



Redefining Building Performance

Resilience and value in a changing world

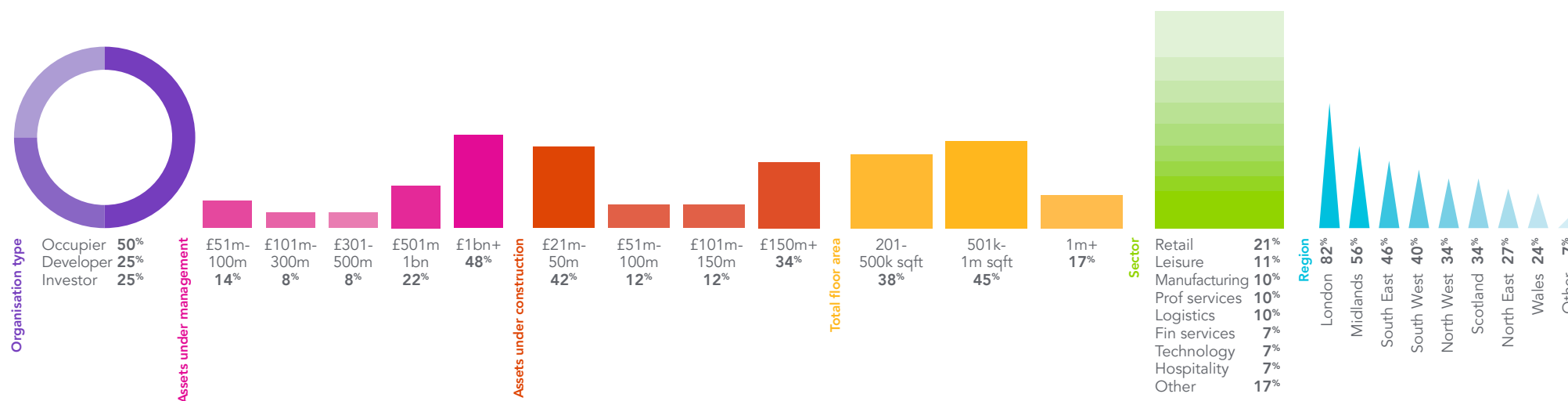
Survey/research methodology

This report is based on market research of 200 senior decision-makers in commercial property investor, developer and occupier businesses operating in the UK.

Property investor: Primarily concerned with investment in property (either acquisition of existing assets or development) for medium/long-term value creation and revenue.

Property developer: Primarily concerned with developing property for short-term value realisation/returns.

Occupier: Whose investment/interest in property is an operational requirement of the main business activities.



Welcome

Welcome to TFT's inaugural report on building performance.

The property industry was in a state of flux even before 2020 hit. The urgent focus on sustainability has put energy and carbon in the spotlight. Public scrutiny and expectations of building quality, safety and social value are growing, and social media provides numerous instant and impactful feedback channels to highlight substandard delivery. Technology companies continue to invest heavily in bringing the world to our devices, developing new and improved experiences for online commerce, work and leisure. As our lifestyles and business practices change, the role of buildings in our lives and livelihoods is shifting too.

As fixed assets with leases that are often shorter and more flexible, buildings are at risk in a changing world. Fund, investor and owner income is tied to the continued ability to secure leases on assets. For them, meeting occupants' expectations will spell the difference between growing their assets' value or risking their obsolescence should the market leave it behind. For occupiers, understanding what buildings are capable of will offer advantages for future-proofing their investment in fixed

assets, end-user experience, workforce wellbeing and effectiveness, reduced costs and much more.

Every stakeholder in the industry has its own view of building performance, oriented around adding financial value, staying ahead of the market and mitigating the costs and risks associated with their assets. Differences in approach are marked by timelines and ambition against key criteria such as occupant experience and sustainability – two factors we at TFT believe to be critical to deliver long-term value and market resilience for buildings.

TFT works across the whole building life cycle, helping our clients to understand and act on the building performance needs or opportunities in their portfolio. That work informs new developments, investment opportunities, operational management, maintenance, refurbishment or re-purposing, and much more.

With this perspective, we researched how the wider industry, including developers, occupiers and investors, achieves building performance. How do they measure success? What are they

trying to improve today? How is their approach likely to change in the future?

Our research revealed gaps between those at the leading edge of building performance and those trailing. In particular, it showed a divide between organisations which sought beyond-compliance solutions for their buildings and those which set narrow benchmarks based only on minimum standards, legislation or historic norms.

In addition to our survey, we interviewed industry leaders to gain a better understanding of how building performance is changing for those at the forefront of the sector's evolution.

This document is the first outcome of this research, identifying five themes which are central to improve the value and resilience of buildings.

Three of these themes are performance goals. These areas are identified by the wider industry as important, but on which not everybody is taking action:

- Health & wellbeing
- Sustainability
- Flexibility

The last two themes are performance drivers. These are the routes by which stakeholders can improve their ways of working and achieve the above goals more effectively:

- Measurement
- Collaboration

By tracking our industry's progress against each, we hope to form a representative picture of commercial building performance to serve as a baseline for improvement across the board.

In the following pages we investigate these themes, exploring the gaps in understanding or action across the industry and indicating how we can close them to drive better performance across the board.

These findings provide the starting point from which TFT, our clients and our industry partners will work together to create better buildings and future-proof assets for those who rely on them.

We hope you find the report useful and welcome your questions and thoughts on how these ideas relate to your future building challenges.

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Executive summary

With respondents largely in agreement that wellbeing, sustainability, flexibility, measurement and collaboration are important to improve building performance, discrepancies remain on action and ambition.

To understand the decision-making process that drives current performance goals for commercial property, we asked senior industry respondents about investment plans and the biggest challenges and risks facing their portfolio.

The majority of respondents understand the need to measure and improve building performance as a means of maximising asset value and reducing the risk of obsolescence. Using our data, we defined three areas of performance that are driving value and reducing risk across commercial property: Health and Wellbeing, Sustainability, and Flexibility. Each of these areas presents opportunity for improvement to meet a changing market, and risks for those which don't

progress. Two key value 'facilitators', Measurement and Collaboration, present routes to the beyond-compliance outcomes that valuable assets must achieve.

Starting with health and wellbeing, we see that property investors are clearly focused on safety. 80% of respondents reported using it as an investment criterion in the last 12 months and 94% believe safety will be an important part of investment decisions in three to five years' time.

However, when asked about the biggest risks facing their portfolio, occupant wellbeing came out top, with two-thirds (66%) saying stricter protocols around occupant health and hygiene are a risk. While the immediate impacts of

Covid-19 might put the spotlight on these issues, the pandemic is more of an accelerant than a trigger for this trend, which we've seen developing in recent years.

