

Digital real estate and its impact on: **GOVERNANCE**

REvolve

Digital Real Estate Innovation Council



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Introduction

The 'Environment, Society and Governance' (ESG) is towards the top of the agenda for many in the property sector; investors are increasingly considering ESG factors in their decisions and large occupiers are demanding buildings that meet their own ESG expectations. With both investors and occupiers engaged, we are seeing this filter through to the rest of the market; planning, construction, property management and valuations are all being affected.

However, the top priority for most organisations today is the 'Environmental' element of ESG, with energy and carbon emissions driving the narrative. 'Society' tends to get less attention and 'Governance' even less so, especially with regards to the digital agenda. Yet governance is a huge and important topic; it covers organisations and buildings, and considers due diligence to risk management, reputation management to data strategy, decision-making processes to Anti Money Laundering checks and insurance coverage to board structure.

This paper focuses on the governance of buildings whilst in operation, in particular digital governance, which is becoming so important as the digital transformation of Real Estate continues to gather momentum. It will cover some of the digital governance imperatives, what happens when they are neglected and the action required to take the Real Estate sector from behind the curve to on the front foot.

95% of CEO's are concerned about a data security breach at their organisations.

Essensys Complexity in the office report





Section 1 – Governance in a digital world

Setting the scene

There is a constant stream of content today about the role of technology in properties with 'Smart Buildings' becoming a well-used buzzword. The use of apps, sensors and data analytics can all deliver huge benefits to users and help reduce running costs. Meanwhile, technology ranging from WIFI to HVAC systems to elevators are now essential for the effective use of a building, whilst cameras, door access systems and alarms are key elements of its security. Even outside the building itself, technology plays an important role. Online mapping platforms help users navigate to a property, geospatial data provides insight into its environmental risks and user review platforms influence decisions about which building to use. Wherever you look and whatever you do, few decisions are made about a building that are not influenced by technology.

The Real Estate sector has well established governance structures and processes in place for the physical management of buildings. For example, established maintenance regimes, Health & Safety policies, registers of equipment and evacuation plans. However, as the world becomes more digital, the sector must adapt these practices to include the digital world.

A primary driver of digital governance in Real Estate today is a commercial one; as technology starts to impact on property values, rents or costs, then owners will pay more attention to its governance. However, regulation is likely to be heading this way. Whilst the Real Estate sector has not traditionally been as heavily regulated as other sectors, this might change as regulations around digital operational resilience (DORA) in Financial Services or international standards for information security (ISO/IEC 27001) become established and potentially impact real estate.

The Digital Operational Resilience Act (DORA) - Regulation (EU) 2022/2554

Background: In November 2022, the EU Council adopted the Digital Operational Resilience Act (DORA) to help the financial sector in Europe strengthen its IT security and stay resilient through a severe operational disruption such as a cyberattack.

Who is affected: DORA applies to a range of companies and organisations operating in the financial sector as well as critical third parties which provide Information Communication Technologies (ICT) related services to them.

Purpose: To ensure that all participants in the financial system have the necessary safeguards in place to mitigate cyber-attacks and other risks. The legislation requires firms to ensure that they can withstand all types of ICT-related disruptions and threats.

<https://www.digital-operational-resilience-act.com/>

ISO/IEC 27001

Background: ISO/IEC 27001 is an international standard focused on information security, published by the International Organization for Standardization (ISO), in partnership with the International Electrotechnical Commission (IEC).

Who is affected: any organisation that wishes or is required to formalise and improve business processes around information security, privacy and securing its information assets.

Purpose: to help organizations establish and maintain an information security management system and protect three aspects of information: confidentiality, integrity and availability. The main philosophy of ISO 27001 is based on a process for managing risks: find out where the risks are, and then systematically treat them, through the implementation of security controls (or safeguards).

<https://advisera.com/27001academy/what-is-iso-27001/>

Governance v compliance

According to a global survey on cybersecurity by CISCO¹, **only 15% of organisations globally have a 'Mature' level of readiness needed to be resilient against today's modern cybersecurity risks.** This appears to resonate with the overall digital governance of buildings. A huge amount of data is now collected through sensors and digital systems but the approach to dealing with that data is often unsophisticated, with confusion over where responsibility for governance of that data lies. Before we delve deeper, it is important to distinguish between governance and compliance as they are often used interchangeably but these are two separate things, albeit related.

Governance *'sets the tone for a company's approach to risk, ethics, and business practices, whilst compliance embodies that attitude in relation to relevant laws and regulations and ensures the guidelines that are established and regulated internally or by an industry body are adhered to'*².

Compliance is therefore essential when using new technology and digital systems, but just ticking the compliance boxes will not reduce ongoing risks if there is not a holistic and ongoing governance system in place.

In the past, business units such as HR, IT and finance have been siloed within many organisations, working independently from the other. Today, firmwide issues such as sustainability, wellness and hybrid working mean it is more common for these departments to collaborate to achieve joint outcomes. Buildings are now increasingly influencing these big issues and so new stakeholders, who have been relatively separate from corporate decisions in the past, are now being introduced. However, compliance issues are often still dealt with

separately and without effective engagement between teams. This can result in 'form filling exercises' being undertaken at the procurement stage of technology, but not necessarily throughout the lifecycle of the systems, leading to gaps in governance.



¹ <https://investor.cisco.com/news/news-details/2023/New-Cisco-Study-Finds-Only-15-of-Companies-Surveyed-are-Ready-to-Defend-Against-Cybersecurity-Threats/default.aspx>

² <https://www.careersincompliance.co.uk/article/is-corporate-governance-the-same-as-compliance->

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33%

of office workers aware of a data security breach at their organisation – [*Essensys report*](#)

82%

of respondents expected a cybersecurity incident to disrupt their business in the next 12 to 24 months – [*CISCO survey*](#)

16%

of respondents said their building had experienced a cyberattack- [*RICS FM survey*](#)

53%

believe the ultimate responsibility for managing digital risks is shared amongst the owner, occupier and manager of the building.- [*RICS FM survey*](#)

