

1. THE CLIMATE EMERGENCY

DSSR'S COMMITMENT TO NET ZERO CARBON

The world is facing a climate emergency like never before. Since the industrial revolution, human activities have had a detrimental effect on our climate. Anthropogenic activities have led to a sharp increase in carbon dioxide and greenhouse gases (GHGs) in our atmosphere. Extreme weather events, increased global temperatures and rising sea levels are already affecting every inhabited region across the world. The Intergovernmental Panel on Climate Change (IPCC) warn if immediate action is not taken to limit carbon dioxide and GHG emissions the effects of climate change will increase in severity ⁽¹⁾. That is why in 2019 the UK Government became the first major economy to legislate against climate change and have set the target to be Net Zero by 2050 ⁽²⁾.

To achieve Net Zero Carbon, total greenhouse gas emissions generated by an organisation must be equal to or less than the emissions removed from the environment. As Building Services Engineers, DSSR understand the importance of our role in facilitating others to understand this concept and adapt to a low carbon future. As a business we are perfectly placed to support the transition to a Net Zero Carbon economy.

As leading providers of sustainable building design, and with 75 years' industry experience in the built environment, DSSR have the ability to influence and inform building design in a holistic way. From the outset, DSSR engage with clients and support them in their aspirations to develop and construct low energy, Net Zero and decarbonised buildings.

We understand the benefits of low energy, low carbon and sustainable design, not only for our clients but for the advantages they bring to our own operations. Sustainability and efficiency are key to lowering operational costs, increasing the health and wellbeing of those we work for and with, helps to reduce supply chain risks and promotes best practice within our industry.

DSSR fully support the UK Government's target of Net Zero Carbon by 2050. As Consultants and MEP Designers we fully understand the importance of tackling the climate emergency head on.

That is why DSSR have pledged to achieve Net Zero Carbon in our own operations by 2045.



2. DSSR: LOW & ZERO CARBON SERVICE PROVIDERS

SUPPORTING OUR CLIENTS' TRANSITION TO NET ZERO

DSSR hold sustainable design with the utmost importance and we support project design teams and clients in their journey to Net Zero Carbon, from initial project brief through construction, handover and operation.

By adopting a whole-life approach, DSSR are able to assist clients in the delivery of low energy, low carbon, well designed buildings which are fit for purpose. We embed sustainable practices in all of our projects, from implementing the use of building physics methodologies and providing accredited sustainable services to our clients, we are at the forefront of energy efficient and sustainable building design.

Alongside our MEP design services, DSSR add value to the built environment by providing the following specialist services:

- » Low and Zero Carbon Technology Feasibility Studies
- » Passive Design Analysis
- » Operational Energy Performance Analysis (CIBSE TM 54)
- » BREEAM Assessment and BREEAM Accredited Professional Services
- » Accredited CIBSE Low Carbon Energy Assessor Services (LCEA) for Level 3, 4 and 5
- » Licenced On Construction Domestic Energy Assessors / SAP Calculations
- » Accredited Section 63 Advisors for Scotland
- » Thermal Comfort and Overheating Analysis (CIBSE TM52 and TM 59)
- » Daylighting and Glare Analysis
- » Indoor Air Quality Plans
- » Soft Landings Champions
- » Energy and Sustainability Statements for Planning

We engage and encourage our clients to secure sustainable outcomes through bespoke solutions. This can include encouraging our clients to consider circular economy principals and life cycle thinking or to specify and procure materials responsibly.

Examples of how sustainable practices are embedded into our services is provided in Appendix A of this report.



3. DSSR'S LOW & ZERO CARBON PROJECT EXPERIENCE

KEY CARBON REDUCTION PROJECTS

As specialists in sustainable building services design, DSSR are committed to assisting our clients in the delivery of their own decarbonised targets, including Net Zero Carbon.

Through the use of our dynamic simulation building performance modelling tools, DSSR are able to advise on the impact of building layout, MEP strategies as well as low and zero carbon technologies, to ensure that only the most effective solutions are integrated into building design at a stage when the value can be maximised.

DSSR's experience has shown that early input to the design - with the opportunity to review the building form, orientation, fabric and façade results in a lower energy demand, which in turn has allowed a more efficient MEP strategies to be developed. By reducing energy demand through passive measures, it is easier to meet thermal comfort conditions with systems that operate at lower temperatures, thus maximising the efficiency of technologies such as heat pumps, and reducing system losses.

DSSR have also developed solutions that allow on-site generation to be maximised and demand controlled, using thermal storage, waste heat transfer to other local buildings, and battery storage. There are different routes available to help achieve low-carbon building solutions and we understand that bespoke MEP strategies and fuel sources use are key elements of this.

