping all these devices talking to each other in the same language — and blocking out intruders from the conversation — is a necessary feature for commercial buildings — today and in the future.

At Schneider, our commitments to cybersecurity and interoperability inform our approach. That's why we're a founding member of the ISA Global Cybersecurity Alliance, and a proud member of both the Cybersecurity Coalition and the Cybersecurity Tech Accord.



Stringent cybersecurity standards
such as ISA / IEC 62443-4-1 that factor in cybersafety throughout product lifecycles



Open protocols for interoperability
between third-party devices and EcoStruxure



Easier regulatory compliance
with data management and reporting for various industry certifications

Buildings of the Future depend on decisions today.

Although EcoStruxure for Commercial Real Estate was designed in a pre-pandemic world, it's no coincidence that many of its features — workspace management, air quality sensing, intelligent load management for low occupancy — are perfectly suited for the specific challenges during and after the pandemic.

That's the mark of a future-ready building system. With unprecedented digital connectivity across all your building's subsystems, you can continually optimize and adapt to the next "new" disruption, such as new ways of working, new regulations, and the new energy landscape.

EcoStruxure-empowered buildings are prepared for disruptions in a world that's becoming more:

Urban
2.5B
more people in cities by 2050, the equivalent of adding ~9 New York Cities every year ¹⁶

Connected
3x
projected growth of IoT devices in buildings between 2018 – 2023 ¹⁷

Electric
2x
greater demand for electricity than for overall energy ¹⁸



EcoStruxure, explained

The EcoStruxure platform is built on three layers. In the foundational layer, connected devices such as IoT-enabled sensors and switches capture data about your building's conditions.

The data from this multitude of devices is then sent to the middle, edge control layer. The software in this layer digitalizes your building's core operations, such as access controls, building controls, and power monitoring.

The third layer, consisting of apps, analytics, and services, is where data is converted into actionable insights. Human and machine intelligence combine to find ways to optimize your building on a continual basis.

Together, the three layers of EcoStruxure for Commercial Real Estate infuse your building with digital connectivity. When everything is connected, everything can be optimized for sustainability, resilience, hyper-efficiency, and people-centricity.

EcoStruxure™ for Real Estate



Sources

- (1) [McKinsey & Co.](#), 2016
- (2) [World Green Building Council](#), 2019
- (3) [Centre for Research on the Epidemiology of Disasters](#), 2019
- (4) [U.S. Environmental Protection Agency](#)
- (5) [Lawrence Berkeley National Laboratory](#)
- (6) (Median figures) [U.S. Green Building Council](#), 2018
- (7) [National Oceanic and Atmospheric Association](#), 2020
- (8) [Aon](#), 2020
- (9) [IDC](#), 2020
- (10) [IDC](#), 2020
- (11) [NREI and Schneider Electric](#), 2020
- (12) [IDC](#), 2020
- (13) [Schneider Electric](#), 2020
- (14) All stats from [JLL](#), 2016
- (15) [Corporate Knights](#), 2021
- (16) [United Nations](#), 2018
- (17) [McKinsey & Co.](#), 2019
- (18) [IEA](#), 2018





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