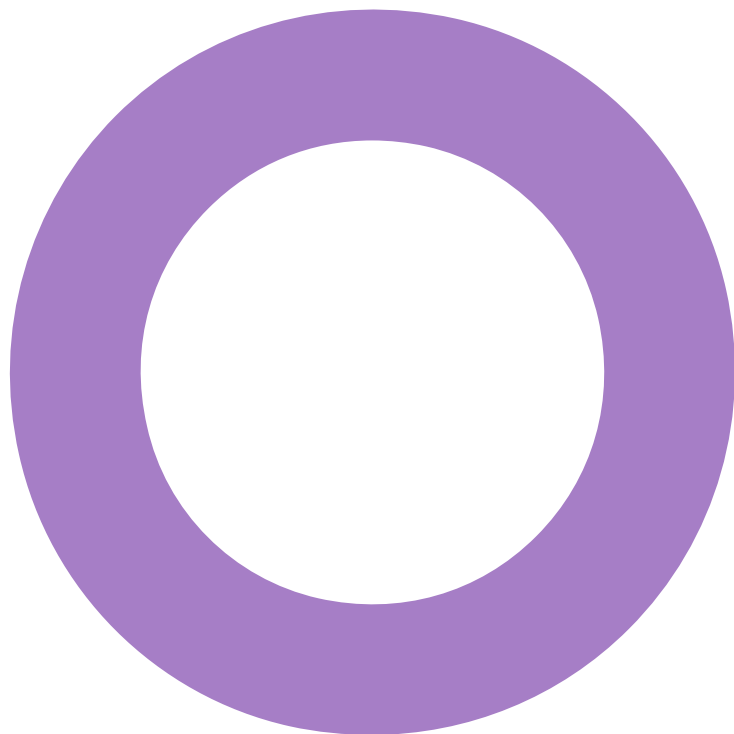


Net Zero Carbon Building Assessment. Annual Summary Report. Financial Year 2021-22.

SUSTAINABILITY
NET ZERO CARBON

REVISION 00 - 26 JULY 2023



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	26/07/2023	Final summary report for publication	T. Mayfield	W. D. M. Naismith	A. E. Bateson

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Executive summary.

This summary report describes Hoare Lea’s net zero carbon building strategy and assessment for the financial period 2021-22. Our report is based on demonstrating our commitment to being a signatory of the World Green Building Council Net Zero Building Commitment.

<https://worldgbc.org/signatory/hoare-lea/>

In accordance with industry best practice, our assessment follows the methodology of the UKGBC Zero Carbon Building Framework Definition.

The assessment describes our approach to evaluating, reducing and offsetting carbon emissions arising from building energy use, including fugitive emissions (refrigerant gas leakage). It provides an update on the work we’ve undertaken to reduce our building energy use since we published in our previous strategy report for 2020-21. <https://hoarelea.com/2022/04/22/net-zero-carbon-strategy-summary-report/>

The carbon emissions for the financial reporting period covered by this report (Oct 2021- Sept 2022) and our previous report (May 2020- Apr 2021) are summarised below, together with the bridging period (May 2021 – Sept 2021). Note that the 5-month bridging period arises from the changes to our financial reporting period, which previously started in May and now starts in October. The change in financial reporting periods is a result of Hoare Lea becoming part of Tetra Tech.

Table 1: Total building carbon emissions for this reporting period (2021-22) and our previous reporting period (2020-21)

Report	Assessment period	Building carbon emissions for the assessment period (Including F-gas emissions)	Transition fund requirement
Previous report	1 st May 2020 – 30 th April 2021 (Our accounting period for 2020-21)	367* tCO ₂ e	£26,000 at a carbon price of £70/tCO ₂ e
This report	1 st May 2021 - 30 th Sept 2021 (Bridging period between different financial periods)	84 tCO ₂ e	£7,980 at a carbon price of £95/tCO ₂ e
	1 st Oct 2021- 30 th Sept 2022 (Our accounting period for 2021-22)	276 tCO ₂ e	£26,220 at a carbon price of £95/tCO ₂ e
*Our previous report declared total emissions of 475 tCO ₂ e with vehicle fleet emissions (vehicle fleet emissions are no longer included beyond the first reporting period; these will be included in our separate scope 1, 2 & 3 emissions report)		Total for this reporting period: £34,200 (including bridging period), based on 360 tCO ₂ e to be offset at a carbon price of £95/tCO ₂ e	

Our commitment.

Hoare Lea is a signatory of the World Green Building Council Net Zero Buildings Commitment. This report fulfils our obligation to assess building carbon emissions, describe our approach to reducing energy use and our method for offsetting residual emissions.

Hoare Lea is also a signatory of the Building Services Engineers Declaration of the Climate and Biodiversity Emergency. As such, we are committed to reducing our environmental impact and targeting net zero carbon emissions.

Our baseline emissions

The Hoare Lea offices covered by the assessment are:

- Glasgow
- Birmingham
- Leeds
- Bournemouth
- London
- Bristol
- Manchester
- Cambridge
- Oxford
- Cardiff
- Plymouth

The building emissions were assessed using building energy consumption data and assumed fugitive emissions for heating and cooling plant (arising from refrigerant leakage).

We have excluded carbon emissions from serviced offices, which have low occupancy and impact.

Governance.

Central to our net zero strategy, developing appropriate governance structures are critical to achieving robust, permanent and managed emissions reduction. Our governance strategy has and will continue to involve increasing engagement, creating responsibility and embedding net zero in our current practices. This is overseen by our Race to Zero Working Group, led by Ashley Bateson, Sustainability Director.

Reducing energy demand

To help manage our energy reductions, each office has an Environmental Management Champion and Carbon Project Manager, assigned to review energy management and consider energy saving measures. During the period 2021-22 we can report the following progress:

- Established an energy saving investment budget to fund office carbon reduction measures.
- Made a commitment to install circuit monitoring systems to enable real-time measurement of electricity usage in our offices.
- Agreed a strategy to transfer from onsite server data storage to offsite cloud data storage (this will reduce our office electricity consumption and provide a more carbon efficient facility for project data storage).
- Implemented the replacement of fluorescent lighting with more efficient LED lighting in our Bournemouth Office.
- Established a plan to implement a range of carbon reduction measures in the refurbishment of our Oxford office (including the installation of a new heat pump/ VRF system).

Dealing with residual emissions

We are taking the leadership approach to offset our residual emissions by establishing a net zero transition fund. In addition, we have a plan to procure high-quality renewable electricity supplies to replace our current direct supplies of electricity. Some offices already procure high-quality renewable energy (as defined by UKGBC Renewable Energy and Offsetting Guidance) and our remaining offices will be transferred to a renewable energy supplier when lease agreements allow.

Offsetting.

Our approach to offsetting residual carbon emissions entails establishing a transition fund with a price for carbon set at £95/ tCO₂e, i.e. £34,200 based on the need to offset 360 tCO₂e. This pays for international carbon credits through investment in afforestation, at approximately £41/tCO₂e. The remainder of the transition fund will be used for a UK community-based carbon reduction project.

