

# CARBON REDUCTION REPORT

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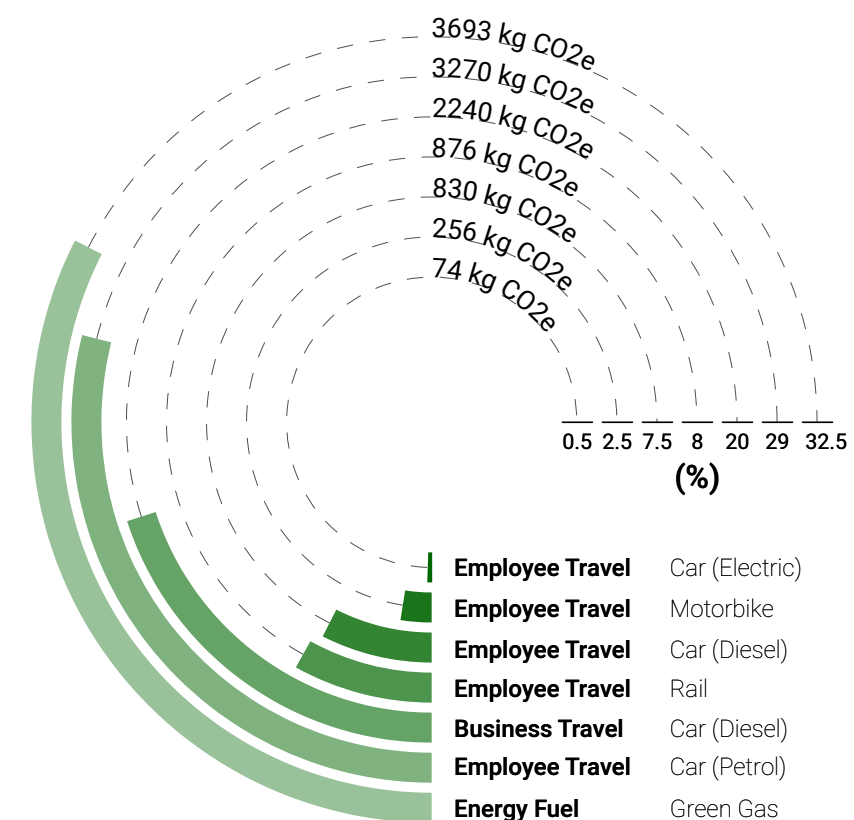
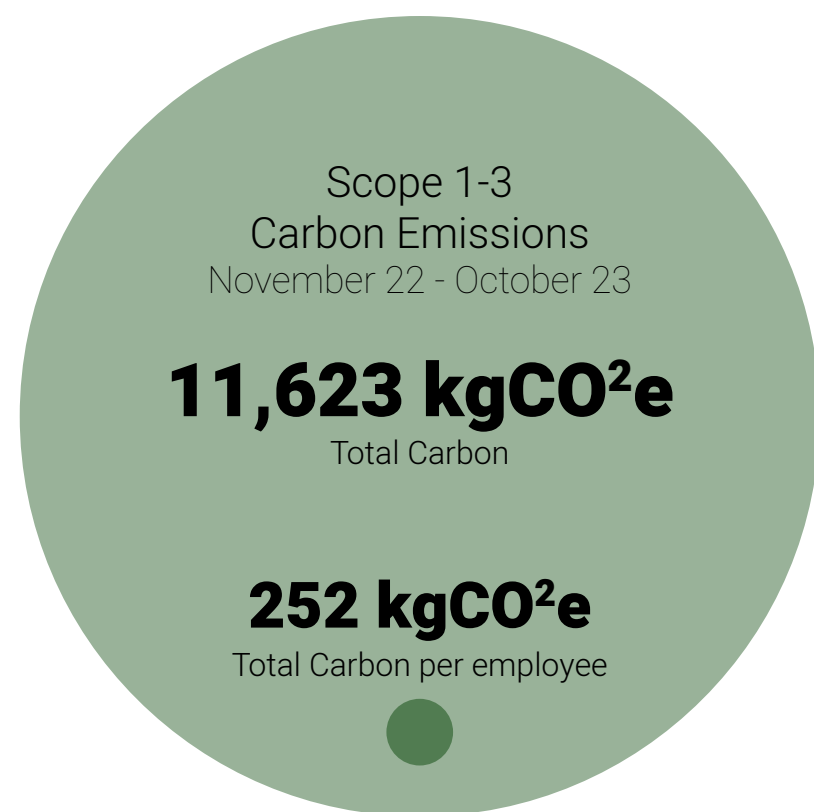
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## INTRODUCTION

