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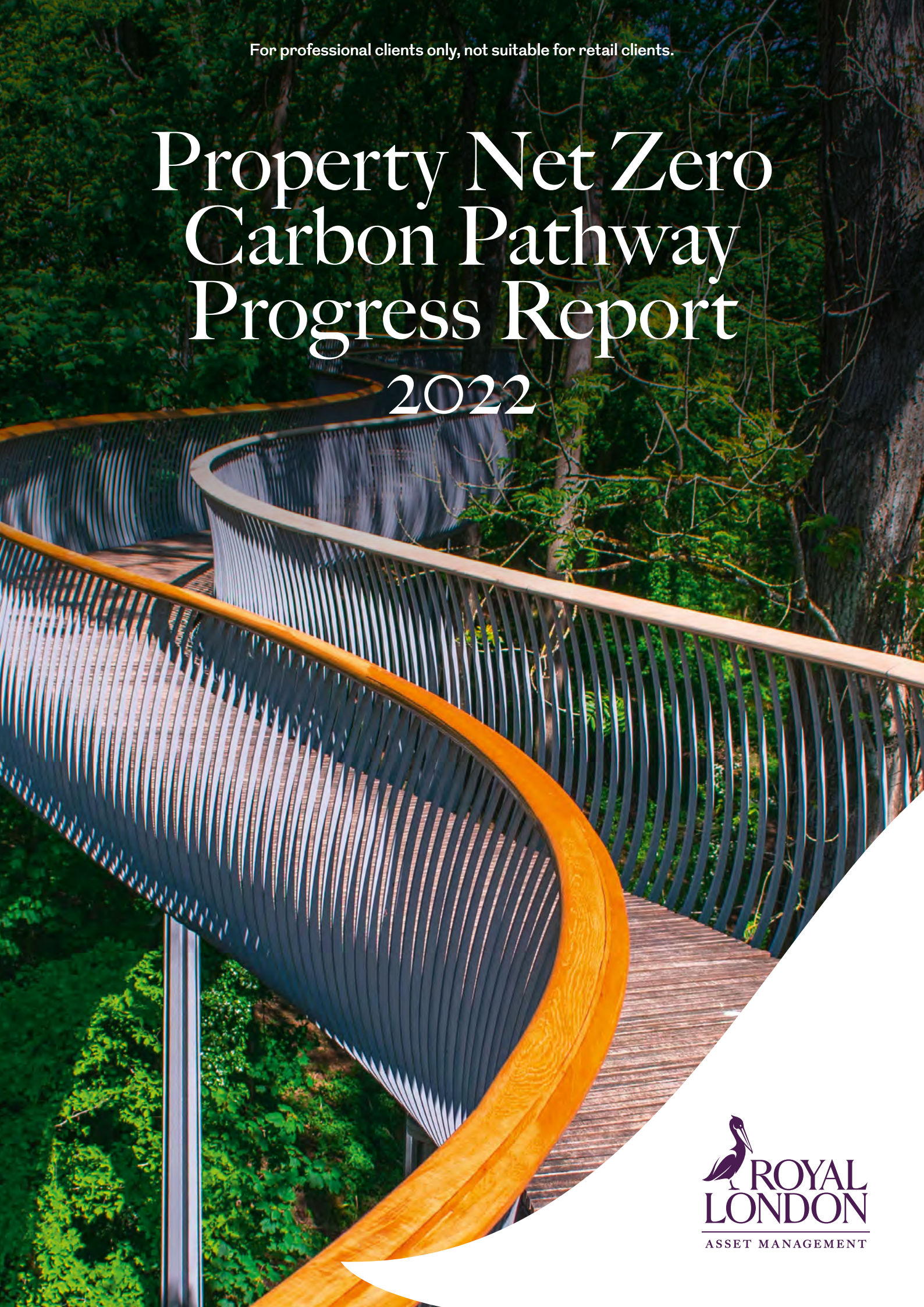
Property Net Zero Carbon Pathway Progress Report 2022



ROYAL LONDON
ASSET MANAGEMENT

> “This year we are also including our first ever property-specific Task Force on Climate-Related Financial Disclosures report.”

Mark Evans, Head of Property

3 Hardman Square, Manchester

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Statesman House, Maidenhead

Mark Evans
Head of Property

We are delighted to publish our first update showcasing the progress made since our original Property Net Zero Carbon Pathway in 2021. In many ways it feels that a lot has changed in the intervening time, but we remain clear and focused on managing our assets for all of our stakeholders and committed to investing in a sustainable future.

The global and local markets in which we operate have seen significant effects from the COVID-19 pandemic, energy prices and inflation, as well as social and technological shifts in the ways that we work, shop and spend our leisure time. At the same time, the understanding of what is meant by 'Net Zero Carbon' and how this applies to the built environment continues to advance. This increasing complexity and the need for urgent action requires us to consider greenhouse gas (GHG) emissions at every stage of an asset's life cycle, and we will play our part in the transformation of the built environment through our decisions and actions, as well as through sharing our experience and working with others.

This is a fast-evolving space. Over the last couple of years, some of our highlights that demonstrate our approach to Responsible Property Investment (RPI) include the critical improvement in data collection from our standing assets that enables greater insight and evidence-based actions, a comprehensive audit programme developing pathways to net zero carbon for individual properties, and pioneering new developments, such as Statesman House, Maidenhead, using NABERS UK Design for Performance.

This report aims to provide a comprehensive view of our commitments and more importantly actions, to the market and all of our stakeholders. We are on a pathway to achieve net zero carbon across all of our property investments and fully acknowledge we are learning and developing as we go. This year we are also including our first ever property-specific Task Force on Climate-Related Financial Disclosures (TCFD) report, demonstrating how we consider the climate-related risks and opportunities that will impact on us, as well as reflecting on our impact on the climate and progress made over the last 18 months.

Mark Evans, Head of Property

Document map

This document aims to highlight the progress made on our RPI Strategy. Helping us to achieve our strategic objectives is a suite of documents, policies and guidance notes disclosing the standards we should be reaching for new and existing assets, as well as detailed statements of achievements against these. The map below sets out this wider suite of supporting documents.

Our reporting suite

This report forms part of our wider Responsible Investment and Property-specific reporting suite:

Responsible Investment

Stewardship & Responsible Investment Report 2023[1]

Our report as part of our commitment to the UK Stewardship Code

1. These reports cover the reporting period 1st January 2022 to 31st December 2022

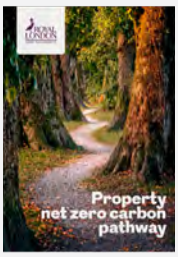
Climate Report 2022

Our report is in line with the recommendations of the Task Force on Climate-related Financial Disclosures

Royal London Asset Management Property

Responsible Property Investment Strategy 2021 to 2025

Sets out our RPI strategic framework and how we embed RPI across our portfolio



Property Net Zero Carbon Pathway

Sets out our pathway to achieving net zero carbon by our defined target dates

Property Development & Refurbishment Statement of Achievement 2022

Sets out our performance highlights against our New Construction and Major Refurbishment Sustainability Standards

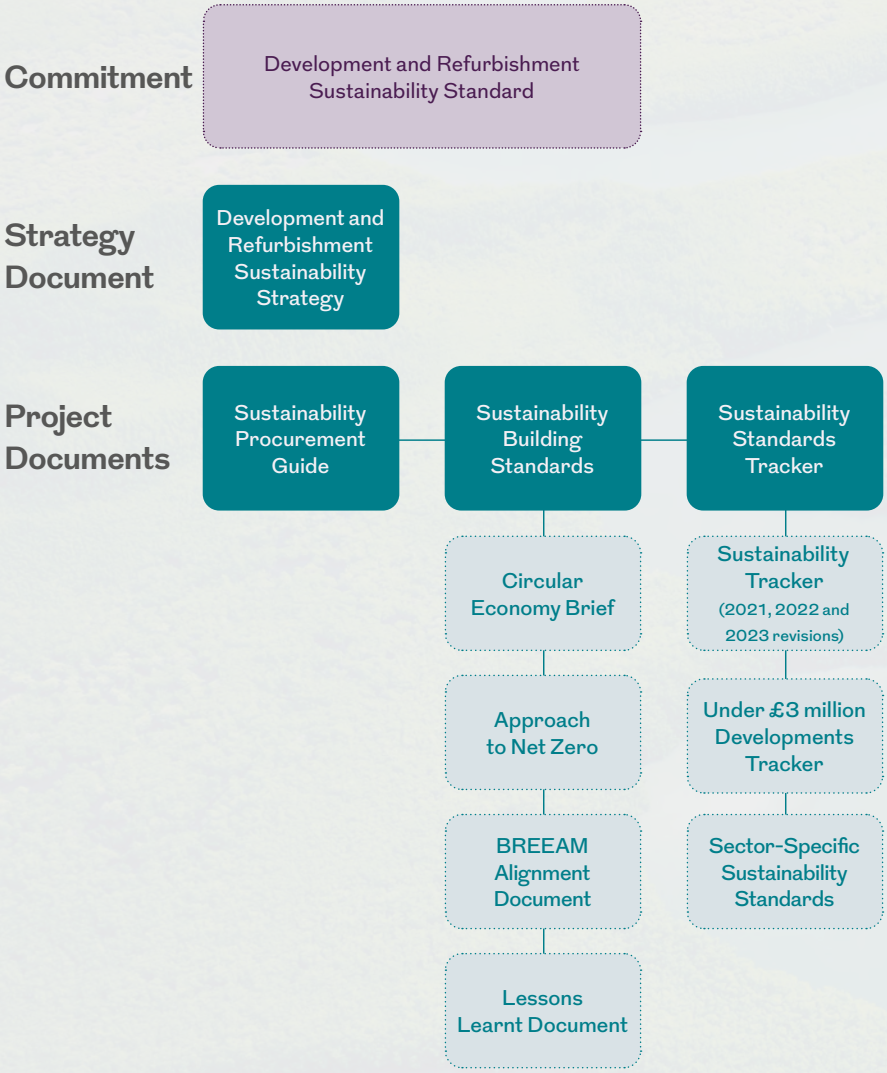
New Construction and Major Refurbishment Sustainability Standards 2023

Our development standards mapped against eight sustainability categories

For more information, please visit rlam.com/uk/institutional-investors/responsible-investment rlam.com/uk/institutional-investors/our-capabilities/property/responsible-property-investment

We have additional policy and project documents for our development and refurbishment activities. These provide guidance to our design teams, whilst ensuring our sustainability targets and commitments are adhered to.

Development and Refurbishment Sustainability framework suite of documents



Introduction

2 City Place, Gatwick

Across Property, we continue to review the carbon footprint and trajectory of our property portfolio. Since the launch of our pathway, we have been working to track progress, manage risks and make informed decisions towards achieving net zero carbon whilst ensuring compliance with increasing regulatory and disclosure requirements.

Changing market conditions due to both international and more local factors have motivated us to place even greater emphasis on energy efficiency and adapt the way we manage our properties. We are also directing considerable attention and resources towards addressing climate concerns, emphasised by the release of the Intergovernmental Panel on Climate Change's (IPCC) Sixth Synthesis Report[1] in 2023. This report underscored the urgency of taking action, emphasising the need for global emissions to peak no later than 2025 in order to limit average global temperature rise to approximately 1.5 degrees. We understand that there is no 'safe' level of global heating and are aligning our action to support this internationally agreed commitment.

Additionally, the definition of net zero carbon is evolving as regulatory bodies and industry working groups in the real estate sector and beyond collaborate to establish the necessary requirements to tackle this challenge. A significant milestone in this regard was the release of the Carbon Risk Real Estate Monitor (CRREM) Version Two[2] in early 2023. This updated pathway offers improved methodologies and increased confidence in assumptions for real estate assets across multiple countries. Additionally, in May 2023, the Science-Based Targets initiative (SBTi) launched a consultation[3] for their new guidance for the buildings industry, with a focus on integrating CRREM pathways to create decarbonisation pathways for the built environment. Moreover, in the United Kingdom, the development of the UK Net Zero Carbon Buildings Standard[4] is currently underway. This standard is expected to consolidate several existing frameworks, providing clear and consistent definitions for UK buildings and corresponding operational and embodied carbon targets.

2 City Place, Gatwick

1. https://www.ipcc.ch/report/ar6/syr/
2. https://www.crrem.org/about-crrem-phase-ii/.
3. https://sciencebasedtargets.org/sectors/buildings
4. https://www.nzcbuildings.co.uk/

Leonardo Hotel, Bristol

Commitment to Net Zero

We have committed to achieving net zero carbon by 2030 for directly managed property assets and developments,[5] and by 2040 for indirectly managed property assets.[6] Our pathway to net zero carbon follows seven steps:

STEP 1
Understand the drivers for net zero carbon

STEP 2
Define the scope and boundaries

STEP 3
Identify carbon footprint and trajectory

STEP 4
Reduce embodied carbon

STEP 5
Increase operational efficiency

STEP 6
Increase renewable energy supply

STEP 7
Offset residual emissions

5. Directly managed property assets are those which Royal London Asset Management has complete operational control and greater than 50% equity share, and joint ventures where they would cover the proportionate amount of emissions. Developments are any new development or major refurbishment that comes online from 2030 onwards.

6. Indirectly managed property assets are either partially managed by Royal London Asset Management or managed wholly by the occupier.

Existing initiatives we are committed to

Since the publication of our Property Net Zero Carbon Pathway in 2021, we have sought to expand the number of global frameworks we are aligned with in order to continue to drive progress and meet our net zero carbon targets. We also ensure that we consistently review any changes to existing frameworks and amend our processes accordingly to adapt to any changes.

Better Buildings Partnership Climate Commitment

The overarching objective of the Better Buildings Partnership's (BBP) Climate Commitment is to deliver net zero buildings by 2050. As a signatory, we published our original Net Zero Carbon Pathway in 2021 and have committed to the following:

- annually disclose our progress towards this pathway.
- disclose the energy performance of our portfolios.
- develop comprehensive climate change resilience strategies for our portfolios.

As a signatory, we are also committed to embedding climate resilience across our portfolio which is aligned with the BBP's own definition of a climate resilience.[7] The BBP define that a climate-resilient business has a strategy in place to:

- **mitigate** the worst impacts of climate change by becoming 'net zero' carbon before 2050.
- **adapt** to operating in a world in which climate-driven disruption is more frequent and severe.
- **disclose** climate-related information to investors, regulators and other stakeholders in a useful and timely way.

