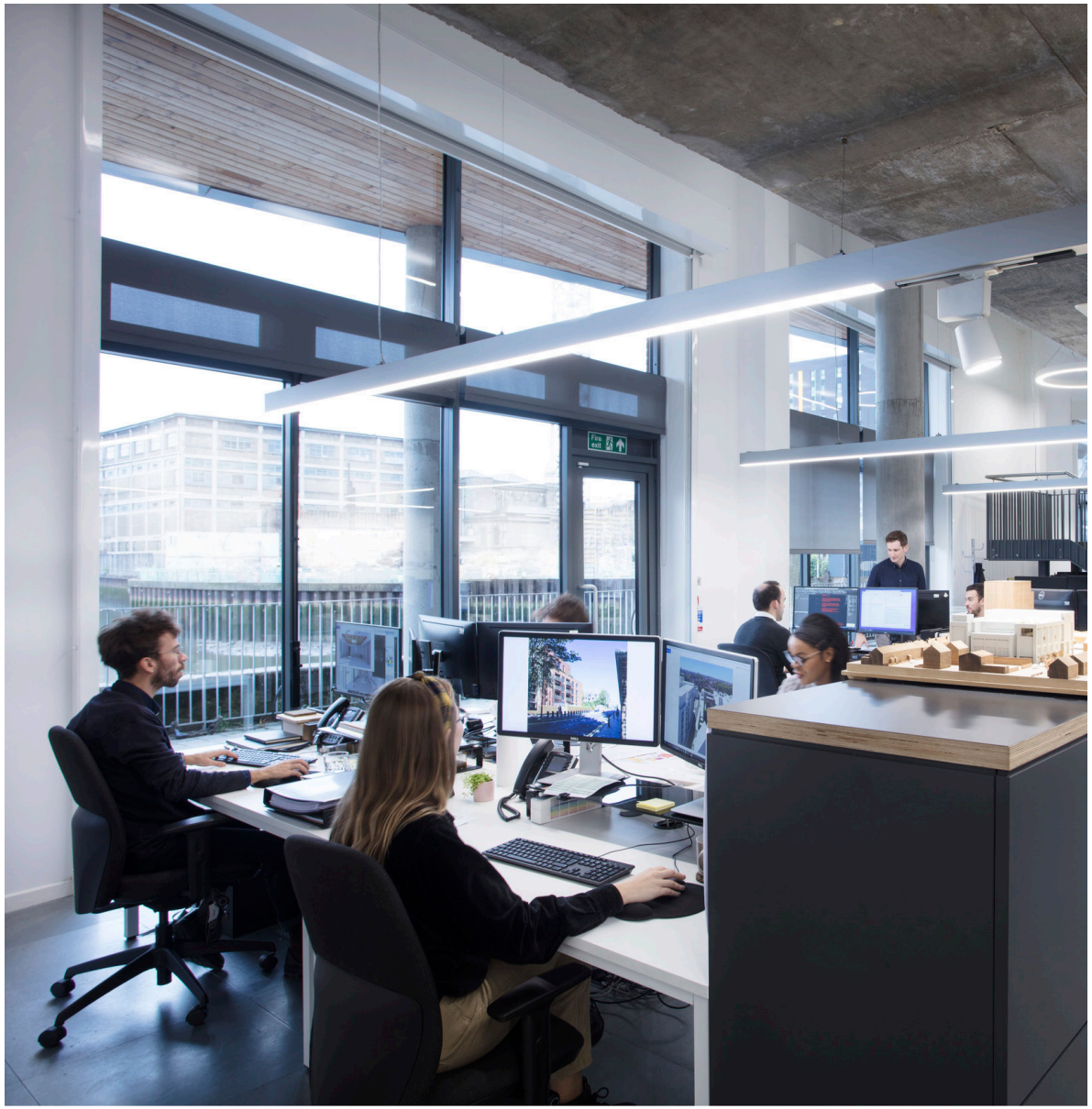
rivingtonstreetstudio

Carbon Reduction Report 2023



About Rivington Street Studio

Rivington Street Studio is an award-winning architectural practice established in 1989, specialising in the education and housing sectors. The practice has deep roots in sustainability, including delivering the first Passivhaus accredited school in London in 2015. Since then, RSS has produced numerous projects that provide industry sustainability exemplars.

