

# From pilots to platform: Embedding digital buildings into the DNA of real estate operations

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## Thano Lambrinos

Senior Vice President of Digital Buildings, Experiences and Innovation, QuadReal Property Group, Canada



Thano Lambrinos

**Thano Lambrinos** is the Senior Vice President of Digital Buildings, Experiences and Innovation at QuadReal Property Group, a global real estate investment, development and property management company headquartered in Vancouver, managing a CAD\$98.5bn portfolio worldwide. He leads QuadReal's built-world digital transformation strategy and oversees the mechanical, electrical and IT practice across its global portfolio, deploying technologies that drive construction and operational efficiencies and deliver a differentiated experience for tenants and residents. With over 20 years of experience in the construction and building technologies sectors, Lambrinos has worked internationally across North America, Europe and the Middle East, applying digital transformation to enhance the design, construction and management of complex assets. In addition to his leadership at QuadReal, he serves on the Board of Directors for KODE Labs, is the Vice-Chair of the Canadian Standards Association Group for Intelligent Buildings, sits on the Executive Committee of the Real Estate Cyber Consortium, and participates in multiple industry organisations dedicated to advancing education and adoption of digital building technologies.

### ABSTRACT

*The commercial real estate sector has traditionally exhibited resistance to technological innovation,*

*a stance shaped by entrenched profitability, fragmented ownership and the capital-intensive nature of assets. Yet evolving tenant expectations, environmental, social and governance mandates, cybersecurity imperatives and cost optimisation pressures have rendered digital transformation essential. This paper presents a case study of QuadReal Property Group's transition from isolated pilot initiatives to a comprehensive, portfolio-wide digital platform. Through structured governance, disciplined change management and standardised practices, QuadReal developed the digital buildings framework: a holistic strategy integrating infrastructure, connectivity, data management, customer platforms and support functions. The analysis includes case studies of the passive optical network, the Integrated Building Management Platform and the QuadReal+ suite of tenant and resident applications. The findings demonstrate that embedding technology into organisational culture, supported by internal expertise, iterative learning and the ability to discontinue tools that do not meet operational requirements, is crucial for sustained asset performance and long-term value creation. Lessons on governance, technological resilience and strategic change management are discussed, offering guidance for real estate organisations seeking to overcome 'pilot purgatory' and achieve scalable digital transformation. This article is also included in **The Business & Management Collection** which can be accessed at <https://hstalks.com/business/>.*

QuadReal Property Group,  
199 Bay Street,  
Toronto, ON, M5L 1G5  
Canada

Tel: +1 416 673 7444;  
E-mail: [thano.lambrinos@quadreal.com](mailto:thano.lambrinos@quadreal.com)

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## **INTRODUCTION: THE REAL ESTATE ‘TECH TRAP’**

The commercial real estate industry is undergoing rapid technological disruption, driven by the maturation of software platforms, Internet of Things (IoT) devices and advanced analytics. Despite these advancements, widespread adoption remains limited, often hindered by the sector’s historical profitability and structural inertia.

In 2023, Deloitte reported that 48 per cent of US real estate companies planned to decrease or stop new technology investments, citing integration challenges, uncertain return on investment (ROI) and disruption to business models that were already producing reliable profits.<sup>1</sup> By 2025, however, Deloitte observed a renewed willingness to invest in artificial intelligence and sustainability solutions as organisations cautiously reopened their technology priorities.<sup>2</sup> Taken together, these findings suggest a reactive posture towards technology investment: contraction during uncertainty followed by renewed enthusiasm in response to emerging trends, rather than sustained progress guided by a consistent, long-term strategy.

Structural challenges further impede progress. Real estate assets are characterised by long life cycles and fragmented ownership, complicating standardisation and alignment of digital priorities. Decentralised decision making and integration risks associated with disparate vendor systems contribute to operational inefficiencies. Moreover, the potential of artificial intelligence in real estate is contingent upon robust foundational

infrastructure and integrated data systems. Without comprehensive digital integration, organisations are unable to fully leverage predictive analytics, automation or enhanced tenant experiences.