Our verified international offset plan uses the Nicaforest High Impact Reforestation Program, an afforestation project in Nicaragua. This is a nature-based solution that absorbs carbon emissions through tree growth and

provides social value and work creation for local communities. The offset credits are purchased through the Gold Standard organisation. <https://www.goldstandard.org/>

Our UK community-based carbon reduction project for the previous reporting period (2020-21) was an employee nominated proposal. The selected project entails supporting a woodland trust in Glasgow, Scotland, to assess the feasibility of using an anaerobic digester to generate biogas from organic waste. For the current reporting period, 2021-22, we will seek another employee nominated community-based project.

Transparency and verification.

We consider transparency and disclosure vital tools for securing robust net zero claims. This report and its appendices have been audited by a third party, BRE, to verify our approach and calculations used to determine our net zero balance. We have also taken the step of publishing this summary report on our website. This will ensure our work remains visible to our people and collaborators, and demonstrates alignment with our values.

Strengthening our commitment.

Our net zero building commitment is not a one-off exercise; we must achieve significant reductions in our underlying emissions, continuously improving the energy performance of our offices and broadening the scope of our emissions boundary in the coming years.

The forthcoming update to our Sustainable Procurement Policy will phase in our identification and reduction of Scope 3 emissions.

We work across different scales, sectors and geographies. To understand the impact of our consultancy on the built environment and organisations, we are also aiming to collect data for measuring the energy performance of our completed projects.

Useful Links.

- World Green Building Council Net Zero Commitment <https://www.worldgbc.org/thecommitment>
- UKGBC Net Zero Buildings Framework <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-buildings-framework/>
- Building Services Engineers Declaration of the Climate & Biodiversity Emergency <https://www.buildingservicesengineersdeclare.com/>
- Hoare Net Zero Carbon Strategy Report for 2020-21 <https://hoarelea.com/2022/04/22/net-zero-carbon-strategy-summary-report/>
- Gold Standard <https://www.goldstandard.org/>

1. Introduction.

Tackling climate change requires action. As consultancy specialising in the built environment, we understand the impact that buildings can have on our planet. As such, signing up for the World Green Building Council's (WorldGBC) Net Zero Buildings Commitment is a natural step and one that we are already embarking on with determination and pride.

This report sets out how we meet our WorldGBC Net Zero Buildings Commitment for the period 2021-22, detailing our approach, methodology and supporting evidence.

The financial period covered is 1st Oct 2021- 30th Sept 2022, however we have also included a bridging period 1st May 2021- 30th Sept 21, since our previous net zero building report covered the period 1st May 2020 – 30th April 2021. The bridging period of 5-months arises from changes to our financial reporting period, which previously started in May but now starts in October, as a result of Hoare Lea becoming part of Tetra Tech.

The report is structured to give our responses to four key questions:

- **Why net zero?**
We provide context for this report and the basis for our net zero buildings commitment.
- **What are we aiming to achieve?**
We set out our approach to realising a net zero future, with the key theme of our response to climate change informed by UKGBC and WorldGBC guidance.
- **What is our baseline and emissions boundary?**
We establish our boundary condition, emissions sources and baseline, followed by an analysis of the current energy performance of our offices and the wider energy landscape.
- **How we achieved net zero carbon?**
We explore the net zero emissions target and the three strands of our response: reducing energy demand, decarbonising energy sources and offsetting residual emissions.

Our answers provide the basis for our net zero claims and are further expanded upon in the appendices, where we also set out our position on offsetting in the built environment and our strategy for improving data collection.

1.1 Our role in a net zero future.

At least four-fifths of the global economy is now covered by net zero pledges despite the idea being relatively unheard of only a decade ago¹. These voluntary commitments are pushing building owners and tenants to be net zero carbon. The International Energy Agency (IEA) estimates that constructing and operating buildings consumes 36% of the world's energy and contributes 40% of energy-related carbon emissions².

We are at the forefront of the net zero transition: advocating for ambitious energy reduction targets, developing comprehensive net zero frameworks with industry partners, and committing ourselves to ambitious climate targets.

1.2 Our corporate responsibility strategy

We are a climate-conscious, human-centric consultancy. Our corporate responsibility strategy aligns with our sense of purpose; both in terms of how we operate as a business and how we add value to society³.

Our approach to corporate responsibility recognises that we have an impact on the environment through our consultancy and operations.

1.3 World Green Building Council's Net Zero Carbon Buildings Commitment

In 2020, acting on our corporate responsibility strategy and our commitment to reduce our climate impact, we became signatory to the World Green Building Council's (WorldGBC) Net Zero Carbon Buildings Commitment⁴.

As our Managing Director, Justin Spencer, explained:

"Tackling the climate and biodiversity emergency requires action. As an engineering consultancy, we deeply understand the impact that the built environment can have on our planet. We are therefore a proud signatory of the WorldGBC's Net Zero Buildings Commitment."

1.4 Building Services Engineers Declaration of the Climate and Biodiversity Emergency

We are also proud to be one of the founding signatories and chair of the Building Services Engineers Declaration of the Climate and Biodiversity Emergency⁵. The initiative, backed by over 100 consultancies and engineering firms, calls for better knowledge sharing and awareness, elevating the role of sustainability in all our work and redrawing the criteria for success.

Our Head of Sustainability, Ashley Bateson, is the Declaration's steering group chair. By extending our influence within the industry and our advocacy role outside it, we can enable the construction sector to take centre stage in mitigating environmental harms and collaborate for a sustainable future.

¹ <https://eciu.net/analysis/reports/2021/taking-stock-assessment-net-zero-targets>

² <https://www.iea.org/topics/buildings>

³ <https://hoarelea.com/about-us/corporateresponsibility/>

⁴ <https://hoarelea.com/2020/09/21/our-net-zero-carbon-commitment/>

⁵ <https://www.buildingservicesengineersdeclare.com/>

2. What are we trying to achieve?

2.1 Defining net zero: WorldGBC commitment.

Launched in 2018, the Net Zero Carbon Buildings Commitment is a mechanism developed by the WorldGBC to encourage organisations, cities and states to demonstrate climate leadership⁶. We became a signatory in September 2020.

The five stages of our commitment include⁷:

1. **Commit:** Commit to only occupying assets that are net zero carbon in operation by 2030. We have opted to occupy net zero buildings in 2021.
2. **Disclose:** Measure and disclose energy consumption and emissions data, made publicly available via the annual report.
3. **Act:** Develop a firm-wide carbon reduction strategy and action plan for all occupied assets. Identify and implement feasible energy saving and efficiency opportunities, and on-site renewable energy sources, and invest in off-site renewables or carbon offsets for the balance.
4. **Verify:** Verify emissions data annually via third-party verification.
5. **Advocate:** Continue to contribute to research and publications on net zero carbon. Increase commitment to share knowledge on net carbon with clients and other stakeholders, including as chair of the Building Services Engineers Climate Emergency Declaration initiative.

2.2 UKGBC Net zero framework and guidance.

Country specific Green Building Councils, such as the UKGBC, have in turn produced frameworks setting out how these ambitious net zero targets should be met. We have followed the UKGBC Net Zero Carbon Building Framework to make our own net zero claims.

Net Zero Carbon Buildings: A Framework Definition

The UKGBC sets out the following definition for operating net zero buildings⁸:

“When the amount of carbon emissions associated with the building’s operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.”