We have an inhouse sustainability forum, the Green Team, who seek to analyse and develop the strategic approach our employees take on our projects. The Team focuses on project and office processes and feed into the practice's inhouse management of carbon data and reduction. Since 2022 we have taken on board RIBA 2030 and LETI approaches to design and developed a project framework which embeds environmental performance analysis and data collection from inception to completion.

Our office is based in East London with projects throughout the UK.

Introduction

As a practice, we recognise that the most significant impact we can have on carbon emissions is through the design of our projects. We have been Architects Declare signatories since 2022 and are committed to the RIBA 2030 Climate Challenge.

We're working towards RIBA's and LETI's performance targets for the reduction of embodied carbon, operational energy, and potable water on our projects.

We believe it is vitally important to measure and analyse our business carbon footprint each year. This demonstrates our commitment towards achieving net zero and increases carbon literacy within our team. We do this through the standardised global framework: The Greenhouse Gas (GHG) Protocol, and categorise business related emissions under three Scopes as outlined on the following pages.

This year we have added detail to the final category of Scope 3 measurements: purchased goods and services (such as groceries, office stationery, etc.). We are now fully reporting against scope measurements.

This report is based on the calendar year January - December 2023.

The carbon footprint data is based on our internal information together with that provided by staff who completed a survey in November 2023.

The new Shipman Youth Zone offers a safe, inclusive space for young people in Newham, in support of the borough-wide commitment to keep children and young people safe and remove barriers to their success. The project completed in February 2024. The project is Net Zero Carbon in operation and achieves BREEAM Outstanding.

In 2023, we measured our Scope 1 and Scope 2 emissions, and the applicable upstream and downstream factors including office goods within Scope 3. We also measured everyone's personal footprints.

Why are we measuring carbon emissions in this way?

- Standardised measurement tools – useful for benchmarking
- Accurate – uses carbon conversion factors to calculate emissions
- Facilitates the management and reduction of emissions
- Understanding and planning for how we will aim for Net Zero emissions as we head towards the 2030 and 2050 targets.

Summary

Our direct action in 2023 sought to review how we travel to, from and within work. We ran an inhouse campaign which sought to encourage cycling and walking, providing support to employees through the cycle to work scheme and with provision of facilities at work to secure and maintain bikes. Employees can make use of an office folding bike and in 2024 we will survey this, together with appointing a "Cycling Champion" to support cycling generally.

We measure and report carbon emissions based on a comprehensive global standardised framework known as the Greenhouse Gas (GHG) Protocol. The report categorises the direct and indirect emissions into three broad scopes:

Scope 1: Direct Emissions

Direct emissions are any GHG emissions from a company's owned or controlled sources. For example, emissions from company owned vehicles.

Scope 2: Indirect Emissions from purchased energy

This includes emissions from energy generated off-site and purchased by the business, i.e. electricity or gas used to power an office.

Scope 3: Indirect Emissions

Indirect emissions are GHG emissions from sources that are not owned or controlled by the business, but are part of its operation. This includes newly included purchased consumables and capital goods (such as emissions due to the manufacturing of IT equipment and mobile phones), business related travel (such as flights and buses to project sites, or staff commutes), courier transport, etc.

According to the US Environmental Protection Agency (EPA), Scope 3 emissions can be defined as "the result of activities from assets not owned or controlled by the reporting organisation, but that the organisation indirectly impacts in its value chain."

In this report we've measured various categories within Scopes 1 – 2, as well as increased measurement of upstream and downstream factors within Scope 3.

