



Richard Long, *A Line Made by Walking*, 1967 © Richard Long.
All rights reserved. DACS, London 2022



Environmental Sustainability Report

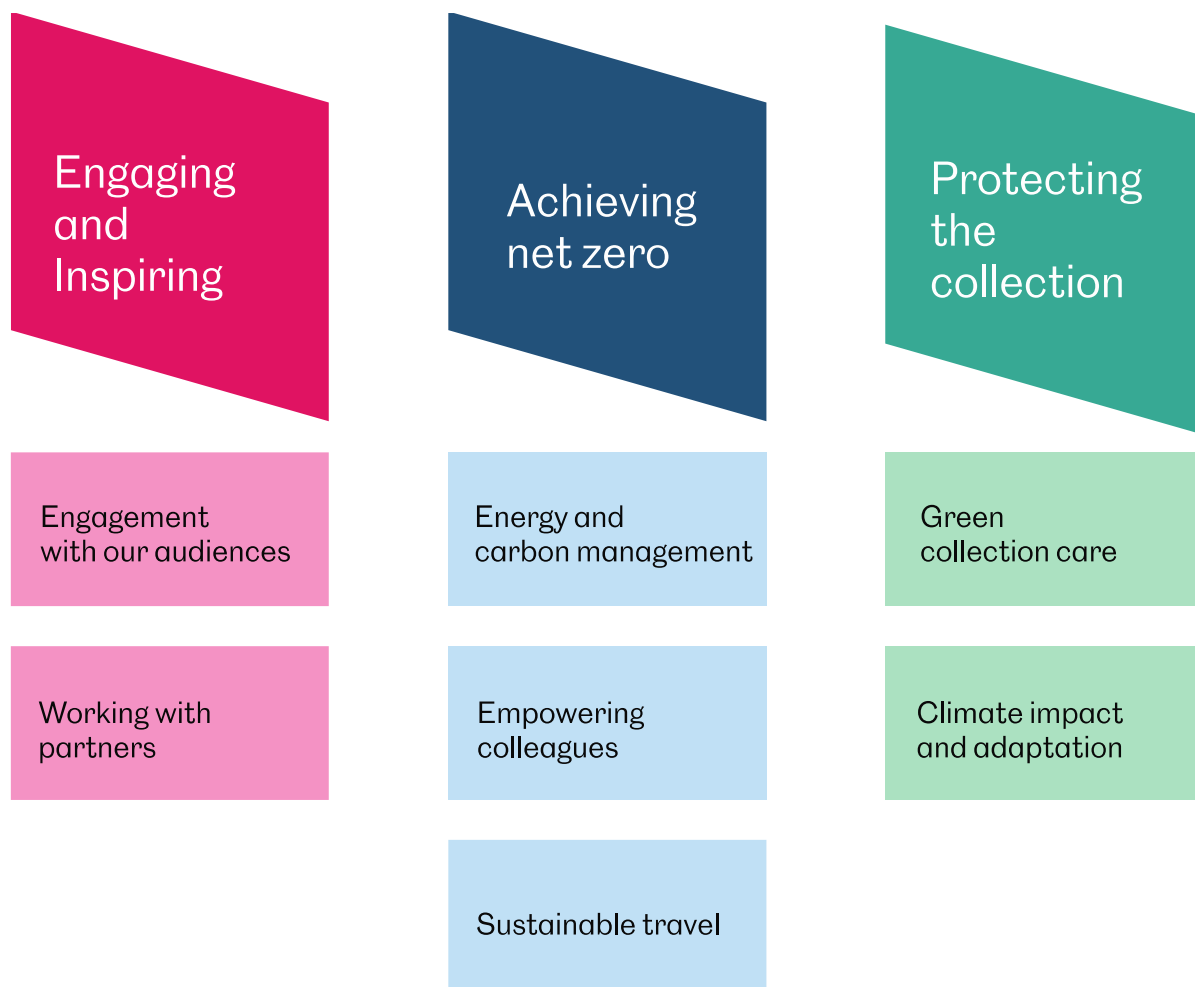
2022 – 2023



Contents

	Page
1. Introduction	4
2. Overall Performance	5
3. Engaging & Inspiring	6
Engagement with our Audiences	6
Working with Partners	8
4. Achieving Net-Zero	10
Energy & Carbon Management	10
Empowering Colleagues	12
Sustainable Travel	14
5. Protecting the Collection	16
Green Collection Care	16
Climate Impacts & Adaptation	18
6. Appendix	19
Performance Figures	15
Emissions Factors	20
Scope Definitions	20

NGS Environmental Response



Introduction

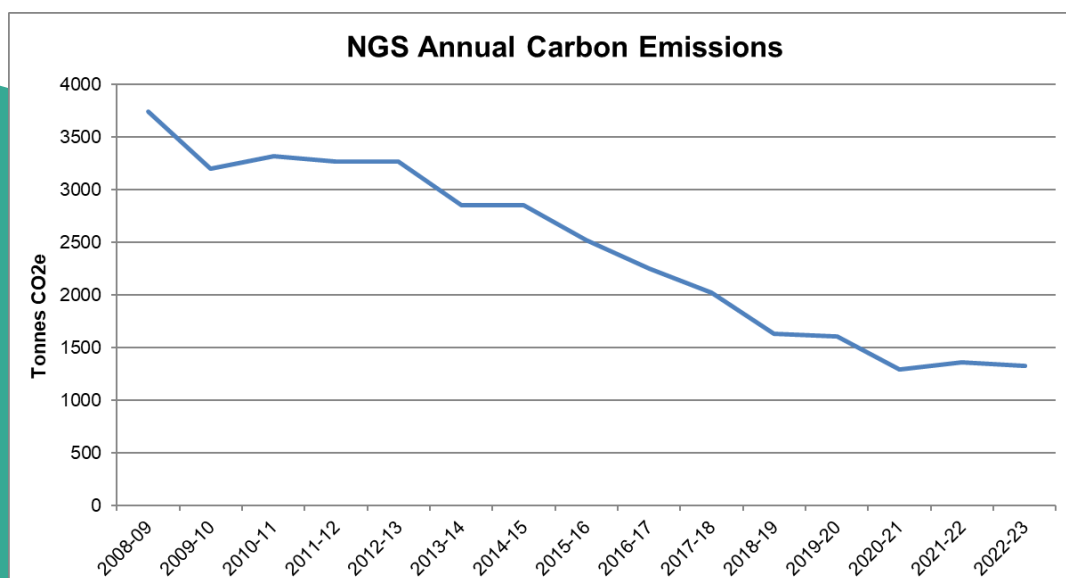
At National Galleries of Scotland (NGS) we have 'Environment' as one of our core organisational priorities alongside 'Equality, Diversity & Inclusion' and 'Health & Wellbeing' which all play a crucial part in the sustainability of the organisation. We recognise the role that we have in addressing the Climate and Ecological Emergency; from the buildings that we run and the art that we look after to our visitors we welcome through our doors and communities we work with. All areas of NGS can support this international crisis.