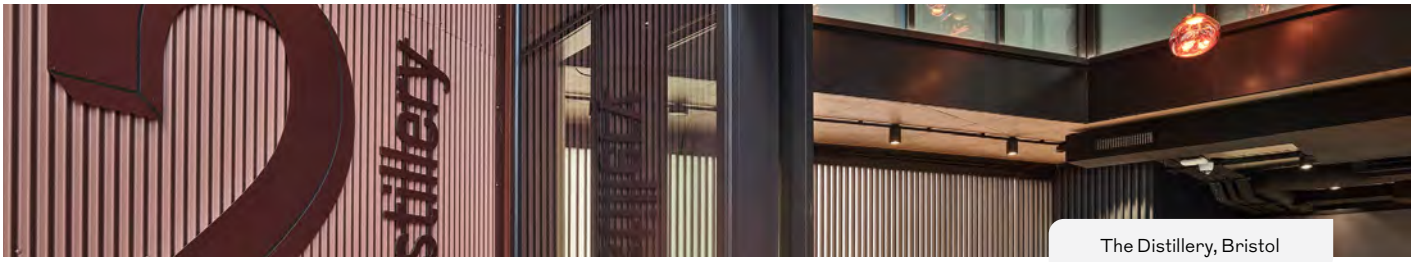
Net Zero Asset Managers Initiative

The Net Zero Asset Managers Initiative (NZAM) convenes an international group of asset managers who are committed to achieving net zero carbon by 2050 at the latest. Following our commitment to NZAM, we have set targets related to Royal London Asset Management Property, covering 100% of our portfolio across both embodied carbon and operational carbon emissions.[8] These will be tracked and regularly reviewed and are as follows:

2030 — **Net zero carbon for directly managed property assets and developments by 2030**[9]

2040 — **Net zero carbon for indirectly managed property assets by 2040**[10]

Our non-property NZAM targets can be found here.



The Distillery, Bristol

7. Better Buildings Partnership, A Guide to Climate Resilience Strategies for Commercial Real Estate, https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBPClimate%20Resilience%20for%20Commercial%20Real%20Estate.pdf
8. https://www.netzeroassetmanagers.org/signatories/royal-london-asset-management/
9. Directly managed property assets are those over which Royal London Asset Management has complete operational control and greater than 50% equity share, and joint ventures, where they would cover the proportionate amount of emissions. Developments are any new development or major refurbishment that comes online from 2030 onwards.
10. Indirectly managed property assets are either partially managed by Royal London Asset Management or managed wholly by the occupier.

New initiatives we are in support of

NABERS UK and Design for Performance

NABERS UK is an adaptation of the highly successful NABERS rating programme that operates in Australia. Launched in 1999, NABERS is widely considered to be a world-leading environmental performance rating tool for commercial buildings. NABERS UK was launched in 2020, and it measures and rates the actual energy use of offices, facilitating building owners to track and accurately communicate their buildings' energy performance.

As part of our journey to achieve our net zero carbon ambitions, we have set design targets to undertake NABERS UK Design for Performance (DfP) Certifications and aim to align to NABERS UK 5 * ratings for our latest office developments, as seen in our case studies on Statesman House, Maidenhead, and Holborn Viaduct. NABERS UK DfP initiative will help to tackle the performance gap and provide an approach based on measurable performance outcomes to ensure new office developments deliver on their design intent.

UK Net Zero Carbon Buildings Standard

A singular approach to net zero carbon for the built environment is critical, with various pieces of guidance available creating some complexities in understanding when net zero carbon has truly been achieved. We believe that the UK Net Zero Buildings Standard (UKNZCBS) will help validate claims of achieving net zero carbon, creating transparency and minimising the risk of greenwashing

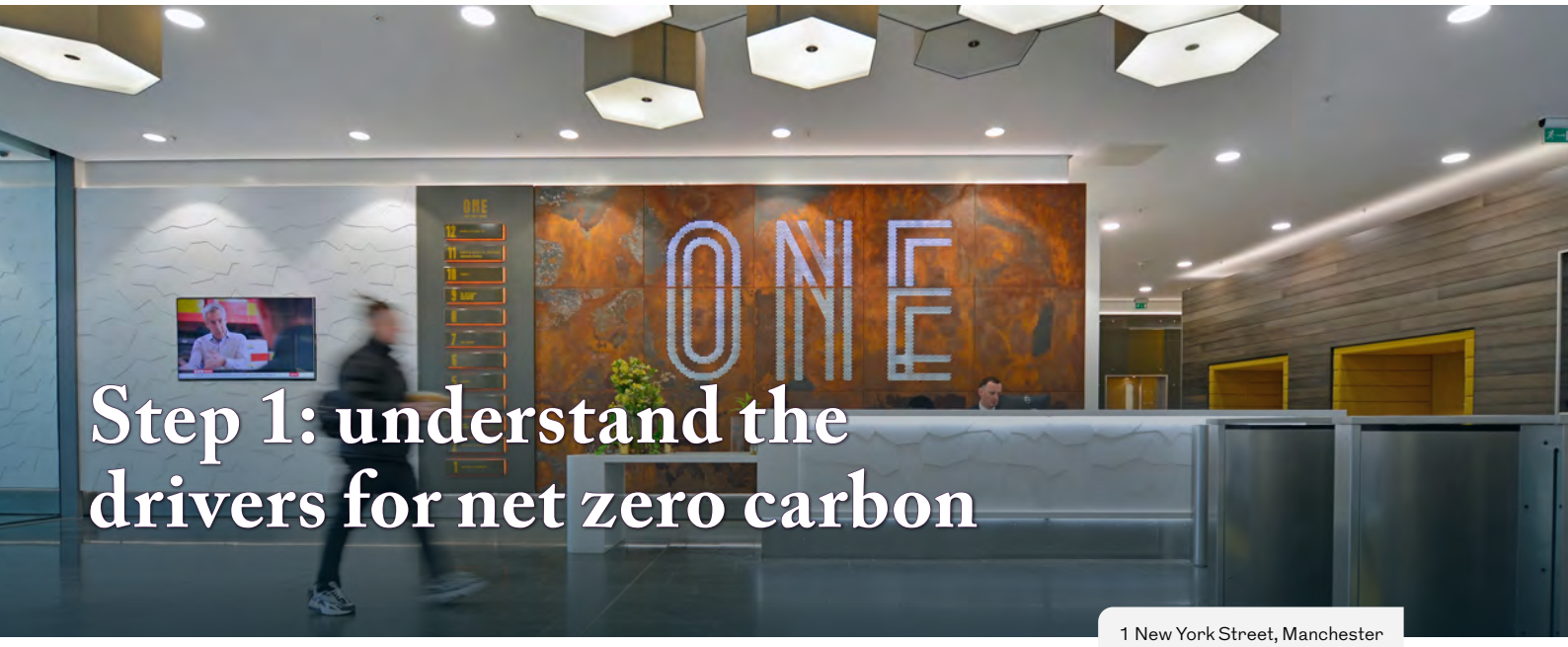
We are fully supportive of the development of this standard. As part of the UKNZCBS's 'call for evidence' in 2022, we shared operational energy performance data for 47 of our properties through the BBP's Real Estate Environmental Benchmark (REEB) programme. We also submitted embodied carbon data to the new Built Environment Carbon Database (BECD) which is intended to form the backbone of the UKNZCBS.

We expect to see the first version of the UKNZCBS published in 2023. Following this, we will ensure that the requirements for net zero carbon are integrated into our programme.

Task Force on Climate-related Financial Disclosures (TCFD)

Over the past five years, the TCFD has seen significant momentum around adopting and supporting its recommendations. The percent of companies disclosing information in line with the Task Force's recommendations has steadily increased each year, as has the amount of TCFD-aligned information companies disclose.

Considering the risks and opportunities of our changing climate is increasingly essential for us. We recognise that identifying and managing our climate-related risks means we can respond appropriately, including building the knowledge in our team and setting up appropriate processes to monitor and respond to these risks. This year, we have produced a property-specific TCFD report, demonstrating our approach to identifying our climate-related risks and opportunities as well as how we will manage and mitigate impact on our property portfolio. It can be found in Appendix 2 of this report.



Step 1: understand the drivers for net zero carbon

1 New York Street, Manchester

We are strongly committed to building a resilient and future-proof portfolio, prioritising delivering exceptional buildings to our occupants while minimising their environmental impact. This commitment is guided by our RPI framework, which is built upon four key pillars:

- **Investing in a resilient portfolio**
- **Developing for the future**
- **Managing assets for positive impact**
- **Making responsible decisions**

Our RPI framework is also built upon a set of previously identified material issues, including 'Transition to Net Zero Carbon'. During 2022, we developed a set of RPI portfolio targets to address these issues, along with key performance indicators (KPIs) and supporting indicators to track ongoing progress towards these targets. These portfolio targets serve as guideposts to keep us focused on reducing embodied carbon across our developments and major refurbishments, improving operational efficiency and maximising renewable energy generation. These are provided in full in our new RPI Report (2022). Future iterations of our Net Zero Carbon Pathway Progress Report will provide updates on performance against the portfolio targets assigned under 'Transition to Net Zero Carbon' using the KPIs and supporting indicators developed.

1 New York Street, Manchester

External factors, such as increasing energy prices, have emphasised the need for ongoing enhancements in energy efficiency. To meet our energy reduction goals and better serve our occupants, we have been actively seeking opportunities for optimisation and efficiency throughout our property portfolio. We are also embracing clean and sustainable technologies in innovative ways to take control and drive our vision forward.

By transitioning our property portfolio to net zero carbon, we empower occupants to utilise energy more efficiently. This not only enhances resilience, but also accelerates our progress towards achieving our targets. Additionally, there has been an exponential growth in the demand for best-in-class spaces with regard to Environmental, Social and Governance (ESG), mirrored with the growth of companies setting net zero carbon and science-based targets. Responding to this ever-growing demand further drives our determination to achieve our net zero carbon goals.

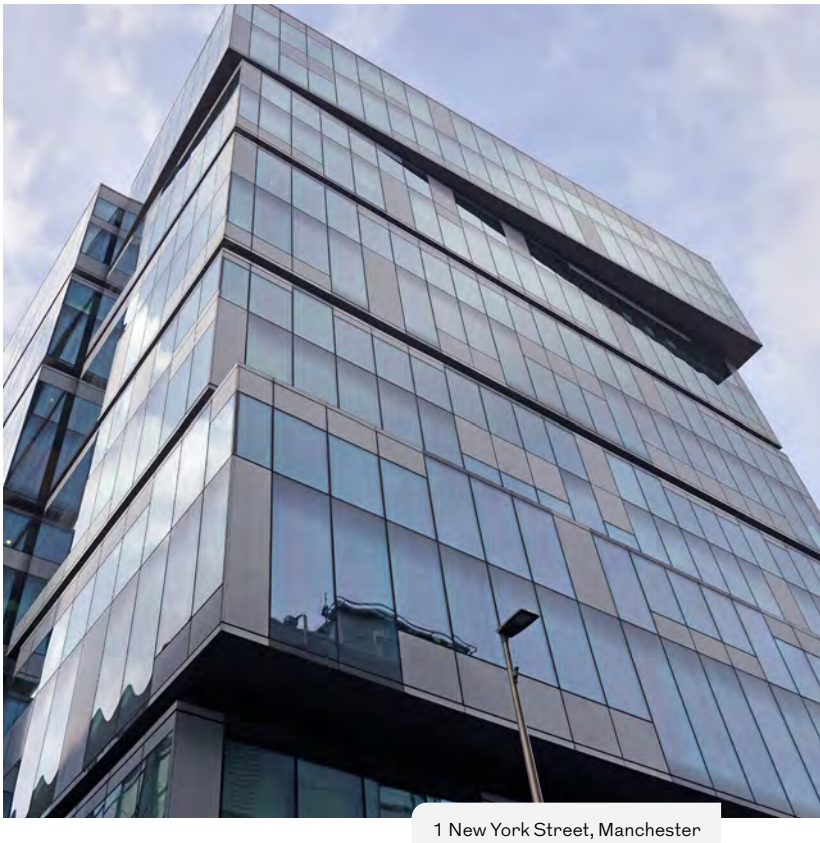
Increased Energy Prices

We are exploring opportunities to instal various smart technology options across assets to increase the operational efficiency of our buildings, primarily through optimising the Building Management System (BMS). See page 24 for our success of the installation of Turntide Induction Motors at 85-87 Jermyn Street.

Increased Occupier Demand

We continually engage with occupiers to understand their priorities and sustainability targets. We actively encourage collaboration with our occupiers when working towards shared goals and commitments.

1 New York Street, Manchester



1 New York Street, Manchester

Step 2: define the scope and boundaries

Ashford Designer Outlet, Ashford

Emissions Scope

Following our original Net Zero Carbon Pathway Report, we have adopted the BBP's Net Zero Carbon Pathway Framework to ensure that all significant sources of emissions are considered in our pathway. Within our original pathway, we excluded the emission source 'waste generated during operation', an activity controlled and managed by landlords. However, as this data is available to us and creates a more complete account of emissions, we have updated our scope to now include this emission source going forwards. Additionally, emissions from landlord-controlled waste only contribute towards approximately 0.1% of our total emissions for 2022. Therefore it does not pose a significant impact. This approach aligns with the BBP recommendations for the activities that signatories of the Climate Commitment should include within their net zero carbon target.[11] There have been no other modifications to the scope of emissions defined in the original pathway.

Investment Boundary

Royal London Asset Management has three main property funds:

1. **Royal London UK Real Estate Fund (RLUKREF)**
2. **Royal London Pension Property Fund (RLPPF)**
3. **Royal London Property Fund (RLPF)**

These make up 99% of our property portfolio by assets under management (AUM). The commitment pathway covers all property assets, both direct and indirect, in these funds, and this also includes co-investments managed by Royal London Asset Management.

In addition, we have three smaller property funds; Royal London Operational Estate (RLOE); Royal London Long Term Fund (RLLTF); and Royal London Cooperative Insurance Society (RLCIS). These smaller property funds are currently excluded from our Net Zero Carbon Pathway as they cover less than 1% of the total property portfolio.

11. Better Buildings Partnership, Net Zero Carbon Pathway Framework, https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP_Net-zero%20Carbon%20Pathway%20Framework_June22_v3_0.pdf

Step 3: identify carbon footprint and trajectory

Since the publication of the original Net Zero Carbon Pathway, we have made significant advancements in data collection, leading to a more refined approach to carbon accounting. As a result of these improvements, we have recalculated our 2019 carbon footprint to more accurately reflect our baseline emissions, alongside the expansion of our reporting scope. This updated footprint will enable more accurate comparisons and facilitate a better assessment of our progress towards our net zero targets. For a detailed explanation of the methodological changes implemented and the revised baseline, please refer to Appendix 1.