Our Results

Scope	Category		Total	Carbon Factor (kg Co_2e)	Total kg Co_2e	Carbon Factor Reference	Carbon Footprint (tonnes Co_2e)	Carbon Footprint per person (tonnes CO_2e)
1	Fuel (Combustion)	Gas	0	N/A	0	N/A	0	0
2	Utilities	Electricity	26,097.40 kWh	0.207074	5404.100539	UK electricity E24	5.404100539	0.168878142
3	Water	Supply	500 m3	0.177	88.342273	Water supply D17	0.088342273	0.002760696
		Waste	1000 m3	0.201	201.318292	Water treatment D17	0.201318292	0.006291197
	Purchased goods & services	Paper	0.19	699.881	136.193	Material use G86	0.136193	0.004256034
		Supplies	Varies	Varies	2483.4986	Varies	2.4834986	0.077609331
	Capital Goods	iPhones, IT	Varies	Varies	4565.33	Varies	4.56533	0.142666563
	Fuel and energy-related activities: WFH (working from home)		Varies	Varies	3303.66	Varies	3.30366	0.10323929
	Business Travel	Taxi	1549.23 km	0.16815	260.503025	WTT- pass vehs & travel- land F49	0.260503025	0.00814072
		Tube	14446.088 km	0.02753	397.700803	WTT- pass vehs & travel- land E90	0.397700803	0.01242815
		Bus	534.2 km	0.07882	42.105644	WTT- pass vehs & travel- land E80	0.042105644	0.001315801
		Train	7899.24 km	0.0351	277.263324	WTT- pass vehs & travel- land E87	0.277263324	0.008664479
		Plane	7535.06 km	0.27101	2042.076611	WTT- business travel- air F20	2.042076611	0.063814894
		Carshare	42.7 km	0.16815	7.180005	WTT- pass vehs & travel- land F49	0.007180005	0.000224375
		Walk	1035.41 km	0	0	N/A	0	0
		Bike	387.0 km	0	0	N/A	0	0
	Employee Commuting	Tube	278188km	0.02753	7658.534360	WTT- pass vehs & travel- land E86	7.65853436	0.239329199
		Bus	3755.90km	0.07882	296.040164	WTT- pass vehs & travel- land E76	0.296040164	0.009251255
		Train	169429.04km	0.0351	5949.959304	WTT- pass vehs & travel- land E83	5.94959304	0.185842478
	Downstream transport and distribution	Motorbike	12.64	0.03134	0.396138	WTT- pass vehs & travel- land E61	0.000396138	0.0000012379
		Small van	7.04	0.05266	0.370727	WTT- pass vehs & travel- land F49	0.000370727	0.0000015852

Total CO_2e 33.11 tonnes

Key Details and Clarifications

RSS started collecting and reporting on Carbon in 2019, and we are now collecting data on all scope items 1-3. The background information and historic data-sets we now have for the office allows us to start focusing on ways we can utilise this information to assist in finding realistic ways to set our own achievable Carbon Reduction targets. In order to do this we also need to analyse and understand the context within which we are operating, the assumptions that are being made and the details of data collected, as well as elements affecting carbon factors provided by the government for calculation purposes. The following provides information used and assumptions made in calculating our carbon footprint.

Carbon Factors:

These are provided by the UK Government and updated yearly to assist companies to calculate their Carbon Footprints. UK Government GHG Conversion Factors - 2023

https://assets.publishing.service.gov.uk/media/649c5358bb13dc0012b2e2b7/ghg-conversion-factors-2023-full-file-update.xlsx

Scope 1:

Fuel (Combustion)

- The office uses no combustion or gas fired appliances.
- Fossil fuels may be burnt "upstream" to create the electricity that the office uses, however this is discounted here, and "factored-in" to Scope 2 - Utilities.

Scope 2:

Utilities - Electricity

Until the end of 2023 RSS offices had a fixed tariff on energy supply. We are currently looking to switch to a more sustainable energy tariff / supplier and his will be factored in to the 2024 Carbon Reduction Report.

Scope 3:

3.1 Water

Supply / waste were included in 2023 to improve accuracy.

3.2 Purchased good and services

In 2022 we collected data for a sample month and multiplied by 12 to gain a yearly average. In 2023 we collected data over all 12 months. We found that there was less than a 5% difference in results so, going forward we will take a sample month and multiply by 12, to reduce office admin. / data collection time and efficiency.

3.3 Capital goods

RSS are considering sustainable options for both :

- upstream acquisition of recycled / refurbished IT equipment and phones, together with
- downstream recycling / donation of office IT hardware

3.4 Fuel related activities / Work From Home (WFH)

WFH assessments are undertaken through analysis of work-patterns for staff as well as accounting for additional office resources required to support this. Further data on home working environments and house-sharing considerations will be considered going forward, and potentially split between employers (is the employee WFH in an empty or shared property?). More detail here can assist in the accuracy of assessments.

