

Meeting the Commercial Property Retrofit Challenge

Part 2: The Business Case for Action

Q4 2024

Quantifying the costs and benefits associated with improving ESG credentials of commercial properties in the UK

knightfrank.com/research/esg



The quick take

In *Part 1: Defining a Strategy*, we defined the scale of the potential obsolescence challenge and the avenues to consider. This report, the second in the three-part series, begins to weigh the benefits and costs of intervention to uncover optimal solutions

KEY TAKEAWAYS

18% relative rental uplift

Assessing the potential rental uplift from retrofitting or refurbishing will play a role in determining the overall optimal scenario. Offices which have been retrofitted or refurbished, upgrading from EPC C (or lower) to EPC B or above, often with added amenities, have, on average, seen the gap to prime rental levels narrow by 18 percentage points, **see page 4** for details. However, investors should consider the potential value enhancements alongside the level of intervention, the market context, future pipeline, the occupier pool and requirements as there can be wide variation and it requires bespoke asset assessment, as noted on **page 3**.

6 months pre-let

The wider benefits to assess include lower risk premiums from reduced vacancy and void periods, as well as ancillary income streams. In London, retrofitted and refurbished offices, that achieved BREEAM Outstanding or Excellent certification or an EPC A-rating were pre-let, on average, six months before completion. In contrast, buildings with lower ratings averaged just over two months before completion. We explore more on **page 6**, alongside our expert discussions on wider benefits, such as ancillary income or financial implications through sustainability-linked loans, on **page 7**.

27% below prime

The cost of inaction, or base case, is growing and may continue to do so, given the trends highlighted in Part 1. The rents achieved by the retrofitted and refurbished London sample remain, on average, 10% lower than the relative prime levels. However, rents for London offices rated EPC C and below are, on average, around 27% lower than prime levels, and this gap has widened in recent years, **see page 4**. While new construction may achieve prime rents, it must be balanced against longer timelines, higher costs, lifetime carbon considerations, and potential planning challenges, which will be further explored in Part 3.

£113 psf cost for EPC improvements

The cost to upgrade will depend on building factors, location, size, interventions required, and amenity provision, making asset-specific assessment critical. Understanding the variance and baseline costs can help narrow down potential strategies. Our hypothetical scenarios, include an EPC D-rated office building in London being upgraded to meet the potential EPC B minimum, which would cost £113 per square foot (psf). When combined with a high level of amenity, **see page 12** for details, this would rise to £268 psf. Costs vary greatly with asset specifics as well as location.

70% include outdoor spaces

The type of amenity, rather than the quantity, appears to have the most impact on relative rental uplift. Outdoor space, such as a courtyards or terraces, offers the greatest differential in our sample, with some 70% of properties experiencing above average relative rental growth featuring such amenities, compared to just over 40% of those with below average uplifts. Identifying the right amenities will aid in assessing the balance between net lettable area and amenity space, as well as informing certification strategies, **see page 5**.

£250 psf for F&B

Amenity provision versus net lettable area becomes a greater factor when weighing up costs and practicalities. For example, whilst food and beverage (F&B) is among the top amenities on occupiers wishlists, the cost can be c.£250 psf, and practicalities of operation are important to consider, as pointed to on **page 8**. Similarly, collaborative meeting spaces can cost between £90 and £120 psf. Detailed, asset-specific analysis is crucial to determine the most cost-effective approach, ensuring that investments align with both regulatory requirements and market demand to maximise potential value.

The upside

When assessing different decarbonisation strategies and optimising building use, all of the potential benefits must be considered. Here, we focus on a selection of the most prominent and less obvious advantages

The first piece of the puzzle

Whilst it may seem obvious that improving a building will lead to higher rents, the level of uplift will vary greatly. We analysed a sample of 130 retrofitted and refurbished office buildings across England and Wales. These buildings were upgraded from

EPC C or below to EPC B or above, with many refurbishments also including additional amenities and general upgrades. To account for market timing factors, we compared rents before and after the renovations (see **page 4** for more details). We found that on average the retrofitted and refurbished offices saw the gap relative to prime rental levels close by 18 percentage points. This relative uplift

varied by location, level of intervention, the number of leases pre- and post, and market specific factors (such as supply). For example, the greatest relative uplifts were more than 70%. Understanding the market context, future pipeline, occupier requirements and enhancements that upgrading buildings can offer, is critical to assess potential value, as are yield and other effects (see **page 6**).

EXPLAINER

The 3 RE's

Whether to retrofit, refurbish or redevelop determines the level of intervention required. We outline broad definitions for the purpose of this series.

1

Retrofit

The process of upgrading an existing building by replacing fixtures, fittings, and systems with modern, energy-efficient technologies while keeping the structure operational. This improves energy performance and occupant comfort without significantly disrupting use or income flow.



2

Refurbish

A comprehensive renovation that typically strips the building back to its frame without altering the building's core structure or use. It involves renewing some or all fixtures, finishes, and systems to enhance functionality and energy efficiency. This may also require modifications to optimise space and occupant amenities, to alter the market positioning of the building in the most transformative cases.



3

Repurpose

This can either be changing the use of the existing building and, therefore, its layout, technologies, and materials, such as an office changing into a residential unit. Or, at the greatest level of intervention, redeveloping through complete remodelling or demolition and rebuilding, to a different or same use, with the goal of increasing internal space, allowing for flexible use, and typically achieving the highest levels of energy efficiency.



MARKET VIEW

Haves and have nots



Katie Oliphant
London
Office Leasing

ESG is a specification issue. The rent gap between offices meeting ESG requirements and those that don't is widening, driven by a new baseline specification, not necessarily a premium. Many occupiers now expect ESG compliance, so buildings lacking it face a shrinking occupier pool.

Data allows a notional quantification, but with a high level of variation and interdependencies, it is not a case of simply applying an average or looking at historical comparisons. The landscape is evolving, with occupier specifications varying by location, industry, and other factors. Supply pipelines affect rental levels and are time-dependent; London's current pipeline is slim with increased and still rising construction costs. Realistic assessment requires nuancing the market research to ensure it is tailored to a building specifics, as the research expands on.

LEVEL OF INTERVENTION

The rents achieved by the sample of retrofitted & refurbished offices in London remain, on average, 10% lower than the relative prime levels, narrowing in the last five years. Yet, it is important to view the benefits against not just the cost, as we do on **page 10**, but avoiding the cost of inaction. Rents achieved by second-hand offices in London, specifically those rated EPC C or below, were on average 27% lower than prime levels over the same period, and this gap has widened in recent years, see Figure 1. With the continued bifurcation of the market and trends highlighted in *Part 1* of the series creating demand for more ESG-focused assets, this may continue to do so.