Mitigating the performance risks associated with health and wellbeing begins with recognising a more holistic set of responsibilities than pure legislative compliance, and which isn't strictly focused on building safety or hygiene. Our experience and our client interviews show that a closer and more consultative relationship between investor, developer and future occupant will be central to progressing further on building health and wellbeing.

80%

of respondents used safety as an investment criterion in the last 12 months; this will rise to 94% in the next five years.

Growth of sustainability

Sustainability is our second key theme, and here our findings reveal a gap in industry action and ambition. When asked how building performance is likely to change over the next three to five years, 90% predict sustainability targets will become stricter. Despite this, it is still not underscoring many decisions being made today. For instance only 70% of all respondents consider environmental criteria to guide their investment decisions today, compared to 94% who use location.

While sustainable legislation such as MEES drives commercial decisions, we see how market leaders apply more challenging benchmarks for a broader set of sustainable outcomes. As occupiers continue to raise their expectations in line with their own ESG goals, our leading investor clients find a strong commercial case for setting their sights higher.

Design flexibility

Our third theme examines the importance of design flexibility and scope for buildings to adapt to new uses. When asked how important flexibility has been to investment decisions over the last 12 months, 70% rank it as a key criterion. However, 84% say space and lease flexibility will be a key factor for investment decisions in the next three to five years. Here the decision lag is narrower than for sustainability, but still represents a big challenge considering that the buildings of the future are being made today.

In addition, when we asked respondents which of their top investment criteria they feel least prepared to achieve over the next three to five years, 40% cited building design and construction flexibility. However, we know that leading organisations are already working to mitigate their assets' exposure to change, and our interviews highlight examples of smarter strategy, design and construction decisions in key client projects.

Gathering the right data

We include measurement as a key building performance theme because gathering and acting on the right data is critical to sustaining building performing and pre-empting some of the risks we discussed in the previous three sections. However, we found that many respondents take too narrow a view of measurement as a short-term cost mitigator alone, with only 30% of our respondents measuring occupant experience as a building performance indicator.

There are signs that some parts of the industry are planning to invest in technology that will help them measure building performance more effectively. A fifth (20%) say they are investing in the Internet of Things (IoT) technology to improve buildings in the next year, while a further 28% plan to in the next one to two years, and 16% in three to five years.

84%

of respondents say space and lease flexibility will be a key factor for investment decisions in the next three to five years.

Collaboration is integral

Our final theme of collaboration is crucial to respond to all the themes, opportunities and risks we identify in this report. It's integral to our industry's wider ambitions as well as our daily operations: 78% of our respondents rely on outsourced expertise on property investment and building, while just 22% use purely in-house expertise.

Given the inter-dependent nature of property, we found a worrying disconnection and perceived lack of leadership which is seen as a material challenge to our respondents. More than half (53%) cite internal organisational difficulties such as siloed teams, team politics and lack of clear responsibilities within their top three greatest challenges to their property portfolio. Looking outside their companies, 38% of all respondents cite a lack of industry guidance around building performance as one of their biggest challenges.

This report is TFT's first step to solving that leadership question. By showing a broad picture of building performance drivers, we are setting out a pathway to meet our industry's current and future challenges.

While our findings show significant portions of the industry don't adopt long-term, ambitious goals for improving building performance, we regularly see leading examples of best practice in the course of our work with many investors, developers, funds and occupiers. We know where the opportunities lie for all our clients to meet future challenges across their building portfolios or estates and are committed to helping them advance standards beyond minimum requirements, building more resilient and valuable buildings for the future.

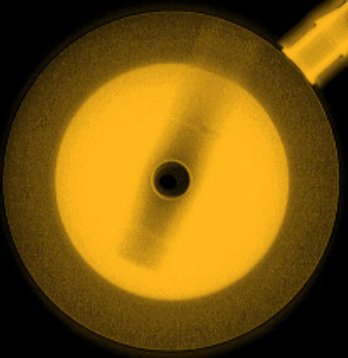
78%

of respondents rely on outsourced expertise on property investment and building, while just 22% use purely in-house expertise.

The impacts of buildings on users are under more scrutiny than ever. While safety is better understood, a wider definition of wellbeing poses new challenges for investors and owners. Those not pursuing more progressive standards may face obsolescence and reputational risks.

Healthy returns

Health & wellbeing





The safety of buildings has never been more high profile: the Grenfell fire in 2017 highlighted the risks of cladding and fire safety, leading the government to publish what it called “the biggest change in building safety for a generation”.

Our survey results show that the industry is well aligned on the need for building safety improvements. It is already a significant focus for property investors – 80% of respondents used it as an investment criterion in the last 12 months – and it is set to rise further up the agenda: 94% believe safety will be an important part of investment criteria over the next three to five years.

When asked about timelines for action on safety, 41% say they have already implemented improvements for their buildings or are currently doing so. Half of our respondents (50%) say they are working to improve safety within the next two years.

As well as making improvements, there is growing awareness of the need to keep occupiers informed about the improvement process. 74% agree that occupiers will require more information on building and life safety when considering how building performance will change over the next three to five years.

While the fundamental safety of buildings is clearly a priority, we are also seeing a wider view of wellbeing considered among our respondents.

The evolution of healthy buildings

The importance of health and wellbeing was growing before Covid-19, though the pandemic added urgency to the trend. The result is heightened expectation from occupants that wellbeing factors – including air quality, thermal comfort, water quality, lighting and the use of healthy materials – are integral to design and management of a space.

Our survey found that this growing awareness of occupant health poses a challenge to our respondents. When asked about the biggest risks facing their portfolio, two-thirds (66%) said stricter protocols around occupant health and hygiene is a risk. 71% of the sector agrees social distancing and disease control initiatives will need to be incorporated into building design when considering how building performance will change in three to five years. (see Figure 1)