Net zero carbon: energy performance targets for offices

The UKGBC has also published guidance on the levels of energy performance that offices, both new and existing, should target to achieve net zero⁹.

Renewable Energy Procurement & Carbon Offsetting

The UKGBC have also developed guidance on the procurement of renewable energy and how to robustly deal with residual emissions¹⁰. The key messages in the guidance are that the only zero carbon energy available for procurement is electricity supplied via ‘high quality’ green tariffs (defined in the guidance) and that the netting off of any residual emissions must be through the use of offset credits which meet a specific set of criteria which ensure their quality.

The guidance also establishes other important principles such as the use of a transition fund where organisations set an internal carbon price each year which is above the market cost of good quality offset

credits. Part of the fund is to be used for the procurement of offsets equal to measured annual residual emissions with the remainder being spent on other activities which support the move to net zero.

2.3 Reporting on progress.

This is our second year of reporting our building emissions aligning it with the WorldGBC requirements. This report will be updated year on year to document annual progress on our net zero buildings commitment.

To help manage our energy reductions, each office has an Environmental Management Champion and Carbon Manage, assigned to review energy management and consider energy saving measures. During the period 2021-22 we can report the following progress:

- Established an energy saving investment budget to fund office carbon reduction measures.
- Made a commitment to install circuit monitoring systems to enable real-time measurement of electricity usage in our leased offices.
- Agreed a strategy to transfer from onsite server data storage to offsite cloud data storage (this will reduce our office electricity consumption and provide a more carbon efficient facility for project data storage).
- Implemented the replacement of fluorescent lighting with more efficient LED lighting in our Bournemouth Office.
- Established a plan to implement a range of carbon reduction measures in the refurbishment of our Oxford office (including the installation of a new heat pump/ VRF system).

⁸ <https://www.worldgbc.org/thecommitment>

⁹ https://worldgbc.org/sites/default/files/Hoare%20Lea%20LLP%20Indesign%20Profile_Final.pdf

¹⁰ <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-buildings-a-framework-definition/>

⁹ <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-energy-performance-targets-for-offices/>

¹⁰ <https://www.ukgbc.org/ukgbc-work/renewable-energy-procurement-carbon-offsetting-guidance-for-net-zero-carbon-buildings/>

3. What is our baseline and emissions boundary?

Two important concepts when considering organisational carbon emissions are the boundary condition, (i.e. what operational emissions are to be reported) and the baseline against which progress can be measured. The boundary condition for this study was set out in the WorldGBC and UKGBC guidance documents and has been subsequently refined by our net zero working group and according to the availability of data.

3.1 Emissions scopes.

Greenhouse gas (GHG) emission sources are categorised into three scopes to ensure responsibility for emissions can be accurately allocated and so that emissions are not double counted across organisations, as encapsulated by Figure 1.

We have focused on Scope 1 and Scope 2 building related energy emissions, as required by WorldGBC and have included the Scope 1 fugitive emissions from refrigerants (as required by the UKGBC net zero framework definition). We have excluded any potential electricity export (i.e. excess generation by photovoltaic panels), the contribution of EV charging and fleet vehicle emissions, as these are not relevant to the WorldGBC Net Zero Buildings commitment.

Direct:

Scope 1: Emissions resulting from activities under the direct control of your organisation, such as gas boiler emissions, fleet vehicle emissions and on-site refrigerant leakage.

Indirect:

Scope 2: Emissions arising from energy purchased by your organisation for its operations, such as power or district heating, such as power or district heating

Secondary indirect:

Scope 3: Emissions arising from associated activities not directly controlled by your organisation, such as leased assets, procurement of equipment, employee commuting, water use, and waste management.

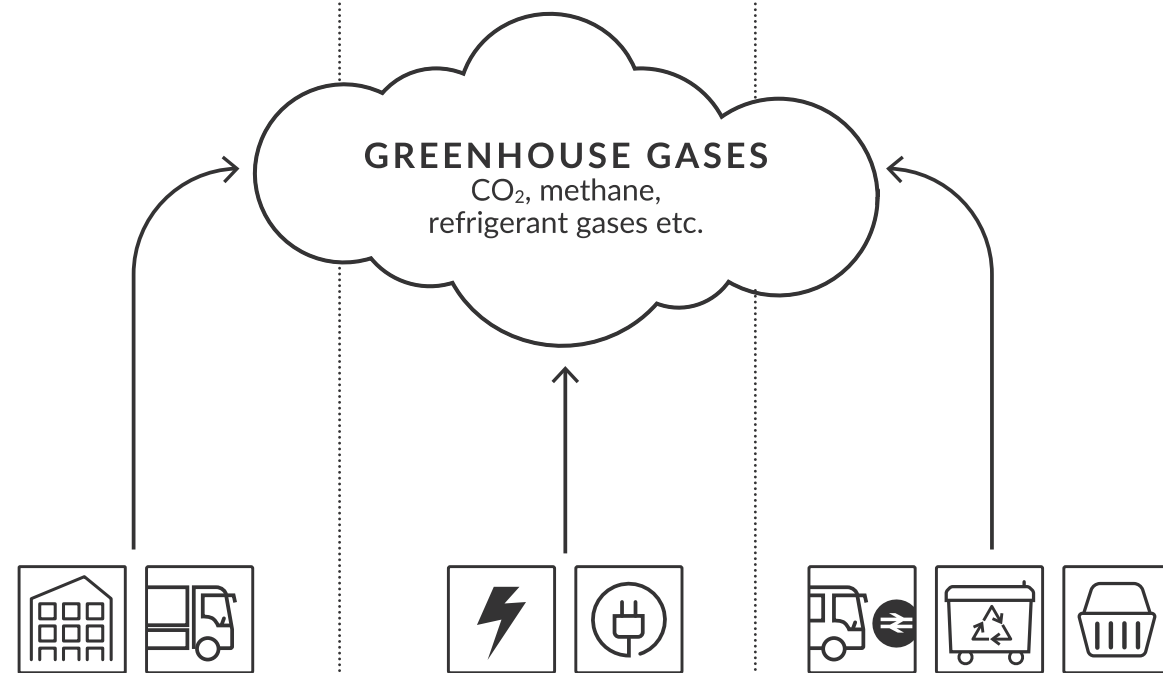


Figure 1: Diagram emissions scopes and responsibilities. Alongside the three scopes, some emissions are required to be reported as out of scope. No out-of-scope emissions are considered relevant to Hoare Lea.

3.2 Operational control.

As well as emissions sources, the organisational boundary should also be defined in terms of the assets and activities to be included. We have applied the operational control approach as defined by the HM Government Environmental Reporting Guidelines (which are in turn based on the World Resource Institute Greenhouse Gas Protocol) which set out the best practice approach to reporting. This control approach effectively says that if you have operational control of the emissions sources, it is reasonable that you should be responsible for those emissions.

3.3 Boundary.

The emissions sources included within the boundary condition are summarised in Table 2:

Table 2: Emissions sources by boundary.