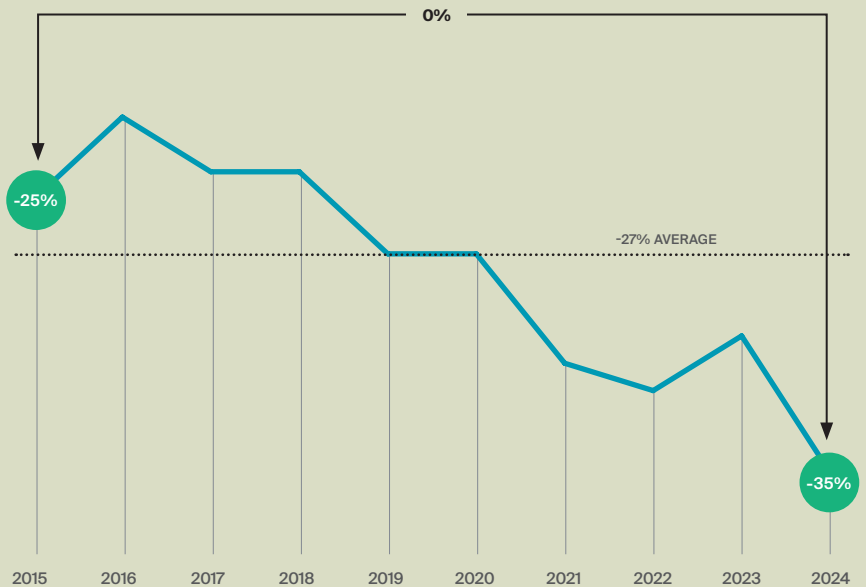
In the universe of options, it is also pivotal to assess the higher levels of intervention. For example, new-builds in London over the past four years have commanded rents 2% higher than prime levels, on average, suggesting that while improvements of varying degrees offer substantial benefits, they may not yet match the specifications or 'new allure' of new constructions. However, this potential for higher rents needs to be weighed with time to realise benefits, higher costs, lifetime carbon – particularly embodied carbon – considerations, and potential regulatory and planning challenges. This point warrants further exploration in Part 3 of our series.

The data shows that substantial rental uplifts can be achieved through improving offices, particularly when paired with energy efficiency improvements and greater amenity, which may require more intervention. Importantly, the cost of inaction has grown in recent years and may continue to do so. Investors

“The type of amenities provided appears to play a significant role with outdoor space, such as a courtyard or roof terrace, emerging as the most influential.”

Cost of inaction

The average rent achieved by EPC C-rated and below offices in London, relative to prime



Source: Knight Frank Research

Methodology explainer on relative rental uplift

To understand how we analysed the change in the rental level relative to prime, we set out a hypothetical example to illustrate.

Office Building A is located in Market B. Prior to the renovation:

- Rent achieved, as stated on the lease, was £44 psf at the time of commencement.
- Market B's prime rental level* was £60 psf.
- Building A achieved 27% below prime rental for Market B.

Post renovation:

- Rent achieved for Building A increased to £67.50 psf.
- Market B's prime rent was £75 psf.
- Building A achieved 10% below prime rental for Market B.

Comparisons:

- Building A saw an absolute rent increase of 53%.
- Market B's prime rent increased by 25%.
- Building A's rent gap relative to prime closed by 17 percentage points.

We have highlighted the rent relative to prime to remove market timing factors and isolate the uplift attributable to the improvements, although locational influences, such as proximity to new transport nodes or green spaces, were not explicitly factored in.

The buildings included come from our development pipeline, excluding new builds and redevelopment, meaning that they would require the building or area to be vacant.

The rental comparisons were adjusted for lease size (sq ft occupied compared to the total leased in the building), where multiple tenants were present.

For more details or to discuss findings in more detail, please get in touch via Flora.Harley@knightfrank.com.

*We have used Knight Frank's definition of prime rents by sub-market for London and each city that we assess. Prime rents reflect what is theoretically achievable for the best-in-class offices within a location. Typically, this would include a ten-year lease by tenants with strong covenants. Our *London Series* describes in detail the criteria for London prime offices, which includes a minimum floor space of 10,000 sq ft and industry-leading sustainability metrics, among other factors.

should consider the potential long-term value enhancements that upgrading buildings can offer, especially as the market increasingly favours sustainable and energy-efficient buildings.

QUALITY OVER QUANTITY OF AMENITY IS IMPORTANT TO RELATIVE RENTAL UPLIFT

Determining what amenities occupiers are willing to pay a premium for is critical when assessing the viability and level of intervention. *Part 1* of our series explored office occupiers’ wish lists and how these preferences aligned with supply. Our uplift analysis provides insight into how the number and type of amenities in offices, which may correlate with higher certification levels, impact relative rental uplift. Offices achieving above average relative rental uplifts averaged 5.6 amenities compared to 5.0 for below average relative uplifts – closely aligning with the number being delivered by the BREEAM certification level discussed in *Part 1*.

The type of amenities provided appears to play a significant role. Outdoor space, such as a courtyard or roof terrace, emerges as the most influential in our sample, with some

70% of the above average relative uplift properties featuring this amenity, compared to just over 40% of those with below average relative uplifts. Conversely, amenities such as gym facilities and those linked to car parking or electric vehicle (EV) charging appear to have less of an impact on relative rental uplift, likely due to locational factors (such as the

