

OUR EXPERT PERSPECTIVES

A DIGITAL DRIVEN APPROACH IS THE FASTEST PATHWAY TO ACHIEVING NET ZERO BUILDINGS



SMART BUILDINGS GROUP

“ In the shifting world of commercial real estate, we're at a critical point in time. Many of Europe's buildings are not meeting the EU's required performance standards, which means there's a real chance they could become 'stranded assets.'

In plain terms, these buildings could lose more than 60% of their value. ”

BRIAN COOGAN, DIRECTOR, ETHOS DIGITAL

REPORT HIGHLIGHTS

In today's rapidly changing landscape, owning and operating real estate presents more challenges than ever before. The industry is evolving at an unprecedented pace, compelling the industry to navigate a series of unparalleled obstacles and transformations that require our highest attention and adaptability. This evolution is driven by five key trends:

1. Capital Markets
2. Rising expenses
3. Climate change
4. Assets obsolesce
5. **Digital Transformation (AI, Automation)**

This document sheds light on the pressing need for corrective actions from a **digital transformation perspective**. It combines 15 companies' global experience and provides a clear path for change, addressing the major shift happening in the workplace. It showcases technology within buildings as the fulcrum for enhancing sustainability, wellness and efficiencies while safeguarding the asset value. This helps to avoid obsolescence through non-compliance with the latest EU carbon reduction regulations and helps to amend failures to meet tenant demands for highly connected, data sharing environments. Integrating digital solutions offers a more rapid and cost-effective approach to safeguarding real estate value, which is virtually impossible using the current resource heavy processes alone.

Given that contemporary building systems comprises of hundreds of devices and thousands of data points, along with a digital overlay that includes cloud based IoT, Proptech, CREtech, and FMtech solutions, establishing a highly connected, interoperable environment that facilitates data sharing and automation is essential to help tackle the inefficient operations of buildings today.

THE MESSAGE IS STRONG FROM KEY BODIES

WORLD ECONOMIC FORUM



A digitally mature approach is the fastest pathway to achieving net zero buildings.

[11] World Economic Forum

MOODY'S ANALYTICS



Buildings that have incorporated new technologies and systems perform better in vacancy and rent

[1] -Moody's Analytics CRE

EUROPEAN UNION



EU introduces mandatory requirements for installation and retrofit of building systems by 2025.

[3] -European Union

FORBES



The post-pandemic working environment has accelerated the need for improved building performance.

[4] -Forbes

WIREScore



Real estate decision makers agree that digital infrastructure and smart technologies are one of their top priorities.