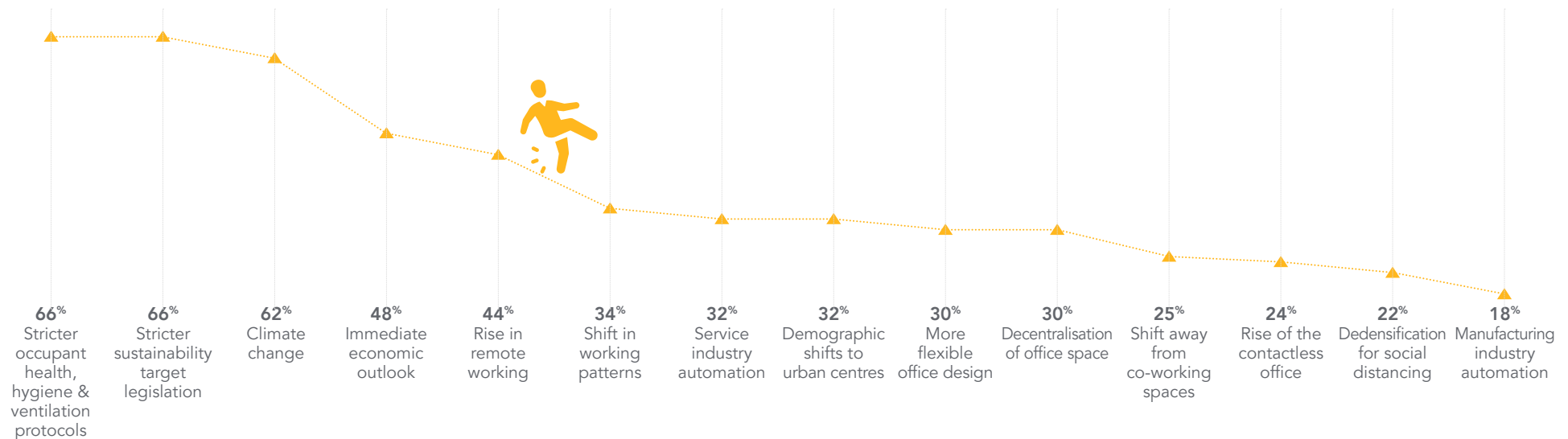


Figure 1: Main risks ahead for property portfolios

A split across the sector

There are, however, signs that the sector is not completely aligned on the importance of health and wellbeing, with our survey unearthing discrepancies in how different groups view it.

Perhaps understandably, given that their employees are the ultimate end users of buildings, occupiers appear to have a slightly stronger focus on it than investors or developers, with 77% of occupiers stating that more information about safety will be needed, compared to 71% of investors and developers. (see Figure 2)

Discrepancies on this point are worth focusing on, because just as mainstream understanding of building health grew in the last year, we should anticipate that today's standards will evolve further in the future.

The solution is a closer and more consultative relationship between investor, developer and future occupant. Pippa Burchett, Head of Technical Services at Legal and General, describes a closer dynamic between these three stakeholders on the fund's HMRC Regional Hubs portfolio. "We see wellbeing as a tool to attract more and better occupiers, rather than just being a virtuous thing to do," says Burchett, "so we sat down with HMRC and discussed how their staffing and recruitment objectives could be met with these offices, then we worked to produce a workspace which their workforce would engage in and benefit from."

77%

of occupiers state that more information about safety will be needed, compared to 71% of investors and developers.

Health and wellbeing: from insight to action

A more progressive view of health and wellbeing in buildings must include not only building safety, but indoor environment quality and inclusive design. Taking a broader view of healthy buildings from a user experience perspective will help drive building user productivity, asset value and long-term resilience in the midst of changing market expectations.

Responding to this need begins with investors, developers and owners formalising more ambitious but realistic standards for buildings which promote health and wellbeing, beyond statutory requirements alone. Technical expertise can lead this process by expanding the understanding of what building fabric and services are capable of, as well as relevant legislation, certifications and examples of best practice in the market. With an agreed set of standards and practical knowledge for achieving them, policies and action plans can be set for improvements.

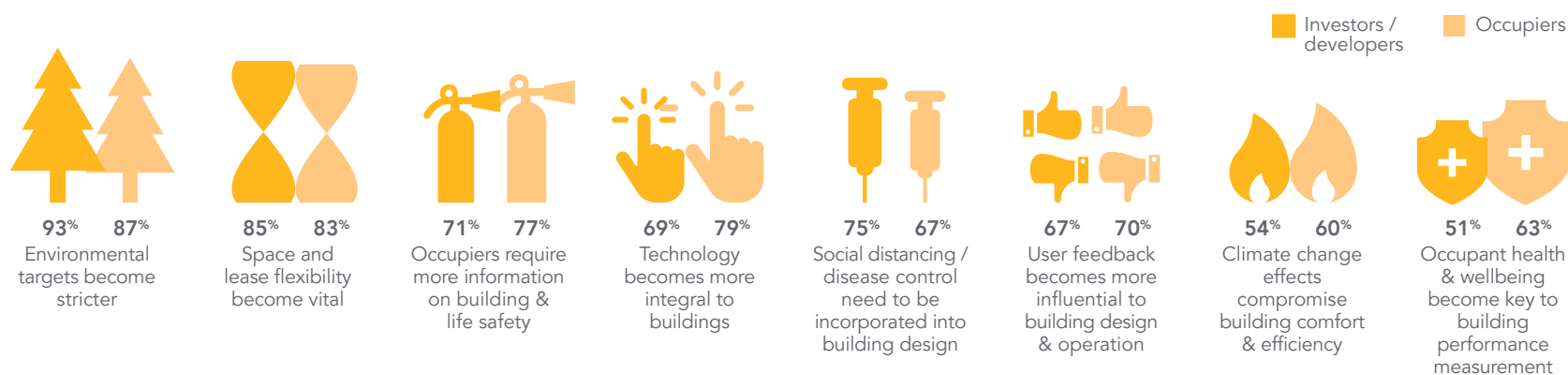


Figure 2: How building performance will change in 3-5 years

Our teams of specialist wellbeing advisors and engineers can inform those policies and implement them. The design, build and fit-out of a space will impact the standards it can achieve, so early involvement by those specialists is important.

In the course of all works, information sharing and transparency will help project and investment teams deliver on the right objectives. Project managers and monitors will be instrumental to ensure health and wellbeing objectives have been met in new developments and refurbishment projects alike, assuring supply chain accountability and creating a store of information about the building's capabilities for occupiers and future purchasers to understand. At the point of transaction, technical due diligence searches will increasingly require evidence of health and wellbeing indicators to inform an asset's readiness for occupation and future resilience.

When the work is done and the right measures are in place, how can owners help occupants to feel fully confident in their space? Clear plans for maintenance will be informed by building usage data, combined with risk assessments and building management plans.

Following these can ensure that a building performs to its occupiers' needs and will do so into the future. Technology can also provide real-time monitoring, demonstrating that a space and its environment is living up to its users' expectations.



Legal & General and HMRC: Regional hubs

Legal & General has forward funded the development of, and will own upon completion, the ten Government Property Agency's regional hubs, a programme devised to rationalise a sprawling property portfolio and bring together civil servants around the country. With a series of major developments in regional centres, the scheme was designed to deliver taxpayer value and state of the art facilities for 30,000 civil servants over 2.5m sqft of prime real estate.

TFT helped ensure the schemes lived up to that promise, with technical due diligence and project monitoring advice across the developments in major commercial and transport hubs such as Cardiff Central Station, Stratford in East London, Edinburgh Waverley and Bristol Temple Meads. We also project managed and provided quantity surveying services for the sensitive refurbishment of Liverpool's listed India Buildings.