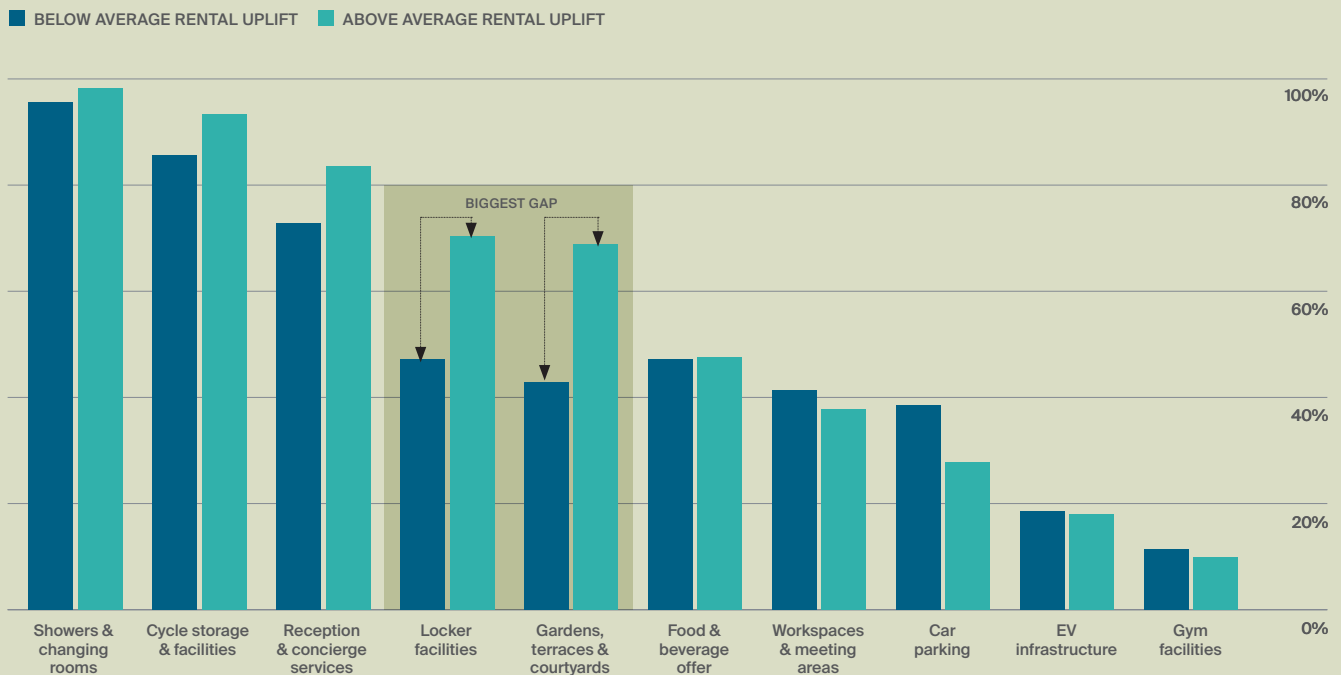
lower prevalence of car parking in London) and considerations around net internal lettable area.

With consideration over amenity size and type with net lettable area, investors should consider which amenities will deliver the greatest return on investment, such as the potential for outdoor space, by closely aligning with occupier demands.



Figure 2: Amenity levers

Percentage of office renovations with each amenity, grouped by relative rental uplift



Source: Knight Frank Research

Build it and they will come

HIGHER SUSTAINABILITY CRITERIA AND AMENITY CAN LEAD TO REDUCED VOID PERIODS

Higher sustainability credentials and amenity appear to lead to longer lease lengths and reduced void periods. These factors can lower risk premiums, as discussed in our *2021 research on green premiums*, and strengthen the business case for upgrading buildings.

In London, offices that were renovated between 2020 and mid 2024, and achieved BREEAM Outstanding or Excellent certification or an EPC A-rating (defined as Group 1), had an average pre-let period of nearly six months before completion. In contrast, offices that achieved BREEAM Very Good or an EPC B-rating (defined as Group 2) averaged just over two months before completion. For new builds, the pre-let periods were notably longer for Group 1 offices, averaging 14 months, but for Group 2 buildings, the pre-let period was a similar two months. The period analysed included pandemic years, which may distort results, yet due to the nascency of interventions at scale, offers an early indication.

Outside Central London, the trend remains consistent. In regional UK cities, the limited availability of high-quality office space is pushing occupiers to secure leases well in advance. For instance, in Leeds, 25% of office take-up in 2023 was either pre-let before construction began or leased before completion, underscoring the growing demand for premium, sustainable office spaces.

“In London, offices that were renovated between 2020 and mid-2024, and achieved BREEAM Outstanding or Excellent certification or an EPC A-rating, had an average pre-let period of nearly six months before completion.”

Renovating to varying levels can reduce void periods and enhance lease security, particularly in markets where high-quality office space is scarce.

LONGER LEASE TIME

The average lease length for Group 1 renovated offices leased 8.5 years – more than a year longer than those in Group 2 and two years more than those EPC C-rated and below.

While other factors, such as building location and tenant profile, may influence lease terms, the correlation between sustainability credentials and lease length is clear. Longer lease periods not only reduce vacancy risk but could boost liquidity and asset value.

YIELD IMPACTS ARE KEY TO DRIVING VALUE AND PERFORMANCE

Buildings with higher sustainability criteria may reduce risk premiums due to improved liquidity, lower vacancy risk and lower overall obsolescence risks. The risk premium is a key component of yield; therefore, lowering this could potentially support yield compression and enhanced returns, as well as other long-term benefits, as discussed in our *2021 Active Capital research*. The potential yield impacts further multiply the rental improvements and drive property performance.

Figure 3: Avoid a void

Average London office pre-let period for renovated office, by Group, 2020-2024, in months

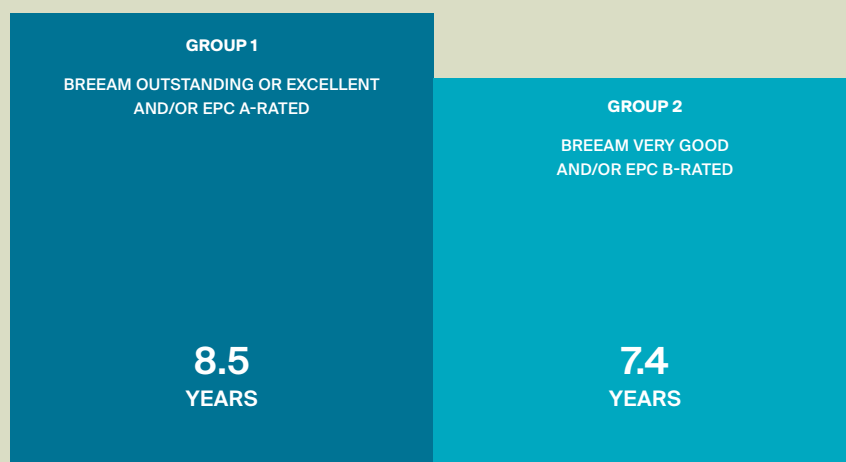


Source: Knight Frank Research, BRE, DLUHC

The sensitivity to risk premiums will vary by sector and region, all of which add to the complexity of assessing the optimal asset use for a more environmentally and commercially sustainable portfolio, which we will dive into in more detail in Part 3.

Figure 4: Higher for longer

Average lease length by office grouping, retrofitted/refurbished London offices, 2020-2024, years



Source: Knight Frank Research, BRE, DLUHC

Ancillary benefits to consider for action

Beyond the benefits of rental uplifts, reduced void periods and compressed yields, there are other opportunities and benefits to assess, such as ancillary income opportunities from renewable energy and financial implications



David Goatman
Global Head of Energy, Sustainability and Natural Resources

A strong ESG asset strategy not only mitigates risk but also provides an opportunity to generate ancillary income, such as through renewables investment and electric vehicle charging infrastructure.