Our Environmental Response Plan 2022-25 outlines where our work will be focused to reduce our carbon emissions and make our practises more environmentally-friendly – our headline priority areas are outlined on the previous page.

Throughout 2022/23 we have been working on the governance structure of the plan to ensure we make a positive impact across the organisation as well as rolling out the initial elements of some of our projects. We have started to create a detailed pathway to net-zero for our direct carbon emissions, and a plan for how we will influence our indirect carbon emissions.

Our collaboration with other organisations for collective efforts on tackling the Climate Emergency have been reaffirmed and expanded this year. This has included a significant contribution of NGS carbon reduction work to the updating of the Bizot Green Protocol; the Bizot group is an international grouping of major museums of which NGS is a member.

Since reporting started in 2008/09, energy and carbon efficiency projects have reduced its carbon footprint by 64%. Our Carbon and Environmental Management Plans have also focused on improving biodiversity, increasing recycling, encouraging active travel, and embedding sustainable practises in procurement and construction as well as engaging our colleagues on all matters of the environment. In 2018 NGS achieved Gold status for all our galleries through the Green Tourism Award and we will be renewing this award in the year ahead.



Performance 2022 – 2023

After the pandemic, NGS has adopted a working framework which allows colleagues more flexibility in their roles. In some cases, this enables a blend of home working and office-based working. Visitor numbers began to gradually increase again post-Covid and at the National we are close to pre-Covid visitor numbers.

NGS emitted 1326 tCO₂e during 2022/23. This is a slight decrease compared to 2021/22 and is 300 tCO₂e lower than pre-Covid emissions. Although not currently reported within this data, we will be considering adding colleagues ‘working from home emissions’ to our carbon footprint, since this is a significant change in our approach to working and has displaced some of our energy use in the office spaces.

Energy usage continues to be the main source of NGS’ carbon emissions, with electricity and gas contributing to 98% of our overall carbon footprint across our eight buildings and storage facilities. 2022/23 also saw the significant rise in utility costs with the energy crisis exacerbated by the Russian invasion of Ukraine. Gas costs more than doubled since the previous year, and in 2023/24 electricity prices have also risen considerably.

Transport from our fleet vehicles as well as business travel have risen due to the lifting of travel restriction, however travel emissions have still stayed notably lower than pre-Covid levels. Waste and water emissions both rose slightly, which was to be expected with more visitors returning to site. Although waste costs increased, a significant decrease in water costs was advantageous for overall utility costs.

Summary table of the progress we have made since the financial year 2008/09 (1 April to 31 March)

Area	2008/09 Baseline year	2021/22 Performance	2022/23 Performance
Carbon from Energy ¹	3690	1346	1303
Total Energy Expenditure	£645,939	£447,362	£616,656
Carbon from Transport ¹	8.45	9	14
Total Transport Expenditure	£10,205	£24,691	£26,005
Carbon from Waste ¹	28.38	3	4
Total Waste Expenditure	£18,553	£18,133	£25,272
Carbon from Water ¹	18.09	4	5
Total Water Expenditure	£86,157	£132,283	£93,156
Total Carbon Emissions ¹	3745	1362	1326

1: Carbon is measured in tonnes of carbon dioxide (CO₂) equivalent

Engaging & Inspiring

Through our exhibitions, learning programmes and digital content, we will find inclusive and sustainable ways to engage our audiences in understanding how we can all contribute to a low carbon society.

Engaging with our audiences

Exhibitions & Displays

The exhibition and display of Scottish and international art continues to be central to engaging with our visitors and communities. The theme of environment has woven through multiple exhibitions throughout 2022/23. *Conversations with the Collection* at the Modern happily coincided with the start of Scotland's Climate Week in September 2022, with multiple rooms within this display exploring themes that impact our environment. The room 'Material Matters' looks at the world by working with overlooked objects with the potential to be recycled or repurposed, while the 'Creative Terrains' room looks at the conversations that artists have with the natural environment around them.



Spring Sea, Soaring, St. Abb's
Susan Harvey, NGS Gallery Attendant

Many talented artists work at NGS and the *Artists at Work 2* exhibition celebrated their creativity. The exhibition was led by NGS colleagues, from the artwork submitted to the curation and display of the exhibition at the Portrait. The artwork produced by colleagues covered a wide range of topics, it was interesting to see the number that touched on our natural world around us; nature, the environment, sustainability, and landscapes were popular themes which arose and were explored in many of the artists' work. We followed up this exhibition with an internal webinar with some of the artists interested in this topic. It was a brilliant conversation hearing about personal interests and experiences from watching the decline of seabirds on the Scottish east coastline to artists actively choosing the most environmentally friendly materials for their work so that their practise matches their message.