	Included in boundary	Excluded from the boundary as outside of WorldGBC scope
Scope 1	a) Fossil fuels used in buildings (i.e. all natural gas) b) Fugitive emissions (arising from refrigerant gas leakage)	- Fossil fuel used in equipment (such as external maintenance equipment) - Fossil fuels used in fleet vehicles for personal use
Scope 2	a) Purchased electricity (including EV charging). b) Purchased district/ communal heating and cooling.	- Other purchased energy

Data

For our offices, we have calculated Scope 1 and 2 emissions using data collected over the period of October 2021 to September 2022. The data has been sourced from a centrally managed spreadsheet where monthly meter readings are taken for utilities from all offices. Each office has a nominated Environmental Management Champion who is responsible for keeping the energy consumption spreadsheet updated.¹¹

Fugitive (or F-gas) emissions arise from the leakage of refrigerant gases that have a global warming potential. Actual refrigerant leakage rates are not known for our offices. We have estimated fugitive emissions based on equipment nameplate ratings for refrigerant type and charge, with annual average leakage rates, assumed according to the system types detailed in CIBSE TM65 Table 4.4.¹²

¹¹ Environmental Management Champions have a role within our Integrated Management System (IMS) to collect energy and environmental data.

¹² <https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q3Y00000IPZOhQAP>

3.4 Carbon emissions for financial year 2021-22.

Our building related emissions assessed for October 2021 to September 2022 (FY 2021/22) are shown in Table 3 and Figure 2.

Table 3: Financial period 2021-22 carbon emissions breakdown

Emission source	Data	Emissions tCO ₂ e	% of baseline	Notes
Scope 1				
Mains gas	Energy, kWh	55	20%	Combination of metered and unmetered data
Fugitive emissions	Mass of refrigerant, kg	31	11%	Estimated, based on CIBSE benchmarks.
Scope 1 totals		86	31%	
Building related scope 2				
Grid electricity (Location based)	Energy, kWh	182	66%	Combination of metered and unmetered data
Heat	Energy, kWh	8	3%	Connection to King's Cross district heating network (London office)
Scope 2 totals		190	69%	
Building related scope 1 and 2 total		276		

The total building emissions are 276 tCO₂e. Of this, 66% comes from electricity use, 20% from natural gas use, 3% from district heating and 11% from F-gas (refrigerant) emissions.

FY 21/22 Building Emissions

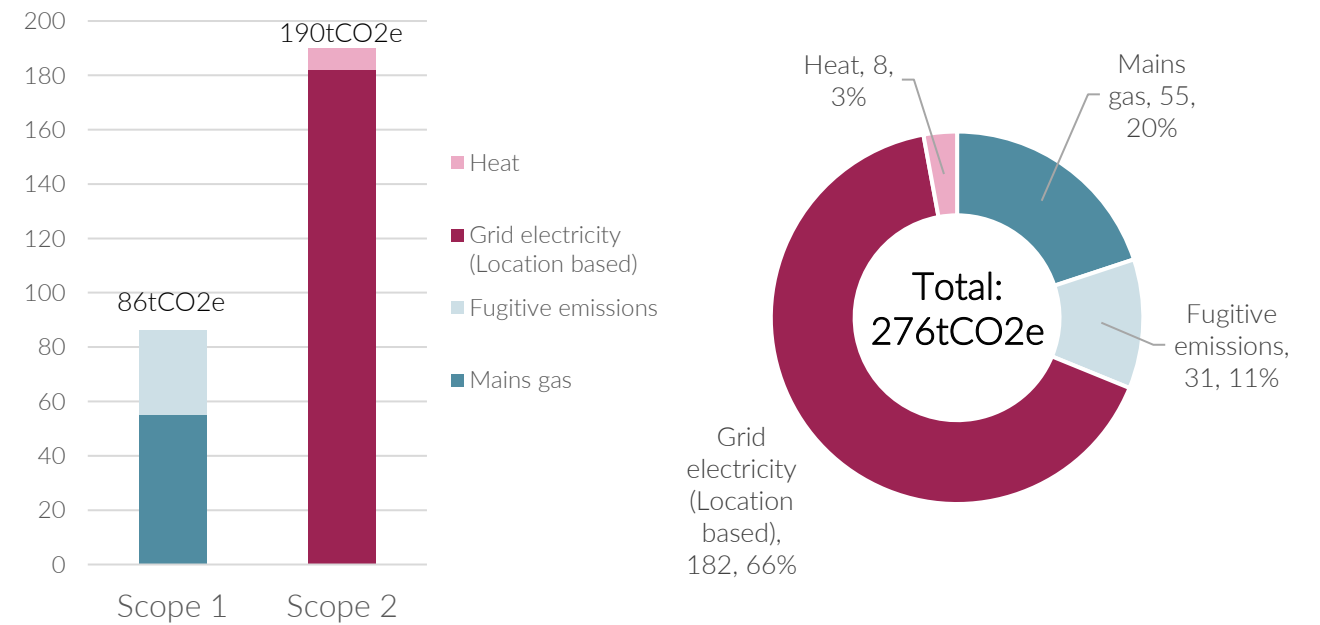


Figure 2: Financial period 2021-22 carbon emissions breakdown (tCO₂e)

3.5 Metering and reporting.

Underpinning all of our work on net zero is the need to ensure that how we report our impacts and progress toward reducing them aligns as closely as possible with best practice guidance (as defined by the HM Government Environmental Reporting Guidelines and the GHG Protocol).

To enable improved data capture and quality, we have surveyed our existing electricity, gas and heat meters. We have engaged a specialist firm to undertake automatic meter reading (AMR) upgrades where we control meters and will push for the same for our landlord submeters.

For more information on our metering improvements, see Appendix A: Reporting, metering and assumptions.

4. How will we achieve net zero carbon?

4.1 Emissions reduction trajectory.

For our offices, we have defined an upper energy use intensity limit according to UKGBC guidance and a number of our buildings are failing to meet the 2020-25 UKGBC energy use intensity targets. To ensure continuous improvement, the UKGBC also tightens energy use intensity requirements over time, as shown by Table 3, whilst concurrently requiring fossil fuels to be phased out.

Table 3 shows the UKGBC target energy use intensity against our current office energy use intensity (EUI). Also included is the energy intensity percentage change comparison to the previous reporting period.

Table 4: Current office energy intensity against the UKGBC trajectory to 2050 and the energy intensity from offices last year.

Office	UKGBC scope	UKGBC Target EUI (kWh/m ² /year)	Office EUI FY21-22 (kWh/m ² /year)	Office EUI FY 20-21 (kWh/m ² /year)	Change in EUI between reporting periods (%)
Birmingham	Tenant	70	397	354	12%
Bournemouth	Whole Building Target	130	124	132	-6%
Bristol	Whole Building Target	130	144	148	-3%
Cambridge	Tenant	70	305	243	25%
Cardiff	Whole Building Target	130	95	117	-19%
Glasgow	Tenant	70	102	82	25%
Leeds	Tenant	70	153	174	-12%
London	Tenant	70	105	163	-36%
Manchester	Tenant	70	144	152	-5%
Oxford	Whole Building Target	130	151	195	-23%
Plymouth	Tenant	70	127	81	57%

4.2 Comparison of energy intensity between annual reporting periods

The improvements from last year can be seen in the table, with the majority of offices reporting a reduction in energy intensity compared to the previous year. Some of the changes in energy use will be due to post-pandemic changes in office occupancy and utilisation patterns.