Our previous research – *SPV – Solar Power Value* – explored income

generation opportunities for industrial and retail asset owners specifically, yet opportunities abound across various building types. To demonstrate the commercial opportunity, a 50% coverage of an average-sized industrial unit, say 10,000 sqm, rooftop could provide an internal rate of return (IRR) of up to 16% (excluding debt) and a payback period of between six and nine years, depending upon the power purchase agreement entered into.

In order to move towards net zero, prioritising on-site renewables is crucial, as outlined in detail in the UKGBC NZ Buildings Framework.

EV charging infrastructure is popular with occupiers, secures long-term grid supply capacity to a site and delivers additional rental income. These are complementary initiatives.

All property owners know the challenge of securing grid capacity over the last few years and how it is costly and can take a very long time. With the increasing levels of electrification across all property types it is crucial that property owners consider the local grid supply capacity, what is needed now and in the future, and how they best position their asset.



Lisa Attenborough
Head of Debt Advisory

Lenders are demonstrating an increasing appetite to provide finance for improving properties as they view the potential benefits through three lenses:

- the renovation will lead to higher income, which will support ongoing debt serviceability and reduce refinancing risk at loan maturity;
- any improvements will drive occupier demand, which should in turn enhance ERVs, and;
- financing decarbonisation efforts will demonstrate a lender's commitment to environmental considerations.

Because of this three-fold benefit, we are seeing more competitive pricing

in the lending space. The introduction of the UK's Sustainability Disclosure Requirements, which includes labels for 'Sustainability Improvers', could further advance this. The debt market has seen growing liquidity in the past 24 months, particularly given the advent of non-bank lenders raising funds. With greater market activity, these actors are looking to deploy capital, which is a huge area of interest – especially given the positive impact of decarbonising efforts.



Simon Berkley
Business Rates Partner

Business Rates exemptions may be available to landlords undertaking certain improvement works. In 2022, an exemption was introduced that allowed

ratepayers who invest in renewable energy solutions such as solar PV, wind turbines, battery storage, and electric vehicle charging to see their rates liability reduced to exclude any added value from these systems. The exemption will be in place until 2035. Furthermore, since April 2024, occupiers who undertake qualifying improvements to their property can also claim a 12-month grace period before the improvement is reflected in their Rateable Value.

However, take-up of both relief schemes has been low, with the previous Government placing too many requirements on ratepayers before they can qualify for the relief. As far as incentives go, both reliefs merely delay the inevitable increase in rates liability that will arise from improving the property rather than actively reducing it. With a new Government in place, there is now a real opportunity to turbocharge these relief schemes to function as a real incentive for investment.

Oversupply or obsolescence?

Alongside assessing the sustainability-related obsolescence risks discussed in *Part 1* of this series, it is important to overlay and assess the localised demand and supply for each asset use, size, amenity, and sustainability criteria. This is critical for the market to avoid oversupply of any one type. The hyper localisation and nuances are explored in more depth, alongside considerations for occupier pools, in our UK Cities DNA Research.



MARKET VIEW

Reality check – managing expectations



Amira Hashemi
ESG Lead, Property
Asset Management

The ability to translate ESG strategies and targets into building action is complex and not typically within

the remit of traditional property management, yet at Knight Frank our latest offering includes comprehensive ESG clauses. A standard set of ESG initiatives, which lead to standard recommendations, will not be sufficient to address the sustainability performance of every building; it requires a bespoke approach. This includes working within service charge budget constraints and

finding solutions to keep buildings on a carbon reduction pathway to mitigate obsolescence risk, be it through non-recoverable costs or mechanisms such as a landlord loan to the service charge. The need to communicate clearly to occupiers is crucial in this strategy.



Charlotte Owen
Property Asset
Management

The benefits of working with a good property manager are they can help support your asset strategy, incorporating bespoke ESG

considerations and market factors, setting out practicalities on how to do it, identifying and supporting the capex requirements and, importantly, how to work into a service charge strategy. We are increasingly helping asset owners to consider and implement strategies for working with existing tenants rather than have an extended and expensive void period.

This also enables owners to collaborate with occupiers on what

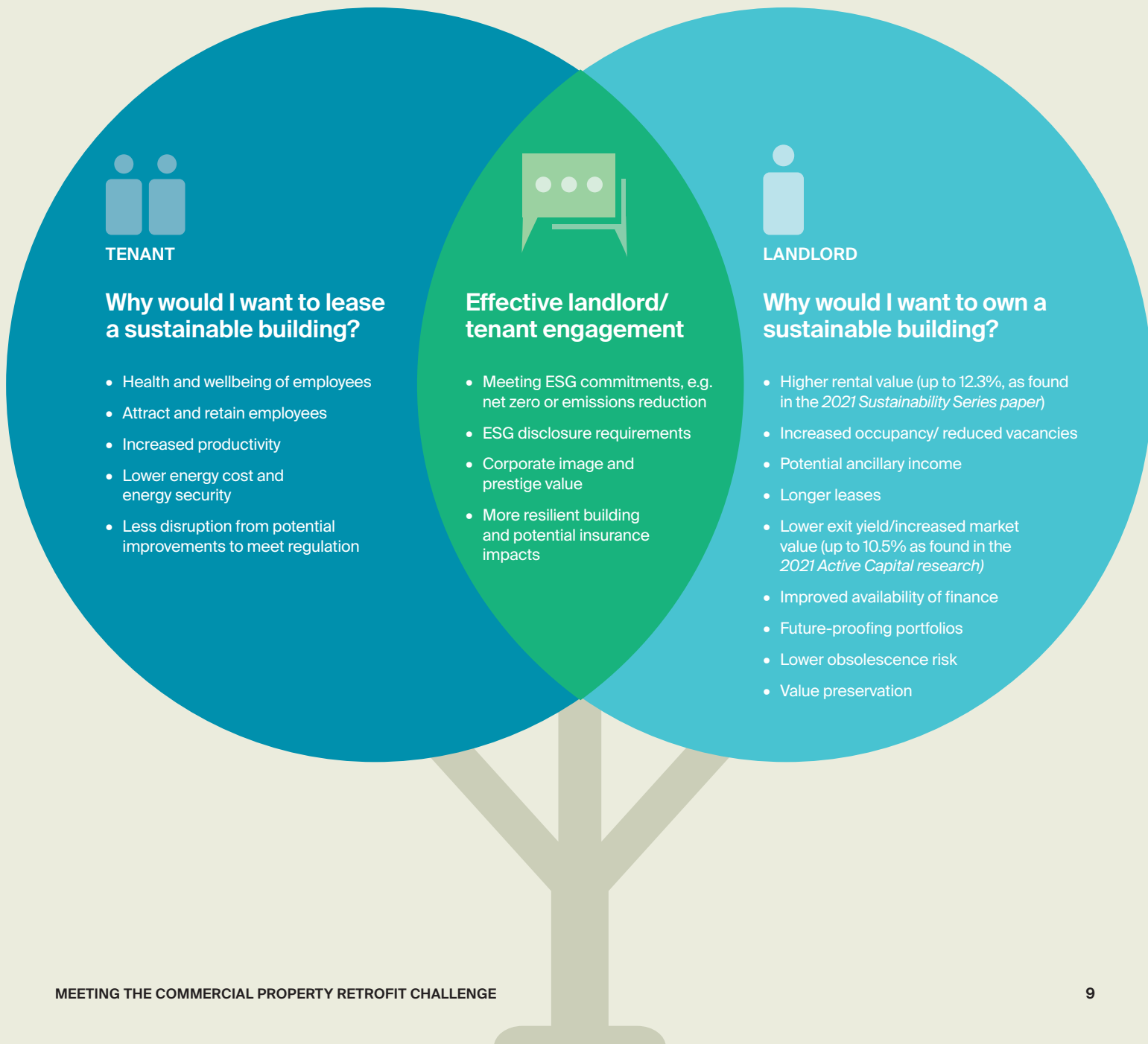
amenities are right for them and the building, thinking through the real practicalities and weighing up the market's extensive amenities list against existing floor space and usage rates. For example, cafés and food and beverage amenity areas are expensive extras. Still, operators need to be commercially viable – this must be considered in the plans and avenues of exploration, not just ticking a box.