63%

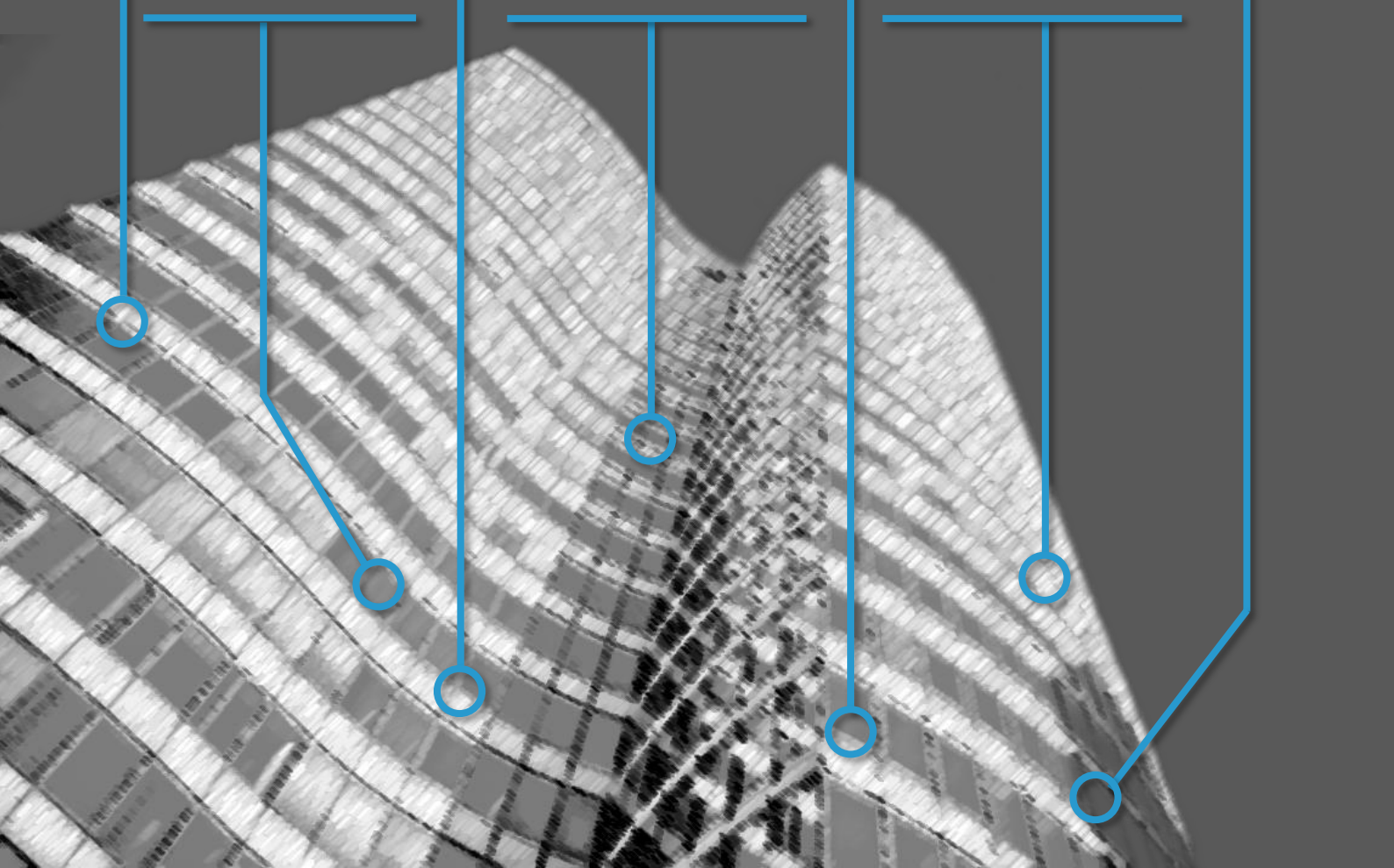
of office workers concerned about security of their organisations' data accessed via in office WIFI – [*Essensys report*](#)

\$4.35 million

average cost of a data breach - [*IBM and the Ponemon Institute*](#)

\$4.54 million

average cost of a ransomware attack (excluding ransom) - [*IBM and the Ponemon Institute*](#)



Digital governance

There are three overriding questions around digital governance that need to be asked for all buildings.

- Who is responsible for the use of technology and data within a building?
- How does that person(s) consider the whole system, not just individual point solutions?
- How are the risks identified, managed and accepted or mitigated?

Once these questions are answered, there are several key areas that should be on the checklist of every building owner or occupier.

Data strategy

At the heart of the building of the future is data, and every building should have a data strategy. The aim should be to collect high quality, accurate data which is used for good reason; haphazardly collecting mountains of data without purpose will add little value. Each strategy will vary from building to building; however, it should cover what data is collected, who has the rights to use the data, how the data is used and where it should or should not be shared. The data strategy should also consider what data standards apply and what compliance is required. Transparency about the data collected is vital as is approaching data collection ethically and within GDPR guidelines where personal data is involved.





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Topics such as cyber security, data privacy and building/operational resilience have been brought into stark focus for real estate firms as technology and data become an increasingly central part of the industry. Understanding what effective governance looks like is a key part of the “digital journey” for organisations, and indeed many of the themes here are similar to the wider topic of digital transformation in the industry – these include:

- New roles and skill sets are required to understand the challenges and opportunities
- It shouldn’t be viewed in a silo – digital governance should be incorporated into the organisation’s overall governance strategy
- Similarly, there needs to be an overarching digital and technology vision and strategy to ensure that systems are talking to each other, working together efficiently and effectively, and governed in a consistent manner
- The fragmented and often outdated systems used across the industry is a key challenge to overcome, and for some this may ultimately lead to investment in a single integrated platform to manage the business and customer journeys
- It should be incorporated across the culture of the organisation, with an example set from the top down
- Engagement and collaboration are needed across (and outside) the industry to develop best practice – for example, with peers, regulators, tech firms

Whilst it is hard to quantify the value of good governance, a failure to do it effectively will clearly have an impact on the business through fines, reputational damage and business disruption. This includes ensuring good governance throughout the supply chain to avoid any knock-on impacts of the actions or failings of contractors and outsourced providers. Sharing data to extract further value also raises the importance of agreeing governance processes and aligning expectations.

With information travelling much faster and wider in today’s digital world, the potential for reputational damage with customers and talent is an ever-growing consideration for firms. Occupiers have stringent due diligence processes to review suppliers, with an expectation that policies and governance will align with their own standards – and property providers will be no exception to this. In particular, as the industry shifts to shorter, more flexible leases and Space as a Service, good governance will form part of customer expectations and firms that do not deliver may well find that their customers move to others who do.