[12] -Wiredscore

OBSOLESCENCE DUE TO CARBONISATION

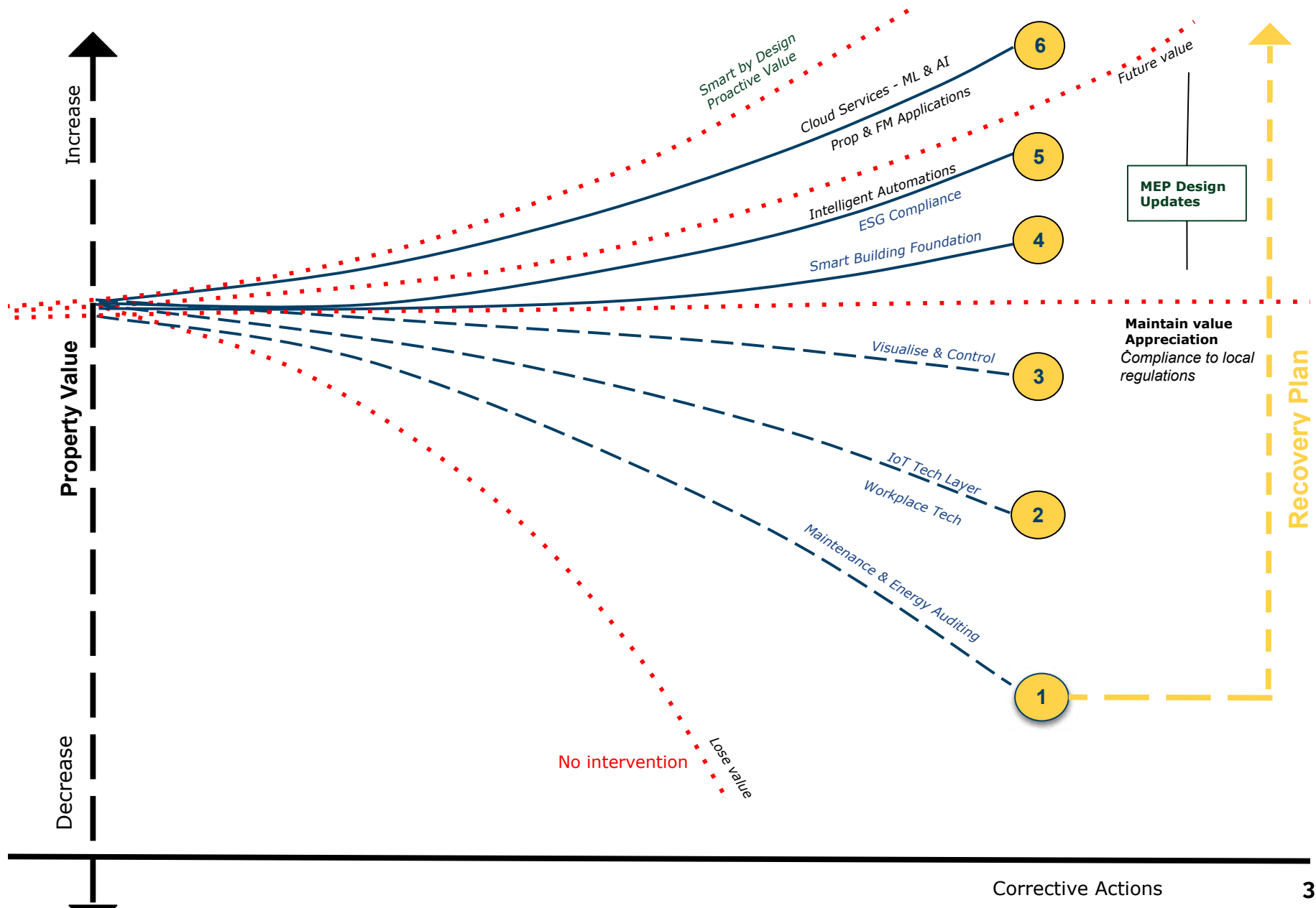
Many buildings are unprepared to face the changes needed to comply with the increasingly strict carbon reduction regulations in the EU, thus entering premature obsolescence, or 'obsolescence due to carbonisation'. This turns them into "stranded assets" or "obsolete assets".

An asset becoming stranded would result in:

- ▶ The building being too costly to run during its use phase
- ▶ High operational costs would negatively affect the decision of tenants.
- ▶ The adaptation of the building being so costly that it's not possible to market it

The rate of building renovation needs to ramp up dramatically to meet net zero targets. Without increasing the digital maturity, equipment-based upgrades will deliver fewer decarbonisation benefits for the same cost. Digital automation and control can provide insights to better guide investments to realise the greatest impact. [14]