Communicating clear benefits to occupiers and providing effective property management are necessary to ensure buildings perform optimally

The need to communicate benefits is crucial, particularly as investor focus turns to how buildings perform in operation. Some 70% of investors in our 2023 survey stated that they require energy use data of buildings before acquisition, which may be largely influenced by how tenants

occupy the building. Aligning and conveying the upside for both tenant and asset owner, as well as active communication and collaboration, will enable the best use and optimal building performance. This is particularly important when operational certifications, such as

BREEAM In-Use or NABERS, are in place, as these require periodic evaluations of ongoing performance and features. To maximise these benefits, every aspect of the strategy must consider all stakeholders and the practicalities of implementation.



Cost conundrum: Adding up

Capital expenditure (capex) is a critical factor in determining the viability of any retrofit strategy. What will the costs be, depending on the level of intervention?

Given the varying sustainability requirements of office occupiers discussed in *Part 1*, we introduced a three-tiered system to categorise the extent of retrofitting and refurbishing needed:

- **Group 1:** Represents the highest standard of office buildings, typically achieving BREEAM Excellent or Outstanding and EPC A-ratings. These buildings also offer additional amenities to enhance the occupier experience.
- **Group 2:** Buildings in this category typically achieve BREEAM Very Good and EPC B-ratings, reflecting higher sustainability and performance than the minimum standard. Basic amenities are also included.
- **Group 3*:** All buildings in this group meet future national regulatory requirements, along with any other requirements set by the Local Authority.

Having explored the rental uplifts relative to prime rents as a result of the intervention, we now turn to the cost implications of each scenario. It is important to note that these costs will be highly asset and location-specific, depending on the building's current condition, design, and infrastructure. We look at planning, embodied carbon and labour elements in more detail in Part 3 of the series. For the remainder of this paper, unless stated otherwise, we set out the cost in £ per square foot (psf) relative to Gross Internal Area (GIA) where necessary, we adjust for the proportion of GIA applicable per intervention per scenario. These costs include an assumed 25% for preliminaries, overheads and profit (OH&P) and a contingency.

Starting with Group 3 costs - the minimum of EPC B rating

To illustrate potential costs, we use the following scenario:

As per our Part 1 research, on average it takes four interventions to reach an EPC B from a lower band. Working alongside Knight Frank EPC experts the most likely interventions to improve ratings have been applied. These include:

- installing LED lighting;
- replacing gas boilers with air-source heat pumps;
- switching to condensers and variable refrigerant flow (VRF) systems;
- and upgrading air handling units (AHUs).

This scenario, estimates the average cost of raising the theoretical office building from EPC D to B-rating in London to be £113 psf.

While we present this scenario, there is a broad range and combination of interventions available, as well as unique asset specific elements to consider in terms of design, existing infrastructure, and occupier behaviour. Understanding these costs is essential

for making informed decisions about cost optimal solutions to improving energy efficiency.

NON-NEGOTIABLES IN DECARBONISING HEATING AND COOLING TO AFFECT HALF OF ALL PROPERTIES

One critical consideration for asset owners is the need to decarbonise heating and cooling systems, a shift that will affect more than half of commercial properties. Electricity's emission factors are lower than gas's and, therefore, are likely to significantly impact EPC ratings and, importantly, emissions.