In the Frame: Conserving Scotland's Art was an informative display at the National which gave visitors an insight into the processes that go into conserving Scotland's national art collection. Part of this display touched on the sustainability practises that the Conservation Team have been embedding into their work. Topics covered included the department's move towards using green solvents, how they have clarified the ethical sourcing of the gold used, as well as considering the sustainability of the timber sources currently used in the framing processes. Visitors were encouraged to respond to the display by creating their own pictures, many of which linked to the environment around us, helping NGS to understand the interests of our visitors.



In the Frame display – visitors' artworks

Members of our Collection & Research directorate supported the work of the University of Glasgow 'Discipline Hopping Peatlands & Wetlands Group'; a multidisciplinary group which considered integrated approaches towards understanding the cultural and scientific value of these landscapes. The research and climate mitigation workshops led by NGS Curators, looked at historic depictions of wetlands and peatlands in art and photography, stimulating discussion around sites that have been lost or significantly changed and present-day management and preservation. Tapping into the group's interdisciplinary insights also helped provide NGS with an enriched understanding of these images; opening up new ideas for encourage audiences to engage with their natural environment through the national collection.

Learning & Outreach

'Your Art World' is an ongoing project run by our Learning & Engagement Team which challenges 3 to 18-year-olds to make and share their art – the art challenges are set by young people across Scotland to inspire creativity. Some of the topics suggested and explored include 'Will the world ever end?' and 'What would it be like to be tiny like a bee?'. A current challenge came from Dounby Community School in Orkney who decided on the theme 'protect' to demonstrate their commitment to protecting the environment, inspired by their concern for the litter that regularly washes up on their shores. All 152 children from the nursery and primary have helped create an installation about the things they want to protect, with a central mascot 'Bob' who has been made from recycled materials. Their work will be displayed at the National later in 2023.



Dounby Community School's mascot 'Bob' made from recycled materials.

The Outreach Team's 'Town Takeover' project supported 35 young artists in Cumnock to link the past to the present and imagine what the future of the area could be. The project discussed major issues within the region such as relative deprivation, employment, industrial work and working-class life, economic sustainability, green energy technology and the climate crisis. The young artists created their own manifesto and used creative responses that were displayed around the town centre to help conjure a vision of hope and possibility for the young people of East Ayrshire for the future.

NGS has continued engagement work with communities in the North Edinburgh area as part of the new Scottish National Gallery (SNG) project and The Art Works. Freelance artist Kate Temple led a natural ink making workshop at the Modern for members of the Granton Castle Walled Garden Group. Inspired by autumnal artworks in the collection, the workshop used foraged plants and berries such as elderberries, rosehip, and brambles to create inks used for creating art. The group were able to bring some of their own materials for ink making from their community garden.

Plans for 2023 – 2024:

- Your Art World display at the National Gallery 2023.
- Research to support responsible tourism communication with our visitors.
- Digital engagement on the Climate & Ecological Emergency.

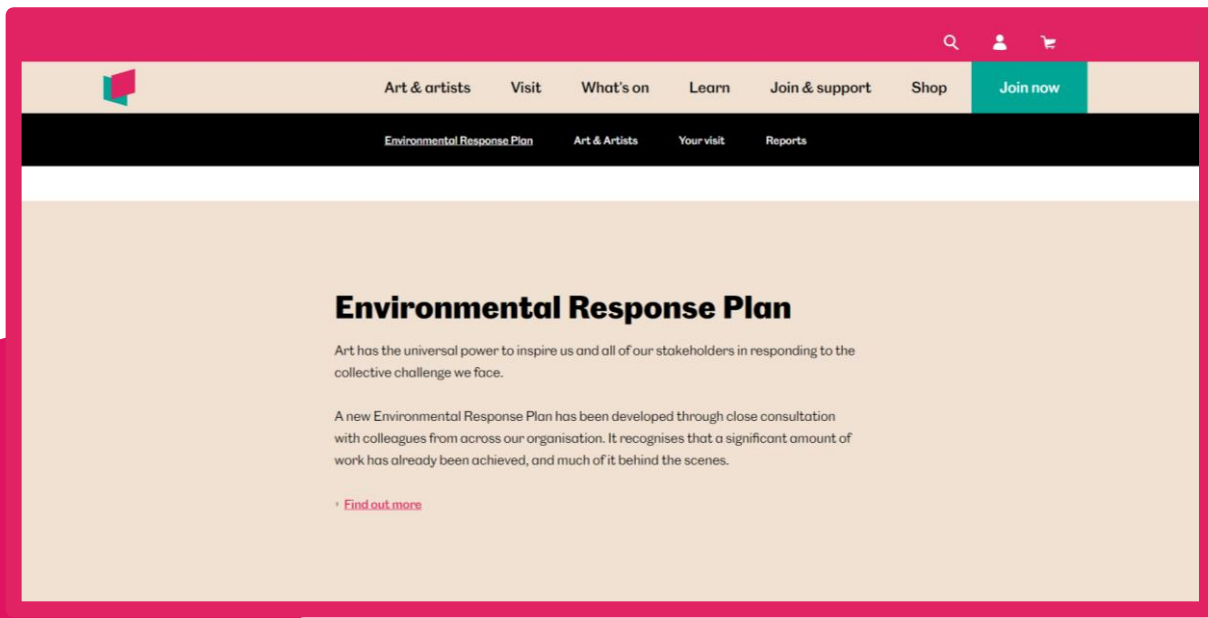
Working with partners



Creative Carbon Scotland leading the SNaCC event.

National Galleries of Scotland have been an active member of the Scottish National Culture for Climate (SNaCC) group since its inception two years ago. This is an informal network of key cultural organisations in Scotland, coordinated by Creative Carbon Scotland. The work of the group focuses on using the collective voice of the organisations to show the importance of arts and culture in addressing the Climate & Ecological Emergency. 'Strengthening Culture's Role in Climate Action' was a learning event held at V&A Dundee in September 2022, with colleagues from our Conservation, Collections & Research, Marketing & Communications and Learning & Engagement attending. We supported a session with artist Patricia MacDonald about the role of art and collections in engaging with audiences.