2022 Carbon footprint

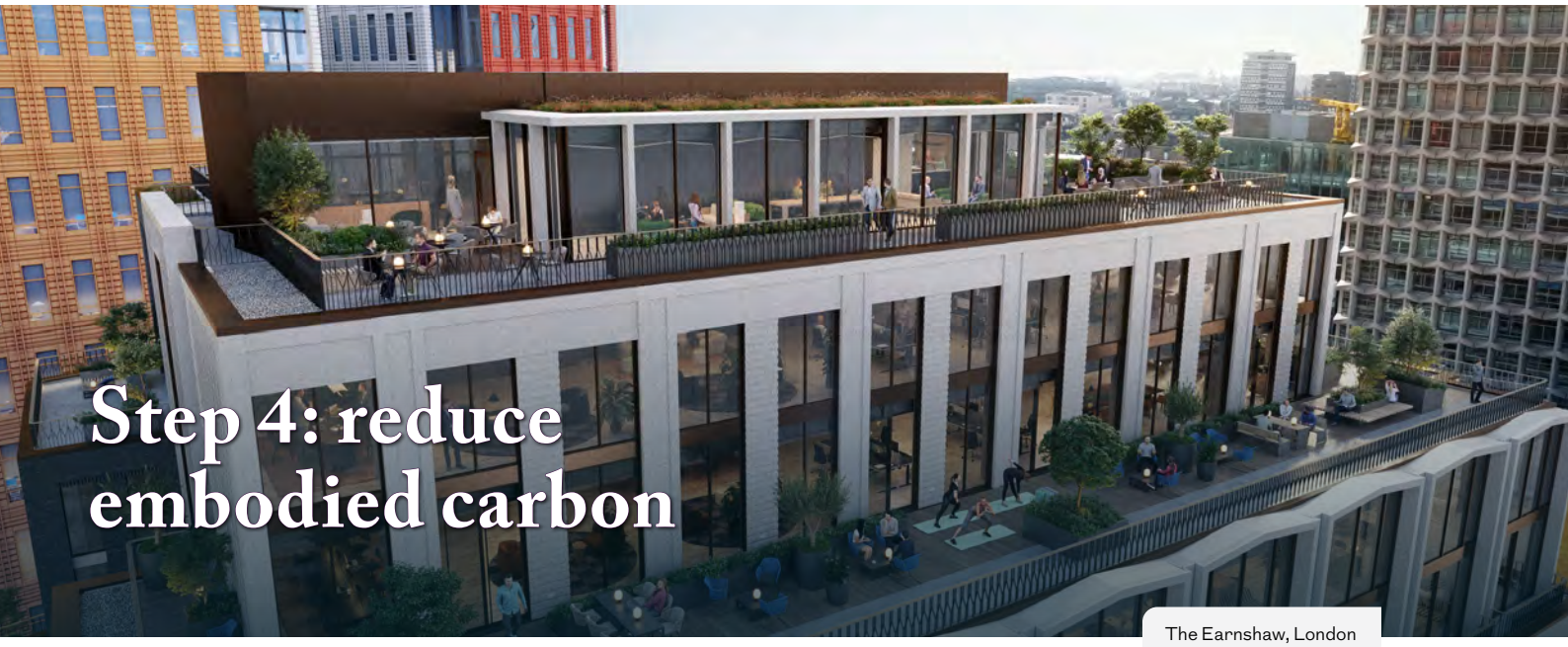
Emissions Category	BBP Category	Activities controlled and managed by landlord, occupier or both	2022 (tCO2e) Q4 21 – Q3 22
Scope 1	Natural gas	Landlord	3,069
	Refrigerants (fugitive emissions)	Landlord	252
Scope 2*	Electricity	Landlord	5,556
Scope 3	Natural gas and electricity	Occupier	54,317
	Water to operate buildings	Landlord	31
	Waste generated during operation	Landlord	205
	Extraction, production, and transportation of fuels and energy	Landlord	2,768
	Purchase of goods and services	Landlord	4,109
	Capital goods (excluding development activities)	Landlord	16,633
	New development works	Landlord	23,971
	Refurbishment works**	Landlord & Occupier	17,000
	Fit-out works***	Landlord & Occupier	14,878
	End of life	Landlord	0
Total			**142,789**

The 2022 reporting period is from Q4 2021 to Q3 2022.

* Scope 2 (location-based) emissions.

** Landlord-controlled refurbishment works covers our major refurbishments activities, over £3 million.

*** Landlord-controlled fit-out works covers our minor refurbishment activities, under £3 million.



Step 4: reduce embodied carbon

The Earnshaw, London

In our Net Zero Carbon Pathway, we have committed to reducing embodied carbon to 500 $kgCO_2e/m^2$ for developments by 2030, in line with the RIBA (Royal Institute of British Architects) 2030 Climate Challenge targets.[12] Additionally, we aim to reduce embodied carbon to 250 $kgCO_2e/m^2$ for major refurbishments.[13] As there is little standardisation around refurbishment targets for embodied carbon, this figure was determined using trends around the reduction of embodied carbon across developments. Our embodied carbon portfolio targets outlined below reflect interim milestones to work towards ahead of 2030, keeping us on track for achieving our original commitments.

To ensure a more tailored and effective approach, our RPI Report (2022) outlines a new portfolio target for embodied carbon reduction across seven sectors: Office, Hotel, Residential, Retail, Industrial, Life Sciences and Student Accommodation. These targets draw on best practice guidance from RIBA and allow us to adapt our strategies to each development and major refurbishment project. We remain dedicated to actively gathering embodied carbon data, enabling us to accurately track our progress towards these targets.

It is important to note that absolute embodied carbon emissions have increased from 0 in 2019 to 55,849 tCO_2e in 2022. This is mainly attributed to the absence of completed developments or major refurbishments in 2019, compared to three such projects in 2022, namely Trafford Park, Manchester; BHX8, Redditch; and 3 St Peters Square, Manchester, along with three minor developments. We have also improved our embodied carbon calculation methodology, which now encompasses fit-out works and occupier-led refurbishments or fit-out activities. These were not previously calculated for 2019. While the absolute emissions from embodied carbon may vary due to the timing and scope of our development pipeline, our primary focus remains on reducing the embodied carbon intensity of our refurbishment and development projects in line with the targets outlined in our New Construction and Major Refurbishment Sustainability Standards 2023.

We are proud to have received recognition for our substantial progress in reducing embodied carbon, as demonstrated by our shortlisting for the Embodied Carbon Award in the CIBSE (Chartered Institution of Building Services Engineers) Building Performance Awards 2022.

12. https://www.architecture.com/-/media/files/Climate-action/RIBA-2030-Climate-Challenge.pdf
13. Major refurbishments are defined as those over £3 million.

Targets

Net Zero Carbon Pathway

1 Reduce embodied carbon to 500 kgCO_2e/m^2 for developments by 2030.

2 Reduce embodied carbon to 250 kgCO_2e/m^2 for major refurbishments by 2030.

New Portfolio Target[14]

Material ESG issue: transition to net zero carbon

1 Aim to achieve a reduction in embodied carbon (A1-A5)[15] across all new build and major refurbishment projects in line with our Standards 2023.

Statesman House, Maidenhead

Statesman House, Maidenhead

14. During 2022, we developed a set of RPI portfolio targets to address the material topics identified in our RPI Strategy. These targets complement those set in our original Net Zero Carbon Pathway. Please see our RPI Report (2022) for more information.
15. Within the whole-life carbon assessment, life cycle stages A1-A5 cover the embodied carbon to practical completion of a building, comprising the product and construction stages. Source: Whole life carbon assessment for the built environment, Royal Institute of Chartered Surveyors (RICS), 1st edition, November 2017

Progress

Commitments made	Actions taken	Future progress
Identify strategic assets in the development pipeline that can be brought to net zero carbon prior to 2030 target deadline.	**Selected developments:** • Holborn Viaduct, London. • Statesman House, Maidenhead. **Potential developments:** • Atlantic Park, Liverpool. • Pasadena Close, Hayes. **Project documents:** • Our 'Approach to Net Zero' guide is used by all design teams. It sets out minimum standards across the net zero carbon hierarchy for all developments and major refurbishments.	• Monitor our development pipeline for opportunities. • Continue to undertake net zero operational carbon feasibility studies across developments and major refurbishments. • Investigate the use of an Internal Carbon Price to enable the cost of offsetting to be estimated in the early stages of a project.
Measure materials in new developments and major refurbishments, and measure the sources of embodied carbon.	**Current requirements:** • All new build and major refurbishment projects must undertake a whole life carbon assessment of materials. • Contractors must map and monitor the carbon footprint of the project during its delivery phases. **Project documents:** • Our Sustainability Standards Tracker sets out minimum embodied carbon standards across seven sectors to be aligned to. • Our Approach to Net Zero Guide sets out guidance for embodied carbon data collection for design teams to guide decision-making.	• Our New Construction and Major Refurbishment Sustainability Standards for 2023 now include embodied carbon targets for seven sectors, and will continue to evolve in line with industry standards. • Continue to implement our Approach to Net Zero Guide and review regularly. • Continue to work with our consultants and Property Managers on minor refurbishment projects to improve the accuracy of embodied carbon measurements.
Adopt circular economy ideas and explore design approaches for both disassembly and use of less carbon intensive materials.	**Current requirements:** • A Circular Economy workshop is undertaken, and a Circular Economy Statement is produced for any development or major refurbishment project. **Project documents:** • Our Circular Economy Brief sets out design guidelines, tools for measuring circularity and a case study of the approach taken at Statesman House, Maidenhead. • Our Sustainability Standards Tracker sets out objectives to encourage less carbon intensive design approaches, including investigating modern methods of construction. • Our 'Lessons Learnt' document is used to capture successfully incorporated sustainability aspects, particularly regarding embodied carbon and circular economy, to drive continual improvements in the delivery of our projects.	• Continue to implement our Circular Economy Brief and review regularly. • Our New Construction and Major Refurbishment Sustainability Standards for 2023 now include a more stringent objective on cement replacement, and an increase in the proportion of construction and fit-out materials derived from recycled and reused content.

Case study: BHX8, Redditch

Outperforming embodied carbon construction emissions - Industrial distribution

BHX8, Redditch consists of a single warehouse incorporating office space and ancillary welfare. It was completed in Q4 2021 and is fully occupied by Amazon. We undertook an embodied carbon assessment to understand the construction and whole life carbon emissions. The review covered substructure, superstructure, façade, internal finishes and building services. As a result, BHX8, Redditch achieved an embodied carbon of 311 $kgCO_2e/m^2$ for A1-A5 construction emissions, outperforming both our own embodied carbon target and LETI's 2020 construction target of 600$kgCO_2e/m^2$.

BHX8, Redditch

Case study: Statesman House, Maidenhead

Targeting Royal London Asset Management Property's first NABERS UK DfP building

Statesman House is a pioneering delivery project which encompasses two office buildings, totalling approximately 258,000 sq. ft. We are aiming to achieve net zero carbon, whereby a yearly carbon balance calculation is being carried out each year to demonstrate that the development achieves this. Statesman House will be Royal London Asset Management Property's first NABERS UK DfP building, an initiative established to help close the performance gap between design intent and actual building operation. Statesman House is also part of the BBP's DfP Pioneer Programme.[16] We are targeting a minimum 4 * NABERS UK rating. To achieve this ambitious aim, we will incorporate design initiatives such as an extensive BMS to control and monitor energy use in operation, as well as targeting space heating demand at less than 15 kWh/m^2 in line with LETI's 2030 climate targets.[17] Furthermore, to minimise carbon emissions, Statesman House will be fossil fuel-free, and onsite solar photovoltaic (PV) panels are to be installed that are estimated to produce 20 MWh/year.

Statesman House, Maidenhead

16. Better Buildings Partnership, Design for Performance: Pioneer Projects, betterbuildingspartnership.co.uk/our-projects/design-performance/pioneer-projects

17. https://www.leti.uk/one-pager

Case study: Holborn Viaduct, London

Net Zero Carbon Development - Office

Holborn Viaduct is a prime mid-town development, comprising 266,000 sq. ft. of office spaces in Farringdon, London. It is targeting a BREEAM 'Outstanding' and WELL 'Platinum' rated building, demonstrating our New Construction and Major Refurbishment Sustainability Standards (2023) in action. Using low- and zero-carbon technologies, efficient systems and offsetting, this fully electric building is targeting Net Zero Operational Carbon and a NABERS UK DfP rating.

Furthermore, smart technology will be incorporated to facilitate both energy efficiency and occupier comfort. Holborn Viaduct focuses more on health and wellbeing, including a 'wellness wing' for occupiers. Passive design principles were also adopted, utilising natural daylight, ventilation and heating and cooling systems to enhance occupier comfort and energy efficiency.

Along with a focus on operational carbon, this project underwent a circular economy workshop and set specific targets for identifying and eliminating major areas of potential waste, with the aim to reduce embodied carbon. This included a target of 95% of waste to be diverted from landfill, with building materials being reused from demolition, as well as recycled materials and lower-carbon alternatives used during construction. The existing foundations were also maintained to reduce embodied carbon.

Holborn Viaduct has also been pre-let to Hogan Lovells, who highlighted the office's alignment with their global sustainability plan and commitment to being a responsible business, including supporting their Science-Based Target to be net zero by 2050.[18]

Holborn Viaduct, London

Holborn Viaduct, London

18. https://www.hoganlovells.com/en/responsible-business/operating-sustainably

Step 5: increase operational efficiency

Since developing our 2019 baseline, we have made substantial strides in enhancing data coverage. Collecting utility consumption data across our property portfolio and the ongoing monitoring of building performance is crucial to measuring progress towards net zero carbon and identifying areas for improvement. This requires the implementation of robust data collection and analysis systems to accurately track and report on the operational performance of our buildings. Throughout 2022, we have been implementing various initiatives to capture this data including a utility logger program across our largest single-let units, installing Automatic Meter Reading (AMR) devices and engaging with a specialist consultancy to access aggregated, anonymous energy data at the building level, sourced directly from a national database. More details of these initiatives can be found within our RPI Report (2022). These various measures have significantly improved occupier data collection across our portfolio. As at December 2022, energy data coverage has extended to 42% of our total portfolio. This remains a key focus for us in 2023.

> "By leveraging these technologies, we can avoid unnecessary energy usage."

Furthermore, in 2022, we have dedicated our efforts to enhancing the operational efficiency of our assets through several key initiatives. One of our primary focuses has been implementing an extensive net zero carbon audit programme across our directly managed offices, having completed eight at the end of 2022. This comprehensive assessment enables us to understand the necessary measures required and define a net zero carbon pathway for each property.