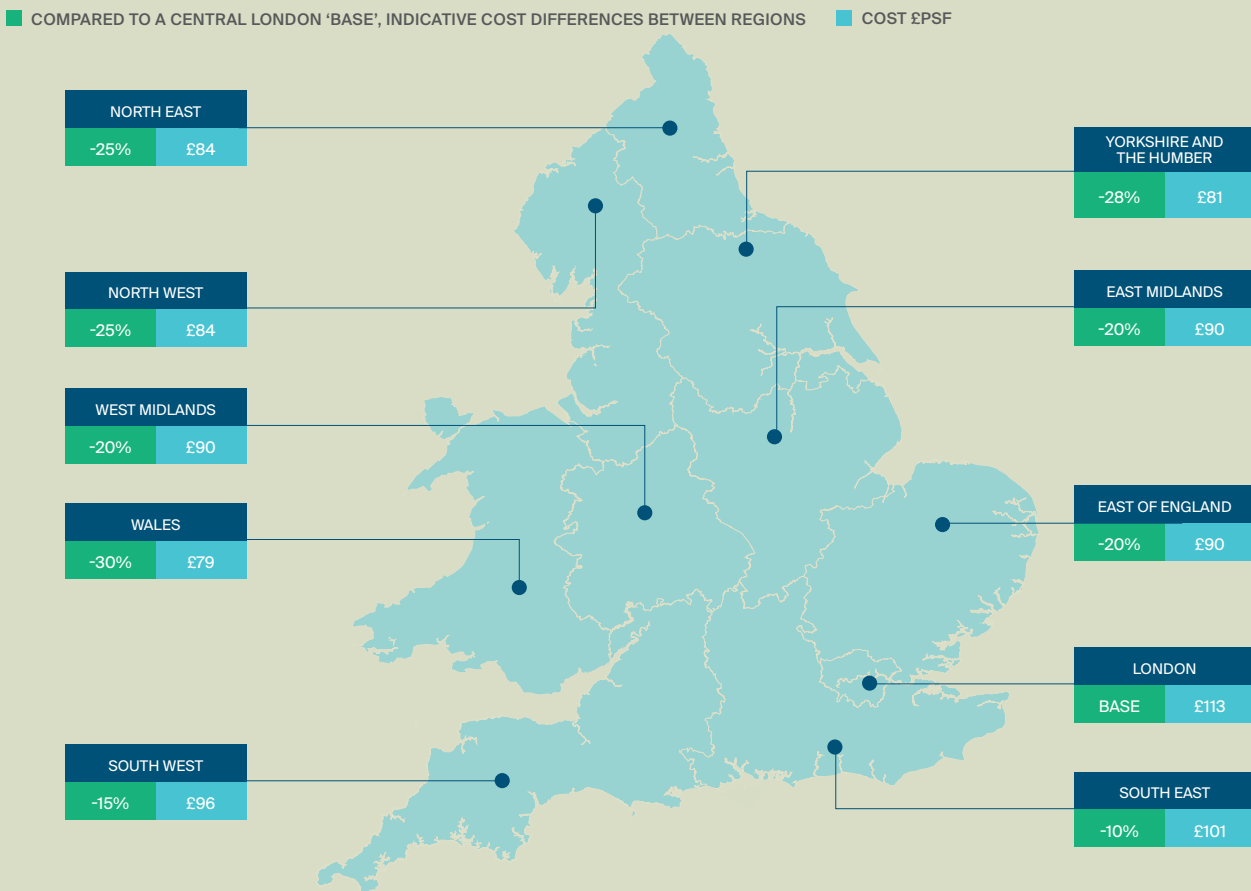
Currently, natural gas is the primary heating source for 54% of office, industrial, and retail floor space in England and Wales, according to EPC analysis. Changes in the EPC methodology in 2022 have shifted the landscape: properties heated by electricity now benefit from improved EPC ratings, while those reliant on gas may see their ratings stagnate or even deteriorate. This is unlikely to be changed due to the emissions relating to each energy type and the



*In Part 1 we defined these as tiers. We have simplified and assumed that our previous Group definitions will encompass Group 3 being all other offices which will have to meet any future regulatory requirements.

Figure 5: Breaking it down, the potential cost, under the modelled scenario, to upgrade offices

Upper cost estimate under the scenario of applying the four most common interventions to an office from EPC D-rating to a B-rating, £psf and regional cost variance



Source: Knight Frank Research, Knight Frank Cost Consultancy, DLUHC
 Note: These costs are based on the scenarios presented and may vary depending on asset specifics.

shift towards electrification. The degree of reliance on gas varies by property type – offices are the most exposed, with 58% dependency, followed by industrial properties at 56%, and retail spaces at 48%.

Switching to electric heating systems, such as heat pumps, could enhance EPC ratings. However, this transition is both costly and disruptive. For instance, installing a heat pump costs an estimated £10-£20 psf. This is before the addition of consultancy and OH&P

“One critical consideration for asset owners is the need to decarbonise heating and cooling systems, a shift that will affect more than half of commercial properties.”

and would most likely require vacant possession to implement or proactive property management to work with existing tenants. Prior to upgrades, the building would also need to be assessed for power capacity – whether there is enough or, if not, whether it can be upgraded. If the upgrade is required and available this would be an additional cost.

Understanding exposure to this on a portfolio level is key. This is of note given the previous government’s consultation on phasing out of fossil fuel heating systems in non-domestic properties and the new government’s move towards cleaner energy.

REGIONAL VARIATIONS

The cost will vary by region and are likely to see lower levels of inflation compared to recent years.

London’s modelled cost is driven by the higher construction costs

compared to the rest of the country, with the lowest in Wales, as shown by the variance in Figure 5. Looking ahead, the costs outlined are based on data as of Spring 2024, yet it is anticipated that building costs will revert to a more ‘normal’ rate of growth. According to BCIS forecasts, general building costs are expected to rise by around 3% over the next year and almost 9% over the next three years. This marks a positive shift against a backdrop of significant build cost inflation, where general costs have risen by 4% in the past year and 21% in the past three years. This would need to be factored into asset strategies and why it’s critical to have an accurate cost assessment to ensure viability.

It is crucial to consider the most cost-effective sequencing and combination of solutions. Each building should be evaluated floor by floor, with detailed modeling to understand the full impact of potential interventions.

Group 1 and Group 2 strategies: Cost of amenity

Simply meeting EPC minimums is not the only strategy; often, this approach is combined with considering amenities and occupier requirements, as discussed in *Part 1*. To fully assess the range of options available, it is essential to understand the costs associated with these combined strategies.

Our analysis of renovated offices reveals that amenities such as showers, changing rooms, cycle storage, and outdoor spaces are common. However, other items on occupiers' wish lists are less frequently included. For instance, gym facilities were present in only 17% of the BREEAM Outstanding and Excellent buildings we analysed, while just 12% included dedicated wellbeing spaces. Landlords face the challenge of balancing these additional amenities with the essentials, which include installing raised access floors and suspended ceilings and refurbishing key areas like receptions, WCs, staircases, and lift lobbies. Any wellbeing offering must be balanced with net internal area (NIA) loss, unless operated by a tenant paying rent, as NIA loss could mean rental loss.

To explore the potential costs of retrofit, refurbishment and repositioning, including various levels of amenities, we outline two theoretical building scenarios corresponding to our Group 1 and Group 2 strategies.

Group 1 scenario includes a full suite of amenities typical of a London office, meeting BREEAM Excellent or Outstanding standards and achieving an EPC rating of A, including:

- end-of-trip facilities (such as bicycle parking, locker rooms, showers, and changing areas);
- private or communal terraces;
- onsite food and beverage services;
- fitness and wellbeing facilities; and
- collaborative meeting spaces.

“Strategies must carefully balance the costs and benefits of retrofitting, considering both EPC compliance and occupier needs.”

Group 2 scenario offers a scaled-down version, maintaining essential end-of-trip facilities while reducing other amenities. This scenario resembles a London office meeting BREEAM Very Good standards and achieving an EPC rating of B.

In both scenarios, the costs are applied to the proportion of gross internal area (GIA), which they cover as set out in Table 1. Bringing the building to each of these levels is likely to require vacant possession rather than whilst tenants are in situ.