QuadReal Property Group recognised these challenges early and adopted a strategic approach to digital transformation. By aligning pilot projects with organisational objectives, investing in internal capabilities and prioritising scalable solutions, QuadReal embedded technology into its operational fabric. Early pilots played a key role in this process, not only by validating successful approaches but also by revealing where technologies or vendors were not yet ready for scale. These insights helped refine standards and strengthen the organisation’s long-term digital strategy.

This paper examines QuadReal’s methodology, detailing the foundational alignment process, the development of the digital buildings framework and the implementation of scalable digital initiatives. The analysis concludes with insights on governance, data strategy and the cultural integration of technology as a driver of organisational resilience and value creation.

## **LAYING THE GROUNDWORK FOR SCALE**

### **Strategic alignment and organisational readiness**

Effective technology adoption in commercial real estate necessitates alignment between digital initiatives and overarching business objectives. QuadReal Property Group initiated its transformation by engaging senior leadership and asset management teams to define desired outcomes beyond cost savings, including long-term competitiveness and tenant retention. This strategic framework was established prior to vendor selection or pilot deployment, ensuring that technology investments were directly linked to value

creation in operations, asset performance and customer experience.

The process began with senior leadership and asset management teams working together to identify the outcomes that technology needed to deliver. These conversations went beyond the typical metrics of cost savings and efficiency. They considered long-term competitiveness, tenant retention and how digital capabilities could build resilience into the portfolio against evolving market demands. Importantly, these priorities were defined before any vendor discussions or pilot deployments took place.

QuadReal also invested in building a broad, cross-functional coalition of support. Property teams, operations staff, leasing, asset and investment management, development, sustainability, capital management and IT were all engaged early in the planning stages. This cross-functional working group was essential for two reasons. First, it created a feedback loop to ensure proposed solutions addressed real operational needs rather than theoretical possibilities. Second, it fostered trust and ownership among those who would ultimately use and maintain the systems.

The commitment to this preparatory phase prevented the common problem of ‘technology chasing’, where tools are adopted simply because they are new or marketable, rather than because they solve a defined problem. By embedding due diligence and stakeholder engagement into the earliest stages of planning, QuadReal ensured that every digital initiative began with both a business case and an adoption strategy.

This groundwork also extended to operational readiness. QuadReal conducted capability assessments of its properties to determine their baseline infrastructure, data maturity and team capacity to adopt new tools. In doing so, the organisation avoided the pitfall of introducing sophisticated solutions into environments that were not prepared to support them. Instead, it

staged deployments to align with readiness, ensuring smooth integration and maximising the potential for scale.

## **THE DIGITAL BUILDING FRAMEWORK: INTERNAL EXPERTISE AS A COMPETITIVE ADVANTAGE**

### **Governance, technical consistency and internal capacity**

Scaling digital capabilities across a diverse portfolio requires robust governance and technical consistency. QuadReal’s Digital Buildings framework comprises six functional areas: mechanical, electrical and IT (MEIT), digital buildings and systems, connectivity and cyber security, data and analytics, digital customer platforms, and call centre and customer support.

Historically, reliance on external vendors led to inconsistent standards and fragmented data. QuadReal’s model internalises key expertise, treating digital infrastructure as a strategic asset and ensuring decisions are informed by both technical and operational realities.

The digital buildings team was created to bring core building and digital systems expertise inside the organisation, effectively treating digital infrastructure as a permanent, strategic asset. By directly employing engineers, systems integrators, IT, cyber security and data specialists, QuadReal ensures that every technology decision is informed by a deep understanding of both the technical requirements and the operational realities of the portfolio.

### **Functions and scope**

The digital buildings team operates at the intersection of technology and operations across the full life cycle of assets, from design and construction through operations and retrofit. Its mandate covers:

- *Design and standards:* Developing and enforcing portfolio-wide specifications for mechanical and electrical (M&E), building and technology systems, ensuring interoperability and data quality.
- *Vendor and platform evaluation:* Assessing proposed solutions against long-term integration and performance criteria.
- *Procurement:* Ensuring that tendering, procurement and contracting are conducted in line with standards established by the digital buildings team to satisfy infrastructure, digital and cybersecurity requirements
- *Implementation oversight:* Embedded in construction and retrofit programmes to ensure successful deployment in alignment with schedules and budgets.
- *Data governance:* Establishing protocols for data ownership, access and security, ensuring that the organisation, not a third party vendor, retains control over key building information.
- *Commissioning:* Verifying that installed systems function as intended and meet the original design intent and specifications, providing assurance before handover that performance aligns with standards.
- *Continuous advancement:* Leveraging operational feedback to refine standards and guide future upgrades.