We are also actively exploring integrating smart technology, particularly systems that optimise the BMS in our directly managed offices. By leveraging these technologies, we can avoid unnecessary energy usage, thereby minimising carbon emissions and reducing costs for our occupiers.

In addition to these efforts, we have developed a new Sustainable Acquisition Checklist. This checklist incorporates the principles of our RPI framework and aligns with the guidance outlined in the BBP's Sustainable Acquisitions Toolkit.[19] The checklist encompasses information requests related to our material RPI issue, 'Transition to Net Zero Carbon'. It focuses on assessing the alignment of assets with our Net Zero Carbon Pathway, as well as identifying potential capital expenditure costs required to invest in the asset and achieve net zero carbon. This approach is vital for future-proofing our portfolio and mitigating risks.

By implementing these initiatives, we are actively working towards creating a more sustainable and resilient portfolio that aligns with our net zero carbon goals and safeguards against potential risks.

19. Better Buildings Partnership, Acquisitions Sustainability Toolkit, https://www.betterbuildingspartnership.co.uk/acquisitions-sustainability-toolkit.

Targets

Net Zero Carbon Pathway

1 15% targeted energy intensity reductions by 2025 for standing assets.

New Portfolio Targets[20]

Material ESG Issue: safeguarding natural resources

Operational Portfolio

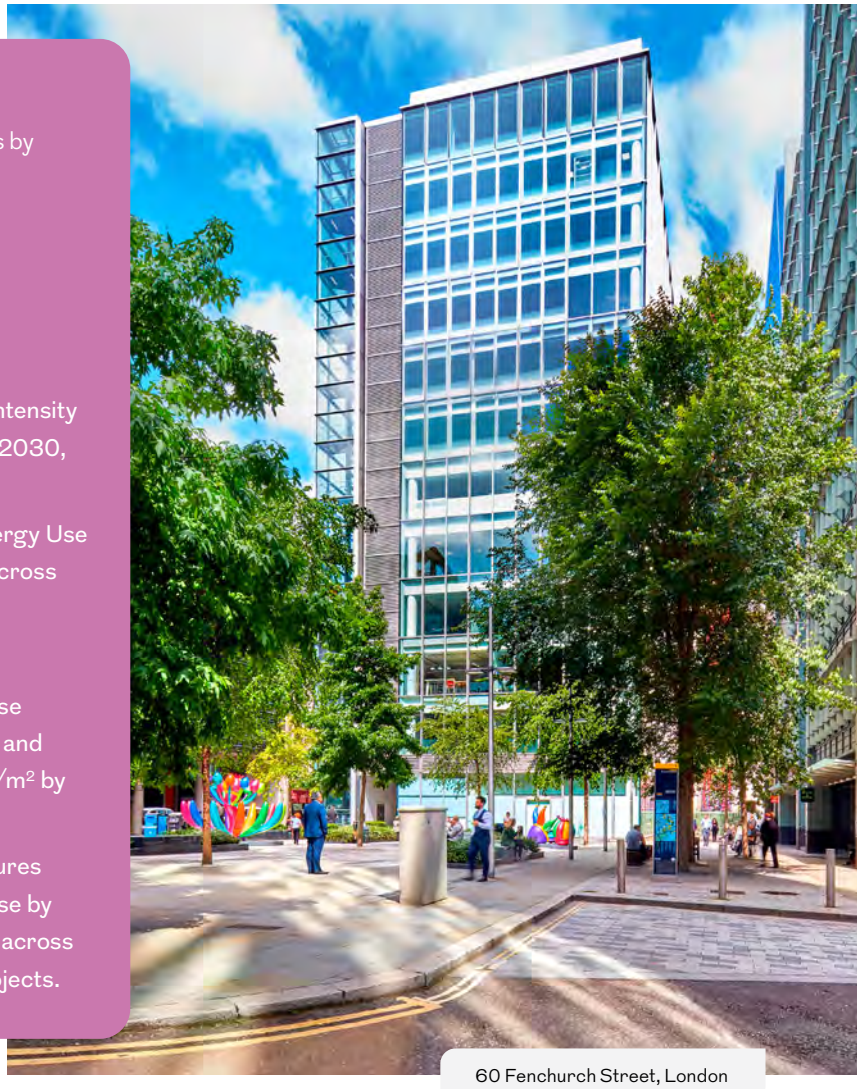
1 Achieve a 30% reduction in Energy Use Intensity across our directly managed portfolio by 2030, against a 2019 baseline.

2 Aim to align with UKGBC Paris-proof Energy Use Intensity target of 70 kWh/m² by 2030 across our directly managed offices.

Development Portfolio

1 Target the UKGBC Paris-proof Energy Use Intensity target across all office new build and major refurbishment projects of 90 kWh/m² by 2025, and 70 kWh/m² by 2030.

2 Aim to incorporate water efficiency measures and/or water recycling to reduce mains use by 40% compared to the BREEAM baseline across all new build and major refurbishment projects.



60 Fenchurch Street, London

20. During 2022, we developed a set of RPI portfolio targets to address the material topics identified in our RPI Strategy. These targets complement those set in our original Net Zero Carbon Pathway. Please see our RPI Report (2022) for more information.

Progress

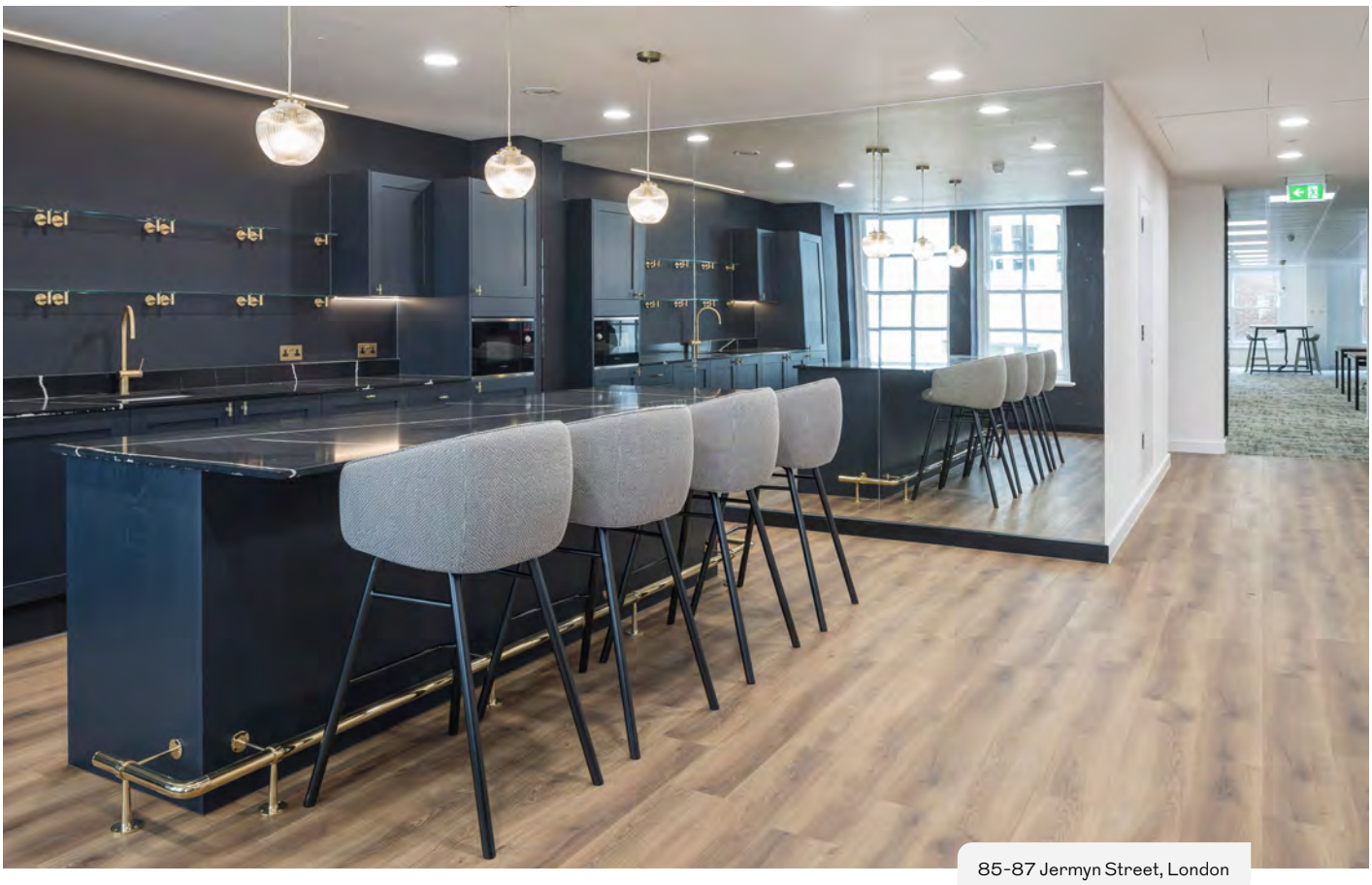
Commitments made	Actions taken	Future progress
Aim for an average of 15% reduction in energy intensity across the managed property portfolio by 2025.	• All office new build and major refurbishments must now aim to achieve a NABERS UK DfP 5 * rating. • Currently undertaking our first pilot NABERS UK Energy for Offices assessment. • Ongoing LED lighting replacement programme across our retail parks covering 1,160,478 sq. ft., equivalent to 42% of retail parks by floor area, with LEDs installed, as at the end of 2022. • Trial of Turntide Future Motors at 85-87 Jermyn Street to optimise asset performance. • Commenced a trial of Hank, a BMS optimisation system using artificial intelligence, at 45 Church Street.	• Aim to undertake further NABERS UK Energy for Offices assessments across our directly managed offices. • Aim to complete LED light replacements across a further 13 retail parks in 2023, equating to over 1.2 million sq. ft. • Identify further opportunities across our directly managed offices to implement Hank or similar smart technology software.
Target benchmark energy use intensities for asset types and align with UKGBC Energy Use Intensity target of 70kWh/m^2 for offices.	• Commenced net zero carbon audits across 22 directly managed offices. • Compared operational building performance against industry benchmarks, including the UKGBC EUI targets for offices and CRREM. • Identified interventions to increase asset efficiency, align with benchmarks and achieve net zero carbon status.	• Aim to complete net zero carbon audits across all directly managed offices by the end of 2023. • Work with occupiers and Property Managers to implement recommendations from the net zero carbon audits. • Align with new sector-specific operational energy use intensity performance targets within our New Construction and Major Refurbishment Sustainability Standards (2023), now covering seven sectors.
Increased engagement with occupiers to improve operational efficiency.	• Increase occupier utility consumption data coverage through various initiatives. • Regular occupier engagement undertaken by: - asset managers through meetings. - property managers through meetings, distribution of newsletters and events held at the property. For example, an Energy Saving Campaign in November 2022. - developed a covering note for our green lease clauses to explain our strategy behind data sharing and create transparency with occupiers.	• Continue to implement the various occupier utility data initiatives and seek to further increase utility data coverage across the portfolio. • Further build relationships with occupiers to determine opportunities to work in partnership to achieve both our, and potentially our occupiers' net zero carbon goals.
Achieve an Energy Performance Certificate (EPC) of B by 2030 on all new commercial spaces.	• Commenced EPC Improvement Cost Assessments across existing assets with an EPC rating of C or lower. • Updated our EPC procedure in line with upcoming Minimum Energy Efficiency Standard (MEES) and potential future legislation.	• Continue to undertake EPC Improvement Cost Assessments until we have covered all units with an EPC rating below a B. • Work with occupiers and Property Managers to implement recommendations from the EPC Improvement Cost Assessments.

Case study: 85-87 Jermyn Street, London

Mechanical and Engineering System Optimisation - Office

85-87 Jermyn Street is a multi-use, multi-let property located in Westminster, London. As part of our commitment to seek innovative solutions to achieve our net zero carbon goals, we trialled Turntide Induction Motors, who replace the existing standard induction motor within the Heating, Ventilation and Air Conditioning (HVAC) system to improve the energy efficiency and expand the life span of the old motor kit. This in turn reduced the carbon emissions and limited the environmental impact of the building, as well as the added benefit of reduced energy costs for the occupier.

The carbon and financial savings were immediate, with a 56% energy saving already achieved in the short term, equating to an annual saving of £3,880 and 8.8 tonnes of carbon. The successful upgrade of the HVAC system also received a Gold Green Apple award.



85-87 Jermyn Street, London

Case study: Unit 3, Stourton Link, Leeds

Smartmeter Technology - Industrial

Positive feedback from our occupiers indicates that the trial utility logger programme has not only been useful for us to increase occupier data coverage, but also for the occupier to gain insights into their environmental performance and opportunities for improvement. In the case of our occupier, the Steeper Group, the installation of the system allowed them to:

1. Monitor energy consumption. Previously, they were using invoices from their energy provider. By using the Smarter Technologies system, they can now have immediate access to their energy consumption, with no estimates
2. Process consumption testing. The Steeper Group was able to use the system to test energy-intensive processes in place across their factory, specifically measuring the effect of isolating different processes on consumption. This testing process resulted in a realisation that they could reduce gas consumption by at least 40% for that process. They plan to implement an updated process regime, which they estimate will reduce gas consumption from 298 kWh to an average of 188kWh, and electricity consumption from 38 kWh to 19kWh, for a process that is run for 58 hours per week.
3. Heating. By monitoring the daily consumption on the system, our occupier noticed that gas was being consumed on days when heating should have been switched off. Investigation showed that the heating controller was not working and had been running for 24 hour periods. By resolving this, the Steeper Group estimates that savings of at least 3,500 kWh of gas per week have been made. This equates to a carbon saving of approximately 33 tonnes of carbon per year.

The installation of the utility logger system has not only allowed us to have greater insight into occupier consumption, but it has provided the occupier with actionable insights to both save money and improve their own ESG practices; a win-win for both parties.

Unit 3, Stourton Link, Leeds

Unit 3, Stourton Link, Leeds

Step 6: increase renewable energy supply

Renewable energy is a critical tool on the path to achieving net zero carbon and one that requires ongoing engagement between occupier and landlord to establish and maintain. All of our landlord-procured electricity is currently from renewable sources through the use of Renewable Energy Guarantees of Origin (REGO) certificates, leading to zero carbon emissions under the market-based accounting method. As well as supporting the market shift to renewables, we are working to ensure as much of this electricity generation as possible is additional, whilst supporting occupiers with their renewable procurement.