3.5 Business travel

Assessed using combined timesheets and Rapport 3. In 2024 this will be via Rapport 3 only to improve accuracy.

3.6 Employee commuting

Assessed using home address to office distances, together with employee declared travel methods. There may be some double counting here when considered alongside individual WWF Carbon Footprint calculations, which also provide a "communting" assessment.

3.7 Downstream transport and distribution

These include courier journeys and printing deliveries. Some courier companies are starting to assess their own carbon emissions and so while currently included in our figures, these may in the future be discounted.

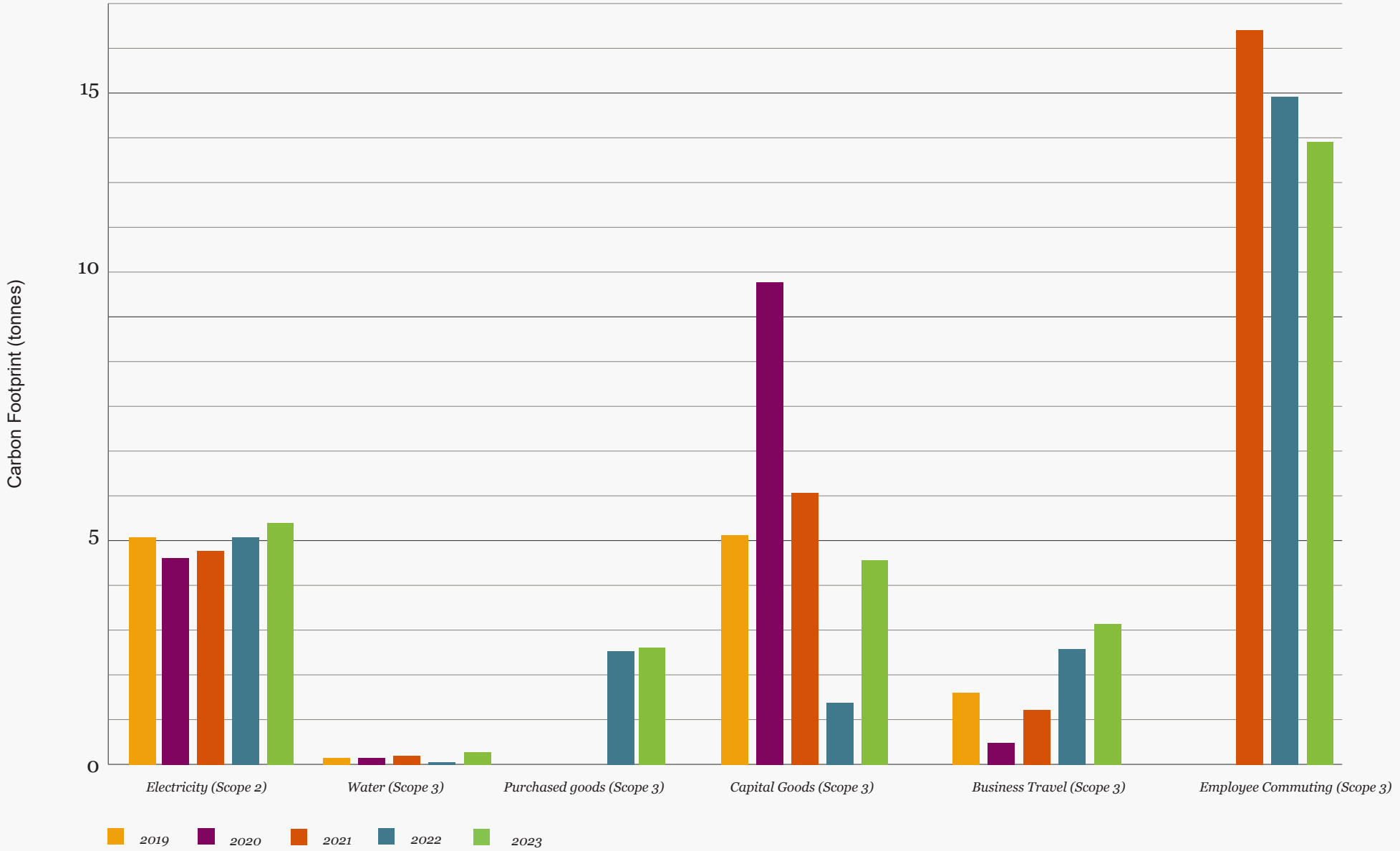
Employee Carbon Footprint Data

Towards the end of each calendar year, we ask employees to use the WWF Carbonfootprint.com calculator to provide their own footprint calculations. We anonymize this information to provide the Employee Footprints table / averages. Going forward we will aim to respond to employees privately, to provide them with their scope compared to both office and national/world average Carbon Footprints. The aim of this will be to assist awareness and comparison for staff members.