Our Director of Conservation and Collections Management and a member of our Learning & Engagement Team joined Creative Edinburgh’s session ‘Creative Circles: Inspiring Climate Action’ to talk about the power of our arts and culture in making derelict and underused land accessible, culturally valuable, and biodiverse to benefit local communities. This session was held in the Granton area with a site tour of the future NGS collections building, The Art Works.



NGS Sustainability website with projects and updates.

Over the past year we have worked with partner organisations such as Museums Association, Museum Galleries Scotland, Sustainable Scotland Network to provide blogs and webinars to give insight into our work on the environment – both positive and negative experiences. These case studies and projects can be found on the updated NGS Sustainability web page, open for everyone to access.

We partnered with Scottish Government for World Art Day in April 2022 to write a blog about our approach to sustainable procurement which is a key component of engaging people that we work with on sustainability. We have focused on improving our Scope 3 emissions data and begun to look at our biggest contracts which could help reduce emissions with these suppliers. We continue to strengthen our environmental requirements in our Terms & Conditions as well as tender processes for all large contracts.

Plans for 2023 – 2024:

- Continued engagement with café and restaurant partners.
- Further participation in the Scottish National Culture for Climate group.
- Participation in sector advocacy for environmental action.

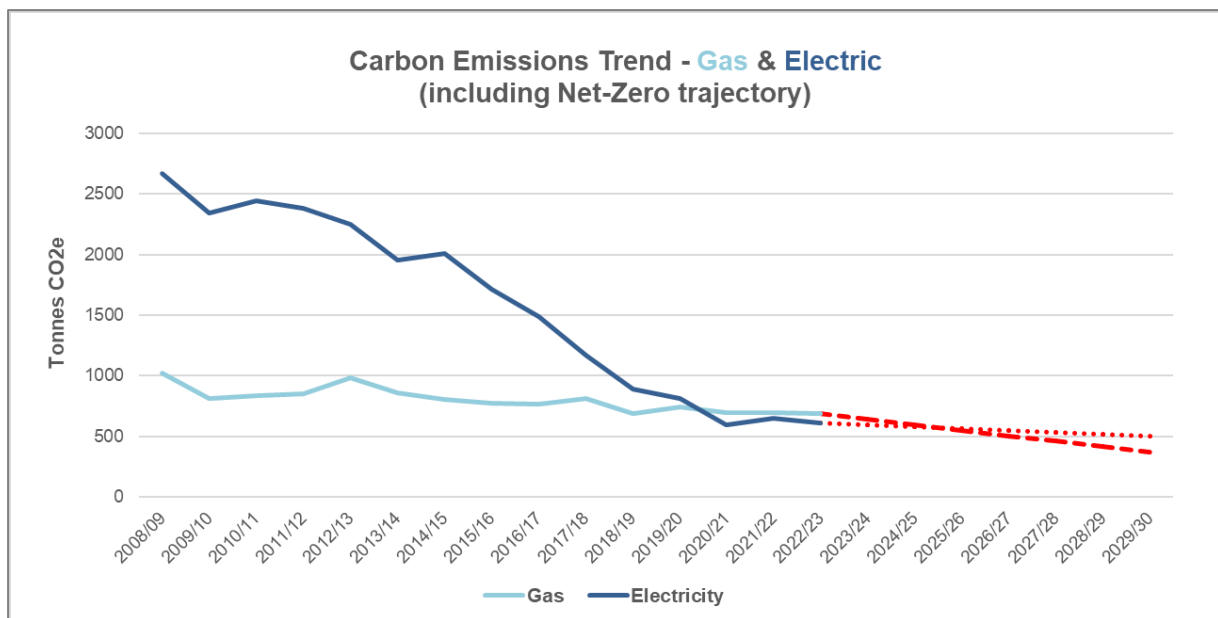
Achieving Net-Zero

As Scotland aims to reach its net zero target before 2045, we will reduce our environmental impact by adopting low carbon alternatives wherever possible across our own estate.

Energy & Carbon Management

Energy

In 2022/23 carbon emissions from utilities dropped slightly from the previous year from 1346 tCO₂e to 1303 tCO₂e. Some further efficiencies have been identified with the replacement of older boiler systems. Although positive news in terms of carbon emissions reductions, the cost of utilities has increase sharply in response to the energy crisis. For 2022/23 the annual cost of gas in particular rose by over 150% from the previous year. We expect to see a similar trend with electricity costs increasing in 2023/24. The cost of utilities has a significant impact on the organisational budget; therefore, energy efficiencies will continue to be a priority for both carbon and budgetary reasons.



As carbon emissions from energy are the largest part of NGS' carbon footprint we are using the Scottish Government target year of 2038 for achieving net-zero. Planning for this pathway to net-zero emissions has continued, with further surveys being completed around the estate to inform feasibility studies and business cases for energy efficiency projects, fabric, and systems improvements, and low carbon technologies. The net-zero trajectory shown in the graph would be a

combination of all these projects with a residual 378tCO₂e from electricity use would need to be covered by offsetting or until the grid is fully 'decarbonised'. The planning and scheduling of this work is being embedded into the longer-term Estates Investment Planning which aligns maintenances as well as capital project planning.