Targets

Net Zero Carbon Pathway & Portfolio Target[21]

1 Generate up to 9.5 GWh per year (equivalent of 11.2 MW of capacity) of renewable energy onsite by 2040.

Progress

Commitments made	Actions taken	Future progress
Generate up to 9.5 GWh of renewable energy onsite across the portfolio.	• Commenced a solar PV feasibility study on over 1,300 individual units, comprising over 800 occupiers across over 120 retail park and industrial assets combined. • Engaging with our occupier at Pasadena Close, Hayes, on setting up our first Power Purchase Agreement (PPA).	• Using outputs of the solar PV feasibility study, engage with occupiers to gauge interest in working collaboratively to instal PVs as well as the option to set up PPAs. • Explore innovative technologies, such as small wind turbines, to maximise onsite renewable energy generation. • Engage with occupiers on sharing the energy generation data of occupier-owned solar PV.
Explore options for off-site high quality renewable energy.	• Updated our green lease clauses to require occupier-procured electricity to be 100% Renewable Energy (REGO-backed), insofar as it is economically viable to do so. • All 36 properties within our Environmental Management System (EMS) remained on electricity supply contracts from 100% REGO-backed renewable sources.	• Engage with our energy brokers on energy procurement contract options available in the market. • Continue to ensure that properties within our EMS remain on 100% REGO-backed tariffs. • Investigate switching to all-bundled REGO-backed tariffs across properties within our EMS.

21. During 2022, we developed a set of RPI portfolio targets to address the material topics identified in our RPI Strategy. These targets compliment those set in our original Net Zero Carbon Pathway. Please see our RPI Report (2022) for more information.

Case study: Essity Warehouse, Trafford Park, Manchester

Industrial

In 2022, we completed a modern extension of 96,000 sq. ft. to an existing warehouse, Essity in Trafford Park, which comprised of 250,000 sq. ft. The design of the extension was in line with our New Construction and Major Refurbishment Sustainability Standards, with the aim to enhance its ESG credentials and minimise its environmental impact. The extension included the installation of a 276 kWp solar PV system, producing 224,450 kWh/annum. This is estimated to exceed the energy demand of the building and can therefore be used to charge forklift batteries too. This enables the occupier to operate the building from 100% renewable sources. The extension of the Essity Warehouse also included the installation of electric vehicle chargers and a diverse landscaping scheme to provide appropriate habitats for local species. These features resulted in the achievement of a BREEAM 'Very Good' rating and an EPC rating of A+.

Renaissance, Croydon

Case study: Pasadena Close, Hayes

Industrial

Pasadena Close is a 72,000 sq. ft. industrial distribution warehouse located in Hayes which is currently undergoing refurbishment to improve its ESG credentials. A significant focus has been on generating onsite renewable energy. As part of the refurbishment, a solar PV array will be installed, covering over 1,000 m^2 across a total of 544 PV modules. This solar PV array is estimated to generate approximately 220 kWp, equating to an annual production of nearly 200,000 kWh. Based on further modelling, we expect that 89% of the generated renewable energy will be used onsite, with the remaining generation feeding into the national grid. We are currently in the process of agreeing to our first PPA; a milestone achievement for us. Additionally, we are aiming to achieve an EPC A+ rating as well as net zero carbon in operation, further demonstrating the asset's ESG profile.

Pasadena Close, Hayes

Springfield Business Park, Chelmsford

Step 7: offset residual emissions

Holborn Viaduct, London

We understand that carbon offsets will play a crucial role in our journey towards achieving net zero carbon. Since the publication of our Net Zero Carbon Pathway in 2021, our primary focus has been on implementing measures that lead to tangible reductions in carbon emissions across our portfolio. We have prioritised initiatives such as enhancing energy efficiency and incorporating onsite renewable energy solutions.

However, in response to the growing demand from occupiers for net zero carbon buildings and the increasingly stringent planning obligations, we anticipate that the use of carbon offsets may have a role in the next few years. Initially, we anticipate that carbon offsets may be required for offsetting emissions from development and major refurbishments.

To prepare for this, we have been actively enhancing our understanding of the carbon offset market and closely following best practice industry guidance. Additionally, we are exploring the option of directly investing in nature-based solutions. By doing so, we aim to have greater control over our carbon offsets and align them with our sustainability goals.

By taking these steps, we are positioning ourselves to effectively utilise carbon offsets when required, ensuring that our portfolio progresses towards net zero carbon while meeting the evolving expectations of occupiers and regulatory obligations.*

Targets

Net Zero Carbon Pathway

1 Carbon offset for those residual emissions that we were not able to abate by any other means using high-quality offsets that are aligned to industry best practice.

* Where we have the fiduciary ability to do so.

Progress

Commitments made	Actions taken	Future progress
Develop a robust strategy for procuring high-quality carbon offsets for residual emissions.	• Undertaken offsetting strategy review of two live development projects to understand the process, best practice approach and potential offsetting options available. • Engagement with key internal stakeholders, including the Royal London Asset Management Responsible Investment (RI) Team, to ensure an aligned approach is taken to offsetting. • Exploring nature-based solutions to directly control our carbon offsets and ensure we use high-quality offsets where needed.	• Investigate the use of an Internal Carbon Price to enable the cost of offsetting to be estimated in the early stages of the project, using industry guidance including from the UKGBC. • Consider the creation of a transition fund.

Cambridge Research Park, Cambridge

Challenges and solutions

5 St Philips Place, Birmingham

Despite our progress towards achieving our goals, we recognise that reaching net zero carbon across the real estate market presents several challenges that must be addressed to successfully transition to a sustainable future.

As the climate science, net zero frameworks and the broader ESG agenda continue to evolve, one major challenge is the lack of clear policy and guidance from governments and regulatory bodies. Without confidence in future regulations and standards, it can be difficult for real estate developers and property owners to know how to prioritise action to reduce their carbon footprint and make the necessary investments to achieve net zero carbon.

Developing resilience plans for buildings that consider the potential impacts of climate change is essential; impacts such as extreme weather events and sea-level rise. These can help ensure that buildings are able to withstand and recover from these. Property's TCFD report (see Appendix 2) assess our physical and transitional climate-related risks, with the aims to create more resilient buildings whilst also reducing carbon emissions.

We also see the need for market changes to incentivise and facilitate the transition to net zero carbon. This includes changes in financing and investment practices, as well as the development of new technologies and materials.

Refrigerants are another area that requires attention due to their high global warming potential (GWP). Although we have observed that emerging guidance is requiring the phase out of refrigerants, it appears that there are limitations in the available alternative technology. In response, our latest New Construction and Major Refurbishment Sustainability Standards for 2023 now includes a target with a GWP threshold to avoid using high-impact refrigerants, along with the requirement to instal refrigerant leak detection technology.

Additionally, embodied carbon is a key challenge in achieving net zero carbon. Reducing embodied carbon requires a shift towards sustainable and low-carbon materials and adopting circular economy principles to reduce waste and increase resource efficiency. Maintenance is also an important factor in achieving net zero carbon, as buildings must be designed and operated to minimise energy use and GHGs over their lifetime.

Achieving net zero carbon is a complex and challenging task. However, we are committed to collaborating and working with our peers and stakeholders across the real estate market, both internally and externally, and taking a coordinated effort to minimising our impacts on climate change, whilst increasing our resilience.

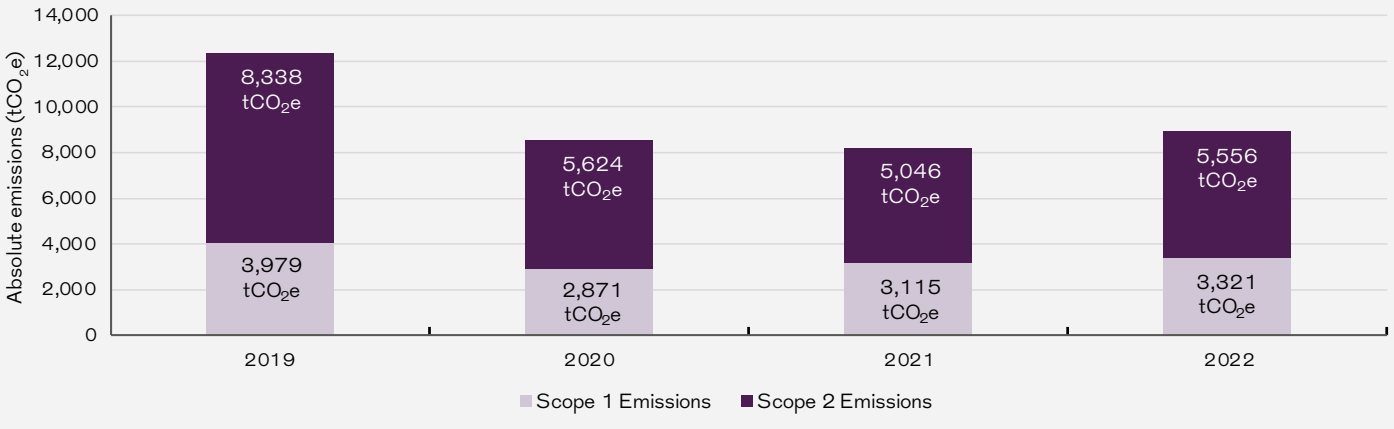
Appendix 1 – Greenhouse Gas Reporting

Full Portfolio Greenhouse Gas Emissions

Scope 1 and 2 Emissions

Emissions Category	BBP Category	GHG Protocol Category	Activities controlled and managed by landlord, occupier or both	Absolute emissions (CO_2e)			
				2019*	2020[T]	2021[T]	2022
				Q1'19-Q4'19	Q4'19-Q3'20	Q4'20-Q3'21	Q4'21-Q3'22
Scope 1	Natural gas	Scope 1	Landlord	3,053	2,871	3,115	3,069
	Refrigerants (fugitive emissions)	Scope 1	Landlord	926	N/A	N/A	252
Scope 2	Electricity (location-based)	Scope 2	Landlord	8,338	5,624	5,046	5,556
	Electricity (market-based)	Scope 2	Landlord	0	0	0	0
Scope 1 & 2 Emissions				**12,317**	**8,495**	**8,161**	**8,877**

Figure 1: Scope 1 and 2 Emissions



Scope 3 Emissions

Emissions Category	BBP Category	GHG Protocol Category	Activities controlled and managed by landlord, occupier or both	Absolute emissions (CO_2e)			
				2019*	2020[T]	2021[T]	2022
				Q1'19-Q4'19	Q4'19-Q3'20	Q4'20-Q3'21	Q4'21-Q3'22
Scope 3	Natural gas and electricity	Cat.13 (Downstream leased assets)	Occupier	53,151	N/A	N/A	54,317
	Water to operate buildings	Cat.1 (Purchased goods and services)	Landlord	112	N/A	N/A	31
	Waste generated during operation	Cat.5 (Waste generated in operations)	Landlord	61	N/A	N/A	205
	Extraction, production, and transportation of fuels and energy	Cat.3 (Fuel and energy-related activities)	Landlord	1,560	N/A	N/A	2,768
	Purchase of goods and services	Cat.1 (Purchased goods and services)	Landlord	112	N/A	N/A	4,109
	Capital goods (excl. developments)	Cat.2 (Capital goods)	Landlord	0	N/A	N/A	16,633
	New development works	Cat.2 (Capital goods)	Landlord	0	N/A	N/A	23,971
	Refurbishment works	Cat.2 (Capital goods)	Landlord & Occupier	0	N/A	N/A	17,000
	Fit-out works	Cat.2 (Capital goods)	Landlord & Occupier	0	N/A	N/A	14,878
	End of life	Cat. 12 (End-of-life treatment of sold products)	Landlord	0	N/A	N/A	0
Scope 3 Emissions				**54,996**	**N/A**	**N/A**	**133,912**
Scope 1, 2 & 3 Emissions				**67,313**	**8,495**	**8,161**	**142,789**

Note: our 2019 baseline was calculated based on a calendar year Q1-Q4. All subsequent years are now calculated and reported in line with other financial and reporting requirements, from Q4 to Q3.

***Revised 2019 baseline**

In our previous reports, we had stated our 2019 carbon footprint as 63,057 tCO_2e. However, we have conducted a recalculation of our 2019 carbon footprint to provide a more accurate representation of our baseline emissions, taking into account the expansion of our reporting scope. The increase in our baseline emissions figure from the previously reported value is primarily attributed to the refinement of our scope and a minor correction related to a previous mis-categorisation.

In the previous reporting, our total emissions for 2019 were primarily focused on operational carbon arising from energy consumption, encompassing both landlord and occupier sources, as well as embodied carbon from developments and major refurbishments. However, we have now expanded our reporting scope to include additional factors such as refrigerants, water consumption (landlord), embodied carbon from fit-out works, and incorporated additional data sources for purchased goods and services.

As a result of these expanded scopes and data sources (where available), we have recalculated our 2019 carbon footprint to ensure greater alignment between the 2019 and 2022 reporting periods. This adjustment enables us to account for the changes in our reporting approach and ensure a more comprehensive and consistent evaluation of our emissions over time.

ᵀ2020 and 2021 Emissions Coverage

The emissions reported for 2020 and 2021 do not include any Scope 3 emissions. We have historically reported in alignment with the 2016 INREV Sustainability Reporting Guidelines.[22] Scope 3 emissions reporting was not a requirement under these guidelines. Therefore, they were not brought into the emissions scope. We will seek to calculate and disclose our Scope 3 emissions for 2020 and 2021 to allow for comparison with other reporting years, and more accurately track progress against our baseline year of 2019 across Scope 1, 2 and 3 emissions.

45 Church Street, Birmingham

22. INREV (2016) sustainability best practice recommendations 2016 https://www.inrev.org/media/7752

Methodology

1. We have calculated emissions in line with the GHG Protocol methodology.[23]
2. We have used the following emissions factors:

Emissions Category	BBP Category	GHG Protocol Category	Emissions Factor Used
Scope 1	Natural gas	Scope 1	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Refrigerants (fugitive emissions)	Scope 1	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
Scope 2	Electricity (location-based)	Scope 2	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Electricity (market-based)	Scope 2	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
Scope 3	Natural gas and electricity	Cat.13 (Downstream leased assets)	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Water to operate buildings	Cat.1 (Purchased goods and services)	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Waste generated during operation	Cat.5 (Waste generated in operations)	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Extraction, production, and transportation of fuels and energy	Cat.3 (Fuel and energy-related activities)	UK Government GHG Conversion Factors for Company Reporting (Full Set) for Reporting Year
	Purchase of goods and services	Cat.1 (Purchased goods and services)	Quantis Tool
	Capital goods (excl. developments)	Cat.2 (Capital goods)	Quantis Tool
	New development works	Cat.2 (Capital goods)	In order of preference dependent on available data: 1) Developer-provided carbon intensity where available 2) Scottish Future Trust – Embodied Carbon for New Buildings (where floor area provided) 3) Quantis Tool for minor developments and procurement data
	Refurbishment works	Cat.2 (Capital goods)	
	Fit-out works	Cat.2 (Capital goods)	
	End of life	Cat. 12 (End-of-life treatment of sold products)	Greater London Authority (GLA) Whole Life Carbon benchmark is applied to the entire building area to calculate associated emissions

3. Data estimations and omissions: for all energy and water data, where partial data exists, consumption is uplifted to cover the entire 12 month period. Where data coverage is insufficient (i.e. where data coverage is less than 50% of the entire property), GRESB intensity benchmarks are applied to the total floor area (i.e. Gross Internal Area) to estimate the emissions. For assets where there is more than 50% data coverage, the emissions for the asset are estimated using industry benchmarks. As such, the full asset emissions are estimated and included within the total emissions figures. For waste data where partial data exists, consumption is uplifted to cover the entire 12-month period.