Digital risk register

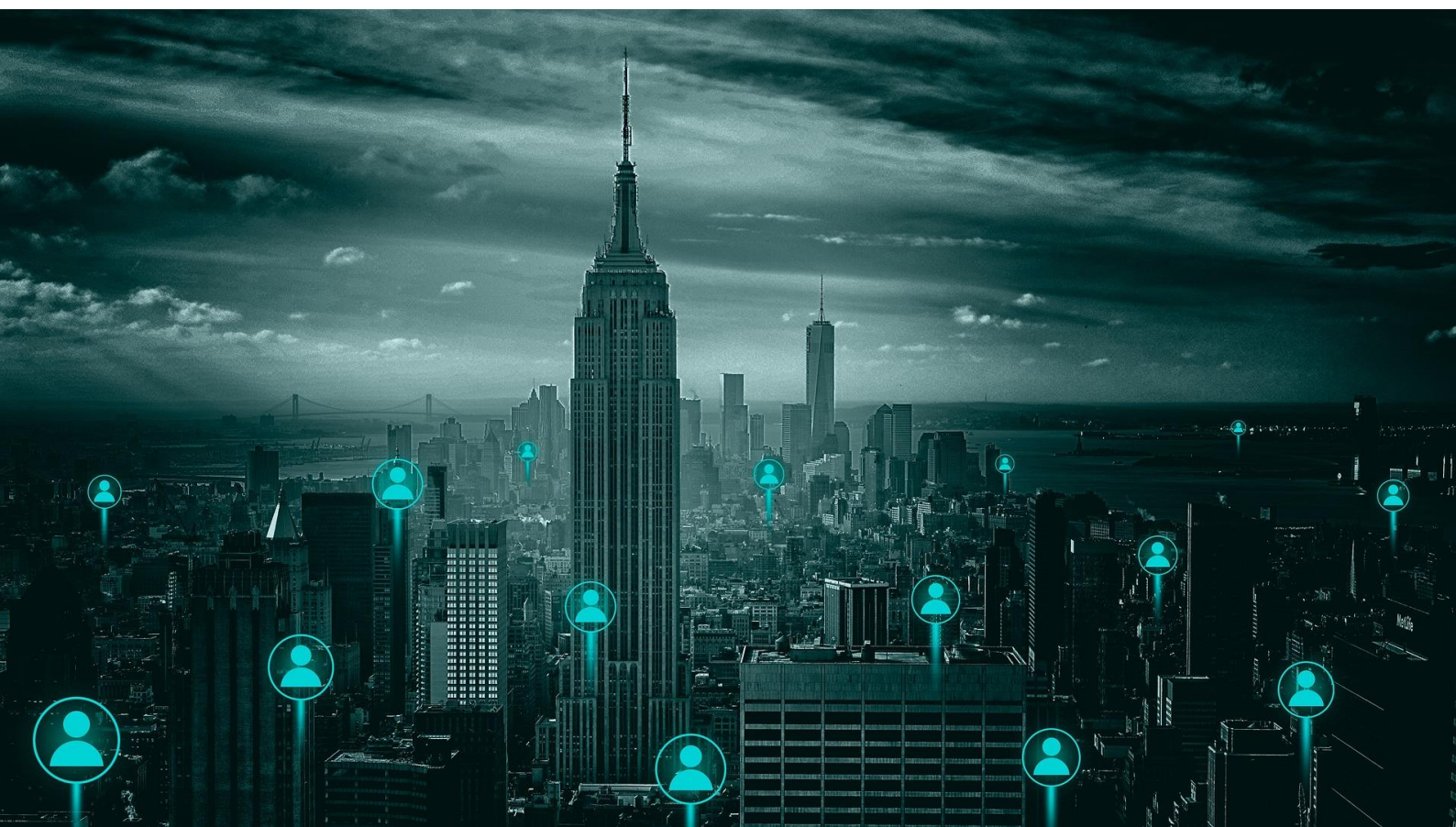
Every building should have a separate digital risk register, or at least ensure that digital is included within a wider building risk register. This should include all the risks that a building might face from data and technology and might also include risks around computer hardware not working, data privacy considerations and cybersecurity. The register could also consider the risks to a building from the use of external data sets that are misused or manipulated, gaps in skill levels and negative impacts on branding. At its most simple, each risk should be scored against likelihood and impact and allocated to a risk owner with a decision to manage or accept the risk.

“A professionally managed building should aim to have a documented register of the largest digital risks it faces, and the steps that can be taken to manage them.”

- RICS International Building Operating Standard (IBOS)

Monitoring external data

More and more data about a building is being created that is not directly managed by those responsible for the building itself. This data is increasingly used by external parties to inform decisions on a building and it is therefore important that a robust system is in place to monitor this data. External data sets might include sentiment indicators such as occupier workplace satisfaction, building scores on popular mapping platforms or comments on social media. Whilst these data sets are often inextricably linked to the occupiers in the building, they also provide valuable insights into areas of strong and weak performance about the property itself. Externally collected data sets, aerial imagery to measure car park use or footfall for example, can provide valuable insights into a building's performance, however can also be manipulated and so these too need to be carefully assessed. As these data sources are increasingly used in investment decisions or in the valuation process, the need for them to be robust and accurate will increase rapidly as will the incentive to manipulate them.



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Proper governance of technology and data is critical to the management of building performance data and the systems that produce it. This requires the design and implementation of policies and processes for the collection, storage, analysis, and use of data, as well as the robustness and security of underlying technology. Inadequate governance will lead to significant legal issues which will impact operational efficiency, reduce financial returns, and threaten strategies around data monetisation.

System Failure, data ownership and liability

Building systems and the sets of data found therein have become increasingly complex and interrelated. When a system fails to pinpoint where liability should fall, complications arise if contractual arrangements have not been properly considered. There is often a complex web of contracts between manufacturers, installers, service providers and building owners/tenants, with a range of warranties, indemnities and limitations.

Where provisions conflict or failures cannot clearly be traced back to a particular party, disputes will be prolonged and liability may be incorrectly allocated. Equally, as data is increasingly valuable to the operation of and investment of property, stakeholders need clarity around who has the right to use, and potentially monetise, data. A failure to address these issues consistently across leases, management arrangements and other contracts will muddy the waters and lead to claims and disputes.

Cyber Security

Cyber security goes hand-in-hand with increased technology and data gathering within buildings. This requires a mix of technical measures and well-designed policies, contractual protections and response plans. Neglecting these will increase vulnerability to cyber-attacks and make responding to incidents correctly far harder, resulting in increased fines and risk of claims. As well as legal consequences, a failure to assess and mitigate risk will increase the potential for data theft of valuable know-how or even the sabotaging of building systems, potentially rendering them temporarily unusable.

Use and monetisation of data

As well as mitigating risk, proper governance can improve the utility and value of data collected. Whilst the industry has been slow to adopt common data standards, parties who have thought through what data they want to gather, how it will be used and to whom it might be transferred will have a competitive advantage. To achieve this, they must design and implement consistent and effective policies, and mandate collection of data from suppliers and counterparties in accordance with clear standards.

Proper Governance is key

Effective governance will not only mitigate risks but drive a range of benefits such as: enhanced stakeholder relationships; increased innovation; improved property operation; and potential new revenue streams founded on high-quality data.



Decision-making processes

The Real Estate sector is typically siloed, slow moving and low risk, and therefore decision-making processes tend to reflect this. For the use of technology within buildings, traditional processes are often not fit for purpose. It is important that there is an overall building system decision-making process established and responsibilities are defined. A clear, documented and managed decision-making process needs to be in place.

Insurance policies

Building owners or occupiers should have suitable insurance policies in place for their buildings that cover the growing digital risks that a building faces. But they face a perfect storm as a rise in ransomware attacks has dramatically increased insurance premiums and made insurers more cautious about who and what they will insure³. The ultimate cost for building insurance is carried by a landlord or occupier depending on the situation. However, factors such as shorter leases, vacant offices and serviced office contracts, means a higher financial burden is being placed on landlords. Either way, as digital risks increasingly need to be included within insurance policies, clarity over where the responsibility lies for a building's digital governance will directly impact insurance and its cost.

The cost of cyber insurance has risen sharply over the past few years. According to Marsh, the price of cover in the US grew by 130 per cent in the fourth quarter of 2021 alone, while in the UK it grew by 92 per cent. ⁴

3

<https://techmonitor.ai/technology/cybersecurity/cyber-insurance>



⁴ <https://www.ft.com/content/60ddc050-a846-461a-aa10-5aaabf6b35a5>



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The role of the property advisor is to guide clients to make well-informed property-related decisions, by understanding their needs and matching those needs to properties. Digital real estate is undoubtedly the way forward. The use of technology and data, to a lesser or greater extent, with the ability to respond to the needs of the occupier, to inform and improve the way a building is used, to minimise waste and contribute to the wider environmental and sustainability agenda, and add value are all real benefits of the developments in digital real estate. These technology developments do, however, come with risks particularly in relation to data ownership, security and privacy, which also need to be effectively managed.

As property advisors, we understand the benefits of operating within a robust governance framework, with an effective regulator to oversee, develop and ensure the consistent application of governance principles, and to take action to develop safeguards and address governance breaches. This provides a level playing field across the sector. In the same way that GDPR and the ICO provide a clear governance framework to mitigate risks to the use of personal data, a data governance framework is needed to respond to the new opportunities and the risks that come with the ongoing developments in digital real estate. The regulator would have a key role in clarifying the responsibilities and accountabilities of the various stakeholders, developing standards, promulgating best practice and generating guidance to key stakeholders in the sector.