Each development was designed to meet high standards of sustainability and wellbeing, such as BREEAM Excellent and upper-quartile EPCs. Accessible and inclusive design was integral to the project: the portfolio has far exceeded building regulations and market norms to meet HMRC's high occupier standards.

A more progressive view of health and wellbeing in buildings must include not only building safety, but indoor environment quality and inclusive design.

The property sector's approach to sustainability is still evolving, with a growing realisation that sustainability is not just about energy use or meeting today's government targets.

Root and branch

Sustainability





Our research found awareness of the growing importance of sustainability, but relatively little action. Part of this could be due to a limited understanding of the commercial impacts of sustainable outcomes which aren't driven by legislation. Many don't appear to look beyond the realm of energy use and minimum energy efficiency standards (MEES) targets.

90%

of respondents say sustainability targets will become stricter in the next three to five years.

When asked how building performance is likely to change over the next three to five years, 90% say sustainability targets will become stricter, and 76% of investors and developers view stricter sustainability targets as their biggest risk. The government's 2020 whitepaper on achieving its net zero goals backs this up, setting out the steps that will be required to eliminate emissions from buildings by 2050. Growing appetite for green funds and occupier commitments to ESG strategies suggest that sustainable building investment is only going to increase in the future.

When it comes to measuring building performance, energy standards such as energy performance certification (EPC) are considered the most important certification for our respondents, even above environmental certifications such as BREEAM, possibly because of their importance to the sale or lease of a building. While our respondents show awareness of the impacts of MEES on building value and letting, other measures for carbon and environmental impact appear less pressing commercially. (see Figure 3)

MEES is an example of a powerful piece of legislation having an effect on the property industry and offers a model of what future legislation could look like. Many of our leading clients are linking carbon with new legislation on the horizon and are taking action to pre-empt its effects.

The comparatively low importance assigned to other standards suggests that industry stakeholders aren't linking sustainability with commercial outcomes such as resilience or future market opportunity. In our view the industry needs to take a longer-term view of building performance that goes beyond what is required by legislation. Conversations with our industry leaders show how commercial agendas can be aligned with sustainable outcomes.

As occupiers put sustainability at the top of their corporate agendas, their requirements of buildings change accordingly. Martin Perry is director of development at Nuveen. He explains that Nuveen takes a broader and more sophisticated approach to

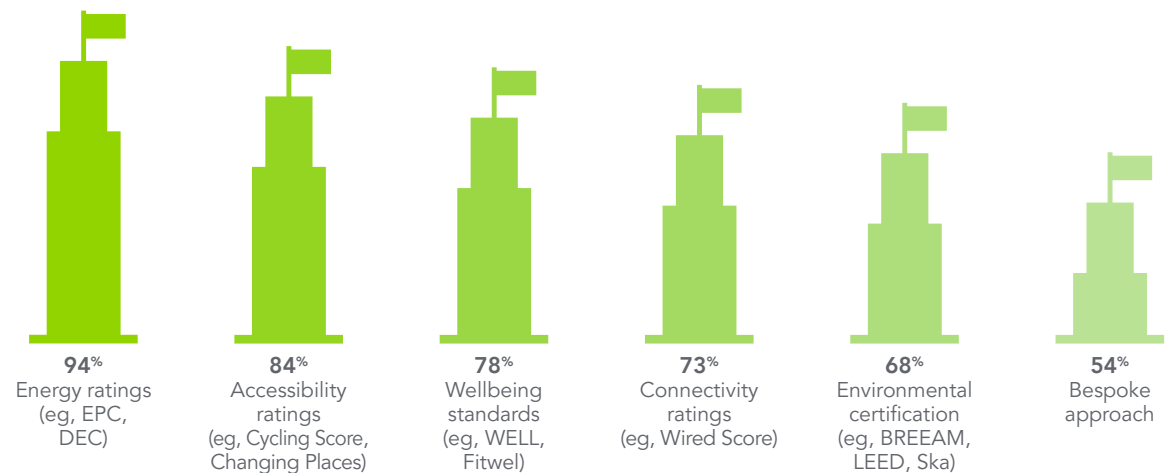


Figure 3: The importance of building standards

sustainability beyond current certifications which are, he says, too superficial: “We look at the elements which we think are important and measure them against whether they have been achieved or not. There is still a lot of box-ticking that goes on in sustainability. We try and put this into real terms.”

Robin Keates, director of forward funding at Grainger, one of the UK’s largest residential landlords, describes a longer-term view of sustainability: “Efficiency is not just about saving energy for us, but making sure the life cycle, operation and maintenance of a building is sustainable, cost effective and will continue to be so into the future. It is about making sure customers feel like they have a great home to live in, in even five or ten years’ time.”

Pippa Burchett at Legal and General sees the impact of that shift. “It’s starting to appear on occupiers’ letting requirements, which is great because it helps support our drive to do it. In the past, for example, solicitor firms would have a very standard approach. But they are increasingly open to agile working with a conscience. It’s interesting – everyone is changing their expectations of what a workplace should be.”

70%

of respondents considered ESG policy alignment to be important for building performance over the last 12 months.

A growing awareness

The fact that our respondents – many of whom are key decision-makers in their organisations – see sustainability as a priority shows how far it has moved up the boardroom agenda.

Despite this, sustainability decisions are still often taking a back-seat to other considerations today. Although we determined that current and future sustainability targets are concerning to 90% of our respondents, what stood out was the smaller number (70% of all respondents) who considered the importance of aligning building performance with their ESG policy over the last 12 months.

The question for the sector is this: If sustainability-related concerns are also strategic considerations set to influence the way we operate in the next three to five years, why are they not incorporated more fully into today’s decisions?

A culture of environmental performance

We asked Anna Bond, Executive Director – Developments at property company Grosvenor Group, how important it is for sustainability to be embraced at board level. She says support from the top is the most important factor. “Having your board be supportive and holding you to account in terms of sustainability is fundamental. There also needs to be a champion for sustainability on the board, but what is essential is that responsibility for sustainability is part of the culture of an organisation, rather than just the responsibility of one board member. So, everybody in the organisation is constantly thinking about how we can get to the next level of sustainability.”

She adds the business has its own internal Grosvenor Green Goals. “We have pulled these targets together into a sustainable development brief, which we use across all of our schemes. TFT has helped us to pull



TFT and Nuveen: St James Quarter

The St James Quarter in Edinburgh is Scotland’s largest and most significant mixed-use development project. The project, in the heart of the Capital, began in December 2016 and will complete in 2021. It involves the redevelopment of a 1970s shopping centre, car park and former Scottish government offices to become a 1.7m sq ft district to complement the city’s rich heritage and culture. TFT acts on behalf of joint venture investors Nuveen Real Estate and APG Asset Management, working as Project Monitoring Surveyor for the entire £1bn development.

together a scorecard. What this means in practice is that we are able to assess the environmental performance of each project and get a score for it. Being able to see different projects alongside each other like this together with their relative scores has provoked a lot of conversations internally and helped drive a culture of environmental performance.”