23. Greenhouse Gas Protocol, Standards https://ghgprotocol.org/standards

Appendix 2 – Property Task Force on Climate-related Financial Disclosures Report

Introduction

This is our first Property Task Force on Climate-related Financial Disclosures (TCFD) report focused on the Property portfolio, which supports and complements the wider Royal London Asset Management Climate (TCFD) report. This disclosure summarises the ways we are investigating how the commitments made on climate risk at our corporate level can be achieved across the Property portfolio, as well as increasingly understand the climate-related risks and opportunities which are unique to our physical assets. While the following is a voluntary disclosure, for best practice we have endeavoured to disclose consistent with the TCFD Recommendations and Recommended Disclosures:

- Governance
- Strategy
- Risk Management
- Metrics and targets

Governance

Board's oversight of climate-related risks and opportunities

Royal London Asset Management's Board is responsible overall the way we manage our response to climate change, monitoring business performance and ensuring that climate, legal and compliance standards are achieved. Led by the Chair, the Board has ultimate responsibility for setting our risk appetite and reviewing our strategic risks, including a principal strategic risk centred on Environmental, Social and Governance (ESG) and climate change.

Day-to-day management is delegated to the Chief Executive Officer (CEO) who is supported by our Executive Committee, which is responsible for ensuring we achieve our climate commitments. The Executive Committee approved our net zero commitment in early 2021 and is involved in setting out our stewardship programme and net zero plan.

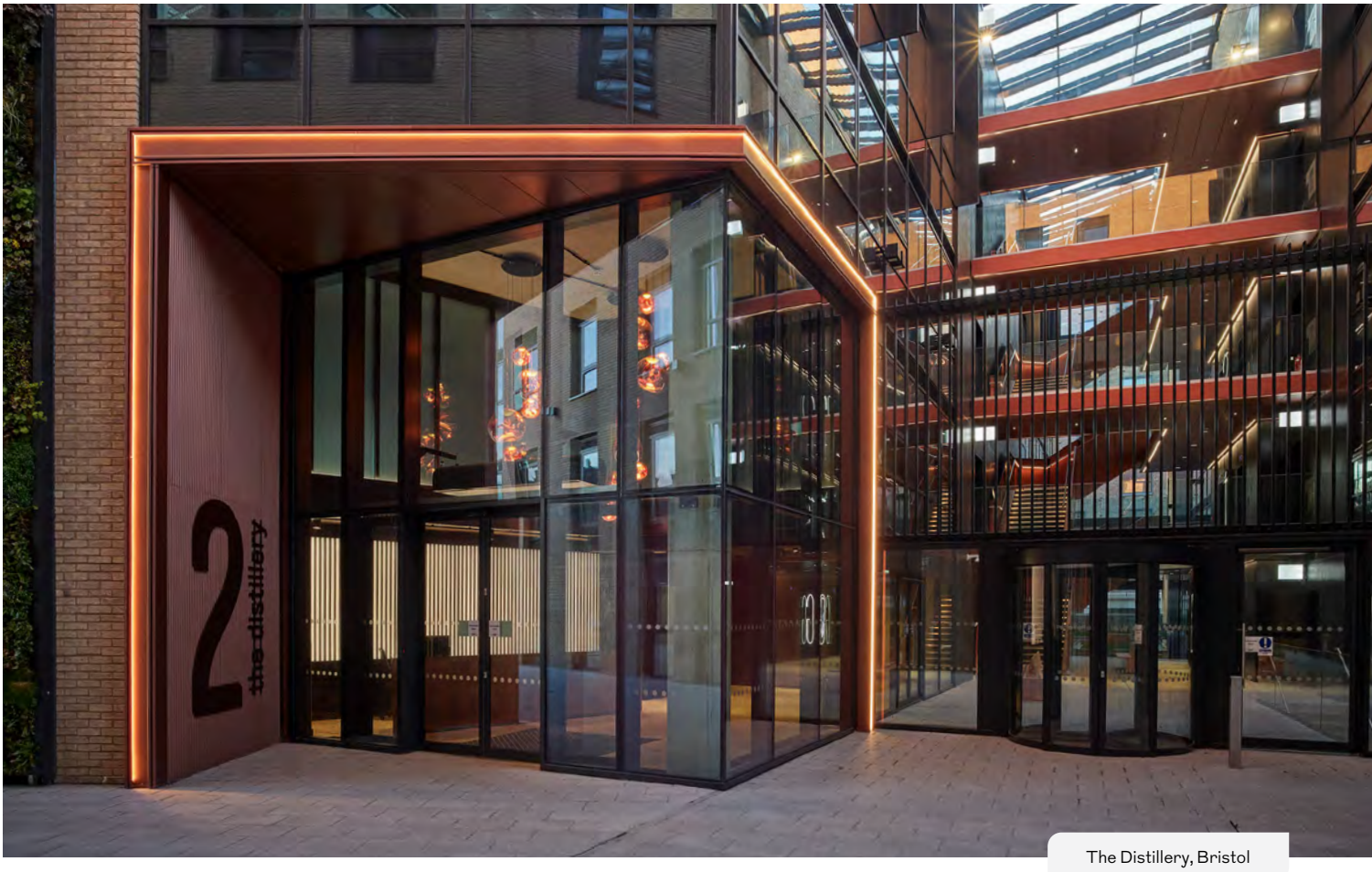
The Royal London Asset Management Board Risk Committee regularly reviews strategic risks, including our strategic risk centred on ESG and climate change.

Climate change can also present a strategic opportunity for firms and their clients. Royal London Asset Management Board recognises these opportunities, and climate-related issues are considered as part of the Board's decision-making process. In addition, responsible investment (RI), including climate change, is reflected as a key pillar of our business strategy.

Our Chief Investment Officer (CIO) is a regulated Senior Management Function (SMF) and is the Executive team member that is accountable for setting the investment strategy, and overseeing our RI function, climate change policy, and approach to climate investment risk. The CIO regularly updates the Royal London Asset Management's Board and monitors climate change risk in line with our risk tolerance threshold. The CIO is also responsible for ensuring climate change risk management is embedded across Royal London Asset Management's investment strategies. The CIO also chairs the Investment Committee (IC).

For full details of the climate-related responsibilities for each role across Royal London and Royal London Asset Management, see page 21 of the Royal London Asset Management Climate TCFD Report.

Royal London Group's incentive framework also covers Royal London Asset Management. It includes both a Short Term Incentive Plan (STIP), which applies to the majority of colleagues, as well as a Long Term Incentive Plan (LTIP), which aims to align Group executives with the long-term interests of members and customers. Both the STIP and LTIP are linked to scorecards with measures and targets, including those concerning sustainability, such as progress against our climate ambitions and reductions in CO_2e emissions. For more information, please refer to the Renumeration section of the Royal London Asset Management Climate (TCFD) report (page 21).



The Distillery, Bristol

Management's role in assessing and managing climate-related risks and opportunities

Within Property, the Head of Property, Portfolio Fund Managers and Sector and Development Specialists that directly manage risk relating to the portfolio report any climate-related issues to the Property Investment Committee (PIC). The CIO is the Chair of the PIC and reports any climate-related issues back to the Royal London Asset Management Board. Management positions are integrated through the Royal London Asset Management Holdings Risk and Capital Committee and the IC, allowing for monitoring of climate-related issues directly by senior management team members.

Management is informed about climate-related issues through the due diligence processes carried out during acquisition stages and subject matter expertise provided by the RI Team, Responsible Property Investment (RPI) Team and external consultants. Property has an ongoing programme of monitoring physical and transitional climate-related issues, in particular flooding and compliance with the Minimum Energy Efficiency Standard (MEES), in order to regularly assess the risk. The RPI Team lead on these programmes as part of the wider RPI strategy and its associated Action Plan.

This requires the active support and involvement of all of Property. Quarterly meetings are conducted by the RPI Team to discuss progress against actions and ensure we remain on track to delivering against our RPI strategy and associated programmes.

Furthermore, the RPI Team present at the monthly PIC on a quarterly basis. This provides the PIC with information on current priorities and challenges, as well as creates the opportunity for the RPI Team to request any necessary support or guidance from the PIC. This provides another forum for climate-related risks and opportunities to be discussed, if required, giving senior management team members oversight.

Strategy

Climate-related risks and opportunities identified over the short, medium, and long terms

At a corporate level, Royal London Asset Management generally considers climate risks and associated strategies under shorter time horizons, aligned with wider commitments such as the Net Zero Asset Managers Initiative NZAM and Climate Action 100+. These consider the 2020s as the 'decisive decade', defining 'short term' within the next five years, and 2030 as medium term-driven. However, due to the distinct requirements and considerations of property assets compared to other assets classes, we have defined the time horizons in the table below with respect to climate-related impacts and scenario analysis for our property assets. This is particularly driven by the lifespan of typical property assets and the longer timelines seen for physical risks to manifest themselves. Therefore, time horizons selected are typically longer than those used for corporate considerations.

Table 1: time horizons

Time Horizon	Years	Explanation
Short	2022 – 2030	Appropriate time horizon to capture short-term planned and imminent policy transition changes, including MEES. Aligns with Property's target for directly managed property assets[24] and developments[25] to be net zero carbon by 2030. This period also aligns with the Royal London Asset Management engagement short (up to five years) and medium (to 2030) time horizons.
Medium	2030 – 2050	Aligns with Property's target for indirectly managed property assets[26] to be net zero carbon by 2040. This period also aligns with the national net zero carbon target date of 2050.
Long	2050 – 2100	Long-term to 2100 is important to capture the impacts of physical risks which manifest themselves over the longer term, particularly given the UK focus. Considering the useful life of our property assets being approximately 60 years, this time horizon captures the end of life, and full life cycle of existing and new assets.

24. Directly managed property assets are those which Royal London Asset Management has complete operational control, greater than 50% equity share, and joint ventures where they would cover the proportionate amount of emissions.
25. Developments are any new development or major refurbishment that comes online from 2030 onwards.
26. Indirectly managed property assets are either partially managed by Royal London Asset Management or managed wholly by the occupier.

Renaissance, Croydon

To identify and prioritise climate-related risks and opportunities, we generated a long-list of potential physical and transitional risks and opportunities that are posed to any business by climate change. This long-list was then reviewed and prioritised by potential financial impact in the short-, medium- and long-term outlook under current operating conditions. The key priority risks identified in this process were taken forward for further detailed financial evaluation.

Each of the priority risks and opportunities was assigned an owner to collect relevant data required to financially quantify and identify any key knowledge gaps. Financial quantification was undertaken with support from our consultant, Climate Advisors. A description of the climate-related risks and opportunities, their impact horizon, financial impact, as well as mitigation and management responses are provided in Table 2 and Table 3 on pages 39 and 41.

To align our risk analysis within the context of the wider business risk, we have applied the Royal London Asset Management financial risk bands to the Property risks and opportunities identified.

Table 2: Royal London Asset Management Property's climate-related risks assessment

Category	Risk	Impact Time Horizon	Potential Financial Impact	Potential Impact	Management and Response
Transition Reputation	Reduced investments if considered not to be responding effectively or fast enough to the climate crisis	Medium	Severe	Our reputation regarding climate action could be influenced by association to Royal London's reputation and investments in other asset types. Additionally, if Property is perceived to be transitioning slower than peers or consumer expectations or perceived greenwashing. Initial quantification considered the financial impact from pension consumers moving away from the Royal London Pension Property Fund (RLPPF) to a company with a stronger focus on climate change, if Royal London Asset Management were considered slow to respond and transition to net zero carbon.	This risk is considered relatively low for Property as current consumers focus on divestments from weapons, tobacco, and fossil fuels. Royal London Asset Management has a stringent governance process for all public disclosures relating to sustainability and climate change, ensuring all communications are accurate and representative. Property will also continue to track peer progress and action relating to RI, whilst continuing to embed RPI and net zero carbon.
Transition Regulation	Costs to deploy and adopt new practices and processes to meet MEES regulations	Short	Severe	There is a risk associated with non-compliance with the UK's existing and current proposed MEES regulations. Using quantification from the Investment Property Forum's[27] research programme and bespoke indicative Energy Performance Certificate (EPC) improvement modelling, the costs to upgrade all our standing assets from their current EPC ratings was estimated.	EPC Improvement Cost Assessments are being undertaken on units with an EPC rating below a B to understand the required interventions and associated costs to achieve an EPC rating of B or above. Under our Sustainable Acquisition Checklist, an EPC Improvement Cost Assessment must be undertaken on any potential purchase with an EPC rating below a B. Interventions identified to improve the rating are incorporated into the Property Purchase Recommendation paper to be presented to the PIC, providing transparency on potential capital expenditure requirements.
Transition Regulation	Costs to deploy and adopt new practices and processes to meet net zero carbon regulations	Medium	High to Severe	There is a risk associated with not meeting future net zero carbon regulations or not aligning with sector-defined ambitions. We are undertaking net zero carbon audits, starting with our directly managed office assets. These determine the interventions required, associated costs and payback periods to transition the asset to net zero carbon, through alignment with both the UK Green Building Council (UKGBC) energy use intensity targets for offices and Carbon Risk Real Estate Monitor (CRREM) pathway intensities. Quantification of financial impact can be determined using these audits.	Net zero carbon audits will continue to be undertaken across all directly managed office assets to create a clearer picture of the financial impact. Where possible, the capital expenditure requirement for the necessary interventions may be shared between us and our occupiers as we collaborate to achieve shared climate goals. We will continue to monitor changing regulations and sector guidance to ensure alignment and reduce risk.