The following 7 offices reduced their energy intensity between 2020-21 and 2021-22: Bournemouth, Bristol, Cardiff, Leeds, London, Manchester, Oxford.

The following 4 offices increased their energy intensity between 2020-21 and 2021-22: Birmingham, Cambridge, Glasgow, Plymouth.

The Plymouth office EUI now includes the addition of a heat network for which the data was not previously available for in the last report. The increases in both the Glasgow and Cambridge offices can be attributed to their growth in employee numbers, being 69% and 33% respectively.

Only two of the offices meet the UKGBC energy intensity targets. We are reviewing opportunities to reduce energy intensity across our offices on an ongoing basis. We have established an energy saving investment budget to fund energy saving measures in our offices.

In the coming years, we will set specific, measurable targets for energy demand reduction so that all offices can meet the UKGBC trajectory in the future.

4.3 Governance.

Mobilising governance gives us the best chance of realising the meaningful, long-lasting, and comprehensive positive impact on sustainability outcomes. With focus, we can create intent which leads to specific, considered, purposeful outcomes.

Last year, we proposed a series of policies and actions, including boosting engagement, creating responsibility and establishing a delivery framework for net zero buildings, led by our net zero working group. Environmental Management (EM) Champions in each office to bolster data collection as they have a key role in promoting awareness and compliance with the firm's EM systems, and in engendering an environmentally conscious culture within their office and the firm as a whole.

To implement the carbon reduction strategy each Hoare Lea office has designated an Office Carbon Project Manager to work with the working group to review and project manage the implementation of office energy saving measures.

4.4 Reducing energy demand.

For any strategy, it is essential to focus on reducing demand whether that be energy or any other resource; only using what we need is a key cornerstone of good carbon management.

During the period 2021-22 we can report the following progress:

- Established an energy saving investment budget to fund office carbon reduction measures.
- Made a commitment to install circuit monitoring systems to enable real-time measurement of electricity usage in our leased offices.
- Agreed a strategy to transfer from onsite server data storage to offsite cloud data storage (this will reduce our office electricity consumption and provide a more carbon efficient facility for project data storage).
- Implemented the replacement of fluorescent lighting with more efficient LED lighting in our Bournemouth Office.
- Established a plan to implement a range of carbon reduction measures in the refurbishment of our Oxford office (including the installation of a new heat pump/ VRF system).

Reducing F-gas emissions

As previously reported, we have limited capability to directly influence F-gas emissions as these are controlled by landlords in most cases, but we will continue to seek reduction through engagement with our landlords. Where we have direct control over cooling plant we will aim to replace equipment with refrigerants having lower GWP impacts.

4.5 Increasing renewable supply.

In consultation with building owners, we will continue to explore opportunities to boost our renewable energy supply. Installations are mutually beneficial, reducing our electricity-related emissions and costs whilst cutting the owner's Scope 3 emissions and raising the property's market value.

4.6 Phasing out fossil fuels in buildings.

Using natural gas in heating plant accounts for 20% of our building emissions. Significant emissions reductions could be achieved by switching to low carbon heat sources (such as heat pumps). However, it is also a challenge as the majority of our offices have central plant managed by the landlord. We will continue to speak to our landlords to seek the replacement of boilers with heat pumps.

The combustion of fossil fuels is inherently unsustainable both in terms of its supply and its impact on climate change as well as being undesirable in terms of impact on local air quality. Currently, the best solution is to use electrically derived heat, whether by connecting a heat main powered electrically, or using local solutions such as heat pumps.

In the last report we aimed to transition to electrically derived heating where we operate gas-fired boilers (subject to lease conditions and landlord agreement). Where we work in a tenant's demise, our ability to firmly commit and plan for the phasing out of fossil fuels is limited. However, we will push for public policy change and engage with building owners. We have also set up meetings with landlords but it has not been straightforward to implement these changes.

4.7 Dealing with residual emissions.

Our long-term aspiration is to occupy net zero buildings by reducing energy demand as far as possible and sourcing the energy that is required from high-quality renewable sources.

We have established the process for purchasing electricity via high-quality renewable electricity contracts with Ecotricity and are in the process of transferring over all offices where we have direct control the supply of electricity. The default, otherwise, is that offices are supplied with low-quality electricity and have a typical grid mix of energy sources.

We will collaborate with landlords where we do not control the electricity supply to facilitate the transition to renewable supplies where feasible.

We are, however, still taking the leadership approach to carbon offsetting by establishing a transition fund to further support the transition to net zero.

Office	Responsibility for office electricity supply
Birmingham	Landlord
Bournemouth	Hoare Lea
Bristol	Hoare Lea
Cambridge	Landlord
Cardiff	Hoare Lea
Glasgow	Landlord
Leeds	Landlord/small basement supply: out of contract
London	Landlord
Manchester	Landlord
Oxford	Hoare Lea
Plymouth	Landlord

Table 5: Electricity procurement method during the reporting period (April 2022).

Transition fund

Following the UKGBC's offsetting guidance for demonstrating net zero leadership, the carbon price in our previous net zero buildings report was set to the HM Treasury Green Book non-traded central scenario, ie. £70/ tCO₂e.

For the period 2021-22 we are setting a carbon price £95/tCO₂e. This is equivalent to the carbon price set by the Mayor of London and similar to the carbon price being used by some other leading organisations operating in the built environment sector.

Our transition fund comprises two parts: (i) payments for international offsets, and (ii) investment in a UK community-based carbon reduction project.

Total transition fund for this reporting period: £34,200 (including bridging period), based on 360 tCO₂e to be offset at a carbon price of £95/ tCO₂e



(i) Payment for offsetting baseline emissions through an approved international carbon standard. £14,867	(ii) Investment in community-based carbon reduction project in the UK (for the remainder of the transition fund). £19,333
---	--

Carbon offsetting

Accepting that we are going to be making an ongoing investment in offsetting, we want to ensure that the investment has maximum impact. As far as possible, we want our investments to align with the Oxford Principles for Net Zero Aligned Carbon Offsetting but to also maximise non-carbon benefits in line with our corporate responsibility strategy¹³.

In the context of our corporate responsibility strategy, investing in carbon removal projects such as afforestation, i.e., a nature-based solution, would both remove carbon from the atmosphere and support other ecosystem benefits; planting trees sustains biodiversity, provides active water filtration and generates employment. For these reasons, we purchased offsets generated by The Nicaforest High Impact Reforestation Program, using the Gold Standard. The offset certificate is provided in the appendix. The Nicaforest Program has 490 hectares of land under management and aims to contribute to the creation of a sustainable value chain by working closely with local landowners in a Shared Benefit Scheme. The program plants teak and other valuable species for future sustainable timber production and added-value wood production as well as other measures aimed at increasing resilience in the local municipalities. The forests offer a natural habitat for native animals and plants, protect and enrich the soil, save and filter water and contribute to the mitigation of the greenhouse effect. The Nicaforest Program is certified by Gold Standard and Forestry Stewardship Council (FSC). This program has already planted approximately 360,000 trees. As of the end of 2018, this program sequestered 45,624 tCO₂e with availability for future sequestering of 32,460 tCO₂e. The tree planting programme uses deforested land only.