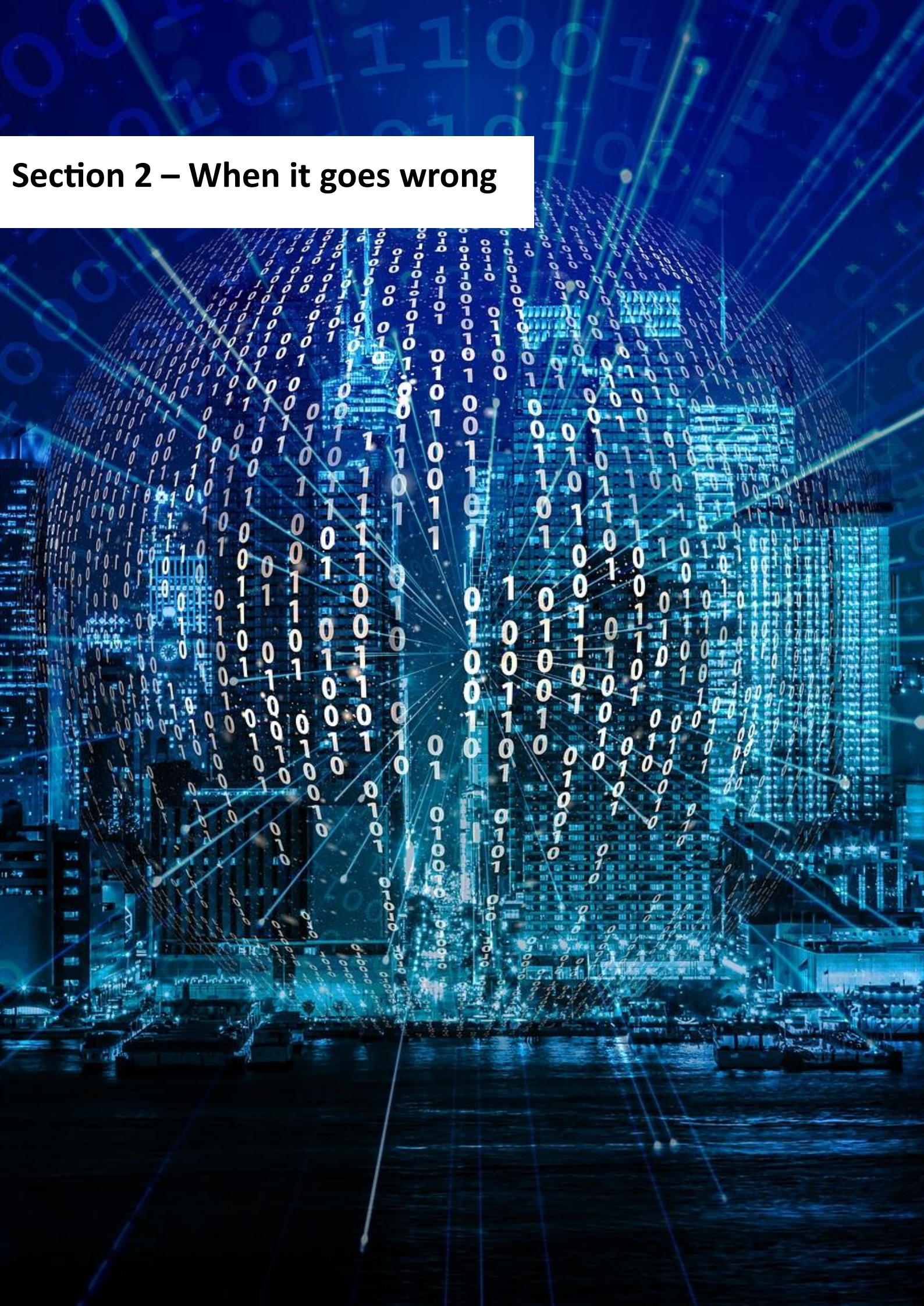
This will not be a simple or straightforward task. Digital real estate involves a complexity of stakeholders, with different objectives and requirements in this space. Bringing these key stakeholders together to support the development of increased governance may be challenging.

Clients are more aware than ever of the value of data, so data ownership within the context of a smart building will be a key matter for clarification. Clients will rely on the data governance framework to provide a clear understanding of their rights and assurance that these rights are protected. Questions around data ownership, privacy and access to the data that is generated by the technology in a smart building will need to be addressed. Where there are multiple owners of different data sets, guidance will need to be provided on how this complexity should be managed. Guidance on the ethical use of technology and data will also be needed.

The development of robust data governance in the context of digital real estate is the key to effectively managing data for the benefit of all, whilst providing safeguards against unethical use.



Section 2 – When it goes wrong



As the use of technology within buildings grows, so digital governance rises up the sector's agenda. Anecdotally, there are more and more problems being reported within buildings due to the un-governed use of technology and Industry bodies are starting to directly address these topics. For example, the British Property Federation recently launched a Cyber Security Working Group and digital risks are specifically highlighted in the RICS International Building Operation Standard⁵ (IBOS).

But the Real Estate sector is not yet fully aware of the potential scale of this issue. Indeed, many experts believe that this is a ticking timebomb waiting to explode and cause havoc in the Real Estate market. This sentiment is backed up by research, for example, one survey revealed that **86 % of IT decision makers that had experienced a cyberattack in the last six months, believed that senior leadership is only likely to invest in cybersecurity after suffering an attack**⁶.

Most companies are fearful of digital risks, and cyberattacks in particular are a big concern due to the financial, business continuity and reputational risks. **According to a cost of a data breach report by IBM and the Ponemon Institute, the cost of a data breach averaged \$4.35 million in 2022**⁷. As a result, when something does go wrong, most organisations try to keep it away from the public eye. Companies can therefore be lulled into a false sense of security and assume that cybercrime is a rare event. In reality, there are a growing number of public examples which should act as a stark reminder that digital risks are very real and highlight the need for

buildings to have robust digital governance in place.

Case study: Cyberattack

PropTech firm Plentific⁸ was the victim of a cyber security attack when scammers gained unauthorised access to their system and the email addresses of some of its residents. The scammers subsequently sent phishing emails to these tenants, posing as Plentific and requesting the transfer of digital currency to pay for repairs.

So what? *This case highlights the cyber security risks that property companies and buildings face not only directly but also through their supply chain or third-party partners. It is important that this is considered and policies are in place to address and manage the risk of suppliers.*

Case study: Building access failure

Facebook⁹ and its subsidiaries including Messenger, WhatsApp and Instagram, experienced a global outage in 2021 and became unavailable to their users for several hours. As a result, Facebook staff were allegedly prevented from accessing parts of their own office buildings as the security pass system was also affected.