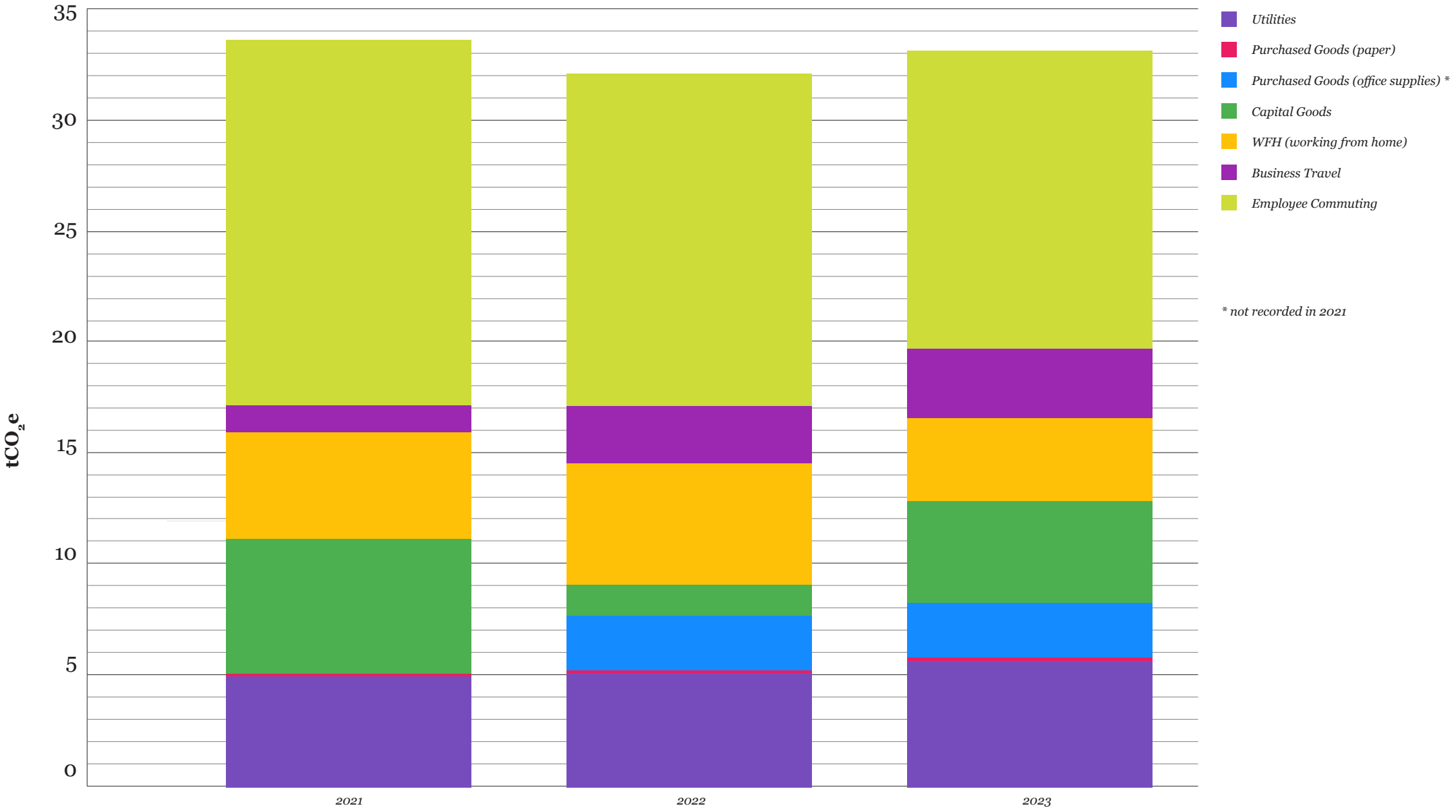
General Commentary

Previously, 2019 and 2021 were used as baseline years however, as 2023 figures include all scope items, this will become our baseline year going forward, from 2024.