¹³ <https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf>



The remainder of the transition fund

As an engineering consultancy, we recognise the role the built environment has to play in mitigating its ~40% contribution to the national carbon footprint and have decided to pledge the remainder of our transition fund in support. Specifically, we will use the remainder of the transition fund to invest in a UK community-based carbon reduction project. This could, for example, entail implementing energy efficiency improvements or enable the retrofit of LZC technologies in one or more community projects, such as schools, charities or community buildings. As an example, school buildings are at the forefront of the government's push to decarbonise the UK; all new Department for Education schools must be designed as net zero.¹⁴

4.8 Verifying our net zero balance.

A critical facet of any net zero strategies is disclosure - inviting scrutiny should help establish the robustness of the net zero building claim and increasing transparency will ensure consistency across reporting organisations, making it easier to assess progress.

This report and its appendices have been audited by a third party BRE, to verify the approach and calculations used to determine our net zero balance in line with UKGBC and WorldGBC requirements. We will submit the audit verification letter alongside our report to WorldGBC.

According to good industry practice, disclosure should be made through any publicly accessible information platform, and we are opting to 'show our working' by publishing this report on our website.

¹⁴ <https://www.gov.uk/government/publications/output-specification-generic-design-brief-and-technical-annexes>

Appendix A: Reporting, metering and assumptions.

Assessment for FY 21-22 and bridging period

Table 5 below sets out the breakdown of the emissions for the bridging period May 21-Sept 21. The emissions factors applied are detailed in the next section.

Table 6: May 21 -Sept 21 bridging period carbon emissions breakdown.

Emission source	Data	Emissions tCO ₂ e	Proportion of total (%)	Notes
Scope 1				
Mains gas	Energy, kWh	13	16%	Combination of metered and unmetered data
Fugitive emissions	Mass of refrigerant, kg	13	16%	Estimated
Scope 1 totals		26	32%	
Building related scope 2				
Grid electricity (Location based)	Energy, kWh	57	67%	Combination of metered and unmetered data
Heat	Energy, kWh	1	1%	Connection to King's Cross district heating network
Building related scope 2 totals		58	68%	
Building related scope 1 and 2 total		84		
Intensity metrics	Gross area	8,749 m ²	0.009 tCO ₂ e/m ²	
	Staff FTE	1070	0.077 tCO ₂ e/FTE	

Table 6 sets out the breakdown of the emissions baseline for FY 2021/22. The emissions factors applied are detailed in the next section.

Table 7: Financial period 2021-22 carbon emissions breakdown.

Emission source	Data	Emissions tCO ₂ e	Proportion of total (%)	Notes
Scope 1				
Mains gas	Energy, kWh	55	20%	Combination of metered and unmetered data
Fugitive emissions	Mass of refrigerant, kg	31	11%	Estimated, based on CIBSE benchmarks
Scope 1 totals		86	31%	
Building related scope 2				
Grid electricity (Location based)	Energy, kWh	182	66%	Combination of metered and unmetered data
Heat	Energy, kWh	8	3%	Connection to King's Cross district heating network (London office)
Building related scope 2 totals		190	69%	
Building related scope 1 and 2 total		276		
Intensity metrics	Gross area	8,749 m ²	0.03 tCO ₂ e/m ²	
	Staff FTE	1070	0.258 tCO ₂ e/FTE	

Emissions factors.

Energy

In line with UKGBC carbon accounting guidelines, emissions factors have been sourced from the UK Government Greenhouse reporting conversion factors. Emission factors used for FY21/22 were the Government 2022 factors. The values used to calculate May21-Sept21 emissions were the GHG 2021 values.

The emissions factor for the King's Cross district heat network, which is CHP led, has been set as 0.0719 kgCO₂e/kWh in the King's Cross Utilities Guide prepared by The King's Cross Central Limited Partnership.

This value was calculated in 2016 and was the most recent available at the time of preparing this report. The possibility of using an updated factor will be investigated in future years.

Electricity – market-based factors

The UKGBC also requires that dual reporting is undertaken for electricity, covering both location-based and market-based factors. The UK Government Greenhouse reporting conversion factors discussed above are location-based.

For market-based factors, the UKGBC state that electricity sourced from renewable electricity procurement mix¹⁵ has an emissions factor of 0.000 kgCO₂e/kWh, with all other electricity assigned the residual grid emissions factor. BEIS does not publish this value, and the UKGBC recommend that it is sourced from the Association of Issuing Bodies, which publishes an annual residual grid emissions factor for Great Britain (Northern Ireland and Ireland are combined).¹⁶

Fugitive emissions

100-year time horizon industry standard global warming potential values (GWP) have been used for the R410a (2088), R22 (1810), R407C (1774) and R134a (1430) refrigerants in our HVAC systems.

Metering.

Office	Utility	Meters
Birmingham	Electricity	Main meter, lighting submeter, small power submeter
	Gas	Gas meter (office apportionment)
Bournemouth	Electricity	Main meter
	Gas	Gas meter
Bristol	Electricity	Main meter
	Gas	Gas meter
Cambridge	Electricity	Lighting submeter, small power submeter
	Gas	Gas meter (office apportionment)
Cardiff	Electricity	Ground floor meter, First floor meter
Glasgow	Electricity	Office submeter
Leeds	Electricity	Office submeter, basement submeter
London	Electricity	Data hub submeter, first floor lighting submeter, first floor power submeter, second floor lighting submeter, second floor power submeter, AH3 Fan/Pump submeter, AH4 Fan/Pump submeter
Manchester	Electricity	Main meter, Meeting room cooling submeter, WC submeter 1, WC submeter 2
Oxford	Electricity	Main meter
Plymouth	Electricity	East submeter, West submeter

Table 8: An outline of the current office metering systems.

Overview of circuit monitoring system implementation

This note describes the implementation strategy for a web-based electricity monitoring system for our leased UK offices. The electricity monitoring system will provide a higher capability for data analysis using a web-based platform, irrespective of our energy provider. It will monitor individual circuits on our distribution boards and provide real-time energy consumption data.

The monitoring system will enable us to:

- improve our ability to monitor our office energy use
- help us to better understand how we consume energy and therefore assess energy savings

- enhance our carbon reporting capability
- provide a tool to help engineers understand workspace energy consumption profiles

Background

Hoare Lea has committed to being a net zero carbon business. This includes reducing emissions arising from building energy use, business travel, commuting, and the procurement of equipment and services.

<https://hoarelea.sharepoint.com/sites/Intranet/News/SitePages/Hoare-Lea-joins-the-Race-to-Zero.aspx>

In committing to net zero we are:

- aligning our operations with our declared purpose (to be plant-conscious and human-centric)
- demonstrating leadership in climate action
- demonstrating best practice to our clients and employees.

System Description

The system will give us a high granular breakdown of our entire electricity consumption across all our tenanted UK offices (serviced offices are excluded).

We have several offices where, due to current metering arrangements, we only get monthly data, the proposed monitoring system will allow every office to have access to their consumption data on a half hourly basis, meaning that local Office Environmental Management Champions will be able to see their consumption data in real time.