Sustainability: from insight to action

Most organisations still have a long way to go before sustainability is considered a core competency. However, the commercial risks of ignoring the bigger picture are motivating leadership teams to act. The first step to take from recognition to action is applying sustainable objectives to the commercial agenda.

We are already applying more environmental sustainability objectives to our clients’ acquisition strategy as part of technical due diligence and demand for this is only increasing. Likewise, we support clients by helping to plan building interventions that mitigate environmental impacts. These include:

- Operational energy and net zero carbon targets
- Climate change resilience
- Resource efficiency
- Wellbeing
- Waste mitigation
- Green infrastructure and biodiversity

Each part of the building life cycle carries both sustainable potential and exposure to risk. New developments allow the greatest scope for sustainable design, yet have huge potential embodied carbon risks, which circular economy construction methods or alternative procurement strategies could mitigate. Refurbishment projects present big opportunities for preserving structures, building fabric and services, with the right design and specialist input. As for the leasing cycle, we are currently working to disrupt an inherently wasteful approach to fitting-out and stripping-out commercial spaces, by supporting

forward-thinking occupiers and owners to work together and manage the process differently.

With so many elements of a building able to improve on sustainability outcomes, which multiply across portfolios, organisations need clear goals and incentives in place to deliver across them all. Bespoke metrics or a scorecard can capture re-use targets, total carbon emissions reductions and more to set a useful groundwork for investment and development leaders to brief consultants and project teams on the priorities for their assets.



TFT and Grosvenor

Grosvenor Group has been a property developer, manager and investor for over 340 years, aiming to improve property and places to deliver lasting commercial and social benefit.

TFT works with Grosvenor to provide sustainability services on major developments such as the Bermondsey masterplan, creating a new neighbourhood anchored by over 1,500 homes for rent, 3 acres of public and play space, 141 new trees and no private cars on the site. TFT also provided sustainability consultancy services for 7 Holbein Place, a major office block refurbishment targeting ambitious sustainability goals including 65% reduction of operational carbon saving compared to typical commercial buildings, 98% of full scheme waste diverted from landfill, Net Zero operational carbon by 2030 and WELL and Fitwel enabled.

“What is essential is that responsibility for sustainability is part of the culture of an organisation, rather than just the responsibility of one board member. So, everybody is thinking about how we can get to the next level of sustainability.” **Anna Bond, Grosvenor**

The pandemic has accelerated several trends, including the need for building owners to adapt buildings to the needs of a dynamic world. Our respondents agree that flexibility of space and occupation will be a vital part of real estate's future.

Nothing's shocking

Flexibility



Adaptable assets are resilient assets – a fact

highlighted by 2020's pandemic-driven economic upheaval. A complete picture of a building's future performance must include its capacity for reinvention.

In the coming three to five years, location is expected to fall drastically in importance for our developer and investor respondents. In the next three to five years only 35% of investors and developers say it will be a core investment criterion, compared to 91% today. (see Figure 4)

The figure suggests confidence in placemaking, and an understanding that with the right combination of building uses and occupiers, the value of location can be self-determined. But this will only succeed with a long-term view of buildings as changeable entities set up to be valuable throughout their life.

Our data also shows a significant shift in the importance placed on lease flexibility when it comes to investment decisions. When asked how important lease flexibility has been to investment decisions over the last 12 months, 80% of occupiers ranked it as an important criterion. In addition, 92% of investors say lease flexibility will be a key consideration in their building investment decisions in the next three to five years.

As occupiers drive demand for flexible lease arrangements, building owners are preparing their spaces to serve different needs rather than being a single-use asset.

When asked how building performance is likely to change over the next three to five years, 84% say space and lease flexibility will become vital. Looking at drivers for this, when asked about the main risks

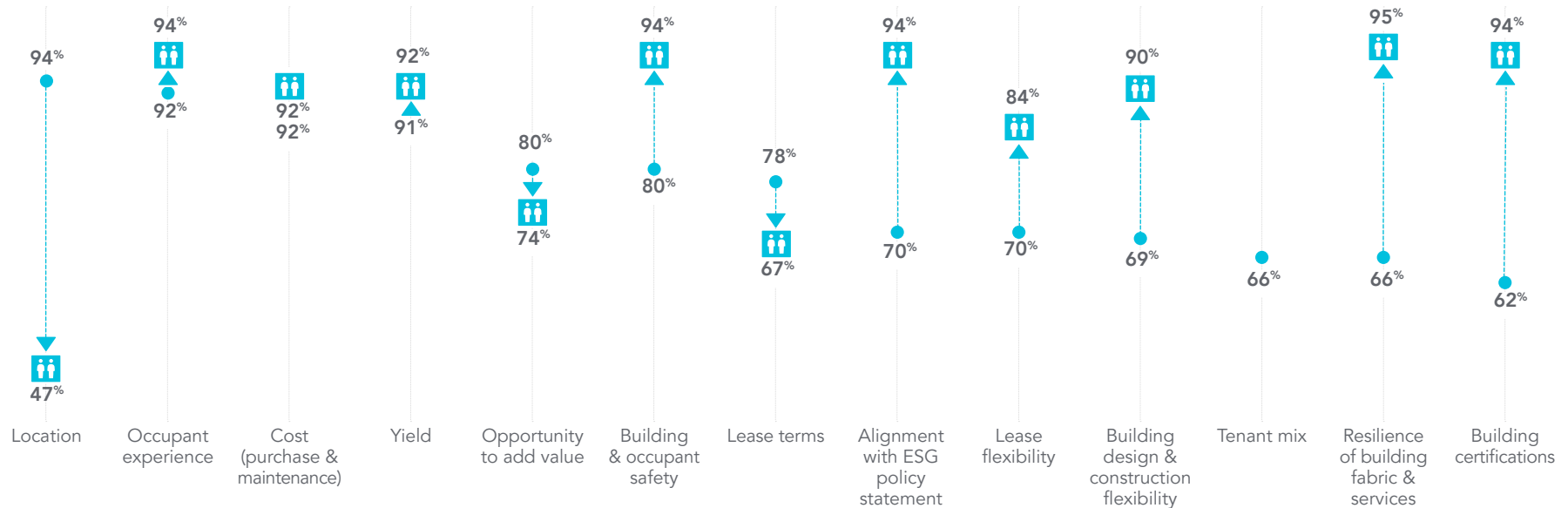


Figure 4: Investment criteria in the last 12 months vs investment criteria in 3-5 years' time

facing their property portfolio, 44% are concerned about the rise in remote working, while nearly a third each say they are concerned about a need for greater flexibility in office design (30%), the automation of service industries (32%) and demographic shifts into urban centres (32%).