Comparison to our baseline year of 2019



Total Carbon Footprint Breakdown

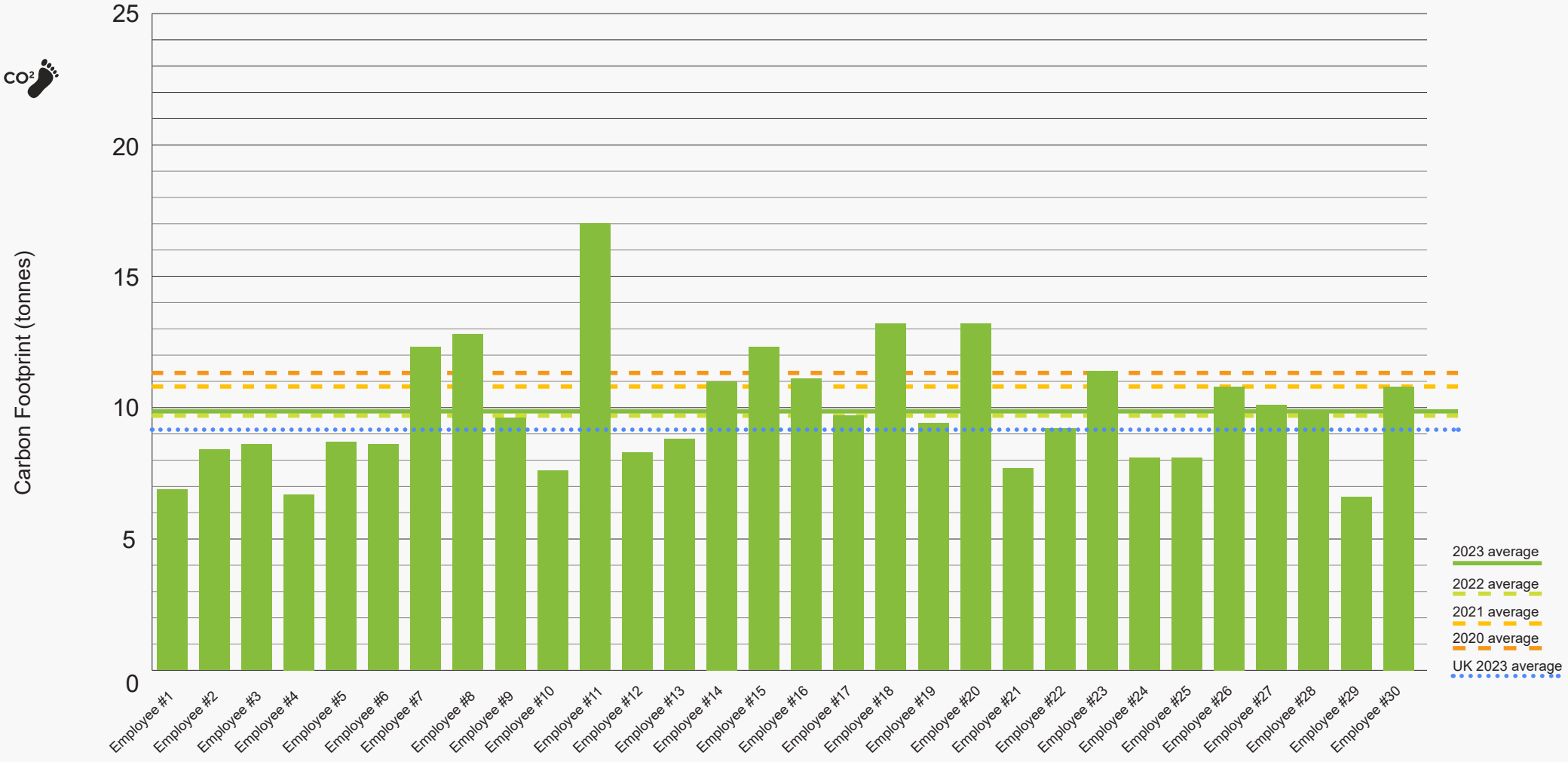


Employee footprints 2023

At the end of 2023 we repeated the annual survey of employee footprints using the WWF Footprint Calculator tool. The results showed that our average carbon footprint increased slightly to 9.89 tCO_2e, above the UK average (9.3 tCO_2e - WWF.org) and well above the global average (6.3 tCO_2e - WWF.org), however this year's figure is still well below our 2021 average of 10.9 tCO_2e.