The circuit monitoring system will allow each office to make informed choices about spending funds to reduce their office energy consumption, for example if the data is showing that the lighting consumption in an office is much higher per square meter than other offices, this would be a good place to invest in some upgrades. The level of data provided from this system will also improve our reporting workflows, meaning that there is less risk for error in energy/ carbon reporting. Alongside carbon reporting benefits, the system will also give us consumption data of offices which will help us to create our own set of benchmarks and improve our knowledge of building energy use.

Implementation

The installation of circuit monitoring system is based on a review of the circuits that can be measured on the distribution boards. This is only for our leased UK offices and excludes serviced offices.

The primary aim is that this real-time energy data capability will help in our carbon management and carbon reduction strategy.

Key people with responsibility for this are identified as:

Carbon Project Managers – responsible for reviewing and co-ordinating energy/ carbon savings in each office.

Environmental Management Champions – responsible for the implementation of our firm-wide environmental management system and environmental reporting (include office energy use)

¹⁵ The renewable energy mix includes electricity sourced from onsite owned generation, an onsite PPA with new unsubsidised (private wire), an offsite PPA with new unsubsidised generation, high quality green tariffs, an offsite PPA w/ new subsidised, low quality green tariffs and electricity combined with unbundled REGOs

¹⁶ https://www.aib-net.org/sites/default/files/assets/facts/residual-mix/2019/AIB_2019_Residual_Mix_Results.pdf

Assumptions.

Where data was unavailable the following assumptions were made:

1. If monthly meter data was missed across a period: the monthly inputs would be an average across all missing months. The average would be calculated as the difference between the two meter readings divided by the number of months missing the data. The total annual energy captured using this method remains the same.
2. Where no meter reading was available because the readings were lost in transition (Cambridge and Cardiff May, 2021), values were inputted using the data from the same month the following year (May, 2022). **This data was not used to calculate Scope 1&2 emissions for FY21/22 and instead relate to the transition period May 21-Sept 21.*
3. Refrigerant data was collected as a total by measuring refrigerant loses and top ups across all offices. The total value of 31tCO2e therefore is not attributed to specific offices but instead added to the Scope 1 total for FY21/22.
4. Overview of the Energy Calculation methodology where verifiable data was not available.

Hoare Lea Offices	Un Metered Data	
Birmingham	Central FCU's	<p>LL's Elec = $m^2 \times 44 \text{ kWhr/m}^2$ (CIBSE F Table 20.10) LL's Elec = $m^2 \times 55 \text{ kWhr/m}^2$ (SBEM) Using the efficiencies noted below. SBEM Calculation was ignored in this instance and CIBSE F figure used.</p>
Cambridge	Central FCU System & Gas	<p>Data available on the energy spreadsheet is for on floor electricity only, no gas or landlords Elec data provided, therefore LL Elec has been estimated using SBEM, comparing against WTS usage and CIBSE Guide F</p> <p>LL's Gas = Floor Area $m^2 \times 97 \text{ kWhr/m}^2$ (CIBSE F Table 20.1 / 20.9)</p> <p>LL's Elec = Floor Area $m^2 \times 44 \text{ kWhr/m}^2$ (CIBSE F Table 20.10) LL's Elec = Floor Area $m^2 \times 42.64 \text{ kWhr/m}^2$ (SBEM) Using the efficiencies noted below. LL's Elec = Floor Area $m^2 \times 31.42 \text{ kWhr/m}^2$ (from WTS verifiable data) Then the average of these three was used for the LL Elec energy data</p>
Glasgow	Central VRF System/AHU	<p>LL Elec for VRF = Floor Area $m^2 \times 11.49 \text{ kWhr/m}^2$ (SBEM) Using the efficiencies noted below. LL Elec for AHU = Floor Area $m^2 \times 34.3 \text{ kWhr/m}^2$ (SBEM) using the efficiencies noted below.</p>
Manchester	Gas for heating	<p>LL's Gas = Floor Area $m^2 \times 71.95 \text{ kWhr/m}^2$ (SBEM) Using the efficiencies noted below</p>
Plymouth	Central Ventilation system	<p>Floor is mechanically ventilated using a displacement ventilation system. LL Elec for Mech Vent based on the metered figures for displacement vent for WTS = Floor Area $m^2 \times 15 \text{ kWhr/m}^2$</p>

5. The data for the London heat network was taken from our 2018 records as we do not have up to date data.
6. We do currently have active PV however the PV data has been excluded as we had no data for this.
7. The meter readings for our offices were completed monthly not annually, which means the dates did not equate to a full year. The difference in values was averaged however moving forwards an annual date will be provided for more accurate data.

Appendix B: Net zero carbon buildings – operational minimum reporting template.

Table 9: Operational minimum reporting template for UK offices. Adapted from the UKGBC Renewable Energy Procurement & Carbon Offsetting guidance, pages 35 & 36.

OVERVIEW	
Dates of achievement	October 2021 – September 2022
Verified by	BRE
Building locations	Birmingham, Bournemouth, Bristol, Cambridge, Cardiff, Glasgow, Leeds, London, Manchester, Oxford, Plymouth
Building type	B1 (a) Offices
Building description	Detailed in full report
Energy scope	Detailed in full report
Assessed area	8,764 m ² total (Full report shows building level breakdown with a combination of GIA and NLA used)
Percentage of total building area	N/A due to the mix of the building contained within the portfolio
Data sources	ESOS report and references therein: REP-HL ESOS Office energy saving opportunities Feb2020-rev01

ENERGY – OVERALL

Indicator	kWh	kWh/m ²
Total annual energy consumption	1,314,007	150
Total annual electricity consumption	941,906	108
Total annual fuel consumption (all other sources e.g. natural gas, 'green gas', heat network) per fuel/delivery type	372,102	43
Total annual electricity exported by renewable energy sources minus storage losses (e.g. photovoltaic)	0	0

RENEWABLE ELECTRICITY PROCUREMENT

Indicator	kWh	%
Onsite owned	0	0%
Onsite PPA w/ new unsubsidised (private wire)	0	0%
Offsite PPA w/ new unsubsidised	0	0%
High quality green tariffs	97,540	10%
Offsite PPA w/ new subsidised	0	0%
Low quality green tariff	423,451	45%
Unbundled REGOs	0	0%
Landlord tariff or quality unknown	441,553	44%
	Total	100%

SUPPLEMENTARY NARRATIVES REQUIRED:

- Where interim EUI targets have not been met: an action plan will be prepared setting out how the target will be met in subsequent years.
- For existing buildings utilising fossil fuel based heating, hot water, and cooking: a trajectory plan setting out how fossil fuels will be phased out by its next system replacement cycle. The plan should also indicate how all other energy systems will be compatible with being powered by renewable energy sources by their next system replacement cycle.

- Supporting procurement information, e.g., supplier and green tariff name, REGO registry entry (Refer to Table 9-10 of the Renewable Energy Procurement & Carbon Offsetting guidance).