### **Impact on scalability**

This in-house model has enabled QuadReal to transition from isolated pilot projects to scalable platforms. Because digital building-defined standards are embedded into project specifications from the outset, each new deployment strengthens the portfolio's overall digital foundation rather than creating another silo. This has been especially valuable when onboarding new properties, where oversight ensures rapid alignment with portfolio-wide practices.

Beyond operational benefits, the digital buildings framework has proven to be a differentiator in the market. Prospective tenants

increasingly value features such as integrated access control, environmental performance dashboards and energy optimisation tools. Having dedicated internal capabilities across all six functions ensures that QuadReal can deliver these features consistently across multiple assets, supporting leasing and retention objectives.

This model demonstrates that, in an industry often hesitant to invest in internal technical capacity, building a comprehensive digital framework can act as a catalyst for long-term transformation. It creates institutional memory, reduces integration risk and ensures that innovation aligns with the organisation's operational DNA.

## **TECHNOLOGY AS ORGANISATIONAL CHANGE**

### **Change management and stakeholder engagement**

Digital transformation is fundamentally a human challenge. QuadReal positioned technology as a business enabler, tailoring messaging to stakeholder priorities, simplifying workflows for property managers and enhancing asset performance and environmental, social and governance (ESG) reporting for executives.

### **Framing technology as a business enabler**

A central principle of QuadReal's strategy is to position technology as an enabler of business outcomes rather than an isolated operational upgrade. For property managers, this meant demonstrating how smart building platforms could simplify daily workflows, reduce reactive maintenance calls and enhance tenant satisfaction. For executives, the emphasis was on how digital infrastructure improves asset performance, reduces operating costs and strengthens the company's ESG reporting capabilities.

By aligning messaging with the priorities of each stakeholder group from the outset, QuadReal avoided the common pitfall of treating technology as a one-size-fits-all proposition. Instead, adoption was driven by a clear understanding of how the tools would create tangible benefits for each audience.

### **Structured change management**

QuadReal applied structured change management practices to its deployments. This included early involvement of property teams in solution selection, pilot testing within representative assets and clear documentation of standards and workflows. Feedback loops were established to capture operational lessons before full-scale rollouts, ensuring refinements could be made without disrupting the broader portfolio.

Training was another crucial factor. Rather than one-off sessions at the point of launch, training was embedded into ongoing operational routines. This continuous approach helped staff keep pace with platform updates and reinforced best practices over time.

### **Overcoming resistance**

As in much of the industry, some cultural resistance presented a significant hurdle. Some teams, accustomed to established processes, viewed digital tools as adding complexity rather than reducing it. QuadReal addressed this through a combination of transparency, practical demonstration and internal advocacy.

By identifying early adopters within property teams and empowering them as ‘technology champions’, the organisation created peer-to-peer influence channels that proved more persuasive than top-down directives.

### **Integration with digital buildings oversight**

The digital buildings programme’s involvement throughout the change process provided a technical anchor for adoption

efforts. Because specialists worked directly with on-site teams during installations and upgrades, they were able to bridge the gap between engineering requirements and day-to-day operational realities. This hands-on engagement helped demystify complex systems, reduce uncertainty and build trust in the technology.

QuadReal’s experience reinforces that successful digital transformation in corporate real estate is rarely a purely technical achievement. It requires a deliberate, structured approach to managing change; an approach that combines clear business alignment, inclusive stakeholder engagement and the integration of technical expertise into the everyday fabric of operations.

### **FROM PILOT TO PORTFOLIO: SCALING WITH INTENTION**

Pilot projects are a necessary step in testing new technologies, but in the commercial real estate sector, they often become the end point rather than the beginning of a scaling journey. Without a clear strategy for integration, pilots risk producing isolated successes that cannot be repeated across a portfolio. QuadReal’s approach was to treat each pilot not as an experiment in isolation, but as a building block in a broader digital architecture.

QuadReal’s first major testing ground was 745 Thurlow, a 400,000ft<sup>2</sup> office building in Vancouver. It was the first site where the company deployed its passive optical network (PON) and validated its Integrated Building Management Platform (IBMP) approach. By proving out the programme and technologies at 745 Thurlow, QuadReal created a foundation that would guide deployments across future assets.