As an organisation which has been involved in a wide variety of UK projects, we can add value and support the Government's transition to Net Zero through our unique understanding of the Construction Industry and utilise our sustainability expertise to ensure long term project sustainability and the consideration of carbon reduction measures at key stages of development.

Notable DSSR Low Carbon & Sustainability projects in the UK:



Harbour City, Salford Quay

130,000sqft office block which utilises the canal as a heat sink for water-cooled chillers to provide low energy cooling to the office building.



Islay Gaelic Community Centre

An early example of roofing slates which featured integrated photovoltaic solar panels to provide a portion of the buildings electrical demand.



Ravenscraig Town Centre

Development achieved the first ever BREEAM Communities Outline Planning Certification with an Excellent Rating.



Great Glen House SNH HQ

Scotland's most sustainable building at construction, utilising passive design and local materials, it achieved the highest BREEAM score of any UK building.



TECA Aberdeen Events Campus

Features the largest hydrogen fuel cell in UK (at the time) providing power, heat & cooling to conference centre, arena and AECC site.

4. DSSR'S PATHWAY TO NET ZERO

DSSR'S OPERATIONAL IMPACTS AND CARBON REDUCTION TARGETS

DSSR have embraced sustainable building design and realise the it is of the utmost importance to understand our own environmental impacts. We have a firm commitment to achieve Net Zero by 2045 and have set incremental targets to achieve this. We have operational processes in place to ensure compliance against these targets is monitored.

DSSR operate from three premises, with offices located in Glasgow, Manchester, Harrogate and with a presence in London. Most of our environmental impacts are generated from the following two core business activities:

1. The operation of our offices
2. Employee commuting

To ensure we achieve Net Zero by 2045 we have set the following targets:

- » Monitor and report our Scope 1, Scope 2 and Scope 3 emission data on an annual basis, in line with SECR ⁽³⁾ and GHG protocols ⁽⁴⁾.
- » In line with the UKGBC guidance, DSSR seek to ensure operational energy demands in each of our offices are reduced by 60% by 2050⁽⁵⁾.
- » Work with the landlords of our Manchester and Harrogate offices to ensure carbon reduction opportunities are identified and maximised.

DSSR'S OPERATIONAL CARBON FOOTPRINT

As DSSR's operations primarily consist of commercial office based activities, with the majority of our revenues driven by intellectual property, our Scope 3 upstream and downstream emissions only contribute a small amount to our overall carbon footprint. Although our upstream and downstream Scope 3 carbon emissions are

negligible, we continue to engage with our suppliers and services providers to drive continuous improvement within these sectors.

DSSR'S OPERATIONAL CARBON REDUCTION INITIATIVES - IMPLEMENTED

DSSR are committed to reducing the carbon footprint of our own operations. Since October 2020 we have collected data on our carbon emissions and have engaged with the wider industry to communicate our commitments.

Key carbon reduction initiatives DSSR have, or will implement in our first year of carbon reporting include:

- » Signatory of Building Services Engineers Declaration of the Climate and Biodiversity Emergency ⁽⁶⁾ confirming our commitment to raise awareness of the climate emergency and the urgent need for action amongst our clients, collaborators and supply chains.
- » Engaging with waste service providers to maximise recycling opportunities.
- » Phased installation of low energy lighting in our all of our offices to reduce operational energy demands.
- » Installing comfort cooling systems in our Glasgow office with lower carbon intensive refrigerants.

DSSR are committed to reducing carbon emissions arising from our own operations. Since October 2020 we have collected data from our landlords, suppliers and employees with respect of understanding our baseline emissions. Understanding baseline emissions is the most important step in any carbon reduction plan. This has allowed us to identify key areas for future improvement.

DSSR’s baseline carbon emission data has been calculated in accordance with SECR ⁽³⁾, GHG Reporting Protocol ⁽⁴⁾, and PPN 06/21 ⁽⁷⁾ guidance. Below details our baseline carbon emission footprint for each of our offices for the year 2021 ¹:

Glasgow Office	
Scope 1 Emissions	40.34 tCO ₂ e
Scope 2 Emissions ²	42.31 tCO ₂ e
Scope 3 Emissions	94.93 tCO ₂ e

Manchester Office	
Scope 1 Emissions	0.00 tCO ₂ e
Scope 2 Emissions ²	38.70 tCO ₂ e
Scope 3 Emissions	49.87 tCO ₂ e

Harrogate Office	
Scope 1 Emissions	20.3 tCO ₂ e
Scope 2 Emissions ²	12.25 tCO ₂ e
Scope 3 Emissions	17.03 tCO ₂ e

The data collected for our baseline reporting year confirms DSSR’s total carbon footprint arising from our operations are as follows:

Scope 1 Emissions	42.37 tCO ₂ e
Scope 2 Emissions ²	93.26 tCO ₂ e
Scope 3 Emissions	161.83 tCO ₂ e

¹ DSSR’s carbon reporting period aligns with our financial year (1st of Oct 2020 to 30th Sept 2021).