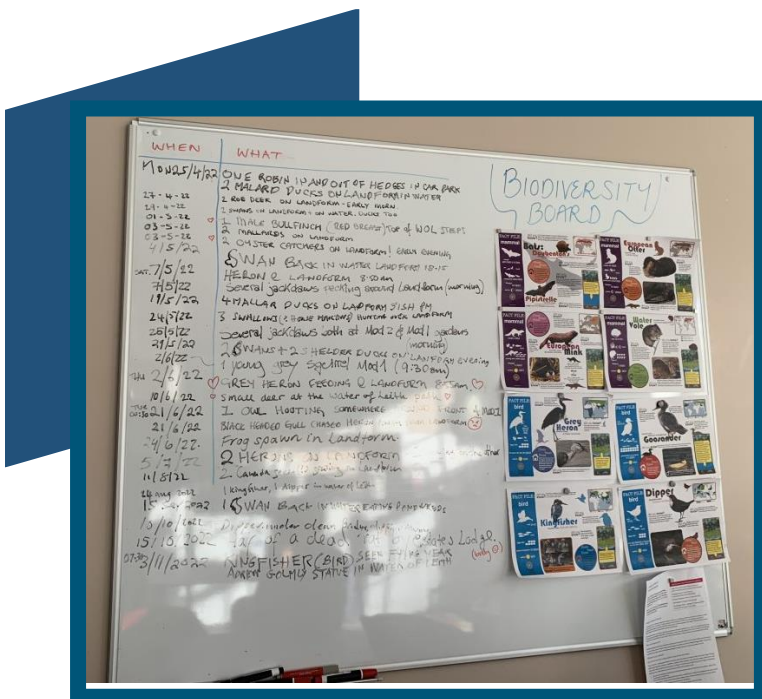
The Scottish National Gallery will be reopening in 2023, with improvements to the fabric and energy efficiency of the building while The Art Works project, a new collection care building in Granton, follows Passivhaus standards and aims to be net-zero on opening in 2025 though still in the planning process. Both these projects as well as the ongoing Estates Investment Planning will allow for the net-zero pathway to be integrated into the overall estates planning and allow for streamlined roll out of projects.

Plans for 2023 – 2024:

- Further planning of the pathway to net-zero greenhouse gases.
- Applying for Scottish Central Government Energy Efficiency Grant scheme.
- Monitoring of utilities cost increases.

Biodiversity

Following on from the biodiversity survey conducted in 2021, a list of good practice to support biodiversity and recommendations for improvements to the site maintenance was collated to form the basis of our Biodiversity Action Plan. In 2022, The Nurture Group took over our grounds maintenance contract with the focus being on the Modern site, through some maintenance and litter picking at the National and Portrait sites. We plan to work further in 2023 with the new company to align the maintenance with supporting the local species and habitats and increasing biodiversity where possible. Areas of ground have been identified for allowing long grass to grow, and compost and wooded areas have been created to allow for habitat piles.



The NGS Biodiversity Board in our social space for colleagues to add sighting to – this is added to website iRecord.

As part of our annual tree inspection surveyed by specialist arborists, 20 trees within our grounds were found to be diseased and in danger of dropping branches posing a serious risk to our visitors and colleagues. Funding has been secured to support the planting of new trees, and in line with the biodiversity survey recommendations these trees will be native and diverse species.

The biodiversity survey identified some local species of particular interest that we could support such as badgers and otters who are found around the Water of Leith area. We arranged a visit with the organisation Scottish Badgers to better understand our role in the local area and confirm that our maintenance practises around the grounds support this protected species.

The 'Biodiversity Board' in our colleague social spaces continues to be of interest, with lots of species being recorded throughout the year. Many birds such as swallows, bullfinches, grey wagtails, oystercatchers, and owls have been sighted, but also a surprise appearance from a few roe deer who had made it to the Water of Leith area and into the grounds of the Modern.



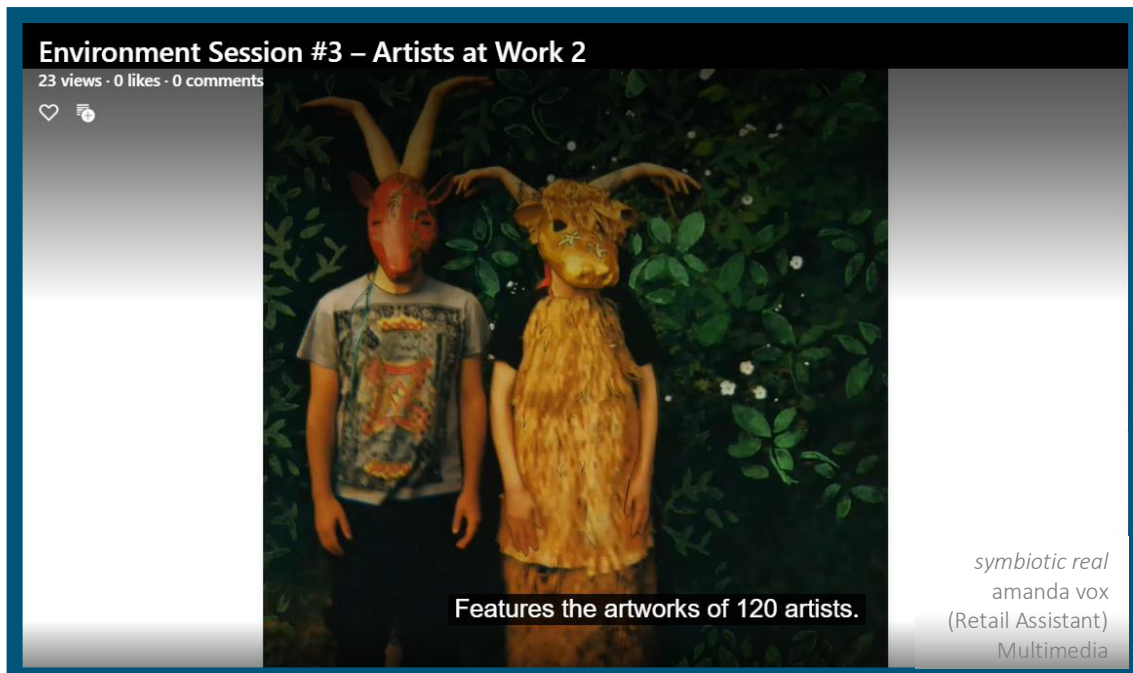
*Roe deer print
(within the blue circle) found in
the Modern grounds.*

Plans for 2023 – 2024:

- Further ground improvements to support local biodiversity.
- Engagement with local conservation organisations such as Scottish Badgers and Water of Leith Conservation Trust.
- Engagement of colleagues and visitors on site.