For the Group 1 scenario, the illustrative cost averages £156 per sq ft (psf), while the Group 2 scenario averages £86 psf. When combined with the costs of EPC upgrades, the total cost would be £268 psf for Group 1 and £199 psf for Group 2. These figures will vary based on the size and quality of amenities, and they must be carefully weighed against potential rental levels and occupier demand. The impact on net lettable area and variations within these metrics also need to be considered to determine the most viable route.

CHALLENGES

Given the complexities and variations at the asset level, scaling these costs up presents challenges, and the total estimated impact could vary significantly. This is not least due to the different number of amenities in London versus outside of London retrofits, as discussed in *Part 1* and on **page 5**. Whilst noted on **page 11** that expenditure could be in line with recent averages in relation to capital values, there may be an impact on property values – a topic we will explore in more detail in Part 3 of this series.

“The net lettable area needs to be carefully considered against amenities delivered.”

Table 1: Levelling up

The amenity provision in our Group 1 and Group 2 scenarios and the Gross Internal Area (GIA) each would require

■ GROUP 1 AND 2 ■ GROUP 1 ONLY

SCENARIO		Proportion of GIA space
Standard refurbishment features	Raised access floor	90%
	Suspended ceiling	80%
	Refurbishment of reception	4%
	Refurbishment of WCs	5%
	Staircases and lift lobby refurbishment	5%
Amenity specification	End-of-trip facilities (bicycle parking, locker facilities, showers, and changing rooms)	2%
	Private or communal terraces	8%
	Onsite food and beverage options	2%
	Fitness and wellbeing facilities	3%
	Collaborative meeting spaces	20%

Source: Knight Frank Research, Knight Frank Project Building & Consultancy

Strategies must carefully balance the costs and benefits of retrofitting, considering both EPC compliance and occupier needs. We have limited the illustrations to our hypothetical scenarios whilst highlighting the additional benefits that would need to be considered and noting other costs that may be incurred, such as vacant periods, rent reductions if doing with tenants in situ (where possible) and other construction-related costs such as waster removal.

In addition, the net lettable area needs to be carefully considered against amenities delivered. For example, whilst food and beverage provision is among the top amenities on occupiers wishlists, as shown in Part 1, the cost can be c.£250 psf. Similarly, collaborative meeting spaces

can cost between £90 and £120 psf. Spatial planning and operational considerations, who will operate F&B for example, are needed. Detailed, asset-specific analysis is crucial to

determine the most cost-effective approach, ensuring that investments are aligned with both regulatory requirements and market demand, to deliver the maximum potential value.

MARKET VIEW

Additional considerations



Sam Ley
Associate, Cost Consultancy

The industry is well versed when it comes to benchmarked rates such as £ psf, but understanding the nuances and when they are appropriate to use is paramount. When advising clients, we often supply a range to ensure we capture as many variables as possible. For full building refurbishments, we tend to use a benchmarked rate, which is applied to the gross internal area (GIA) to estimate the potential spending; however, this rate can be skewed by economies of scale.

For example, a benchmarked rate may seem appropriate in a 100,000 sq ft building, but for a 40,000 sq ft building, you are likely to see a higher £ psf due to a large amount of construction work squeezed into a small area.

Table 2 : Cost benchmarking

The average cost per intervention using Central London as a base, £psf

ENERGY EFFICIENCY UPGRADES	
MECHANICAL & ELECTRICAL UPGRADES	
Switch from traditional chiller and fan coil systems to efficient VRF units	£30-£40
Replace existing air handling units (AHUs) with high-efficiency models	£15
Upgrade from gas boilers to air source heat pumps	£10-£20
Install energy-saving LED lighting with smart controls for occupancy	£10-£15
Replace central boilers with localized water heaters for WCs and kitchens	£2.5-£5
Upgrade existing boiler with a high-efficiency, energy-saving model	£3-£5
Install a smart Building Management System (BMS)	£5
Add photovoltaic (PV) solar panels	£2-£7
Install solar shading and reflective films	£2-£5
BUILDING ENVELOPE IMPROVEMENTS	
Repair or replace window seals and gaskets	£5-£10
Replace or upgrade flat roof finishes	£3-£7
Install triple glazing	£10-£25
Conduct air permeability testing to identify and seal air leaks	£1-£10
Increase wall insulation	£3-£7
Improve floor insulation	£1-£2
Replace façades and windows	£50-£100
FUNCTIONAL IMPROVEMENTS	
STANDARD REFURBISHMENT FEATURES	
Install raised access flooring	£6
Install suspended ceilings	£8
Refurbish reception area	£10
Renovate WCs	£20
Refurbish staircases and lift lobbies	£5
AMENITY SPECIFICATION	
Install end-of-trip facilities such as bicycle storage, showers, and lockers	£20
Add private or communal terraces	£10-£25
Introduce onsite food and beverage options	£250
Add fitness and wellness facilities	£50
Create collaborative meeting spaces	£90-£120

Source: Knight Frank Cost Consultancy

A balancing act

The success of any retrofit or refurbish strategy depends on balancing benefits and costs, or, in other words, viability. Regional variations make asset-level analysis essential to ensure financial viability and optimise returns across different markets

Viability is key, looking at the full picture requires nuance

The cost to retrofit or refurbish an office varies significantly by asset, not only by region, and these differences, alongside thorough investigation (see **page 13**) and budgeting, must be carefully considered to ensure financial viability.

In Figure 6, we show the variation in all aspects – the prime rental levels in each market, the proportion of floorspace needing upgrade and the potential range of costs for our scenarios of Group 1, 2, and 3 interventions.

Viability is key, looking at the full picture requires nuance. In London, where the highest prime rent across

all markets sits at £150 psf, but can reach £200 psf, the cost of upgrading offices can be more compelling due to the potential relative and absolute rental uplifts and long-term value enhancement. However, with lower rental levels it may be harder to justify on rent alone. The challenge intensifies when layering on the cost of amenities, which could enhance rental value but also increase costs, as discussed on **page 12**.

Importantly, upgrading properties, as examined on **page 6**, has a number of other benefits that help assess and understand the full picture. The interventions can reduce the risk

premium due to lower liquidity risk (more investor demand) and less vacancy risk. It could also enhance income streams, all of which could lead to yield compression, which will, in turn, enhance value and drive performance.

Conversely, in locations where rental uplifts are not as compelling, capital values may have already adjusted, or may need to adjust, to enable viability, or other options may need to be explored for optimal asset strategy. We will explore this more in Part 3 of this series.

As sustainability standards tighten and occupier demands evolve, simply meeting the EPC minimum may not be sufficient for some parts of the market. Yet, there is going to be a market where EPC minimums are enough and the higher level of amenity and sustainability isn't required (our Group 3 portion of the market).