This document has been prepared by the **MAST Architects Carbon Reduction Team** to illustrate our internal carbon assessment and analysis process.

It provides an overview of our assessment method and carbon footprint as well as identifying areas of current and potential future improvement.

Our approach is guided by our commitment to support and adopt the aims and objectives of **Architects Declare**, a network of Architectural practices committed to addressing the climate and biodiversity emergency.

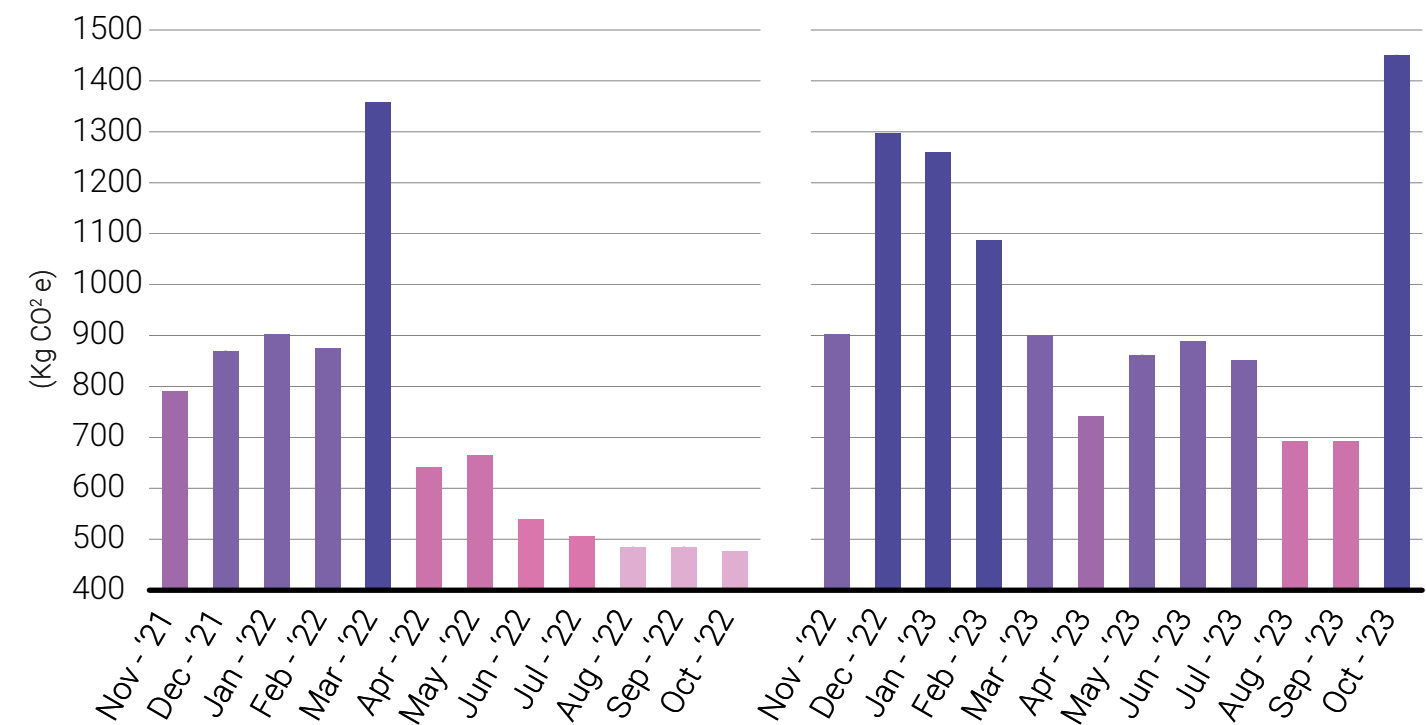
For further details, refer to Appendix A.