Empowering Colleagues

Colleague engagement has been a key focus throughout 2022/23, with the internal Environmental Response Engagement Group supporting communications. A plan has been developed to continuously update colleagues through quarterly intranet updates, all staff webinars and dedicated environmental webinars. These Environmental Session webinars have been a primary way of giving colleagues a deep dive into specific projects at NGS, or an insight into how different departments are approaching the environment priority. External speakers are invited along to the sessions to give insight into the wider sustainability sector, we have been supported by Julies Bicycle, Creative Carbon Scotland, Sustrans and Museums Galleries Scotland so far.



Environment webinar held for colleagues for sustainability project updates.

Resources have also been made available to colleagues, in particular, one that outlines all the networks and organisations that are working on sustainability in the arts and culture sector. This resource allows for colleagues to easily access helpful partner organisations who have case studies, research, guidance, or networks of people who are already working on a host of environment improvements.

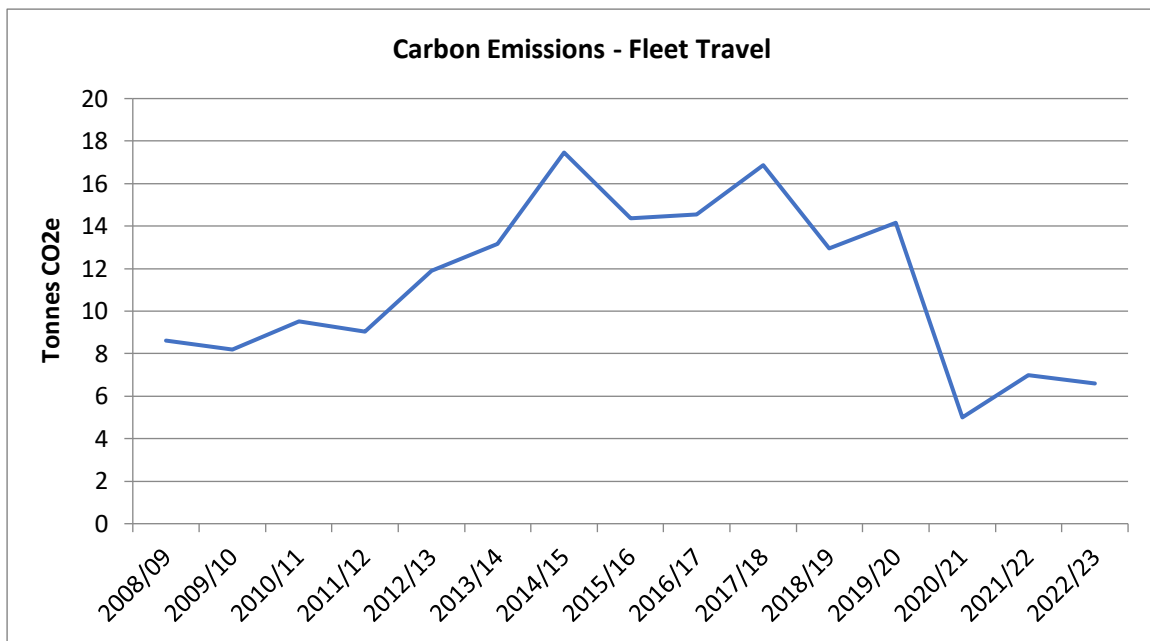
At the start of 2023 we rolled out NGS Climate Literacy Training for all colleagues. This half hour training covers the very basics of climate science, frequent terminology used while talking about climate change and looks at the impacts of climate change internationally, in Scotland and well as for NGS. The training is being delivered via webinar and in-person, when possible, to allow for departments to discuss the different impacts of climate change on their own work and allow for questions and discussion time. All colleagues joining the organisation are asked to complete the training as part of their induction process. The topic of environmental sustainability has also been embedded into other development sessions at NGS such as Project Management training and Procurement training.

Plans for 2023 – 2024:

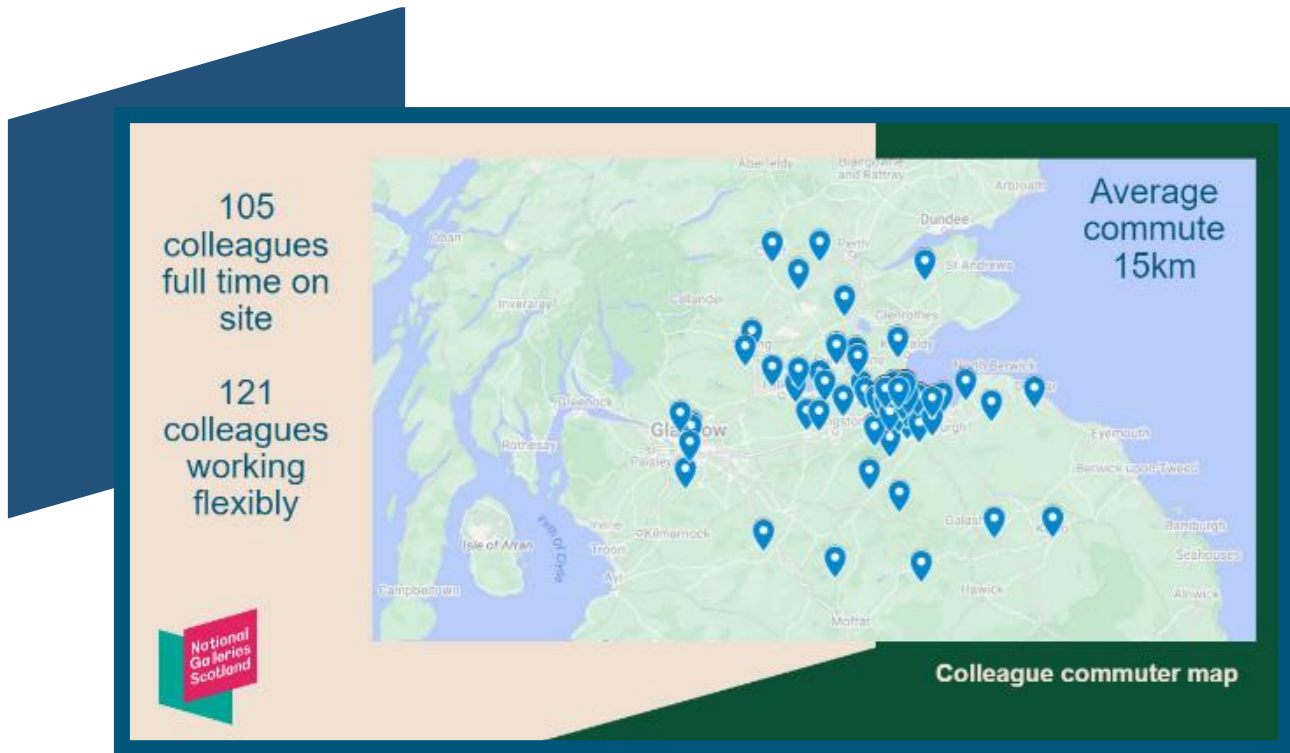
- Update to resources available on internal sustainability pages.
- Embedding sustainability into all colleague training.
- Further engagement sessions for colleagues on key topics.