### **PON: Building a secure connectivity layer**

As is still the case in much of the industry, prior to QuadReal’s PON deployments,

many building networks were unmanaged and undocumented. In some cases, contractors could not identify which communication devices and infrastructure were active, abandoned or connected to external systems — conditions that increased the complexity of network management and heightened exposure to cybersecurity concerns. QuadReal's objective was to address these challenges through a converged operational technology (OT) network backbone, capable of supporting asset management and cybersecurity programmes across the portfolio.

The solution was to launch PON at 745 Thurlow, replacing traditional and disparate active networking equipment. Compared with active equipment, PON offers lower deployment and management costs, a significantly longer equipment life cycle, and lower power usage. This resulted in reduced energy consumption, increased bandwidth and simplified network management. Most importantly, it created the digital foundation upon which the system application and data layers could sit. With PON in place, QuadReal gained visibility into network activity, improved security and unlocked the ability to layer technologies that enable remote building management.

Key lessons emerged from the deployment. In existing buildings, teams reviewed and categorised each system to determine requirements for integration. Some older systems were incompatible and required full replacement. Others could be upgraded and connected to the new platform, while a smaller cohort of more recently installed systems was already compatible.

System discovery proved essential in retrofit projects: before cutover, teams conducted digital and physical audits, exploring all areas of the building to understand the true state of the infrastructure. For new development projects, clearly communicating the converged PON approach to consultants, contractors and subtrades was

crucial to avoid the creation of divergent OT networks. These learnings shaped subsequent deployments as PON was rolled out across the existing building portfolio and implemented as the standard in all new developments.

### **IBMP: Operational intelligence at scale**

Building on the PON foundation, 745 Thurlow also became the proving ground for QuadReal's IBMP, developed by a third party vendor. At its core, the platform consolidates disparate systems, including mechanical controls, lighting, security, energy metering and a range of IoT sensors, into a single layer of intelligence. Together with a consultant, QuadReal co-developed 82 use cases addressing energy optimisation, predictive maintenance, operational efficiency and enhanced tenant comfort. While many of these are enabled through the IBMP, they were tailored to the portfolio to ensure scalability across asset classes and geographies.

Results from the IBMP rollout have been meaningful. Optimisation algorithms reduced equipment runtime by 20 per cent, enabling CAD\$700,000 in verified annual energy savings, with identified savings of up to CAD\$3.4m annually as the platform scales. Functional testing tools and diagnostics streamlined maintenance workflows, while integration with QuadReal's tenant apps enhanced the customer experience.

Importantly, centralised data collection positioned the company to comply with emerging regulatory requirements with confidence. This same visibility also enables more structured engagement with vendors: by having direct access to system data, QuadReal can negotiate on equal footing, ensure solutions align with long-term objectives and hold suppliers accountable for delivery. This shifts conversations from reactive problem solving to proactive collaboration.

The successful pilot at 745 Thurlow enabled QuadReal to roll out IBMP and

PON across the broader portfolio with confidence. Today, the IBMP spans 61 properties totalling 21.8m ft<sup>2</sup> of commercial and residential space across North America and Europe. Property managers and operations teams can now access real-time dashboards, benchmark asset performance and align decisions with ESG commitments.

By intentionally transitioning from pilot to platform, QuadReal has established a robust digital foundation that enhances performance while mitigating integration risks that have historically hindered technology adoption in real estate.

### **QuadReal+ and QuadReal+ Home: Digital engagement at scale**

While back-of-house platforms advanced operational intelligence, QuadReal's digital suite was designed to transform the front-of-house experience. The effort began with QuadReal+, a custom-built office tenant app developed in only four months. The timing was crucial: with no unified way to communicate with tenants across buildings, the app provided a central channel for notifications, virtual engagement and ongoing connection. By developing in-house with support from a third party vendor, QuadReal retained flexibility and achieved notable cost savings compared with purchasing an off-the-shelf solution.

As technology and tenant needs continued to evolve, QuadReal+ expanded in scope. Features such as health screenings, hot-desk bookings and digital amenity reservations streamlined daily operations. The app also became a platform for sharing unique tenant-level reports, supporting the rise of ESG disclosure requirements. What began as a pandemic response quickly evolved into a permanent engagement tool.