So what? *Planning for the risk of not being able to access your own building due to a technology failure may previously have been considered overkill, but this story provides a good example of where establishing a plan B up front could have saved significant financial and reputational damage.*

⁵ <https://www.rics.org/profession-standards/rics-standards-and-guidance/sector-standards/real-estate-standards/ibos>

⁶ <https://www.tanium.com/press-releases/tanium-today-released-new-research-cybersecurity-prevention-is-better-than-the-cure/>

⁷ <https://www.ibm.com/downloads/cas/3R8N1DZJ>

⁸ <https://www.insidehousing.co.uk/news/housing-association-residents-hit-by-phishing-emails-after-plentific-cyber-attack-72376>

⁹ <https://www.businessinsider.com/facebook-employees-no-access-conference-rooms-because-of-outage-2021-10?r=US&IR=T>

Case study: Privacy violation

In 2019, the media reported that cameras in the Kings Cross area of London were using live facial recognition technology¹⁰. The property developer faced criticism from the general public and privacy campaigners resulting in the Information Commissioner's Office (ICO) launching a major investigation into its use of the technology. More recently, a convenience store chain in the South East¹¹ is facing a complaint for using live facial recognition cameras in its stores whilst nine schools in North Ayrshire were contacted by the ICO for using the technology on its pupils whilst they were queuing for their lunch¹².

So what? *These incidents highlight the ethical issues around facial recognition technology, the negative publicity its use can attract, and the discomfort felt by many people when tracked without their consent. As facial recognition becomes more widely available, proportionality and transparency must remain at the top of the agenda for any company managing a building or public space.*

“There are only two types of companies: those that have been hacked and those that will be.”

- Robert Mueller, FBI Director 2012

¹⁰

<https://www.theguardian.com/technology/2019/sep/02/facial-recognition-technology-scraped-at-kings-cross-development>

¹¹ <https://news.sky.com/story/co-ops-use-of-facial-recognition-on-customers-prompts-legal-complaint-12659309>



<https://www.theguardian.com/education/2021/oct/18/privacy-fears-as-schools-use-facial-recognition-to-speed-up-lunch-queue-ayrshire-technology-payments-uk>



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Governance is fundamental to the International WELL Building Institute’s work as a standards setting body. Governance helps maintain a rigorous process for developing the WELL Building Standard (WELL) and is based on best practices including gathering stakeholder input, relying on evidence, seeking practical or implemental solutions, and enabling continuous development, among others. These same best practices can apply to digital governance.

Gather input. To start, managers of individual buildings looking to collect and use digital data should gather the relevant stakeholders to assess the key data points to be collected, for what purpose, how to mitigate risks and how to reassess the process for future development and needs.

Enhance trust and integrity. Governance helps improve the quality of digital building data. First, good governance, particularly with respect to data security, privacy and transparency, fosters trust and encourages people to support digital initiatives. Second, governance can promote data integrity and accuracy, which can in turn lead to better decision making, impacting the health and well-being of people inside the buildings.

Comply with regulations and standards. Gathering data via digital tools should comply with applicable privacy regulations and information security standards, including responsible vendor management. For instance, technologies used to collect data will need to be vetted to confirm compliance with relevant information security standards. Doing so will enable new technologies to fit within the building ecosystem and avoid introducing vulnerabilities that could impact other critical building systems.

Enhance transparency. Even with minimal or no personally identifiable information collected among building data points, good privacy practices such as user notices and proper consents can garner trust among users. This provides comfort to people whose usage of data may be shared with building operators and owners.

Collect what is necessary, not more. While collecting various types of data may lead to interesting analysis, collecting large volumes of data for its own sake not only carries risk but, from a practical standpoint, is unhelpful. Consider that someone will need to analyse this data and make decisions based upon it. Some type of standardisation should be implemented so the data is usable to stakeholders.

Know how data may be used. A question that often arises is, “Who ‘owns’ the data generated from buildings and monitoring technologies?”. However, in most cases the better question is, “How can data be used?”. Disclosing what is being collected and how it may be used furthers trust in the systems. It is also important to consider where data came from and whether the rights to use it apply to the designated purpose. For instance, if a sensor technology includes proprietary graphic content, there may not be rights to display that content outside of the building display. Governance is particularly important given the complexity that could arise from multiple data points generated from multiple data sources.

Enhance accuracy and integrity. Vetting how data is collected to enhance accuracy will enable it to be relied upon in decision making. For example, sensors used to verify compliance with IWBI’s WELL Performance Rating are subject to specifications on placement and calibration, among others to lead to better data inputs.

Along with general governance best practices, building managers and organizations should consider their unique circumstances, potential for risks and opportunities for innovation when establishing digital governance structures. As illustrated by other governance models, such as processes employed by standard setting bodies, prioritizing good governance can significantly benefit digital building data strategies.



Case study: Hardware vulnerability

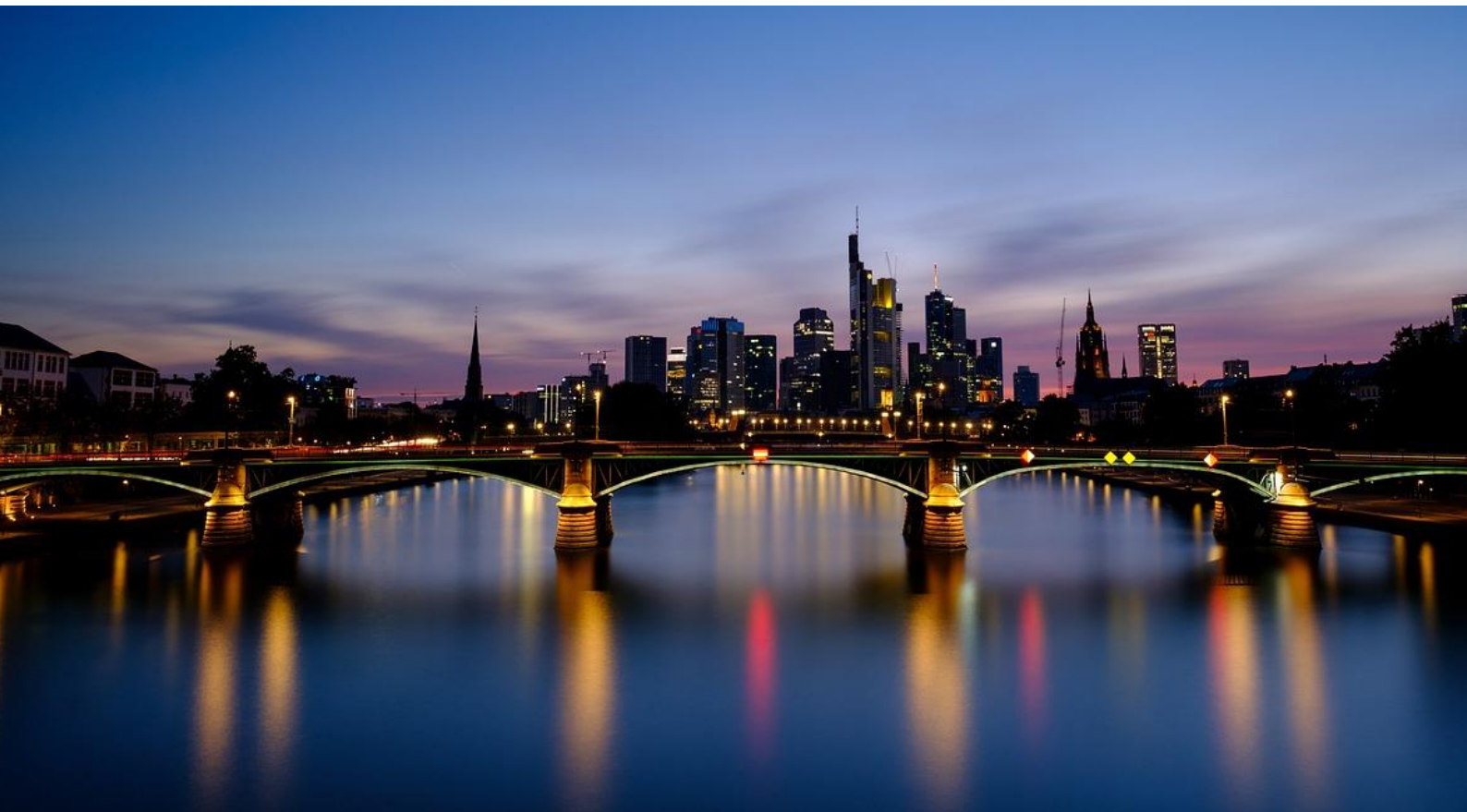
Perhaps one of the earliest high profile case studies was when US retailer Target¹³ was victim of a huge data breach when malware was used to steal data on around 40 million debit and credit cards. The sector was shocked when it was revealed that the hacker's entry point was through the retailer's HVAC supplier, highlighting the vulnerability of online HVAC systems to a cyberattack. We have since seen several examples of systems being attacked with connected building devices being the entry point.