## CARBON SUMMARY

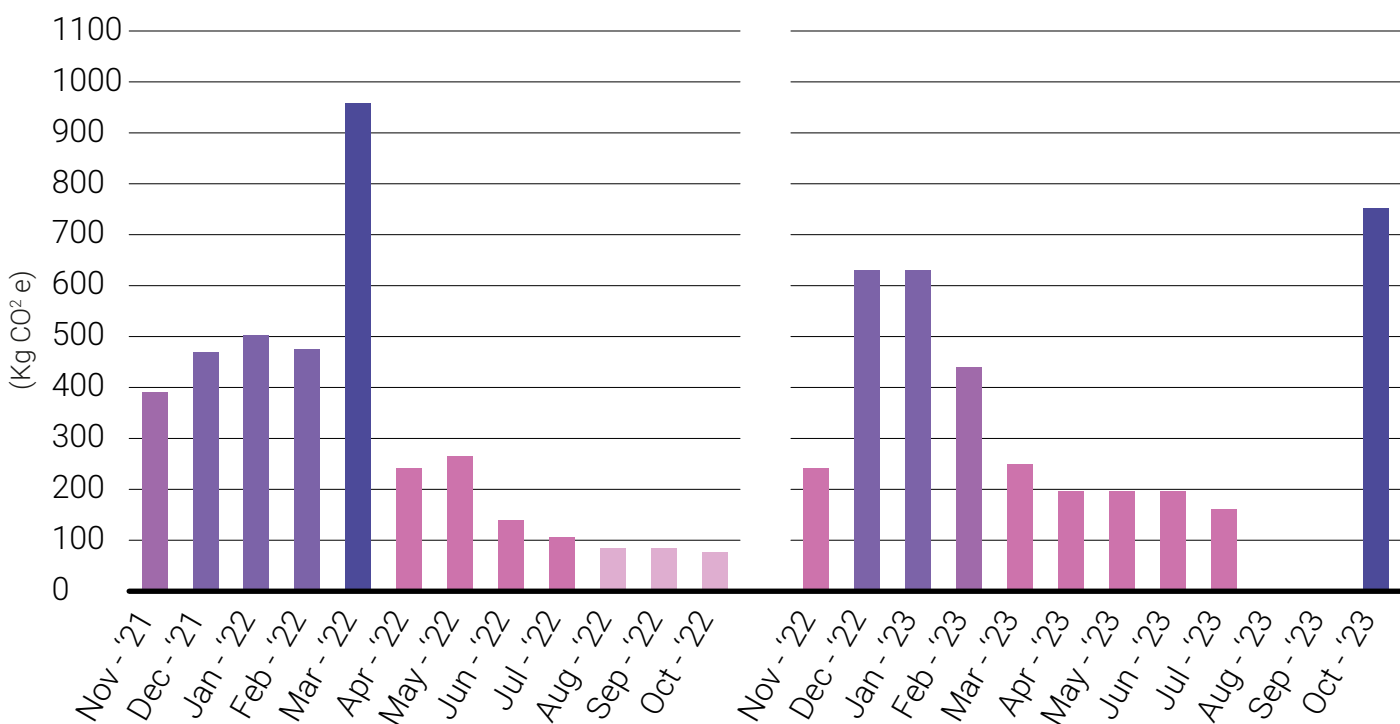
Through this process we have gained an understanding of our carbon footprint and in turn our environmental impact.

By understanding the impact of our practice, we are able to consider actions and take steps to reduce our carbon footprint going forward.