Sustainable Travel

Carbon emissions from the NGS fleet stayed fairly similar to the previous year, remaining around 7 tCO₂e. Emissions from our business travel (rail and flights), have increased as travel restrictions were lifted in 2022. Although there has been an increase in these emissions, it has been positive to see that they have not returned to pre-Covid levels, with colleagues prioritising using video conferencing over in-person meetings. We look to continue this trend and keep reducing our emissions over both fleet and business travel.



A travel survey was completed in November 2022 to understand colleague commuting behaviours as well as approaches to business travel and travelling between NGS sites. The survey was completed by 54% of colleagues and showed the trends and insights of both colleagues working onsite as well as hybrid style working. It was found that 82% of these colleagues are using active or sustainable transport to travel to work, with the bus and walking being the more common mode of travel. It was interesting to see the difference in approaches to commuting since our previous survey pre-Covid in 2017/18, with commuting distance now being longer and many colleagues preferring to use video conferencing as a substitute for business travel. This survey will help form the basis of our Sustainable Travel Plan to be produced in 2023/24 and has helped identify areas for improvements across our fleet and facilities as well as communications with colleagues on sustainable and active travel options.



Findings from 2022 Travel Survey

Through our Collections Management team, we have started to consider ways that we can monitor and report on the carbon emissions associated with the movement of our art, during tours, loans, and acquisitions. These emissions are not all currently included within the reporting data, only the emissions from art being transported by our own fleet vehicles. Other emissions are generated through fine art shipment companies that are used for destinations further afield. This topic is one that is being considered on a sector level, so that all culture and arts organisations can gather data and report in an aligned way. The Gallery Climate Coalition are working with arts organisations and shipping companies to improve these reporting processes; we look to align with the sector and include these emissions in future reports.

Plans for 2023 – 2024:

- Production of NGS Sustainable Travel Plan.
- Improvements to travel reporting of art transport.
- Revisit business case for colleague e-bikes as part of NGS fleet.

Protecting the Collection

We will prepare for the effects and impacts of climate change in order to protect Scotland’s world-class art collection for future generations.

Green Collection Care

The care of the national art collection is central to NGS’ work and the Collections Care department have been considering ways in which policy, processes and materials can be improved to benefit the environment. The department have been participating in sector consultations and supporting improvements to approaches to collection care through multiple organisations such as the Institute of Conservation (ICON), Arts Council England as well as the National Museums Directors’ Council. As part of the Heads of Conservation group through ICON, NGS have collaborated to create a joint committed for all participating organisations to balance the care of and access to collections with the demands of sustainability; helping drive energy consumption reductions and emissions as well as mitigating the effects of climate change.

One of our NGS Senior Conservators participated in the organisation of the conference ‘Sustaining Art: People, Practice, Planet in Contemporary Art Conservation’ which welcomed artists, conservators, technicians, curators, practitioners, academics, and art movers to the event in November 2022. The conference looked at the key impacts that conservation and preservation of contemporary art could have on the peoples, practices and the environment associated with them.



Sustaining Art conference

In terms of our own practises, improvements have been made across the board. Virtual couriering has been continued since Covid-19 whenever possible, this reduces the amount of travel our colleagues must do. More detailed sustainability criteria have been embedded into the project management for exhibitions so that colleagues consider both the positive and negative environmental impacts of the exhibitions that we display.



Art crates repurposed for exhibition displays.

The Art Movement team continued to improve the materials used, with plastic glove recycling through TerraCycle now becoming a permanent fixture. Working with the NGS waste contractor Changeworks Recycling, the team have also begun to recycle the polythene and paper tape used for packing art to be transported. Following on from the reduction in paper printing during Covid-19, further administration processes have been adapted to be paperless also.

Art crates returning from last year's international touring exhibition to Japan presented us with a great opportunity, not only to retain and reuse some but also find new ways of sustainably disposing of the others. Our Learning & Engagement team took on 7 crates for reuse as part of an exhibition at the Portrait, while another 23 crates have been delivered by the Art Movement Team shuttle to communities across Edinburgh to use as garden planters – their new homes include Friends of Burdiehouse, Corstorphine Community Centre, Grove Garden in the Park, the Meadows Community Garden and the Salvation Army community garden near our Granton Art Store and the site for The Art Works. We look forward to seeing these in action in the seasons to come.