So what? *As the connectivity and use of smart sensors increase in buildings, so does the risk of hackers accessing these new technologies. Organisations must adjust their risk registers to cover digital systems within their buildings and take steps to mitigate these risks.*

Case study: Supply chain interruption

Conveyancing group Simplify¹⁴ experienced a cyberattack which left thousands of home buyers unable to complete their housing transactions and leaving them at risk of a data breach. The firm's systems were shut down, thereby leaving some customers unable to exchange, complete or move home.

So what? *Whilst this story highlights how any real estate business can be at risk from a cyberattack leaving it vulnerable to data breaches, it also highlights how the potential of an attack on the supply chain can have an impact on a building or a business. Planning in advance will allow businesses to get on the front foot and, if they do fall victim to an attack, they can respond faster and potentially reduce the damage to the business or building.*



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<https://www.computerworld.com/article/2487452/target-attack-shows-danger-of-remotely-accessible-hvac-systems.html>

14

<https://www.thisismoney.co.uk/money/mortgages/home/article-10216419/Conveyancing-chaos-Simplify-say-issue-fixed-UK-chains-affected.html>



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The question of how the Real Estate sector can best ensure data governance has, in large part, been satisfied through General Data Protection Regulation (GDPR). Landlords providing digital services to an occupier customer require their consent through Terms of Use and Privacy Policy opt-ins. However, once consent is granted, what happens next? Well, the reality is that every User will leave an indelible trail of data for every interaction they ever make with the service, and that data needs to be stored securely. Further, the data then needs to be managed in compliance with the regulations. So, it is vital to partner with a technology provider who is, for example, ISO27001 and/or SOC2 certified. A good way to think about your provider is - would you trust them with your bank account?

Why do we need to think about data governance across Real Estate in terms of banking grade cyber security? Well, the world has moved on and the mobile device is all powerful. We can now use Apple Wallet to enter buildings, we book the space we want to work in and can even control the environment in which we work, all via a smartphone. We make payments for food and services with a single click and we communicate all day long using apps. Corporate Real Estate has been tapping in to this through the delivery of ever smarter buildings with pioneering tech partners like Smart Spaces. The age of the Real Estate connected super app is here – enabling a series of interchangeable micro-services which enterprise occupiers deliver to their employees through corporate mobile apps and web apps. Landlords can deliver data-led smart buildings for corporate occupiers, but it is the corporate occupier who must ensure any service they connect to satisfies their infosec compliance.

We are seeing a balance struck between the occupier pursuit of employee-experience and landlords seeking to realise enhanced returns. There used to be a lot of second guessing and today, both parties are much better joined up on what the final product will be and how tech will be used and managed. Regarding potential poor data governance, it is our view that in general, enterprise occupiers are further along than landlords in their understanding of the risks. The average property professional isn't typically equipped to manage the digital governance of a building and rely on services like Smart Spaces to protect them, including indemnity and insurance cover through the data hosting service we provide. Cyber security and data protection are best handled by those vendors geared up to do so.



Case study: Manipulation of external data

Google Maps is a relied upon source of live traffic information but, as with all data sources, it can be vulnerable to manipulation. In early 2020, a performance artist¹⁵ pulled a cart of phones around the empty streets of London which showed up as traffic jams on Google Maps, illustrating how the live data could be exploited.

***So what?** This may have been a staged exercise by a performance artist; however, it has everyday consequences. The technology used as an exercise in performance art today could be used to manipulate fake traffic data for a planning appeal or buying decision tomorrow, affecting the future use of buildings. Many of the external data sets that are becoming increasingly used to inform decision-making are open to manipulation and so ensuring the veracity of the data is essential.*

Case study: Data privacy fines

A London based estate agency was fined £85,000 by the Information Commissioner's Office (ICO) after a data breach left customer's data exposed for over two years¹⁶. This included financial records, copies of passports, dates of birth and addresses of both tenants and landlords. The ICO said that the company had failed to take appropriate technical and organisational measures to protect customers' personal data and issued the fine.

So what?

This illustrates that data protection bodies are willing to impose substantial fines on businesses when their collection of personal data breaches data protection legislation.



“The biggest cyber risk businesses face is not from hackers outside of their company, but from complacency within their company.”

- John Edwards, ICO Commissioner

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<https://www.theguardian.com/technology/2020/feb/03/berlin-artist-uses-99-phones-trick-google-maps-traffic-jam-alert>

16 <https://www.estateagenttoday.co.uk/breaking-news/2019/7/huge-fine-for-estate-agency-after-data-breach>



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As a leading real estate investment manager, at LGIM Real Assets (LGIM RA), we champion the importance of good governance which, we believe, is embedded in our DNA. Consequently, it is only natural for us to ensure we have technology governance inclusion strategies, thereby protecting our customers, while continuing to evolve and digitalise our capabilities.

While the level of understanding may vary among different players in the industry, there is a growing awareness of the potential risks and benefits associated with technology in real estate. With the rapid expansion of technology solutions, we ensure we engage with potential suppliers early on to coach them through an unfamiliar process which encourages governance best practice from the outset. These fundamental building blocks will help them retain clients and secure contacts with similar enterprises helping them scale.

At LGIM RA when we seek new capabilities for our occupiers, we carry out extensive technical and due diligence steps to ensure that all technology aspects align with our rigorous governance model. This includes thorough assessments of security measures, scalability, compliance with data regulations, and alignment with our core values and objectives. Having carried out initial due diligence, sometimes this means we must find alternative solutions.

LGIM RA understands that governance is not a ‘one-off’ but something which requires continuous vigilance. As a result, we monitor both the data and systems to ensure that prompt identification of any anomalies or breaches are raised and reported. By doing so, we can take swift remedial actions to safeguard sensitive data and maintain operational integrity. We also hold regular supplier performance meetings to monitor performance and product evolution to ensure our technology partners uphold the same high standards of governance to which we aspire.

By using these guide rails, we aim to mitigate potential risks and ensure that technology choices adhere to current and evolving governance principles.

LGIM RA recognises the importance of demonstrating safe guardianship of system and hardware selection to ensure the best experiences for our occupiers are not disrupted. By embracing digital governance, we believe we cultivate an environment that fosters trust and confidence among occupiers with the solutions we implement. Occupiers can rest assured, knowing that their building interactions and services are safeguarded by a company that values governance as a fundamental principle.