TOTAL CARBON EMISSIONS



SCOPE 1 EMISSIONS



CARBON SUMMARY

We began assessing our carbon footprint utilising the CBN Expert Software in January 2022 which allowed us to accurately calculate our carbon emissions, including the following;

- Energy Usage – Electric & Gas
- Business Travel
- Employee Travel
- Carbon Offsetting

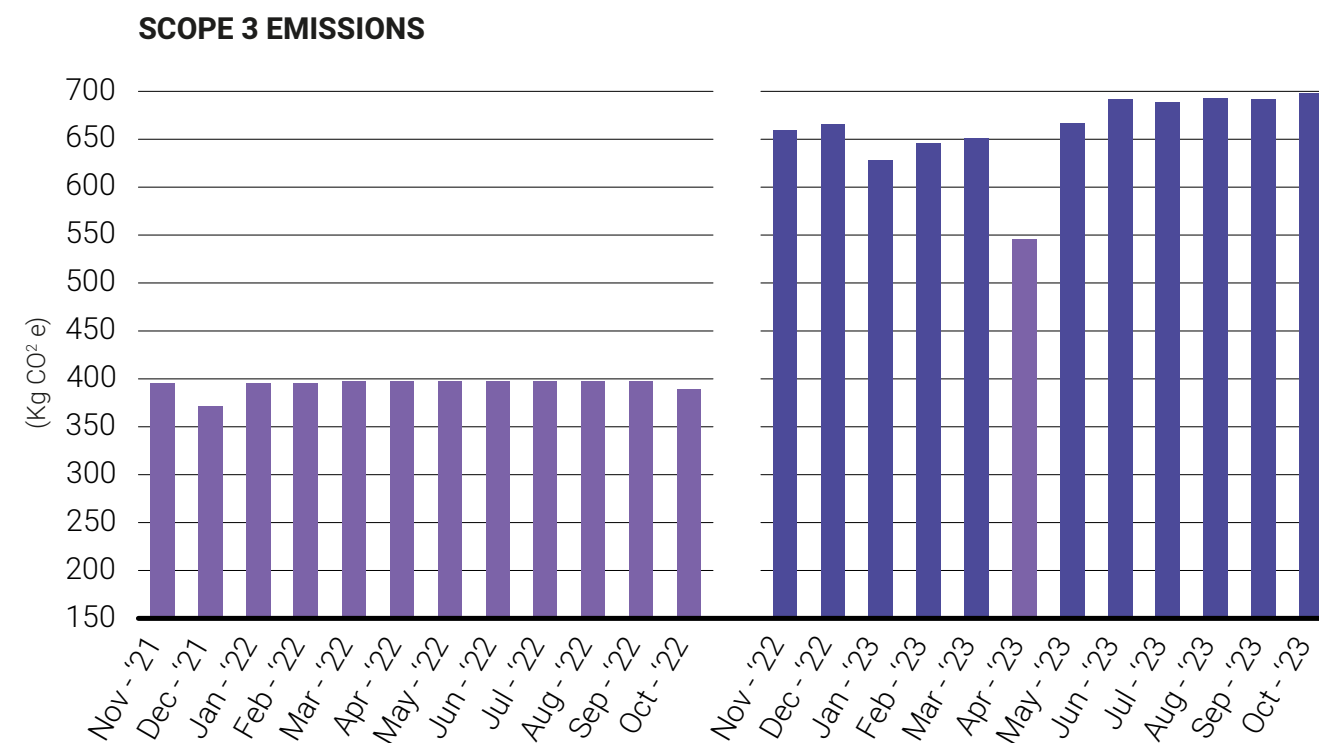