Plans for 2023/24:

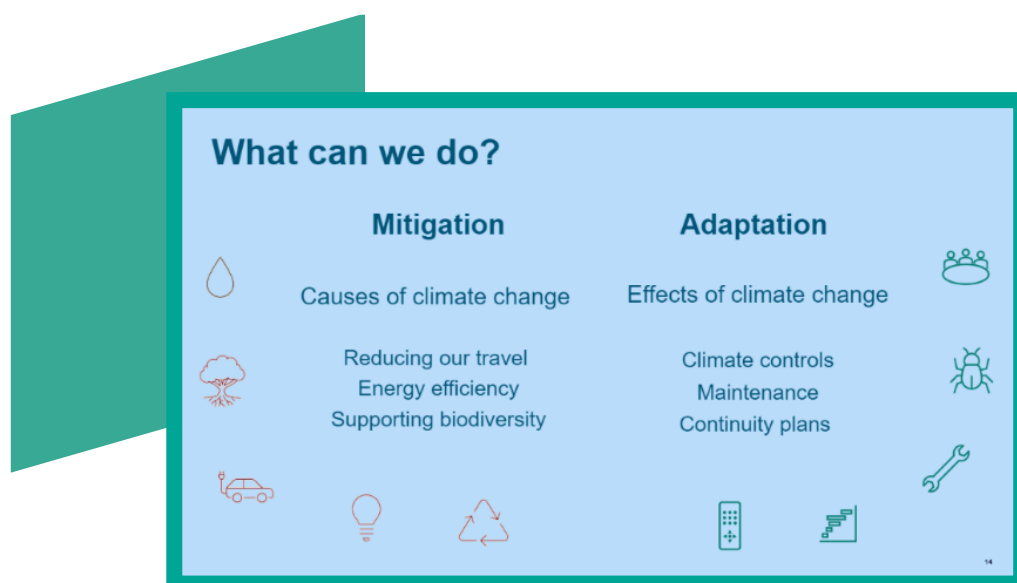
- Participation in refresh of the Bizot Green Protocol policy.
- Revision of NGS Collections environment policy and guidance.
- Further research on green solvent use in Conservation.

Climate Impacts & Adaptation

Understanding and collating information on climate adaptation has started to be embedded into some of the key processes within NGS. Through the dedicated Climate Literacy training colleagues have been introduced to the difference between climate mitigation and climate adaptation, with examples of current adaptation practises that are already adopted such as general maintenance and the disaster cabinets. Project Management training for colleagues also prompted colleagues to think about the long-term climate changes that we may need to prepare for within the project planning process.

Within the Chief Operating Office, Emergency Response documents are being updated and disaster response planning have started to consider elements of climate impacts such as storms and rain events. Further work is planned to roll out adaptation planning with key departments such as Collection Care and Estates. Improvements to the current Estates, particularly the National with the Scottish National Gallery project, will support futureproofing of the building to help with flooding and extreme rain events. Similarly, climate adaptation has been embedded into The Art Works project from the first stages of planning.

Within the biodiversity survey and the subsequent recommendations, future climate scenarios will be considered to adopt nature-based solutions which has been embedded into future grounds maintenance and species being planted. The focus on plants that can help slow surface run off in heavy rainfall events, as well as plants that can support shade during intensive heat periods.



NGS Climate Literacy Training covering adaptation.

Plans for 2023 – 2024:

- Dedicated adaptation planning with Collection Care and Estates department.
- Implementation of nature-based solutions in Biodiversity Action Plan.

Appendix

The following table provides a summary of how we are performing against our carbon reduction targets.

	Emissions	2008/09 (Baseline)	2021/22	2022/23
Targets	Total Carbon (CO ₂ e)	3,745	1346	1303
	Our Target 60% by 2021/22	-	-64%	-65%

The following chart provides a summary of how we are performing in energy use.

	Scope	2008/09 (Baseline)	2021/22	2022/23
Gross Emissions (Tonnes CO ₂ e)	Scope 1: Direct (Gas)	1,021	695	691
	Scope 2: Indirect (Electricity generation)	2,476	612	561
	Scope 3: Indirect (Electricity transmission & distribution)	193	54	51
	Total	3,690	1361	1303

The following chart provides a summary of how we are performing in transport.

Transport	Scope	2008/09 (Baseline)	2021/22	2022/23
Gross Emissions (Tonnes CO ₂ e)	Scope 1: Direct (Vehicle fleet)	8.62	7.00	6.60
	Scope 3: Indirect (Air and rail business travel)	-	1	8

The following chart provides a summary of how we are performing in water.

Water	Scope 3	2008/09 (Baseline)	2021/22	2022/23
	Water m ³	20,639	8,979	13,060
	Water tonnes (CO ₂ e)	18.09	4.00	5.50

The following chart provides a summary of how we are performing in waste.

Waste	Scope 3	2008/09 (Baseline)	2021/22	2022/23
	Waste Total (tonnes)	117	165	211
	Waste Recycled (tonnes)	16	15	27
	Waste to Anaerobic Digestion (tonnes)	0	26	30
	Waste to Refuse Derived Fuel (tonnes)	0	95	117
	Waste to Landfill (tonnes)	97	0	0
	Waste (CO ₂ e) tonnes	28.38	3.00	3.70

Emission Factors 2022/23

Electricity Generation (kWh)	Electricity Transmission & Distribution (kWh)	Gas (kWh)	Water Supply (m3)	Water Treatment (m3)	Waste to Landfill (tonne)	Waste Recycled (tonne)	Diesel (Litre)	Petrol (Litre)
0.193	0.018	0.183	0.149	0.272	467.008	21.280	2.558	2.162

Scope Definitions

Scope 1: Direct

This includes direct consumption of gas and oil. Emissions from NGS owned fleet vehicles are included.

Scope 2: Indirect

This is for emissions which result from energy consumed which is supplied by another party. For us this is electricity generated by another party.

Scope 3: Others

This is for emissions relating to official business travel, waste disposal, water supply and treatment and electricity transmission and distribution.