While awareness is growing of the need for flexibility, we found some respondents unprepared for it. 40% ranked building design and construction flexibility as being among the top three criteria they feel least prepared to act on over the next three to five years.

Designs for the future

The market can move radically and unexpectedly; if assets are to avoid being stranded, owners and occupiers should be ready to repurpose them for more productive means.

Rory Carson, Vice President of Mapletree Investments Pte Ltd, the owner and developer behind the expansion and repositioning of Reading's Green Park, describes how flexibility played an important role in the design of the 195-acre business park's newest development at 400 & 450 Longwater Avenue.

40%

of respondents ranked building design and construction flexibility as being among the top three criteria they feel least prepared to act on over the next three to five years.

"When we started this project in 2017, we considered flexibility a fundamental requirement to ensure that the two buildings had longevity, and were adaptable to suit a wide range of occupiers, with an emphasis on sustainability and wellness."

He says the long-term benefits of their initial development investment would help futureproof the new scheme as much as possible. "This included a more complex structural frame design to provide large span, column-free floorplates to accommodate a variety of subdivision options. In addition, the design benefited from high efficiency building services systems which took into account future carbon reduction targets and

likely climate change, as well as greater floor-to-ceiling height to accommodate a range of HVAC solutions."

While some building types lend themselves to one type of use, there is still scope to adapt key areas to changing needs. Robin Keates explains which elements of Grainger's Build to Rent (BTR) developments are adaptable to future occupant needs. He says: "The amenity offering is really important in BTR. We design this in a flexible way to enable us to adapt to changes and future requirements so that our developments continue to meet our customers' needs without significant added cost. It's about designing flexibility and durability into the project."



400 & 450 Longwater Avenue, Green Park, Reading

Reading's Green Park is a 195-acre business community incorporating unique, sustainable office buildings within a biodiverse site owned by Mapletree Investments Pte Ltd, a leading real estate developer, investor, capital and property manager headquartered in Singapore.

Project-managed by TFT, 400 & 450 Longwater Avenue is the latest speculative development on the site, which will provide 228k sqft of Grade A column-free office space over two buildings. Completed in March 2021, the new occupiers will join more than 60 other businesses within the Green Park community.

Flexibility in design has also been key to Nuveen's St. James Quarter development in Edinburgh, a retail-led scheme in the middle of a World Heritage Site. Martin Perry says: "In terms of its construction, the building itself can take expansion, contraction and up and down movements to allow for changes in demand. Our scheme allows occupiers to flex their spaces to their needs too. They might start off taking a pop-up space for instance, then progress to an incubator shop and expand from there as their business grows."

Flexibility has also had to be built into the way that the developer is working with retailers: "We saw that retail was evolving and looked to bring brands together in a number of different planes. Not just in terms of their physical space, but how they advertise, trade online and how they get their goods delivered. It's about recognising that it might be a retail-led scheme, but it's not a shopping scheme in its own right. It's deliberately trying to be something different," Perry says.

Whether for an acquisition, a new development or a refurbishment project, understanding the technical capabilities of a space is crucial to delivering futureproofed buildings.

Flexibility: from insight to action

Whether for an acquisition, a new development or a refurbishment project, understanding the technical capabilities of a space is crucial to delivering future-proofed buildings. These considerations cover building structure, plan shape, floor height or design loadings, and will include climate change adaptation considerations and circular economy principles too.

In the medium term, increasing demand for all-electric building services is driving a requirement for refurbishment projects to convert or replace gas systems. In addition, installing electric vehicle charging points is a challenge in existing buildings where the power load to the site may have to change drastically.

These improvements require the right team of specialists who can realise a commercial need and rejuvenate older assets effectively and sensitively for healthier and more sustainable outcomes.

Building owners and project teams must, where possible, work closely with the intended building user to establish the expectations for the space and establish a more productive long-term relationship in which the building serves occupier needs more closely. This will include ongoing consultation with occupiers to gather data on their experience with the building and their needs, to inform building owners of trends before they become disruptions.



TFT and Grainger

Grainger is the UK's largest listed private residential landlord, established in Newcastle in 1912. Today, Grainger is a leader in the private residential sector (PRS), bringing a high-quality approach to its developments. TFT supports Grainger with PRS development through the construction and handover phases, including with design changes and amenity area fit-outs to meet occupants' needs. We support safe, sustainable and resilient developments across the UK, from Guildford Train Station to Bath Press and London's Hallsville Quarter.

There is a growing awareness of the value in implementing a programme of building performance measurements. However, there is still a worrying lack of action when it comes to gathering useful data.

Assess all areas

Measurement





Both qualitative and quantitative data are critical to creating and maintaining highly performing buildings: if desired outcomes aren't measured, they can't be successfully managed.

In a connected age, we are all used to reporting, reviewing and measuring our experiences, online and offline. The same mindset applies to our workplaces, our leisure time and the places those experiences occur. If occupant organisations and building owners are not aware of their building users' experience, and don't act to improve it, the customer base will vote with their feet. This is particularly important amid the rise of shorter, flexible leases.

When asked which factors they consider important for measuring building performance, 50% of our respondents cite maintenance and building costs, 41% cite resilience,

while only 30% look to the occupier experience. While costs and resilience are integral factors, a lack of focus on measuring the occupier experience represents a long-term risk, given how easy it would be for occupiers to look elsewhere if their needs are not met.

These findings suggest a limited view of measurement as a cost saving tool, rather than addressing factors which will preserve or increase value and guard against obsolescence. (see Figure 5)

A combination of quantitative and qualitative data can produce insights which are actionable and commercially important. These include post-occupancy evaluations, which can help landlords and owners track how happy people are in the space, allowing them to identify any issues with building design or management before they become problems.

Another example is the use of sensors enabling data

50%

of respondents cite maintenance and building costs when asked which factors they consider important for measuring building performance compared with 30% who cite occupant experience.