The experience informed the next step: QuadReal+ Home, a fully integrated residential app. Having proved the concept internally, QuadReal was able to move away from a third party residential solution and

build its own platform tailored to its portfolio. The new platform reduced per-unit costs by over 30 per cent per suite compared with the previous app, allowing reinvestment into operational improvements. The decision reflected a growing recognition across the industry that ownership of digital infrastructure matters. Many firms remain reliant on external tenant apps, which can limit customisation and data control. By contrast, QuadReal's approach reinforced scalability and long-term resilience.

Today, the QuadReal+ suite functions as a portfolio-wide engagement ecosystem. For residents and office tenants, it consolidates building information, amenity access and community programming.

By treating digital platforms as part of a repeatable system rather than one-off pilots, QuadReal has created a resilient foundation for engagement. The apps have shifted from stopgap tools to core infrastructure, positioning technology as a cultural asset rather than a bolt-on convenience.

While these platforms demonstrated that carefully structured pilots can lead to portfolio-wide adoption, QuadReal also encountered several initiatives that did not progress as expected. These experiences were equally important in shaping the organisation's approach, strengthening standards and clarifying the level of technical and operational maturity required before scaling. The following examples illustrate how controlled failure contributed to the evolution of QuadReal's digital strategy.

### **Learning through failure: Operationalising 'failing fast'**

QuadReal's transition from pilots to portfolio-scale platforms did not follow a linear path. Several initiatives failed to meet expectations on first deployment. Rather than treating these as isolated missteps, the organisation deliberately contained their impact, extracted lessons and used those lessons

to tighten standards and refine its digital strategy.

In practice, ‘failing fast’ meant limiting the blast radius of experimentation, being willing to exit underperforming solutions, and allowing those experiences to inform subsequent decisions about vendors, architecture and use cases.

### **Mobile access control**

An early example involved mobile access control. QuadReal sought to introduce mobile credentials in its office environment to improve user convenience and reduce reliance on physical cards. The initial deployment at two pilot sites relied on a Bluetooth-based solution offered by a young start-up. On paper, the technology met the desired use case.

In practice, the deployment produced inconsistent results: performance varied across device types, read ranges were unpredictable and the system struggled to keep pace with high-volume entry periods. The vendor was still maturing, both technically and organisationally, and was unable to support the level of reliability required in a multitenant commercial environment. The pilot remained in place for six to eight months, longer than was operationally necessary in hindsight, reflecting a genuine effort to see whether further tuning, iteration or vendor support could bring the solution in line with expectations. One of the key learnings from this experience was recognising when continued effort was unlikely to change the outcome and when it was more prudent to redirect attention to solutions with a clearer path to stability.

From an operational perspective, the impact remained manageable by design. The pilot was limited to QuadReal’s own offices, and employees retained physical access cards and were explicitly told that the mobile experience was in testing. When it became clear that the solution could not deliver a consistent experience, QuadReal

discontinued the service. No physical access infrastructure had to be removed, and the broader tenant population was unaffected.

The experience directly informed the eventual adoption of near-field communication (NFC) based mobile access, which benefited from both market maturation and clearer internal standards shaped by the earlier deployment.

### **AI-driven mechanical optimisation**

A second initiative involved early testing of an AI-driven platform intended to adjust mechanical systems to improve energy efficiency autonomously. In controlled environments, the platform produced promising initial results. But when deployed at a full-building scale, the system began cycling equipment too frequently, creating comfort issues and prompting tenant feedback.

The outcome underscored the challenges of implementing algorithmic control in occupied commercial spaces. Reliable mechanical optimisation at scale depends on stable integrations, clear visibility into system logic and a vendor with sufficient maturity to support continuous tuning. When these requirements were not met, QuadReal chose to sunset the technology and discontinue further rollout.

The lessons from this initiative shaped the approach taken in later deployments, including the co-development of use cases for the IBMP. The organisation adopted more rigorous validation processes, increased emphasis on explainability and stronger operational oversight before extending optimisation features across the portfolio.