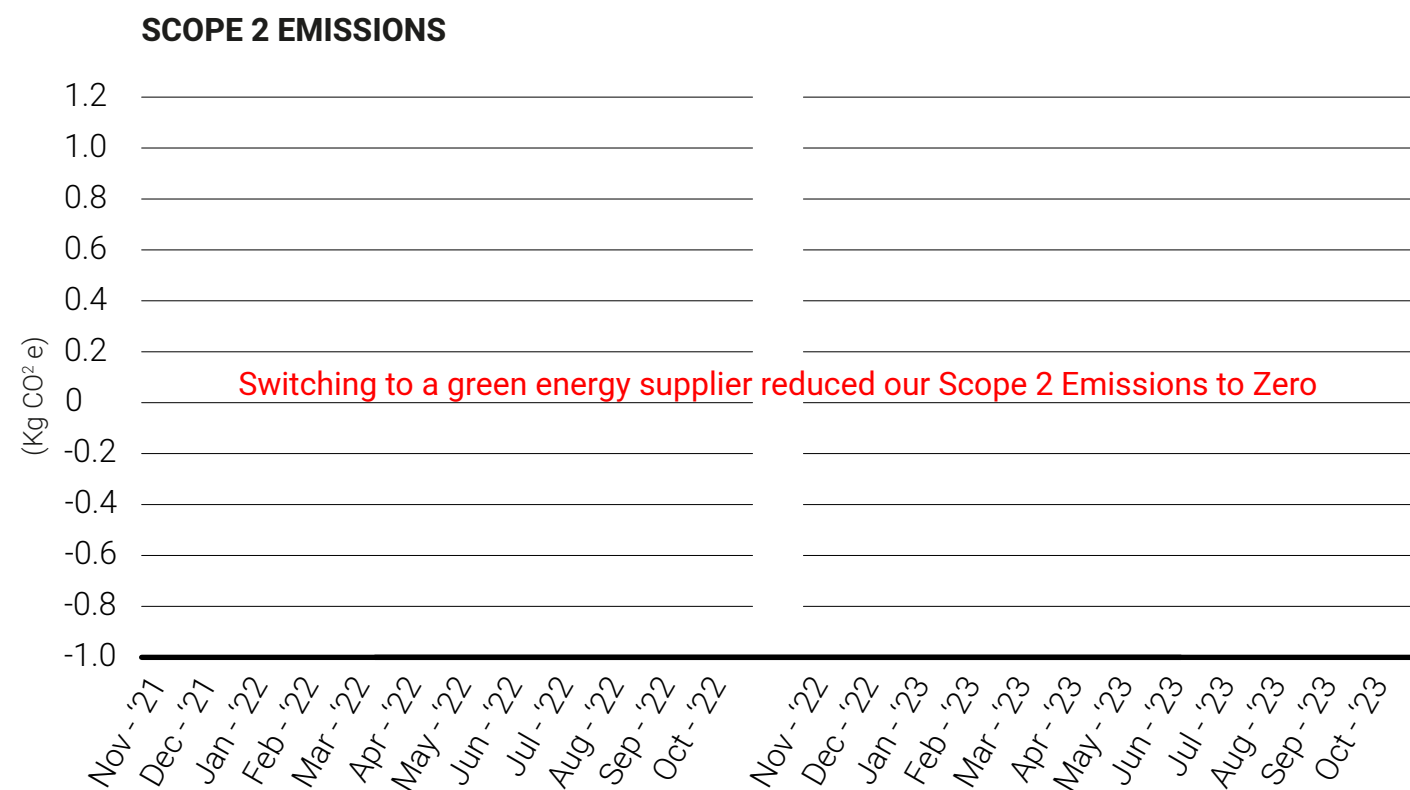
Using the software we established a carbon benchmark for 2021/2022 against which we can now compare our carbon emissions for the current year 2022/23. Having the benchmark has allowed us to assess the impacts of the carbon saving measures we have implemented thus far and establish future areas to target.