² Scope 2 emissions have been reported based on the market based calculation methodology.

DSSR’S OPERATIONAL CARBON REDUCTION INITIATIVES – DEVELOPING

To maximise carbon reduction within our operations, we will be implementing the following initiatives over the coming years:

- » Adoption of hybrid working practices to allow employees’ to work from home. This policy will have a significant impact on our Scope 3 emissions. If all employees take up the opportunity to work from home for two days of the week, DSSR will be able cut the emissions associated with employee commuting by up to 40%. Based on our 2021 baseline data, this could remove 31.904 tCO₂e from our operational Scope 3 emissions annually.
- » Refrigerants are a significant and growing source of greenhouse gases. Therefore, DSSR will seek to replace refrigerants in our own comfort cooling systems with those with lower GHG impacts.
- » We will promote the benefits of active travel and encourage our employees to commute by more sustainable methods.
- » We will seek to purchase 100% of our operational electrical energy from renewable energy suppliers.
- » DSSR will seek to align with ISO 14001 and ISO 50001 methodologies to ensure our energy reduction activities are monitored, recorded and reviewed on annual basis in a clear and consistent manner.
- » Seek to improve our own Net Zero commitment by engaging with the World Green Building Council with a view to improving our Net Zero commitment to account for both operational energy and embodied carbon by 2030 ⁽⁸⁾

DSSR are committed to reducing our carbon footprint and will monitor and report on our Scope 1, Scope 2 and Scope 3 carbon emissions on an annual basis.

Carbon reduction initiatives implemented will be reviewed alongside annual data and new or revised incremental targets will be set when and where appropriate to support our journey to Net Zero Carbon.

5. APPENDIX A

Below provides details of our key business objectives and the actions we take to support the UK Government's transition to Net Zero:

Focus Area	Operational Activities & Actions
Supporting The Energy Transition	Undertake feasibility studies for alternative technologies for our projects.
	Support clients in their aspirations to low energy decarbonised and Net Zero buildings through energy efficient technical solutions.
	Discipline specific training for all our staff on new emerging drivers, trends and technologies.
	Promote knowledge sharing of Net Zero and carbon reduction issues and mitigation strategies in-house, with our clients and with wider industry.
	Developing bespoke solutions for our clients which encourage the shift away from intensive fossil fuel use.
	Engage with industry to develop technical solutions that are future-proofed.
	Embrace new technologies and design appropriate energy efficient systems.
Material Efficiency & Sustainability	Adopt circular economy principals and promote the benefits of life cycle analysis (LCA).
	Design and specify MEP systems responsibly, avoiding the overuse of materials or resources.
	Consider end-of life impacts in our designs, taking account of future adaptation and reuse opportunities.
	Promote lower-embodied carbon solutions and the value of responsible sourcing in our supply chains.
Ethics & Equality	Promote ethics, equality and diversity in all of our operations.
	Target projects which bring wider benefits to society.
	Regularly engage and support local charities.
	Procure food and consumables for social and corporate events from local businesses where possible.
In-house Research & Development	Support and encourage our employees to upskill in emerging technical areas through regular and relevant training.
	Employees are allocated dedicated time to carry out R&D activities.
	Annual professional development programme for all employees to support career progression.
	Regular engagement with Government, Local Authorities and policy makers on legislative changes or planning policy guidance.
	Staff knowledge sharing workshops to identify strengths and areas of technical expertise for development.

6. REFERENCES

1. **Intergovernmental Panel on Climate Change.** *Climate Change 2021 The Physical Science Basis.* Switzerland : IPCC, 2021
2. **Government, HM.** *Net Zero Strategy: Build Back Greener.* London : HH Associates, 2021. E02678428 10/21
3. **HM Government.** *Environmental Reporting Guidelines: Including Streamlined Energy and Carbon Reporting Guidance.* London : Crown Copyright , 2019. PB 13944
4. **World Resources Institute and World Business Council for Sustainable Development.** *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.* Geneva : s.n., 204. 1-56973-568-9
5. **UK Green Building Council.** *Net Zero Carbon: Energy Performance Targets for Offices.* London : UK Green Building Council , 2020
6. **Building.** *UK Building Services Engineers Declare. UK Building Services Engineers Declare Climate & Biodiversity Emergency.* [Online] Happold Foundation, 2020. <https://www.buildingservicesengineersdeclare.com/>
7. **Cabinet Office.** *Technical standard for Completion of Carbon Reduction Plans.* London : s.n., 2021
8. **World Green Building Council .** *Net Zero Carbon Buildings Commitment.* London : World GBC, 2021