DIGITAL INTERVENTIONS - ASSET VALUE RECOVERY PLAN



DIGITAL INTERVENTIONS PERFORMANCE OUTCOMES

	OUTCOME	ACTION	PROBLEM REMOVED
6	Augments predictive maintenance, energy optimisation, and occupant experience.	Integrate advanced cloud-based applications using AI/ML	Removes the challenges in optimising building operations and maintenance due to lack of AI-driven insights & automation.
5	Automates engineering best practice (domain knowledge) across the building.	Implement intelligent automations for repeatable tasks. Monitor and optimise processes	Further eliminates environmental and social concerns, ensuring compliance with standards.
4	Seamless integration providing access to and added data sharing capabilities.	Establish enhanced IT, OT, MEP infrastructures with a digital overlay, ontology, and data analytics,	Resolves compatibility issues, streamlining communication between diverse systems and the FM management processes.
3	Improved system insights enabling data-driven decisions.	Deploy visualisation platforms, centralise control, on-board/train staff.	Removes decision-making barriers by providing additional insights and centralised control.
2	Better connectivity, communication, efficiency, and experience.	Integrate sensors and tech for workplace optimisation.	Removes inefficiencies in building operations due to the lack of real-time performance and usage data. Increases user comfort and efficiency.
1	Extends asset life, lowers repairs frequency	Annual audit and maintenance review for HVAC efficiency and operational insights	Eliminates inefficiencies by pinpointing consumption areas of concern,



WHAT IS DIGITAL MATURITY

Digital Maturity is a measure of a building or portfolio's readiness to apply digital solutions. This supports a smart building or portfolio to leverage automation and data for improved operational performance and occupier wellbeing.

Automation

The technique of enabling a device, process, or system to function automatically.

Operational Performance

Refers to a company's capability to conduct its daily operations with optimal efficiency and effectiveness, aligning with its sustainability and Net-Zero goals and objectives.

Occupier Wellbeing

Includes thermal comfort, air quality, visual comfort and satisfaction with the overall connectivity and space flexibility from a user's perspective.

ESG COMPLIANCE THROUGH DIGITAL

EU Compliance

While retrofitting your buildings comes with its obvious monetary benefits, it is no longer a luxury or 'optional'. Recent revisions to the Energy Performance of Buildings Directive (EPBD) now means that all non-residential buildings must be retrofitted to a minimum of an F standard by 2030.

Additionally, the number of EU businesses of that are required to comply with new Corporate Sustainability Reporting Directive (CSRD) will increase more than 400% in the next few years from its predecessor (NFRD), with non-compliance resulting in heavy fines.

Compliance Through Digital

Digital interventions impact the sustainability and ESG compliance of buildings. A single pane of glass analytical platform can quickly resolve 80% of issues remotely. A digitised HVAC and electrical infrastructure – including a network of IoT-enabled connected meters and sensors – provides maintenance teams early risk warnings to equipment reliability or occupant well-being.

Transparency Through Digital

GRESB serves as an international ESG benchmark for real estate portfolios, evaluating key performance indicators. Employing a digital-driven strategy ensures compliance and amplifies transparency in sustainability, thereby facilitating thorough performance assessment. Likewise, adhering to PRI standards for responsible investment necessitates efficient data management. Utilising digital solutions enhances adherence to PRI guidelines, fosters transparency, and integrates ESG factors seamlessly, strengthening risk management and aligning investments with responsible principles.

MONETARY BENEFITS OF DIGITAL ESG COMPLIANCE

For every \$1 invested in digital buildings, businesses get \$3 in return over 5 years. [11]



ENVIRONMENTAL

- Reduced HVAC energy
- Reduced lighting energy
- Improved waste management



EFFICIENCY

- Reduced facilities & operations spend
- Reduced unoccupied space
- Reduced maintenance spend



EXPERIENCE

- Reduced productivity leakage
- Reduced employee sick days
- Improved employee retention [11]



TAKEAWAYS

BUILDING OBSOLESCENCE

Building upgrades and retrofit projects need to be scaled up significantly to keep the majority of existing buildings from slipping into obsolescence. How is this happening?

- o The building being too costly to run during its use phase
- o High operational costs would negatively affect the decision of tenants.
- o The adaptation of the building being so costly that it's not possible to market it

DIMINISHED ASSET VALUE DUE TO POOR PERFORMANCE

In recent years we have passed a turning point in building performance. 80% of the buildings in existence today will still be in use in 2050. [5] Already suffering from poor performance, this building stock will further depreciate if these performance issues are not addressed. Digital capabilities are the critical missing component to avoid buildings becoming stranded.