However, it is important to highlight that the practices carbon emissions in 2021/2022 were impacted by the COVID pandemic. In 2022/2023 the practice fully established a hybrid working policy, increased in staff numbers and the number of in person meetings rose significantly. Therefore, going forward the carbon footprint from 2022/2023 will be used as our new benchmark.

SCOPE 1 EMISSIONS

Our **Scope 1 Emissions** (those created by heating our office) have marginally decreased over the last year, however, the changes in working patterns between now and our benchmark should be considered when reviewing these figures. Our **Scope 1 Emissions** have decreased from 95kgCO<sub>2</sub>e per employee to 80 kgCO<sub>2</sub>e per employee, a 15% decrease. The reduction in emissions is due to the mindful approach that is now taken to heating the office, ensuring energy is not wasted, however going forward we are considering larger scale interventions.

The practice has recently been working with **Business Energy Scotland** which provides support to help SME's save energy and reduce their carbon emissions. **Business Energy Scotland** have prepared a report for the office which identifies energy savings opportunities and ways in which they can support MAST in the implementation of these opportunities.



## SCOPE 2 EMISSIONS

In December 2021 we switched to a carbon neutral energy supplier (*Octopus Energy*) which has reduced our **Scope 2 Emissions** (those created by our electricity usage) to zero.

We recognised however that reducing our electrical demand as far as possible would be beneficial and have continued to implement the energy saving measures from 2021/2022, including;

- Installation of motion activated light sensors to ancillary rooms (kitchens, WC's and print rooms)
- Implementation of power saving software to workstations.
- Reducing the amount of powered office equipment

In addition to these we have also implemented the following measures in the last year;

- Paperless office policy
- Energy efficient office equipment policy

## SCOPE 3 EMISSIONS

Our **Scope 3 Emissions** have undergone the most significant change since 2021/2022 increasing by almost 50% from 5,150 kgCO<sub>2</sub>e to 7,929 kgCO<sub>2</sub>e and accounting for the largest proportion of our carbon footprint. However, this increase is a direct result of an increase in the number of employees (scope 3 emissions per employee have increased less by 35%) and the increase in the number of in person meetings as COVID restrictions have been lifted.

The figures for 2022/2023 will be used as a benchmark going forward and the following measures will be considered in an effort to reduce these;

- The adoption of an online meeting policy
- Replacing our current office pool cars at the end of their life with hybrid models (the options to replace with fully electric vehicles is not possible due to the absence of a suitable EV charging point)
- Utilising a car club facility once the current office pool cars have reached the end of their life



RECOMMENDED OPPORTUNITIES

Description	Finance Estimates						Annual Environmental Saving Estimates	
	Annual Cost Savings	Annual Income Generated	Investment Required	Payback	Potential Grant	Payback with Grant	Energy	CO2e
	£ (ex. VAT)	£ (ex. VAT)	£ (ex. VAT)	Years	£	Years	kWh	Tonnes
Solar PV	1,752	201	11,826	6.1	0	6.1	6,046	1.4
Flat Roof Insulation	680	0	6,000	8.8	4,500	2.2	3,775	0.7
Secondary Glazing	350	0	21,000	60	0	60	1,900	0.4
Total	£ 2,782	£ 201	£ 38,826	-	-	-	11,721	2.5



BUSINESS ENERGY REPORT

The **Business Energy Scotland Report** identified the following measures which could be implemented and the associated reduction in CO<sup>2</sup> emissions annually;

- Solar PV 1400kgCO<sup>2</sup>e
- Loft Insulation 700kgCO<sup>2</sup>e
- Secondary Glazing 400 kgCO<sup>2</sup>e

The report also provided an approximate cost for installation of each of the measures and in turn a payback period.

Based on both costs and emissions it has been agreed that we will investigate installation of solar PV and loft insulation further to reduce our **Scope 1 and 2 Emissions**, however, secondary glazing at this time is not considered a viable option.E

CARBON OFFSET

Although we can take meaningful steps to reduce our carbon footprint, it is not possible to reduce our emissions to zero. As an additional measure in 2022/2023 we again signed up as a **Silver Partner of Trees for Life**, a conservation charity who have planted nearly **two million trees** in the Caledonia Forest over the past 25 years.

Our donation for the year of **200 trees** will offset **4000kgCO<sup>2</sup>e**, significantly reducing our carbon footprint.