We ask all staff to complete this at the end of each year and feed back to staff in order to :

- Encourage awareness of their environmental impacts and limit their carbon footprint where possible.
- Get a more accurate picture of our collective environmental impact.
- Understand the impacts of our daily choices.



Conclusions and Key Findings

This year our carbon footprint sits at just over 33.1 tonnes of CO_2e , which represents a slight increase from 2022, though still below the 2021 total.

Reasons for fluctuations in our carbon footprint:

- As per the scope exercise table on pages 5-7, this year we are including data for additional Scope 3 categories, including purchased goods and full tally of consumables (tea, coffee, flowers, cleaning products etc).
- Employee commutes (calculated using the distance-based method) have reduced, although still account for just over one third of total carbon emissions, with almost all employees now travelling to and from the office 3-5 times a week.
- Meetings and site visits are now more often in-person which has dramatically increased emissions related to business travel.
- Our office electricity use has increased slightly and the office has now stabilised to a blended working strategy. Most of our staff work in the office (WITO) 3 days and work from home (WFH) 2 days per week. The office is occupied continuously 8.30am to 6.30pm, Monday-to Friday.

While overall our carbon footprint has increased since last year, it is important to acknowledge additional categories for which the practice's carbon footprint information is being collected and analyse where fluctuations may have arisen:

- Inclusion of purchased goods does make a large difference to the carbon footprint. In 2022 this was averaged based on a typical month. A month by month analysis has been included for in 2023.
- Capital goods purchases have increased in 2023 (IT equipment and mobile phones): In 2020 and 2021 we bought unusual amounts of IT equipment to facilitate home working, in 2022 we didn’t need many items (though some older/faulty PCs and mobile phones were replaced). For 2023 we purchased additional PCs, laptops and a reconditioned server which have increased the carbon footprint substantially since 2022.
- Having reviewed electricity consumption with our IT team, our server was replaced in the 4th quarter of 2023 to a more energy efficient model. The choice of purchasing a refurbished model helps to minimise this impact and future energy consumption emissions will be monitored for 2024 to analyse this potential improvement in efficiency and to help decrease the daily energy use of the office as a whole.

Fluctuations in 2023 carbon factors for calculating total CO_2e (e.g., UK phasing out coal as a source of energy, however increased use of gas as energy source for electricity creation) has lead to changes in the carbon footprints across many categories. Other carbon factors changes and their effects include:

- Supply of water is assessed at 500 cubic meters / year (same as previous year), however, the carbon factor for treatment has reduced from 0.272 (22) to 0.201 (23) providing and overall 35% reduction.
- Combined total for water (supply and treatment) has reduced compared to 2022, from 0.3465 (22) to 0.28966 (23), providing a 19.6% overall reduction.
- Transport carbon factors have generally increased for electricity using modes (trains / tube etc) due to the increase use of gas to create electricity at source. This has had a big impact on Scope 3 "business travel" and "employee commuting".
- Car and taxi journeys have typically become lower carbon, due to the average vehicle frequently being more efficient or electric / hybrid (ULEZ impact).

Targets & Next Steps

We are moving to a 100% renewable energy supply for our office electricity for 2024. We are still trying to get a metered water supply information to better understand our consumption, and target reductions where possible.

We have become more detailed and analytical during 2023 data collection; we anticipate introducing further and more strategic carbon reduction measures in 2024.

What is the target?

"Net Zero" seeks to ensure the UK reduces its greenhouse gas emissions by 100% from 1990 levels by 2050. How will we help to achieve this through yearly reductions?

Scope 1

- No direct reliance on fossil fuels for office heating (gas).

Scope 2

- Monitor and reduce office electricity consumption.
- Switch to green energy supplier with renewable sources.