An evaluation of the best approach to integrating energy efficiency upgrades with tenant-focused amenities must be considered and weighed not only with net lettable area to optimise property value, but also an assessment of the location 'DNA' – or economic make-up- to ensure long-term viability.

“As sustainability standards tighten and occupier demands evolve, simply meeting the EPC minimum may not be sufficient for some parts of the market.”



A one-size-fits-all approach is unworkable. The ranges presented in Table 3 are only presented as a guide. As the market evolves, it is critical to seek advice and understanding of all the nuances brought to light in this series of reports. Property owners and investors must conduct detailed, asset-level analyses, considering local market conditions, occupier demands, variations in costs and benefits (which may alter if thorough investigation and planning is not implemented at early stages) and how each strategy will vary within these elements. It is important to look at all options, including the possible avenues and level of renovation alongside alternative strategies like repurposing – be that to different use or redeveloping – to find the optimal solution.

In Part 3, the next instalment, we will delve deeper into these considerations, offering further insights into how to navigate this complex landscape.

MARKET VIEW

All in the detailed planning



Charles Ingram Evans
Head of Project Management, Development Consultancy & Building Surveying

The biggest risk for any retrofitting or refurbishment project is not going into enough detail to accurately assess the cost. Even if on the face of it a project stacks up, unforeseen expenditure can bring viability into question.

To mitigate these risks it is essential to do thorough investigations at an early stage, which might be pre-acquisition due diligence if buildings

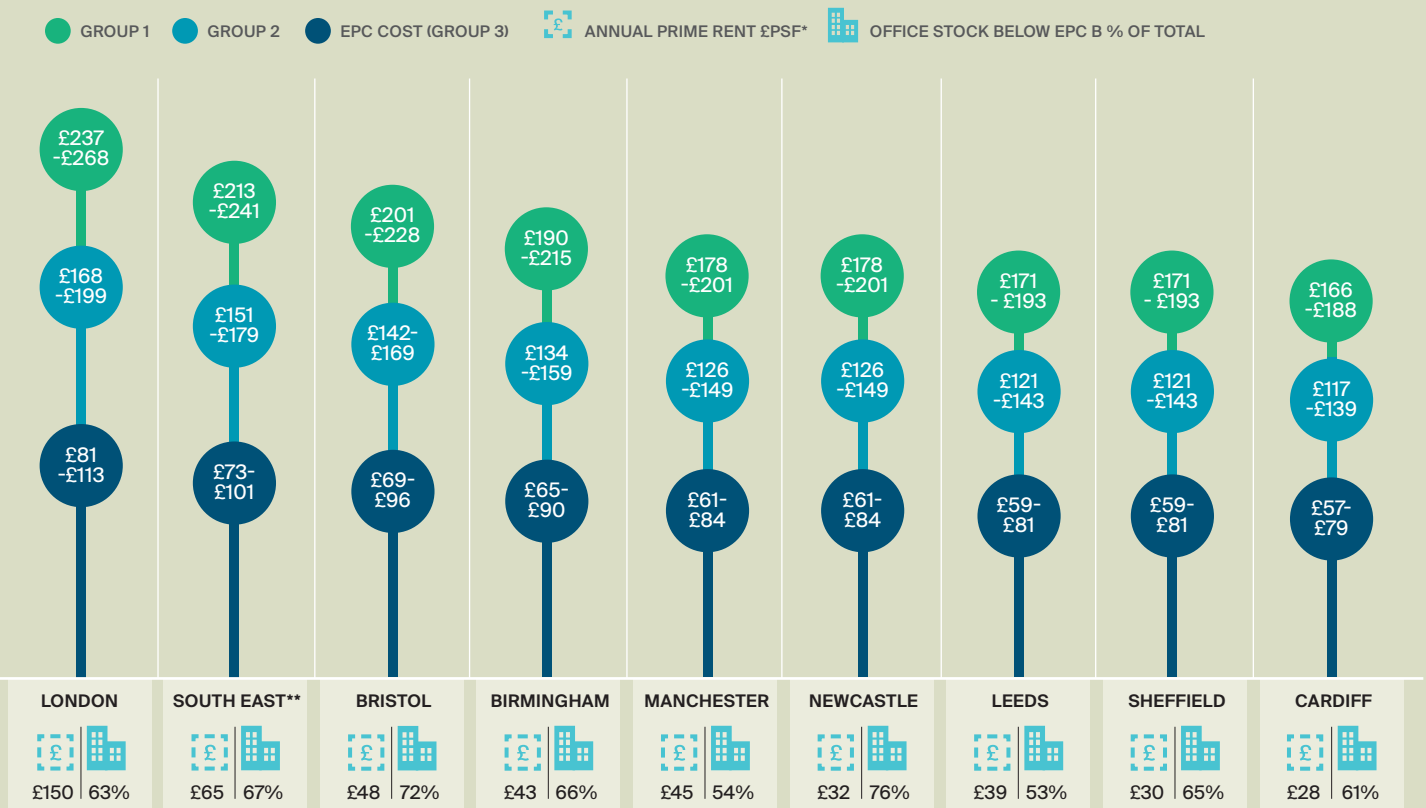
are being purchased for value add. Key questions include:

- Is there historical information on the building?
- Can the as built drawings be trusted?
- Is there any recourse against the original design team or contractor?
- Are any further investigations required to verify information reviewed?
- Will there be and additional fire proofing requirements and additional expenditure required as a result of new legislation?

This is often more intrusive and time consuming upfront but is imperative to ensure budgets are kept to and the project remains viable.

Figure 6: Stacking up

Our hypothetical scenarios and illustrated cost ranges for Group 1, 2 and 3 scenarios, average market, prime rents and floor space required to upgrade



Source: Knight Frank Research

* This represents the prime rent for the central office market, excluding London and the South East, where it represents the highest across all submarkets.

** Brighton, Cambridge, Guildford, Maidenhead, Oxford, Reading, Watford, Woking, South West London, and West London.

Note: We have applied the asset-level EPC recommendations, the top four interventions, and the illustrative Group 1 and Group 2 scenarios as shown in Table 1. Costs have been adjusted for each region according to differential as shown in Figure 5. **These costs are based on the scenarios presented and may vary depending on asset specifics.**

Recent Research



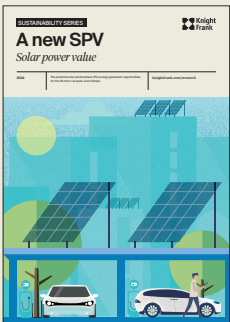
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