Although carbon offsetting can work alongside direct measures we do not believe this is a suitable substitute on its own which is why going into the next year we will be considering larger scale interventions to reduce our carbon footprint which may mitigate the need for offsetting.



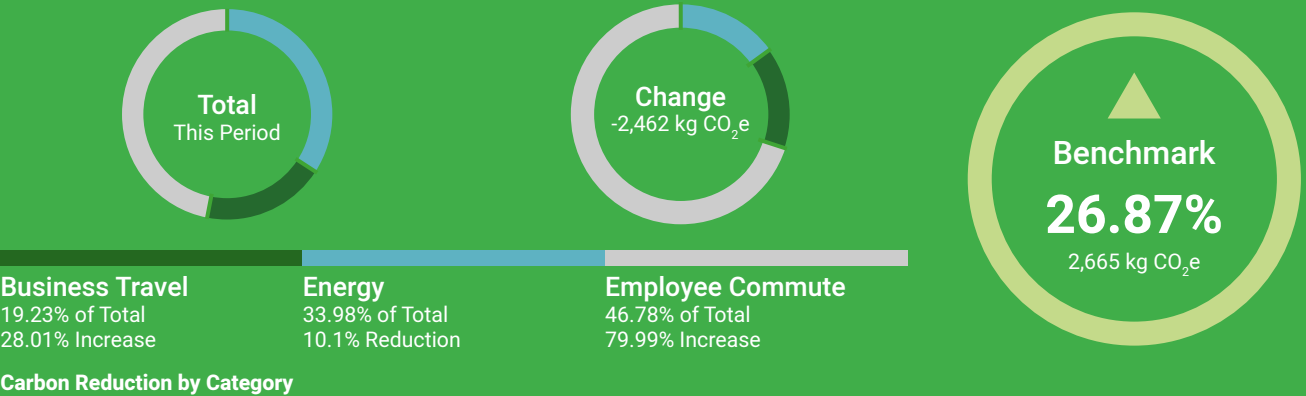




# CONCLUSION

There has been an overall increase in our carbon emissions over the last year from **8,958 kgCO<sub>2</sub>e** to **11,623 kgCO<sub>2</sub>e**, a **30% increase** in emissions per employee. This can be entirely attributed to the increase in **Scope 3 Emissions** and will be a key area for the practice to target going forward.

As a practice we are committed to developing a carbon reduction plan and setting targets for one, five and ten year periods as we aim to become a net zero business. In 2024 we will undertake a third party assessment to advise additional measures to reduce emissions and develop our net zero and circular economy action plans. We will continue to report our carbon figures annually to quantify the impacts of our carbon reduction processes over time.



## APPENDIX A

**Architects Declare** is a network of architectural practices committed to addressing the climate and biodiversity emergency.

MAST Architects are committed to and support **Architects Declare** and will seek to:

- Raise awareness of the climate and biodiversity emergencies and the urgent need for action amongst our clients and supply chains.
- Advocate for faster change in our industry towards regenerative design practices and a higher Governmental funding priority to support this.
- Establish climate and biodiversity mitigation principles as the key measure of our industry's success: demonstrated through awards, prizes and listings.
- Share knowledge and research to that end on an open source basis.
- Evaluate all new projects against the aspiration to contribute positively to mitigating climate breakdown, and encourage our clients to adopt this approach.
- Upgrade existing buildings for extended use as a more carbon efficient alternative to demolition and new build whenever there is a viable choice.
- Include life cycle costing, whole life carbon modelling and post occupancy evaluation as part of our basic scope of work, to reduce both embodied and operational resource use.
- Adopt more regenerative design principles in our studios, with the aim of designing architecture and urbanism that goes beyond the standard of net zero carbon in use.
- Collaborate with engineers, contractors and clients to further reduce construction waste.
- Accelerate the shift to low embodied carbon materials in all our work.
- Minimise wasteful use of resources in architecture and urban planning, both in quantum and in detail.
- Support those who are working for climate justice and strive to ensure equity and an improved quality of life for all.

<https://www.architectsdeclare.com>





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