27. https://www.ipf.org.uk/static/uploaded/5f24165a-8bc5-4b27-a00644c51299c79c.pdf

Category	Risk	Impact Time Horizon	Potential Financial Impact	Potential Impact	Management and Response
Physical Acute	Loss of asset value due to damage or physical risk from flooding	Medium	High to Severe	Extreme weather, predominantly flooding, poses the risk of increasing costs to repair assets that are damaged as well as reduced asset value due to extreme weather exposure. We used our historical experience of how flood risk has impacted asset value to estimate the potential impact on the value of assets located in Flood Zone 3.[28] This modelling assumed a combination of both assets being sold at a reduced value as well as the costs associated with being unable to sell an asset due to their exposure to flood risk.	We will continue to regularly measure the flood risk of our portfolio, monitor assets in high flood risk zones, implement necessary mitigation measures, and record incidences of flooding and the costs associated, including repairs or impacts to insurance. These regular assessments will also help to determine investment decisions regarding disposal of assets. Property will also look to monitor and record costs associated with the redevelopments of assets currently exposed to high flood risks that are therefore currently unable to be sold. We will continue to undertake due diligence on all acquisitions concerning potential exposure to current and future flood risk.
Physical Acute	Disruption to construction due to extreme weather events	Long	Moderate	Extreme weather poses the risk of causing delays to construction as well as damaging the new building or materials. This could result in reduced revenues and increased operating costs from extending construction time and repairing or replacing damaged parts. We considered our development pipeline within the modelling, along with typical weekly construction costs for asset types in various regions to estimate the impact of delayed construction.	We will track the frequency and impact of extreme weather events that occur during construction. We are also considering including a financial and time allowance within development budgets for 'climate change' to mitigate against unexpected delays or costs, and manage the risk of these extreme weather impacts delaying plans.

28. Zone 3 is the highest risk Flood Zone defined under UK Planning Policy. https://www.gov.uk/guidance/flood-risk-and-coastal-change#table1

Table 3. Royal London Asset Management Property's climate-related opportunities assessment

Category	Opportunity	Impact Time Horizon	Potential Financial Impact	Potential Impact	Management and Response
Products and services	Green premiums on rent and asset value from net zero carbon buildings	Short	Severe	As more occupiers set net zero carbon targets, the most efficient and green certified buildings will become increasingly desirable. This may lead to green premiums on rents and reduced voids. Using recent research exploring the relationship between green buildings and value, we quantified the likely increase in rents and asset value for high-performing, green certified buildings. This was based on achieving our portfolio targets concerning building certifications within our RPI Report (2022).	Property will look to collate evidence of green premiums and monitor the impact of increased green building certifications. We will continue to develop best-in-class assets by delivering against our New Construction and Major Refurbishment Sustainability Standards. We will also continue to improve the ESG credentials of our standing assets through delivering against our portfolio targets within our RPI Report (2022). We will regularly review our targets in line with market expectations and progress to deliver best-in-class properties.
Resource efficiency	Reduced operating costs through more efficient buildings	Medium	Severe	Through developing our Net Zero Carbon Pathway, we identified the likely energy efficiency reductions required from both operations and refurbishment to achieve our targets. By optimising operational performance, we will expect to see reduced operating costs. This opportunity is likely to be compounded by volatility and price fluctuations seen recently in the energy market. We quantified the annual saving by applying the average 2021 electricity and gas prices from the HM Treasury Green Book[29] to the identified likely energy reductions across both our operations and refurbishments.	We engage regularly with our occupiers to identify opportunities to optimise energy efficiency as well as to encourage the sharing of utility consumption data in order to determine potential opportunities to improve asset performance. In addition, our net zero carbon audits and EPC Improvement Cost Assessments will help to identify opportunities to improve energy efficiency. We will also seek to integrate energy efficiency improvements into existing Property Maintenance Plans.
Energy security	Generate and sell renewable onsite electricity	Medium	High	There is an opportunity to instal solar photovoltaic (PV) panels across our assets to both fulfil a key step in our net zero carbon pathway as well as create a source of income through selling energy to occupiers through Power Purchase Agreements (PPA). As detailed in our RPI Report (2022), we have undertaken a solar PV renewable feasibility study across our industrial assets and retail parks. Based on an assumption of the available roof space, the study determined the potential solar PV generation. It was assumed that all landlord purchased electricity would be provided for by this solar PV, thus the remaining electricity generation could be sold to the grid. This financial opportunity was quantified by applying recent average PV feed-in-tariffs from Ofgem[30] to the theoretical PV potential.	Based on the outcomes of the study, we are now undertaking occupier engagement, with a view to capitalise on shared opportunities for solar PV for both parties. We will continue to track feed-in-tariffs and policy opportunities related to selling generated electricity to the grid.

29. https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal
30. www.ofgem.gov.uk/publications/feed-tariff-fit-tariff-table-1-april-2022

Impact of climate-related risks and opportunities on our businesses, strategy, and financial planning

We produce asset business plans across all properties in the portfolio. These asset business plans outline the property's short and mid-to-long-term strategy, covering aspects including financial forecasts, upcoming lease events and risk. The asset business plans are updated and reviewed every six months.

Physical and transitional climate-related risks and opportunities have an influence over these asset business plans. These are detailed in the table above, but include projects such as the outcomes from the net zero carbon audits, EPC Improvement Cost Assessments and solar PV feasibility study, as well as necessary mitigation to minimise any flood risk. Each of these projects generate a set of recommendations for the asset in question to either minimise climate-related risk or maximise the opportunity that is present. Incorporating these recommendations into the asset business plans creates accountability for the asset manager to implement them, with these regular reviews ensuring progress is monitored. Furthermore, capital expenditure estimations are provided for these recommendations, enabling the asset manager to build this into the financial plan for the asset.

Resilience of our strategy

Royal London Asset Management Property have undertaken a qualitative scenario analysis exercise for the first time this year to understand how resilient the business strategy is under a range of possible climate scenarios, where the outcomes are highly uncertain and will play out over the medium-to-long term. We are looking to improve on this analysis for future disclosures by adding in a quantitative element to the scenario analysis.

To see a full range of potential impacts on our business strategy, Royal London Asset Management has chosen three scenarios that represent a disorderly transition to 1.5°C, an orderly transition to 2°C and a continued reliance on fossil fuel leading to a 'hothouse' world. The descriptors for these scenarios align with the IPCC's Representative Concentration Pathways (RCPs)[31,32] and the Shared Socioeconomic Pathways[33] (SSPs) to give both a policy and climate outcome under each of the scenarios. As Royal London Asset Management's property portfolio is UK-based, the UK Climate Resilience Programme's SSPs[34] have been referenced to develop the scenario narratives for a UK property portfolio focus. The choice of these three scenarios allows Royal London Asset Management to understand how the business might be impacted most by transitional risks under the disorderly scenario, and by physical risks under the hothouse scenario.

Royal London Asset Management has investigated the climate-related risks and opportunities under each of these scenarios in the short term (to 2030), the medium term (2030 – 2050) and the long term (2050 – 2100). Table 1 outlines the detail of these time horizons.

To understand how resilient Royal London Asset Management Property's strategy is to the effects of climate under these three scenarios, the evolution of the priority climate-related risks and opportunities have been described under each of the three scenarios. This analysis was done qualitatively but in future years, we will look to progress to a more detailed quantitative analysis. We will look to use this qualitative analysis of our climate-related risks and opportunities to inform our future business strategy, at the asset-level through our asset business plans, as well as at the portfolio-level through incorporating these risks into our risk management regime. This is outlined in the 'Risk Management' section of this report.

2 City Place, Gatwick

31. https://www.ipcc-data.org/guidelines/pages/glossary/glossary_r.html
32. https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---representative-concentration-pathways.pdf
33. https://www.sciencedirect.com/science/article/pii/S0959378016300681
34. https://www.ukclimateresilience.org/products-of-the-uk-ssps-project/

The scenario narratives are outlined below.

Table 4: scenario narratives

Scenario	Transition risk	Physical risk	Why chosen?
Scenario 1: 1.5°C disorderly transition Slow changes in the short term until a drastic step change in policy and consumer demands in the 2030s. Rapid abandonment of fossil fuels and increased investment in renewables and green technology causes the biggest change in regulations and carbon taxes.	High	Low	This meets the TCFD requirement to consider a scenario with warming of below 2°C, and highlights the transition risks associated with a late transition.
Scenario 2: 2°C orderly transition Steady increase of regulations and consumer interest in sustainable development, with business drivers already in the short term. Policy is well thought out and organised so businesses can prepare for upcoming regulations.	Medium	Low	This scenario represents an optimistic outlook for both transition and physical risks.
Scenario 3: hot house Most businesses and customers continue to favour resource- and energy-intensive activities, with investments into further fossil fuels. Green environment policy is inconsistent. Current ambition may be reduced, and the physical impacts of climate change will manifest strongest, causing more remediation costs.	Low	High	This scenario represents a pessimistic outlook for physical risks.

Holborn Viaduct, London

Holborn Viaduct, London

Risk management

Our processes for identifying, assessing and managing climate-related risks

Royal London Asset Management maintains a comprehensive principal risk register, Archer, covering all high-level risks and controls across all aspects of the business. Each department determines which climate-related risks should be included as appropriate. Each risk is assigned an active status, risk category, business entity and risk owner. For each high-level risk, there are prevent and detect controls in place which are regularly reviewed by the Risk Owners.

This year as part of our increasing focus on climate-related risks and opportunities, we have carried out a thorough review and impact assessment for Property-specific climate-related risks and opportunities. Further detail of the process undertaken to identify risks and opportunities is given in the Strategy section of this report. Property will look to review the climate-related impacts on a regular basis to determine any new risks, assess their relative priority and if any new relevant impacts should be considered monitored.

In 2022, we developed a new Sustainable Acquisition Checklist. Implementation of this checklist ensures that potential investments meet our commitments to RPI across its material ESG issues. The Sustainable Acquisition Checklist has been developed in alignment with the Better Building Partnership's (BBP) Acquisitions Sustainability Toolkit as well as reflects our RPI framework. The outcomes of this checklist are used to advise our asset managers on how to improve the ESG credentials of the asset, and are also reviewed by the RPI Team to ensure any climate-related risks are identified and appropriate mitigation is in place if the asset is acquired. The outcomes of the Sustainable Acquisition Checklist are then presented at the PIC in order to gain approval from the Head of Property and CIO. This more stringent process will help to mitigate risks and maximise opportunities to add value across the portfolio whilst enhancing sustainability performance.

The Sustainable Acquisition Checklist requests information on both physical and transition climate-related risks and opportunities. These factors feed into the overall decision on whether Royal London Asset Management Property proceeds with the purchase.

Kings Court Care Home, Newark

These include the following.

- Energy performance, including historic energy consumption data to compare against industry benchmarks, such as the BBP's Real Estate Environmental Benchmark.
- Installation of shading features to minimise overheating risk.
- Extent of insulation to improve the building's energy efficiency.
- Sustainable building certifications, including NABERS UK, BREEAM and WELL.
- EPC rating to determine compliance with current and proposed MEES.
- Flood risk rating to determine the site's risk as well as whether capital expenditure may be required to mitigate the risk following purchase.
- Fuel type sourcing the building (electricity, gas, or a combination) to determine the resilience of the building to potential future legislation of the phasing out of gas.
- Onsite low carbon/renewable technology, for example solar PV panels and heat pumps, to understand potential opportunities available, including PPAs, plus determine the carbon benefit.

Royal London Asset Management Property's response and management to the specific high-priority climate impacts disclosed in Table 2 and Table 3.

The Distillery, Bristol

Integration of processes for identifying assessing and managing climate-related risks into our overall risk management

Royal London Asset Management have embedded a policy of constant re-assessment of its risks and controls through four lines of defence:

1. **Property Department**
2. **First Line Risk and Compliance**
3. **Second Line Risk and Compliance**
4. **Internal Audit**

The key element involves the six-monthly process where the risk and control owner must formally attest that our approach fully takes account of the current risk environment. The clear aim is that Royal London Asset Management Property constantly assesses its risk management regime to ensure it is up to date with all elements of our strategy, including our Net Zero Carbon Pathway and RPI Strategy. This ensures that we adapt to the evolving risk environment generated by the various scenarios. The Risk and Compliance and Audit function's role is to constantly challenge Royal London Asset Management Property to justify its risk ratings, and to highlight additional work or areas of weakness that need addressing.

Following the identification of Royal London Asset Management Property's material climate-related risks and opportunities and the associated qualitative scenario analysis, the RPI Team will seek to communicate these findings to the PIC. This is fundamental to ensuring these material risks and opportunities are embedded into our investment considerations, building resilience into the portfolio and future-proofing our assets.

Royal London Asset Management Property will also look to reassess its risk management regime to ensure that these climate-related risks are incorporated, and a risk and control owner has been identified. These will be challenged every six months, assisting with ensuring they are embedded across the Property Team and continually considered within our strategy.

Metrics & Targets

Metrics to assess our climate-related risks and opportunities

Monitoring the environmental performance of our property assets is fundamental to tracking progress towards achieving our net zero carbon goals, alongside identifying opportunities to improve the operational efficiency of our assets and create a more resilient portfolio. We will continue to measure and report annually on the following metrics:

- **GHG emissions.**
- **energy consumption.**
- **EPC ratings.**

Furthermore, we have identified the following additional metrics which have been deemed relevant for tracking the financial impact of climate-related risks and opportunities:

- **portfolio flood risk profiling.**
- **number of assets with onsite renewables and total generation capacity.**
- **number of assets with green building ratings.**

15 Rathbone Place, London

We will continue to monitor these metrics internally and look to further understand the financial impact against each metric. Royal London Asset Management Property will also seek to develop further metrics that are specific to the physical and transitional climate-related risks and opportunities identified in this TCFD report. We will look to collect data against new metrics and report in future iterations of this report.

Royal London Asset Management Property do not currently use an internal carbon price. However, we will look to investigate establishing an internal carbon price which aligns with the wider Royal London Asset Management approach.

Aurora, Bristol

Table 5: energy consumption and GHG emissions for Property

Fund	Absolute (kWh)		Like-For-Like (kWh)	Energy Intensity (kWh/m²)	GHG Emissions (tCO_2e)				GHG Intensity ($kgCO_2e/m^2$)
	Total Electricity	Total Fuel	Total Like-For-Like Energy	Total Like-for-Like building energy intensity by floor area	Scope 1	Scope 2 (location-based)	Scope 3	Total GHG emissions	Total GHG emissions intensity by floor area
Royal London Pension Property Fund (RLPPF)	29,052,061	15,150,856	33,483,860	154	2,418	4,003	108,751	115,172	68
Royal UK London Real Estate Fund (UKREF)	9,162,166	8,822,894	10,086,613	120	807	1,322	20,670	22,799	32
Royal London Property Fund (RLPF)	1,432,464	583,059	1,631,150	208	96	231	4,491	4,818	34
Total	**39,646,691**	**24,556,809**	**45,201,623**	**146**	**3,321**	**5,556**	**133,912**	**142,789**	**56**

Source: Royal London Asset Management as of 30 September 2022.