### **Occupancy sensing**

Occupancy sensing offered another instructive example, although not an outcome that resulted in discontinuation. Following the pandemic, QuadReal deployed sensors across select office and retail assets to better understand traffic patterns, space utilisation and service needs. The technology continues

to provide meaningful directional insight into how people move through buildings: daily tower entries, floor-level activity and retail traffic remain reliable and useful inputs for operational planning.

As the deployments expanded, however, certain higher-accuracy use cases proved more challenging than initial models suggested. Applications that depended on near-complete precision, such as emergency-response modelling or real-time headcounts in multi-entry rooms, highlighted the inherent complexity of capturing occupancy data at scale. Accuracy tended to fluctuate depending on sensor placement, room configuration and building conditions, and the architecture was sensitive to failures at any point in the chain. Connectivity interruptions, application programming interface (API) issues or a single malfunctioning sensor could affect the reliability of more advanced outputs.

These findings did not diminish the value of the system; rather, they clarified the contexts in which the technology performs well and the conditions under which its outputs require additional verification. Expectations were recalibrated and QuadReal continues to use the data for trend analysis, amenity planning and traffic reporting, while exploring ways to strengthen accuracy for more demanding applications. This includes considering 'sensor-fusion' approaches that combine occupancy data with access control, pass card information and video analytics.

The experience underscored that occupancy, while one of the most important data points in a building, is also among the most complex to capture consistently in dynamic, multitenant environments. It reinforced the need for stable infrastructure, multiple data sources and clear definitions of use-case feasibility as the organisation continues to refine its approach.

### **Refining standards through iteration**

Together, these cases illustrate how QuadReal's digital practices evolved through controlled

experimentation. Pilots were deployed in bounded environments, evaluated against defined outcomes and discontinued when they did not meet operational or reliability thresholds. The operational impacts were modest — a return to physical access cards in some offices, a deactivated optimisation tool and a reframing of occupancy insights — but the resulting clarity was significant.

These experiences directly shaped the digital buildings standards, strengthened vendor evaluation processes and clarified the infrastructure and governance requirements that would guide future deployments. In effect, they helped establish the conditions under which a technology is ready to move beyond a site-level pilot.

Taken together, these lessons reinforced that scalable digital transformation depends not only on the success of individual pilots but on the governance structures that determine how data, integrations and operational insights are managed across the portfolio. With these foundations in place, QuadReal was positioned to progress from isolated initiatives to a more integrated, data-driven operating model.

## **DATA, GOVERNANCE AND PORTFOLIO IMPACT**

The implementation of operational platforms and tenant-facing applications delivered clear site-level improvements in efficiency, transparency and user experience. Their broader significance, however, lies in the data they produce and the governance structures that determine how that information can be applied at scale. Moving from isolated pilots to portfolio-wide systems required not only technology adoption but also disciplined standards for ownership, integration and security.

These measures have allowed QuadReal to treat building data as a strategic asset, shifting its operating model from reactive maintenance to proactive, data-driven portfolio management.

## From siloed data to integrated intelligence

Before the introduction of the Digital Buildings framework standards and platforms such as IBMP, building data was fragmented. Each system, heating, ventilation and air conditioning (HVAC), lighting, and access control operated independently, storing data in silos and, in some cases, proprietary formats. This made it difficult to generate portfolio-wide insights or benchmark performance between properties.

Today, data from multiple systems is aggregated into unified dashboards, enabling side-by-side comparison of asset performance. This not only identifies underperforming buildings but also highlights operational best practices that can be replicated across the portfolio.

## Governance as an enabler

The ability to act on integrated data depends on clear governance. QuadReal established protocols for data ownership, ensuring that operational data remains under company control even when external vendors manage supporting systems. Access is structured to provide site teams with the information required for day-to-day operations while protecting sensitive portfolio-wide insights.

Cybersecurity considerations are embedded in this governance model. The proliferation of connected devices has increased the risk of intrusion, requiring rigorous standards. Digital Building protocols mandate secure network architecture, regular testing for vulnerabilities and defined incident response procedures. These safeguards allow the organisation to realise the benefits of digital integration while minimising risk exposure.

## Driving asset performance

Standardised and reliable data has materially influenced capital planning. Real-time consumption metrics are compared against historical baselines and utility cost

projections, creating a stronger basis for investment decisions. Predictive analytics now identify components approaching end-of-life, enabling proactive maintenance that reduces downtime and extends asset value.