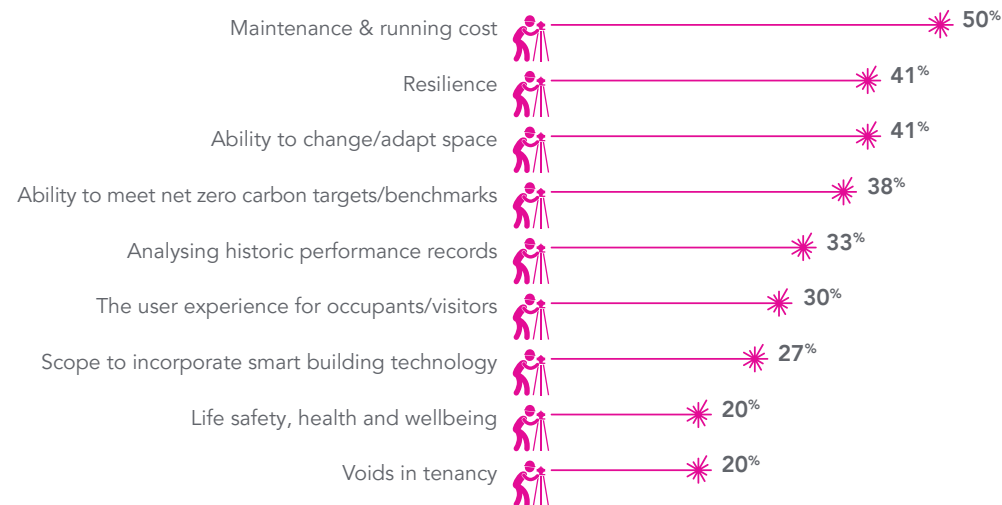


Figure 5: How do you measure building performance?

collection for M&E maintenance, operation and indoor environment quality. This is something that is already available on the market but is so far underused and not fully understood by investors and owners.

Robin Keates at Grainger says qualitative and quantitative assessments come together to inform building operation and maintenance requirements. "In addition to energy efficiency metrics, we look at the social and economic aspects of building performance. The longer tenants stay in our buildings the better – having an economically sustainable development is dependent on great customer satisfaction," he says.

"This helps to inform the design of new buildings, so we are constantly learning and adapting, making the most of the pool of knowledge we have within the business."

A slow-paced revolution

74%

of respondents agree that technology will become more integral to buildings over the next three to five years.

There is a growing awareness of the role of the Internet of Things (IoT) when considering the measurement of building performance, user wellbeing, air quality and more. When asked how building performance will change over the next three to five years, almost three-quarters (74%) agree that technology will become more integral to buildings. Occupiers are more likely to think of the IoT as important; 79% think it will become integral to building performance, compared to 69% of investors/developers.

Our research captures the industry's progress in using technology to measure building performance more effectively. A fifth (20%) say they are investing in IoT technology to achieve this in the next year, while a further 28% plan to in the next one to two years, and 16% in three to five years. (see Figure 6)

However, despite this, IoT-enabled buildings are not

currently seen as important to improving building performance – only 4% of all respondents say incorporating smart technology is important for measuring building performance.

There are huge opportunities to use data to support the management and improvement of buildings by flagging weaknesses or inefficiencies before they turn into crises, enabling buildings to become self-diagnosing and self-correcting. It can also help decision-makers prioritise and assign responsibilities for these issues before they become critical. We found that organisational difficulties (such as siloed responsibilities and politics) are flagged by 53% of respondents as being a barrier to achieving building performance targets. An effective system could alleviate this, with early and clear prompts for action.

We can look again at Grosvenor's Green Goals for

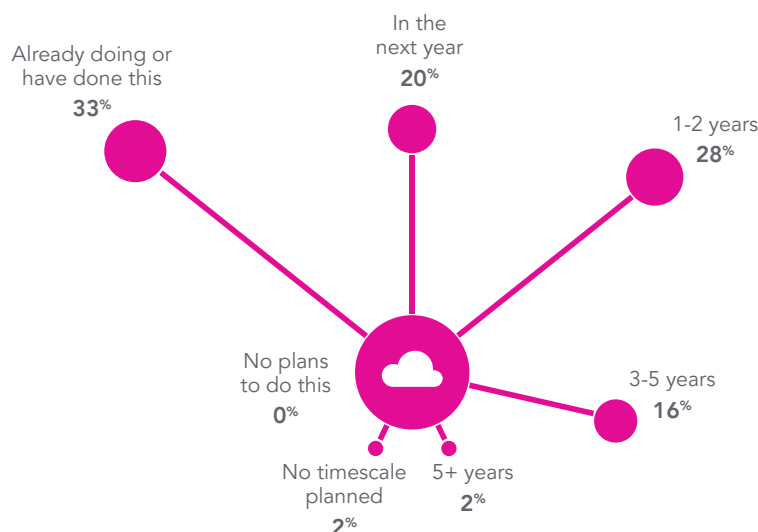


Figure 6: IoT investment plans

an example of measurement driving organisational change. Its sustainable development scorecard created by TFT allows Grosvenor to apply consistent and actionable metrics across different projects. Anna Bond says: “Being able to see different projects alongside each other like this together with their relative scores has provoked a lot of conversations internally and helped drive a culture of environmental performance.”

In addition, 44% of respondents rate funding as a significant challenge when it comes to improving building performance and over a third (36%) report difficulties in demonstrating financial return on investment for building performance improvements. Creating useful measurement systems to quantify improvements accurately and set benchmarks could strengthen a business case and demonstrate the return on investment to building users.

Measurement: from insight to

44%

of respondents rate funding as a significant challenge when it comes to improving building performance.

action

Measurement is the first of our two key drivers for improving building performance. With imminent challenges of improving health and wellbeing, sustainability and flexibility at hand, solutions for each must be measurable to quantify, incentivise and recognise improvement. For organisations without a commercially relevant means of benchmarking the performance of their buildings, establishing the right metrics and consistent measurement methods will be a crucial step.

This process begins with the building user, to align performance with those who rely on the building and will ultimately drive its value. Post-occupancy evaluations are a valuable tool to capture qualitative data, aligned with occupier organisations’ goals and derived from actual building use as opposed to expectations from design.

In addition, smart building technology provides an additional layer of insight to the function of a building and the needs of its users.

This has several benefits:

- To inform maintenance and management of building services and fabric over time
- To provide occupants with transparent real-time information
- To allow for granular adjustments via apps
- To build a source of supporting data for future building transactions
- To inform better use of the space and building systems by users.

These streams of qualitative and quantitative data are tools to ‘close the loop’ between the ambition and outcomes of good building performance. An effective Soft Landings process would include training occupiers to implement the data for effective fit-out, commissioning, facilities management and Building Information Modelling (BIM) to support future transactions or leasing.

The property industry is complex, and relies on interconnected parties to successfully deliver development projects, leases, building operations and transactions. The stakes are high: these relationships need to be effective.

Sync and swim

Collaboration



78%

tftconsultants.com/rbp

Collaboration is crucial for holding together, or underpinning, everything else discussed in this report. Disconnected project teams fall short of project goals. Owners who don't understand what their would-be occupiers want will lose their business. Developers who do not know their investors' ESG expectations will back the wrong projects. Poor communication between landlords and occupiers can result in lease breaks and costs on both sides. An industry which doesn't share learnings on safety or sustainability will not be effective in improving the built environment for all.

For instance, it is occupiers who are most likely to view building performance as part of their long-term strategic plan – 88% have a plan in place until 2030, while only 50% of investors and developers have such a plan in place. This is concerning given it is the strategic decisions of the latter two groups that will most impact the fundamental approaches to the design and construction of our future buildings.