CARBON

	Dual reporting			NZCB Framework Definition approach	
	Scope 1	Scope 2 (location-based)	Scope 2 (market-based)	Scope 1	Scope 2
Total annual direct CO ₂ e emissions from self-generation and consumption	0 tonnes			0 tonnes	
Total annual indirect CO ₂ e emissions from imported electricity		182 tonnes	80 tonnes (excluding green electricity)		182 tonnes
Total annual direct CO ₂ e emissions from combustion of fuel (e.g. onsite gas) per fuel type	86 tonnes			86 tonnes	
Total annual indirect CO ₂ e emissions from combustion of fuel (all other sources, e.g. heat network) per fuel type		8 tonnes	8 tonnes		8 tonnes
Total annual CO ₂ e for Scope 1 + 2 emissions		190 tonnes	88 tonnes	86 tonnes	190 tonnes

For net calculations:

Total annual displaced CO ₂ e emissions from electricity exported by on-site renewable energy sources minus storage losses	0
Total annual displaced CO ₂ e emissions from international carbon offsets	276 tonnes
Total annual displaced CO ₂ e emissions from domestic carbon units	0
Total annual net CO ₂ e emissions	0

OFFSETS

Carbon offset approach used	Transition fund
International carbon offset standard used, amount and type of offset credit procured. Registry link.	Standard: Gold Standard Amount: 360 credits (also covering sources outside of UKGBC scope as detailed in the main report) Type of offset credit: Reforestation. Description: Reforestation program in Nicaragua on degraded pastureland. Registry Link: https://registry.goldstandard.org/credit-blocks?q=Gold+Standard+Marketplace+Order+GSM18827+&page=1
Domestic carbon unit standard used, amount and type of offset unit procured. Registry link	N/A
Weighted average cost per tonne of CO ₂ e for carbon credits/units bought	£45/tCO ₂ e (approx..)
Transition Fund – carbon price, cost per tonne of CO ₂ e (if applicable)	£95/tCO ₂ e

SUPPLEMENTARY NARRATIVE REQUIRED:

- For Transition Fund approach – Refer to Section 4.8.

Table 4: Carbon Accounting for 'Net Zero Carbon – in Operation'. Adapted from the UKGBC Renewable Energy Procurement & Carbon Offsetting guidance, pages 56 & 57.

CARBON ACCOUNTING FOR 'NET ZERO CARBON – IN OPERATION'

Building	Area (m²)	Gas (kWh)	Heat (kWh)	Electricity (kWh)	Renewable electricity procurement mix – consumption (kWh)							Electricity (kWh)	Exported generation (kWh)
					Onsite owned	Onsite PPA w/ new unsubsidised (private wire)	Offsite PPA w/ new unsubsidised	High quality green tariffs	Offsite PPA w/ new subsidised	Low quality green tariff	Unbundled REGOs		
Birmingham	590	95,528	-	138,462						138,462		-	0
Bournemouth	1085	51,095	-	83,529				43,195		-		40,334	0
Bristol	1983	45,612	-	240,481						-		240,481	0
Cambridge	291	53,777	-	34,876						34,876		-	0
Cardiff	568	-	-	54,158				11,690				36,106	0
Glasgow	187	-	-	19,106						19,106		-	0
Leeds	371	-	-	56,695						-		56,695	0
London	2087	-	44,653	174,223						174,223		-	0
Manchester	766	53,819	-	56,784						56,784		-	0
Oxford	283	-	-	42,655				42,655		-		-	0
Plymouth	538	-	27,618	40,937						-		40,937	0
Refrigerants*													
Total	8,764	299,831	72,271	941,906	0	0	0	97,540	0	423,451	0	414,553	0
					%	0%	0%	0%	10%	0%	45%	0%	44%

*Refrigerants included as a total not individually by building.

Scope 1	Scope 2: location-based	Scope 2: market-based	Scope 1	Scope 2: location-based
Dual reporting (gross tCO ₂ e)			NZCB Framework (gross tCO ₂ e)	
17	27	-	17	-
9	16	8	9	8
8	47	47	8	47
10	7	-	10	-
-	10	7	-	7
-	4	-	-	-
-	11	11	-	11
-	37	3	-	3
10	11	-	10	-
-	8	-	-	-
-	13	13	-	13
31	-	-	31	-
86	190	88	86	88

	Scope 1 inc. refrigerant	Scope 2	Total
Gross scope 1 + 2 combined (tCO ₂ e)	86	190	276
Exported generation (tCO ₂ e)	0.0	0.0	0.0
Net combined (tCO ₂ e)	86	190	276
Min. offset credits required for FY21/22			276
Min. offset credits required for bridging period May-Sept21			84
Min. offset credits required for FY21/22 +bridging period May-Sept21			360

Appendix C: Carbon offsetting certificate.

Climate+
Positive Action for Planet + People

We are delighted to confirm the retirement of
360 Verified Emission Reductions (VERs)
for
Hoare Lea LLP
on 10/05/2023

The Nicaforest High Impact Reforestation Program - (360x)

*These credits have been retired, saving **360** tonnes of CO2 emissions
from being released into the atmosphere.
Thank you for investing in a safer climate and more sustainable world.*


Order number: [GSM18827](#)

Gold Standard

Retirement certificates are hosted on the Gold Standard Impact Registry, [view your certificate](#).

Gold Standard | Chemin de Balexert 7-9 1219 Châtelaine, International Environment House 2, Switzerland | [goldstandard.org](#). +41 22 788 70 80, [help@goldstandard.org](#)

Appendix D: Third Party Audit letter.



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Hoare Lea LLP
c/o Ashley Bateson, Hoare Lea
(by email to: AshleyBateson@hoarelea.com)

15 June 2023

Our Ref. P125783-1000

Dear Sir,

Independent 3rd party verification audit of net zero carbon – operational energy: Hoare Lea LLP portfolio of offices

We are pleased to present our 3rd party audit report of the net zero carbon - operational energy for the Hoare Lea LLP (Hoare Lea) portfolio of eleven offices in the enclosed Appendix A. This is for the reporting period of 01 October 2021 to 30 September 2022 (which aligns with the Hoare Lea financial year). This is the second year of reporting the carbon emissions of this portfolio of offices.


Hoare Lea is a signatory of the World Green Building Council (WorldGBC) Net Zero Building Commitment and thus they have set out to assess the portfolio in accordance with the requirements of the UKGBC Net Zero Carbon Building Framework (the Framework) to satisfy the WorldGBC commitment. The Hoare Lea assessment highlights that:

- The total annual energy consumption for the portfolio is 150kWh/m²/year, resulting in a total annual carbon emission (Scope 1 and 2) of 276tCO₂e.
- To demonstrate leadership, Hoare Lea has established a transition fund at a carbon price of £95/tCO₂e. International carbon credits have been purchased, via the fund, to cover the total annual carbon emissions, as reported above, for the reporting period of 01 October 2021 – 30 September 2022. Additional carbon credits have also been purchased to cover a bridging period (01 May 21 – 30 Sept 21). The remainder of the fund will be invested in a UK community project to provide additional carbon offsets.
- A carbon reduction strategy has been developed to be implemented for the continual improvement of the portfolio.

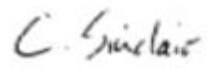
This verification audit concludes that the approach taken by Hoare Lea is consistent with the requirements of the UKGBC Net Zero Carbon Framework for operational energy. The operational energy stage for the reporting period is verified as satisfying the Framework.

Appendix A of this letter provides commentary on our findings and information regarding the requirements to satisfy the UKGBC's Net Zero Carbon Buildings Framework at operational stage.

Yours sincerely




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