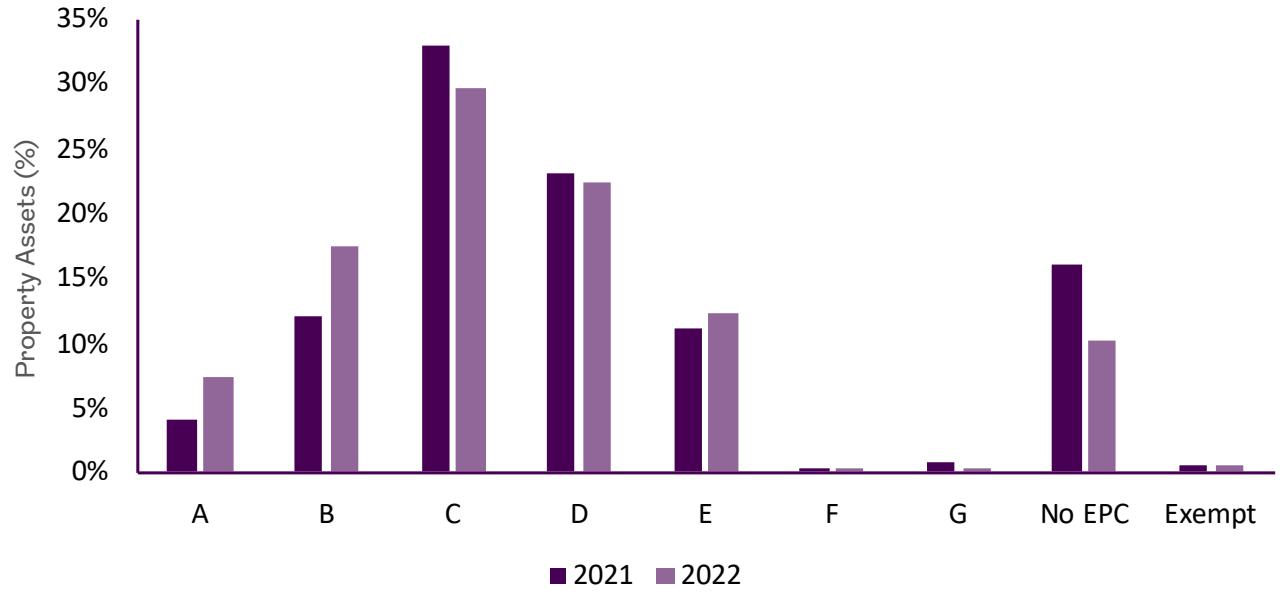
Note: like-for-like intensity metrics are calculated only where whole building coverage is available to align with the INREV reporting guidelines. It relates only to internal (Gross Internal Area (GIA)) utilities only. Assets sold or purchased during the reporting period and assets with incomplete data sets have been excluded from like-for-like analysis.

Note: energy intensity calculations are inclusive of data from assets which have whole building data and full coverage across the reporting period.

Note: due to a change in GHG methodologies between the previous and current reporting years, it is not possible to raise direct like-for-like comparisons. Where data has not been available, GHG emission calculations have utilised benchmarks and averages. Total emissions and intensities therefore cover the GIA of each fund.

Note: please see Appendix 1 for a full breakdown of Scope 1, 2 and 3 emissions by GHG emission source and methodology.

Figure 1: EPC ratings



Source: Royal London Asset Management as of 30 September 2022.

Scope 1, 2 and 3 emissions and related risks

Property calculates its Scopes 1, 2 and 3 emissions on an annual basis in line with the GHG Protocol methodology. See Appendix 1 for GHG emissions and methodology. Where possible, this shows the change in emissions from Scope 1 and 2 in previous years compared to the current reporting year. However, changes in calculation methodology mean that we are disclosing Scope 3 emissions for 2022 and our baseline year, 2019, but we are not able to compare these to our 2020 and 2021 reporting years. This is explained in Appendix 1.

Targets to manage our climate-related risks and opportunities

We have committed to achieving net zero carbon by 2030 for our directly managed assets and developments, and 2040 for our indirectly managed assets. To support this commitment, Royal London Asset Management joined NZAM and became a signatory to the BBP Climate Commitment.

During 2022, we developed a set of RPI portfolio targets to address the material topics identified in our RPI Strategy. These targets include key performance indicators (KPIs) and supporting indicators to track ongoing progress towards these targets. With regard to climate, we have set targets against the material RPI issues 'Transition to Net Zero Carbon' and 'Climate Resilience, Adaptation & Risk Mitigation'. These are as follows:

3 Hardman Square, Manchester

Objective	Area	Portfolio Target
Transition to net zero carbon	Operational	• Achieve net zero carbon across our directly managed property assets and developments by 2030* • Achieve net zero carbon across our indirectly managed property assets by 2040** • Generate up to 9.5GWh (equivalent of 11.2 MW of capacity) of renewable energy onsite per year by 2040
	Development	• Aim to achieve a reduction in embodied carbon (A1-A5)[35] across all new build and major refurbishment projects in line with our New Construction and Major Refurbishment Sustainability Standards
Climate resilience, adaptation and risk mitigation	Operational	• Explore forward-looking climate risk assessments and commence across all assets from 2024
	Development	• Commence forward-looking climate risk assessment at design stage and integrate adaptation solutions within the design on all new build and major refurbishment projects from 2024

* DIrectly managed property assets are those over which Royal London Asset Management has complete operational control and greater that 50% equity share, and joint ventures where they would cover the proportionate amount of emissions. Developments are any new development or major refurbishment that comes online from 2030 onwards.

** Indirectly managed property assets are either partially managed by Royal London Asset Management or managed wholly by the occupier.

35. Within the whole-life carbon assessment, life cycle stages A1-A5 cover the embodied carbon to practical completion of a building, comprising the product and construction stages. (Source: Whole life carbon assessment for the built environment, Royal Institute of Chartered Surveyors (RICS), 1st edition, November 2017).

Our three operational targets against the material RPI issue 'Transition to Net Zero Carbon' were also defined within our original Net Zero Carbon Pathway. These will be measured against our baseline year of 2019, as defined in that report, and are all absolute based targets. Additionally, the development target against 'Transition to Net Zero Carbon' will evolve on an annual basis, in line with our New Construction and Major Refurbishment Sustainability Standards which are reviewed every year. This ensures alignment across our various policy documents through having a consistent, sector-specific embodied carbon target across all new build and major refurbishment projects. This is also an absolute based target.

Work to fulfil both targets against the material RPI issue 'Climate Resilience, Adaptation & Risk Mitigation' will commence from 2024 as per the target wording. Both targets are absolute targets. We will look to define this target further, including time frames and base year, once the programme to deliver climate risk assessments has been established.

These targets can be found in full within our RPI Report (2022). Future iterations of our RPI Report and Net Zero Carbon Pathway Progress Report will provide updates on performance against these targets using the KPIs and supporting indicators that will be defined in future reports.

As our understanding of climate risks mature, we will ensure that we continue to improve our data collection and analysis to ensure that we are making the most informed decisions and review and update targets and metrics regularly.

Appendix 3 - Terminology and Acronyms

Terminology

The following table lists key defined terms used throughout the report.

Word/Phrase	Definition
1.5° Aligned/1.5° Pathway	A target, commitment or reduction pathway which, if applied globally, will ensure global warming is either limited to 1.5°C above pre-industrial temperatures, or allow them to return to 1.5°C above by the year 2100 (following an overshoot). See also 'Paris-aligned'.
Asset Owner	An individual or organisation allocating capital for the acquisition, development or operation of a building – potentially as part of a pension fund, endowment or foundation, or for high-net-worth and retail investors who own underlying real assets but charge the management of those assets to asset/investment managers.
Base Building	Areas of a building managed by the landlord, rather than the occupier.
BREEAM	Building Research Establishment Environmental Assessment Model (BREEAM) is a green building certification used to assess, rate and certify the sustainability of a building.
Carbon Offsetting	Actions or investments made at a building or organisational level to facilitate another party to reduce or avoid emissions, or absorb atmospheric carbon. Often used as a means of compensation for emissions generated elsewhere.
Climate Change Mitigation	Actions or investments made at a building or organisational level to reduce or prevent the emission of greenhouse gas.
Directly Managed Property Assets	Property assets where Royal London Asset Management has complete operational control and greater than 50% equity share, and joint ventures where they would cover the proportionate amount of emissions.
Embodied Carbon	Greenhouse gas emissions associated with building construction, including those arising from extracting, transporting, manufacturing, and installing building materials, in addition to the operational and end-of-life emissions of the materials.
Energy Hierarchy	A principle which prioritises the improvement of energy performance above all other carbon mitigation/compensation methods and allows offsetting to be used only as a last resort in any net zero carbon definition.
Energy Use Intensity	The measured unit of consumption (kWh) per unit of floor area (m^2) for a property.
Fitwel	A global building certification system used to assess, rate and certify a building based on its promotion of health and wellbeing within buildings.
Global Warming Potential	Measure of how much energy the emissions of 1 ton of gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The higher the global warming potential, the more that given gas warms the Earth compared to CO_2.
GRESB	Formerly the Global Real Estate Sustainability Benchmark, GRESB is a global sustainability benchmark for commercial real estate and infrastructure.
Indirectly Managed Property Assets	Property assets that are either partially managed by Royal London Asset Management or managed wholly by the occupier.
Internal Carbon Price	A monetary unit is applied to a ton of carbon dioxide equivalent (CO_2e) that is determined by an organisation which can be used to determine financial opportunities and risks.
Landlord	An individual or organisation responsible for the ownership of a building which is rented or leased to an individual or organisation.
Low- and Zero-Carbon Technologies	Technologies that emit low levels of carbon dioxide (CO_2) emissions, or no net (CO_2) emissions.

Word/Phrase	Definition
NABERS UK	Green building certification that uses the actual operational performance of a building to assess, rate and certify the sustainability of a building.
Net Zero Carbon Building	A building-level status whereby the building has undergone steps to improve the energy performance and reduce inefficiencies. Building-level status is also achieved on completion of national grid decarbonisation. Residual emissions are offset.
Occupier	An organisation residing in/operating from a building.
Operational Carbon	Greenhouse gas emissions associated with the operational stage of a building's lifecycle, mostly attributed to emissions from energy use.
Paris-Aligned	A target, commitment or reduction pathway which is aligned with the requirements of the Paris Agreement (2015) – synonymous with 1.5° aligned.
Paris-Proof	A concept pioneered by the Dutch Green Building Council basing energy reduction requirements on the future zero carbon energy generation capacity. Paris Proof targets set out the expected magnitude of energy efficiency improvements required by 2050.
Property Manager	Third party service, procured by the asset owner, who manages the operational stage of a building lifecycle.
Quantis Tool	Provides spend-based emission factors which can be applied for greenhouse gas reporting.
Refrigerants (Fugitive Emissions)	Emissions that are not produced intentionally – within the built environment, this is usually attributed to leakage of refrigerants from cooling systems and heat pumps.
Renewable Energy Guarantees of Origin (REGO) Certificate	A certificate issued by the Office of Gas and Electricity Markets (Ofgem), certifying that the electricity in respect of which the certificate is issued, was electricity produced from renewable energy sources.
Scope 1 Emissions	All direct emissions from sources that an organisation owns or controls directly, such as emissions associated with fuel combustion in boilers.
Scope 2 (location-based) Emissions	Indirect emissions from electricity purchased and used by the organisation. Emissions are based on the average emission factor of the UK National Grid.
Scope 2 (market-based) Emissions	Indirect emissions from electricity purchased and used by the organisation. Emissions are based on the emission factors of the chosen energy contract.
Scope 3 Emissions	All other indirect emissions from upstream and downstream activities of the organisation, occurring from sources that they do not directly own or control.
Transition Fund	An approach to carbon offsetting. The amount of residual emissions for a new or existing property asset is multiplied by an assigned monetary value of carbon to create a fund that is used to both offset the residual emissions from a new or existing property asset, as well as fund additional projects that contribute towards the transition to net zero carbon.
WELL	Green building certification used to assess, rate and certify the health and wellbeing performance of a building.
Whole Life Carbon	Greenhouse gas emissions associated with the full lifecycle of a building, from materials and construction through to demolition, combining embodied carbon, operational carbon and any other sources of emissions.

Acronyms

The following table includes a list of acronyms used throughout the report.

Abbreviation	Meaning
AMR	Automatic Meter Reading
AUM	Assets Under Management
BBP	Better Buildings Partnership
BECD	Built Environment Carbon Database
BMS	Building Management System
CEO	Chief Executive Officer
CIBSE	Chartered Institution of Building Services Engineers
CIO	Chief Investment Officer
CO_2e	Carbon Dioxide Equivalent
CRREM	Carbon Risk Real Estate Monitor
DfP	Design for Performance
EMS	Environmental Management System
EPC	Energy Performance Certificate
ESG	Environmental, Social and Governance
EUI	Energy Use Intensity
GHG	Greenhouse Gas
GIA	Gross Internal Area
GWh	Gigawatt hour
GWP	Global Warming Potential
HVAC	Heating, Ventilation and Air Conditioning
IC	Investment Committee
IPCC	Intergovernmental Panel on Climate Change
KPI	Key Performance Indicator
kWh	Kilowatt hour
kWp	Kilowatt peak

Abbreviation	Meaning
LED	Light-Emitting Diode
LETI	London Energy Transformation Initiative
LTIP	Long Term Incentive Plan
MEES	Minimum Energy Efficiency Standard
MW	Megawatt
NZAM	Net Zero Asset Managers Initiative
NZC	Net Zero Carbon
PIC	Property Investment Committee
PPA	Power Purchase Agreement
PV	Photovoltaic
RCP	Representative Concentration Pathway
REEB	Real Estate Environmental Benchmark
REGO	Renewable Energy Guarantees of Origin
RI	Responsible Investment
RIBA	Royal Institute of British Architects
RPI	Responsible Property Investment
SBTi	Science Based Targets initiative
SFDR	Sustainable Finance Disclosure Regulation
SMF	Senior Management Function
SSP	Shared Socioeconomic Pathway
STIP	Short Term Incentive Plan
TCFD	Task Force on Climate-related Financial Disclosures
UKGBC	UK Green Building Council
UKNZCBS	UK Net Zero Carbon Buildings Standard
UN PRI	United Nations Principles for Responsible Investment

Contact us

For more information about our range of products and services, please contact us.

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