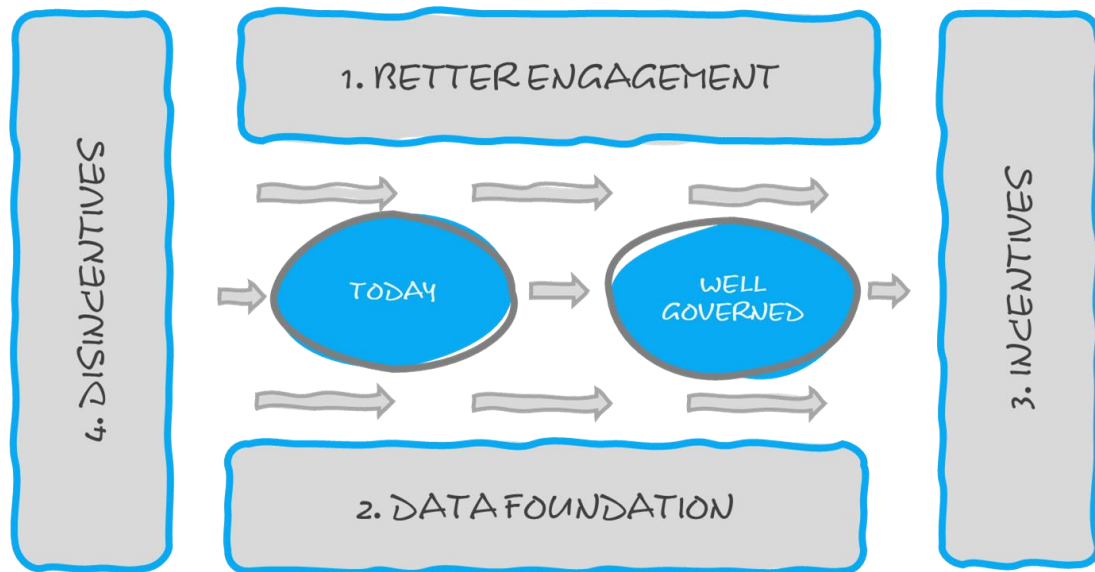
The importance of quality data and technology platforms are key to LGIM funds’ long-term performance - both in our ability to differentiate our space and properties with occupiers and also in our ability to deliver on our net-zero carbon objectives.

** Disclaimer on page 31*



Section 3 – Transforming Digital Governance





The Real Estate sector must take significant strides towards a more mature approach to the governance of data and technology within buildings. However, whilst there is wide acceptance that change is needed, making it happen is easier said than done. There are four key elements to driving the change required to position the sector on a stable footing with relation to digital governance.

Element 1 – Better engagement

Quite simply, the Real Estate sector does not consider the governance of data and technology anywhere near as much as it should. It is incumbent on all stakeholders to educate themselves about digital governance and to help raise awareness amongst building users about the topic, the potential risks and benefits and what to do about it.

A campaign to promote digital governance really needs to be spearheaded at a sector wide level. Whilst individual organisations should absolutely be addressing this, the responsibility has to also fall on Government and industry bodies to take the lead.

This awareness and engagement around digital governance is not just about knowing what is, and what might happen, it needs to consider what good looks like and ensure that building managers have the right skills and processes to properly govern a building's use of data and technology.

Element 2 – Data foundation

Without an improved approach to data at a sector level, and solid data foundations being put in place, there is limited hope of providing robust governance. There are many different elements of data that need to be considered, but the highest priorities for the sector to address immediately are:

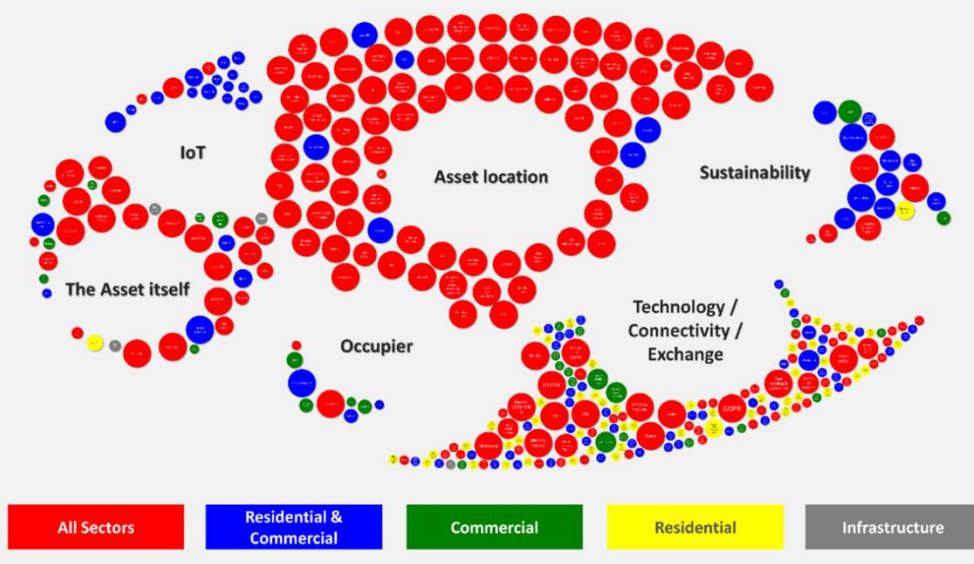
- **Data Privacy** – the sector needs to have a more comprehensive and detailed understanding of privacy. Whilst personal data should be at the top of the agenda, all data collected from or used to inform decisions about a building needs to be considered. In particular, this must apply not only on a data point by data point basis, but at a building level. Many risks appear at the interface of systems or the combination of different data sets.
- **Data ownership** – strictly speaking, it is not possible to own data, only the rights to use it but this isn't always common knowledge. More often than not, building stakeholders compete over ownership of and access to data rather than the right to use it, which is where the real competitive advantage lies. For good data governance

to be achieved, a shift in mindset around this issue is necessary, particularly as the value of data increases and more parties wish to stake their claim on it. Clarity about who has the rights to use data and for what purpose must be made clear in all situations and ideally should be written into lease agreements and technology supplier contracts.

- **Data Standards** – the consistent collection, use and sharing of data is imperative, across technology systems, with regulators and between landlords and occupiers. But this is only possible when everyone speaks the same data language, supported by data standards. The sector must significantly increase its effort on standardising its approach to data. This does not mean a single standard for everything, but avoiding duplication and ensuring interoperability are essential.

An infographic showing a range of different standards applicable to the UK market that influence that affect the collection, management and sharing of data.

Source: The RED Foundation : The role of standards in enabling a data driven UK real estate market (<https://www.theredfoundation.org/standards>)





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Esri's ArcGIS enables the creation of digital twins and we are seeing increased interest applying this technology to help property managers understand or even guide what a human does in a space. This level of monitoring raises concerns for individual privacy, but in reality, the sensors that track us have been around for years; what is new is our ability to integrate models and IoT data streams in three dimensions and in real time. Whilst digital twins are a quantum leap forward for sustainable building management, their use also heightens concerns about privacy. We are therefore working with customers to implement governance across new and legacy systems, wherever personal data is collected, stored or accessed, including at the level of the data itself.