THE NEED FOR DIGITAL MATURITY

Digital maturity is vital for buildings' efficiency and relevance. Data-driven insights optimise digitally mature buildings, enabling real-time improvements through automation. Manual monitoring of countless data points is impractical, making digital solutions faster and more affordable for augmenting current processes.

INVESTING IN TECHNOLOGY FOR ASSET PROTECTION

The long-term drop in building value can be minimised or corrected through technological investments. There is a misconception that technology equals expensive, there are many low capital investments that can lead to high returns with a quick ROI.[6]

DIGITAL INTERVENTIONS FOR REGULATORY COMPLIANCE

Tightening government regulations and standards have only furthered the drive and need for digital interventions. Data transparency helps businesses comply with waste, energy and wellness reporting.

EVOLVING WORK PATTERNS AND MARKET DYNAMICS

The post-pandemic era has ushered in hybrid and remote work models, fundamentally altering traditional work patterns and influencing market dynamics. This shift has prompted businesses to rethink their operational strategies and workspace designs to accommodate the changing needs of their workforce.

THE ROI DOES EXIST FOR SMART BUILDINGS

BROUGHT TO YOU BY OUR TEAM OF SMART BUILDING EXPERTS



FRANCE



SWEDEN



UK



FINLAND



LUXEMBOURG



BELGIUM



SPAIN



IRELAND



ITALY



PORTUGAL



LITHUANIA



DENMARK



SWITZERLAND



THE NETHERLANDS



GERMANY



CONTACT THE FIRST Q SMART BUILDINGS TEAM

We're thrilled to present our latest Expert Series from the Smart Buildings Group, designed to inform and inspire. If you're eager to delve deeper into this paper or explore how we can empower your business to safeguard your building from becoming a stranded asset, we're here to engage in meaningful conversation. Let's connect and chart a course toward building resilience and maximising potential together.

Get in touch at info@firstqnet.com
[firstqnet.com](https://www.firstqnet.com)

REFERENCES

- [1] Digital Connectivity and the Evolving Office Sector (2022), Moody's Analytics CRE
- [2] Taker, S. (2022) How IoT Energy Management can Improve Building Performance, Leading adaptive buildings company. Buildings IOT
- [3] Directive (EU) 2018 of the European Parliament amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency
- [4] Hu, A. (2021) Council Post: Bringing Workers Back To Something New: What The Post-Pandemic Workplace Will Look Like, Forbes.
- [5] Net Zero Carbon Guide (2021) Retrofit or New Build? - Summary, Net Zero Carbon Guide
- [6] Weichie (2021) eu.bac guidelines for the transposition of the revised EPBD, EUBAC.
- [7] Trinquet, J. Clarke S. (2020) Verdantix Market Overview: Systems Integrators For Smart Buildings
- [8] Hedayat, K. (2023) 4 ways smart building technology helps optimize operational efficiency, Schneider Electric
- [9] Farhadi, F. (2023) 7 Important Building Technology Ideas for 2023, Neuroject.
- [10] Furtune Business Insights (2023) Smart Building Market Size, Share, Growth & Trends [2030].
- [11] O'Neill, S. (2023) Top 4 trends influencing the ROI of smart buildings: JLLT
- [12] WiredScore (2023) The office in 2028 – a smarter way to work: A WiredScore report
- [13] Connaughton, M. (2023) Remote and hybrid working here to stay, CIPD
- [14] Echeverría,y. (2022) The premature obsolescence of buildings due to carbonization, JG Ingenieros

FIRST Q NETWORK | SMART BUILDINGS GROUP
TWO THOUSAND AND TWENTY FOUR | WHITE PAPER SERIES