However, we predict that occupiers will increasingly set the pace for building performance improvements. Developers and investors with longer-term performance plans in place will be equipped to meet their needs.

There are smaller but significant

88%

of occupiers have a building performance improvement plan up to at least 2030. Only 50% of investors and developers have the same.

disparities relating to areas such as satisfaction with the performance of buildings in a portfolio – 66% of occupiers are satisfied, compared to 72% of investors. Occupiers are also keen for more flexibility – 80% use lease flexibility as part of their investment criteria now, compared to 61% of investors/developers. (see Figure 7)

Disconnection and a lack of leadership is starting to be seen as a material challenge to our respondents. More than half (53%) cite organisational difficulties such as siloed teams, internal politics and lack of clear responsibilities within their top three greatest challenges to their property portfolio. The problems are slightly less for external support, but still 38% of all respondents cite a lack of industry guidance around building performance as one of their biggest challenges.

“We try and say it’s an operation with no secrecy, everyone is welcome to the table in all meetings.”
Pippa Burchett, Legal & General

On engaging with the wider industry, Anna Bond of Grosvenor describes the importance of industry bodies to aid collaboration: “The majority of our collaboration actually comes from external partners such as the Better Buildings partnership, Green Buildings council, Steelzero as well as lots of other organisations. These organisations help us understand what excellent looks like for us, whether that be in approaches or standards. They also give us greater insight into what our peers are doing and how we can learn from them.”

Despite the challenges, many are working hard to create a collaborative and co-operative approach. Pippa Burchett at Legal & General identifies some areas of change in project teams. “There is still an unhelpful approach between claims driven contractors and employer teams, even between contractors and novated designers. We recognise it when we see it as

we also refreshingly see more enlightened contractors who truly want to cooperate and find solutions.”

She adds her teams promote cohesion on projects by holding regular meetings and workshops that are open to all. “We try and say it’s an operation with no secrecy, everyone is welcome to the table in all meetings. We sometimes have projects coming to completion and suddenly there’s a question – we will have a workshop with all interested parties to thrash out the detail and make sure everyone is happy.”

She says this approach is a crucial part of producing a building the client is happy with. “We want to totally understand the product they want. [HMRC] know if a building is successful while we’re still working with them on other buildings, so we absolutely want to get it right. It’s really important we understand what they want and need.”



Figure 7: The biggest barriers to achieving building performance targets

Collaboration: from insight to action

Collaboration and measurement are our two key drivers for advancing the goals of health and wellbeing, sustainability and flexibility in buildings. Where measurement sets the objective and tracks progress, collaboration seeks more productive relationships between all stakeholders which interact across the building lifecycle.

A significant point of improvement is between building owners and occupiers. There is a gap between the expectations or ambitions of occupants and the wider view of owners, which can be overcome by mutual desire to step beyond the boundaries of the traditional 'landlord-tenant' dynamic. Our findings and experience tell us that a more service-oriented relationship is increasingly common – to the benefit of building users and the long-term value of assets – but entrenched processes persist. The lease cycle for instance produces

a significant amount of waste, and siloed relationships between building owners, agents and occupiers exacerbate unsustainable outcomes. Working together and finding new ways to use buildings can result in a less wasteful building life cycle, and contribute to net zero carbon ambitions across the board.

Among project teams, leadership which combines technical understanding with the commercial objectives of a given project is integral to delivering on longer-term performance goals. Where different priorities sit across a project team, central roles such as project manager, project monitor, lead consultant and employers' agent are instrumental in aligning teams to the performance strategy and hitting established metrics. Collaborative project management tools will support this, gathering and sharing information on the building for future letting, operation and sale including integration with BIM and other building management systems.

The final piece of the puzzle is community engagement: bringing together those who will be working on, using and neighbouring a building in the course of its development and operation. At a time when reputations are difficult to build and easy to damage, setting the stage for a positive relationship with local residents is important, engaging communities to understand their needs and identify opportunities for more positive outcomes. It also means navigating neighbourly matters such as rights of light and party wall concerns sensitively and in a timely fashion.

Across the whole building life cycle, and against each element of building performance, collaboration is central to shifting business-as-usual to a higher standard. The outcome is creating and improving buildings which are better used and more valuable assets.

53%

of respondents cite organisational difficulties such as siloed teams, internal politics and lack of clear responsibilities within their top three greatest challenges to their property portfolio.

Conclusion: Beyond compliance, into value

While building performance is widely understood to be important, our industry is split when it comes to ambition and action to achieve it.

Our findings and experience point to a divide between leaders and laggards in terms of action against key performance goals – Health and Wellbeing, Sustainability and Flexibility – but also on the drivers to achieving them: Measurement and Collaboration.

For organisations seeking long-term returns on their investments in buildings, it's not enough to meet current industry standards and legislation because the market is outpacing them. Achieving more progressive benchmarks is the

way forward, which apply the projected needs of building users to enhance the material capabilities of building fabric and services.

The most significant impact will come from more strategic consultation about the scope for our existing buildings to transform and improve for the future. While new developments can keep pace with the latest requirements more easily, even new buildings will be challenged to remain resilient in a changing climate – environmentally, socially and economically – decades down the line.

The gaps identified by our research, in both vision and readiness, reflect our hands-on experience working with investors, developers and occupiers of all sizes. While we work with leading lights in the industry, our role is also to support and challenge clients of all kinds to elevate their standards and achieve more with their buildings.

We, as multi-disciplinary consultants, can also do more. These findings support a raft of changes afoot in TFT's business which will strengthen our ability to enhance the performance

of buildings and wellbeing of those who use them. Our client advice and our team capabilities are continually adapting to reflect the changing world and the new priorities that our clients are seeking to act upon.

If you would like to hear more about what we can do to help you maximise the performance of your buildings, get in touch.

While new developments can keep pace with the latest requirements more easily, even new buildings will be challenged to remain resilient in a changing climate.



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This report was created with input from across TFT, and beyond. The findings touch on many areas of our business, and we encourage readers with questions to get in touch with our team to discuss them:

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About TFT

TFT is the independent building consultancy that places the wellbeing of people and the performance of buildings at the heart of everything we do.

We were founded in 1973 by three building surveyors David Tuffin, John Ferraby and Michael Taylor, and have since grown to become a major independent consultant for building investors, developers, and occupiers. Our specialists support clients to meet their development, built asset, sustainability and engineering challenges with technical expertise with commercial understanding.

Our reputation for integrity and quality work has seen TFT become a nation-wide practice, operating from Birmingham, Bristol, Cardiff, Edinburgh, Guildford, London and Manchester.

Find out more about us here: <https://www.tftconsultants.com/>