Digital twins aren't limited to modelling the physical space or the building systems. It is possible now to use sensors to track people and materials moving through doors and past beacons. The identity of the subject can be obtained from room booking systems, passkeys, RFID tags or QR codes. The information can be used, for example, to switch on lights and air conditioning. We are also increasingly seeing it used to allocate costs to occupiers of shared spaces. Metadata tags allow us to control who has access to the records collected, even down to fields within records, so data can be securely published and shared to different user groups across multiple platforms.

A fundamental point to note about geospatial technology is that data doesn't need to be linked in order to be joined. Why is this important? Recent US government advice to its agencies is to assume that hackers are already in your system and so make sure that they can't string data together. Using spatial data, you don't need to have an identifier that is a foreign key between a BMS, door key pad, HR system or billing system. You can track a person or package and keep a secure stream of coordinate/time stamps, then you can have a separate stream of building events, and finally when you want to create a billing event, you create a spatial join between the streams without a foreign key. The result is a single allocation of cost that doesn't need to include the personal data. Therefore, in the event of a hack, there is less risk.

Spatial technology enables good governance in ways that weren't previously possible.



Element 3 – Incentives

In a carrot and stick analogy, there are a few ‘carrots’ which could help encourage digital governance. A well governed building brings multiple benefits around transparency and reduced risk. However, traditionally the sector is loath to take action unless there is a really compelling business case or a clear ROI on the investment required. This business case can be made significantly more attractive when it is driven by demand from users, directly linked to the value of the building or associated with lower costs.

- **Owner / Occupier driven demand** – governance of data will often fall on the shoulders of the property managers to action, and owners and occupiers should clearly highlight this as a requirement by including digital governance in all tenders and contracts. Clear client demand is one of the most powerful drivers of behaviour for all suppliers throughout the supply chain and this will also provide significant short- and long-term benefits.
- **Link to valuation** – there is a clear value in data being collected and technology being used in a building and this needs to be considered within the valuation process. It can already be argued that this should be the case where there is evidence of its value, but as a building uses more and more technology to improve its performance, this tangible technology and intangible data must be robustly built into the valuation of the building and regulations / standards altered to reflect this. As the value increases, so will the incentive to improve digital governance.
- **Reduced costs** – when digital governance is done well, it should help improve the efficiency of technology, reduce long-term costs and potentially attract lower insurance premiums, all of which helps sell the case for better governance.

Element 4 – Disincentives

Continuing the carrot and stick analogy, the carrot is always preferable, but sometimes a ‘stick’ becomes necessary as well. Compared to other sectors, Real Estate has traditionally been less regulated. When new standards are published, such as IBOS, there is an opt-in approach and organisations are not obliged to follow the guidance. Effectively, the sector has been allowed to self-regulate but some do question whether it has its house in order in this respect. As technology and data become a material factor in real estate values and the underlying risks associated with it become more prominent, the possibility of regulation around digital governance grows. Two areas would need consideration:

- **Existing regulation** – there are many regulations already in place about the use of data and technology, but this usually focuses on businesses, as opposed to individual buildings. This is changing slowly, but to drive change more rapidly, existing regulators must highlight the relevance of these regulations to individual buildings.
- **New regulation** – new regulation will be required and is more likely to be imposed on the sector if it does not take action itself. Rules around the governance of data and reporting that exists within real estate can be starkly contrasted with the regulation available around the financial services sector, health and safety or anti money laundering. It would be prudent for the sector to monitor how regulation such as DORA and standards such as ISO/IEC 27001 impact on other sectors.
- **Insurance** – this is one area that might make organisations pay more attention. Improved digital governance can help reduce insurance premiums providing a strong incentive, but if buildings are sufficiently behind in digital governance, then buildings may simply become uninsurable providing a strong disincentive to ignore digital governance.

Digital Governance Checklist for organisations and buildings

- Awareness** - Improve your organisation's awareness of digital governance and how it applies to your business and building.
- Collaborate** - Work with peer firms to support the sector to help drive improvement around governance and standards; talk to competitors, share knowledge and information about best practice to broaden the knowledge base across the sector.
- Digital audit** - Consider how all digital systems fit together and make sure the whole ecosystem is considered; what happens if one smart system is breached or fails, how does it affect the others?
- Transparency** - Be transparent around what data is collected and how you are going to use it.
- Compliance** - Don't just tick the boxes and consider compliance complete, ensure digital compliance starts at procurement and remains active throughout the technology lifecycle.
- Certification** - Consider ESG Certification frameworks to encourage better building performance management and governance.
- Recruit** - Find the best digital talent you can for your organisation to oversee technology and data applications, strategy and governance.
- Cheerlead** - Help senior stakeholders to see the business opportunity of better governance, don't just focus on the digital risks, consider the benefits of taking action.
- Agree Liability** – Include data sharing agreements and apportionment of liabilities into leases so everyone knows where liability lies if something goes wrong.
- Act now** - Get match fit now for future regulation changes around governance; follow best practise over data standards and governance today and collaborate with suppliers and other stakeholders.

About REvolve

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Membership does not imply agreement with or endorsement of all of the views expressed in the report. Members provide their own 'Expert View' on the topic.

Each paper is written by Alpha Property Insight and is based on both extensive desk research and a round table discussion with members.

REVOLVE MEMBERS



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The International WELL Building Institute (IWBI) is a public benefit corporation and the world's leading organization focused on deploying people-first places to advance a global culture of health. IWBI mobilizes its community through the administration of the WELL Building Standard (WELL) and WELL ratings, management of the WELL AP credential, the pursuit of applicable research, the development of educational resources, and advocacy for policies that promote health and well-being everywhere. More information on WELL can be found [here](#).

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At Knight Frank, we provide innovative property solutions for our clients that add tangible value, across a variety of sectors and services.

By the nature of being a partnership, our decisions are made by and for our people and we focus on long-term outcomes. We know, that to achieve great results, we need to collaborate effectively and communicate clearly.

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KPMG

KPMG is a leading provider of professional services, with nearly 16,000 partners and staff across the UK and an international network of independent member firms operating in 144 countries and territories. Our real estate professionals draw on experience from a variety of backgrounds, including accounting, tax, advisory, banking, regulation, strategy and corporate finance, to provide informed perspectives and clear solutions throughout the asset and investment lifecycle. Our client focus, commitment to excellence, global mindset and consistent delivery build trusted relationships that are at the core of our business and reputation.



LGIM Real Assets

LGIM is one of Europe's largest institutional asset managers and a major global investor. LGIM manages £1.3 trillion* in assets, working with a range of global clients, including pension schemes, sovereign wealth funds, fund distributors and retail investors. LGIM Real Assets has assets under management of £39 billion* and is one of the largest private markets investment managers in the UK. Investing in both debt and equity and across the risk/return spectrum, LGIM Real Assets actively invests in and manages assets across commercial, operational, and residential property sectors, as well as infrastructure, real estate, corporate and alternative debt. Taking a long-term view to future proof our investments, LGIM Real Assets continues to lead the industry in ESG performance, considering all environmental, social and governance issues at asset level as well as portfolio level.

** at 30 June 2022*



Smart Spaces

Founded in 2010, Smart Spaces now powers over 60 million sq ft of UK real estate, over 20 million sq ft of which is located in London. The London based user-experience and software development team, which has 44 members of staff, has an extensive software development portfolio and delivers a number of smart workplace solutions for industry leading real estate clients including: AXA IM Alts, Aviva, Columbia Threadneedle, GPE, Helical, AshbyCapital, Three Mobile, Workspace Group, Sellar and 22 Bishopsgate – the worlds smartest skyscraper.

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