Scope 3

- Monitor goods and services - use low carbon suppliers and aim to reduce our scope 3.1 carbon footprint (office supplies) by 10-15 %.
- We started collecting recycling data in 2023; we will include this data in our 2024 reporting figures. From this baseline we will report future reduction in overall waste (increasing overall proportion of recycling / recycled goods where possible).
- Monitor, reduce and improve travel / transport methods to and from project sites.
- Encourage / assist staff in making low carbon, energy and transport choices in commuting and working from home.
- Commuting - train and tube travel to and from work will be targeted and we will seek a 10% reduction here.
- We continue to support active travel by creating additional support for sustainable modes of transport including cycling and walking.

Gordonstoun Elizabeth II Rooms Classroom Hub project is highly sustainable, with ground source heat pumps, PV panels, natural ventilation and high levels of insulation with a fabric first approach. The embodied carbon consumption has been minimised, achieving the RIBA 2030 Climate Challenge targets, and used regenerative materials to achieve this outcome.

In simple terms, "net zero means cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere". As a company and as individuals, to achieve the Net Zero goal, "emissions need to be reduced by 45% by 2030 and reach net zero by 2050." - https://www.un.org/en/climatechange

Now that we are fully collecting data for scopes 1-3, we can look at ways to reduce our carbon footprint as an office, and individually. We recognise that travel, whether it be commuting to the office or within office time, as well as utilities and purchased goods contribute a large proportion of the offices' Carbon expenditure. We we will look to ways to further encourage more staff members to cycle and walk to work, or from work to meetings and project site locations as an additional strategy to reduce our carbon footprint.

We are a carbon neutral company. Our main goal is to reduce our emissions; where this cannot be done, we offset via an accredited offsetting solution.

In addition to considering our own environmental impact, social sustainability is a key part of our business. We provide an active Social Value programme, with project-specific initiatives. This is multi-faceted and includes apprenticeships, work experience, charities, education partnerships, our supply chain and professional support – and in all instances encourages others to consider their environmental impact.

As architects, we encourage all clients to seek the highest standards of sustainability for their projects and work closely with them to meet targets, including embodied carbon as well as energy use, travel and transport, water consumption etc. Throughout any project we regularly meet our clients to report against carbon reduction, maintain our involvement , post completion and aim to obtain information about building energy in-use. This is essential for targeting Net Zero in all we do.

Scope of Carbon footprinting exercise

	2019 (Baseline)	2020	2021	2022	2023
Scope 1					
Fuel Combustion	n/a	n/a	n/a	n/a	n/a
Scope 2					
Purchased electricity/ heat					
Location based	Yes	Yes	Yes	Yes	Yes
Market based				Yes	Yes
Scope 3 (upstream)					
3.1 Purchased goods and services (coffee, hotels, food and drink, milk, sandwiches, printing paper, alcohol, water, tea, laundry)				Yes (partial)	Yes
3.2 Capital goods (IT equip, phones, fitout and refurb)	Yes	Yes	Yes	Yes	Yes
3.3 Fuel and energy-related activities Work from home energy	n/a	Yes	Yes	Yes	Yes
3.4 Upstream transportation and distribution	n/a	n/a	n/a	n/a	n/a
3.5 Waste generated in operations (amount of recycling and landfill waste)				Yes	Yes
3.6 Business travel (flights, train, bus etc)	Yes	Yes	Yes	Yes	Yes
3.7 Employee commuting (Based on a typical week)			Yes	Yes	Yes
3.8 Upstream leased assets	n/a	n/a	n/a	n/a	n/a
Scope 3 (downstream)					
Downstream transport and distribution (couriers)			Yes	Yes	Yes
Processing of sold products	n/a	n/a	n/a	n/a	n/a
End-of-life treatment of sold products	n/a	n/a	n/a	n/a	n/a
Waste disposal and treatment of products	n/a	n/a	n/a	n/a	n/a
Downstream Leased assets	n/a	n/a	n/a	n/a	n/a
Operation of franchises	n/a	n/a	n/a	n/a	n/a
Operation of Investments	n/a	n/a	n/a	n/a	n/a
Employee footprints					
All staff WWF footprints		Yes	Yes	Yes	Yes

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