Sustainability reporting has also been strengthened. Previously reliant on manual collection, reporting is now supported by verifiable performance data captured directly from connected systems. This enhances both the accuracy and credibility of QuadReal's ESG disclosures, addressing investor and stakeholder expectations with greater confidence.

## Portfolio-level impact

The combination of digital building oversight, integrated platforms and disciplined data governance has shifted QuadReal's operating model from reactive maintenance to proactive optimisation. The portfolio now benefits from:

- reduced operating costs through efficiency gains and early issue detection;
- enhanced tenant satisfaction from improved building performance and transparency;
- stronger ESG management through verifiable performance metrics; and
- greater resilience against cybersecurity threats.

In effect, data has become both an operational tool and a strategic asset, informing decisions that shape the portfolio's long-term value.

## WHAT IS NEXT: BUILDING TECHNOLOGICAL RESILIENCE THROUGH FLEXIBILITY

The pace of technological change presents both opportunity and risk for corporate real estate owners. The challenge is not only in adopting innovation but in doing so without overcommitting to tools or systems that may

quickly become obsolete. For QuadReal, this rests on designing standards, infrastructure and decision-making frameworks that remain adaptable as new technologies emerge.

### **Avoiding technology bloat**

The rapid growth of the proptech market has created an abundance of tools, each offering incremental benefits. Without careful discipline, portfolios can accumulate overlapping systems that complicate operations, inflate costs and dilute value. QuadReal's approach has been to evaluate every adoption through a consistent lens of integration, scalability and measurable outcomes.

Platforms that cannot connect to the existing data ecosystem or align with Digital Building Standards are unlikely to be pursued regardless of the appeal of their individual features. This governance-first approach preserves coherence across the portfolio and avoids the inefficiencies of a fragmented technology stack.

### **Flexible infrastructure**

Building resilience into technology requires designing infrastructure as a series of connected building blocks, where each layer enables the next. At the foundation are core building systems that generate essential operational data, from environmental controls to security and energy metering. That data is carried and secured through the PON and cybersecurity protocols, creating a high-capacity, trusted backbone. On top of this, system-level software such as building automation and energy management platforms interpret data and feed into the IBMP, which unifies insights across assets and translates them into actionable intelligence, optimising performance. Finally, the reporting and analytics layer delivers this intelligence to users through tenant apps, ESG dashboards and operator reporting.

Each layer is validated through commissioning and re-commissioning to ensure that

systems function as designed and remain adaptable over time. The modular structure also allows individual layers to evolve or be upgraded without disrupting the entire system. The result is an infrastructure that not only supports today's operations but also scales with future tenant expectations, regulatory requirements and sustainability goals.

### **Continuous monitoring and review**

QuadReal treats technology deployment as an ongoing process rather than a one-time event. Platforms are regularly reviewed against key performance indicators, user feedback and evolving industry standards. Where tools are underperforming or superseded by better alternatives, decommissioning is considered to keep the digital environment lean and effective.

### **Staying aligned with business and ESG goals**

Adaptability requires clarity of purpose. QuadReal's digital strategy remains guided by its overarching business and ESG objectives: to improve operational efficiency, elevate tenant experience and strengthen sustainability outcomes. This alignment ensures that new technologies are adopted in service of enduring priorities rather than as reactions to short-term trends. By embedding flexibility into both infrastructure and governance, the organisation is positioned to capture the benefits of emerging innovation while avoiding the risks of overinvestment or obsolescence.

## **CONCLUSION: TECH IS CULTURE**

### **Cultural integration and organisational identity**

QuadReal's digital transformation is characterised by the integration of technology into organisational culture, supported by internal expertise, structured change management and disciplined governance. Case

studies of PON, IBMP and QuadReal+ illustrate the evolution from pilots to portfolio-wide capabilities, while early initiatives that did not progress as expected helped refine standards and clarify the level of reliability required for scale. The approach reduces risk, avoids redundancy and enables adaptation to market expectations, from cybersecurity to ESG transparency.

Technology is treated as an ongoing, adaptive process, aligned with business goals and embedded in the company's identity. When managed with purpose, structure and a willingness to learn quickly from both successful and limited pilot outcomes,

digital transformation becomes a consistent driver of value for tenants, investors and communities.

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