Gardens Libraries & Museums
UNIVERSITY OF OXFORD

# GLAM Environmental Sustainability

## Annual Report for 2024-25

# Executive Summary

This report provides an update on progress toward the Gardens, Libraries and Museums (GLAM) environmental sustainability goals - achieving **net zero carbon and nature positive by 2035**, in alignment with the University of Oxford's Sustainability Strategy.

The 2024–25 financial year began with the successful completion of the GLAM initiative to develop a **carbon net zero strategy** for the division. Since then, efforts have focused on **implementing carbon action plans**, advancing approaches for **nature positive** and **climate adaptation**, and continuing to strengthen **staff and public engagement**.

**Key areas of progress in 2024-25**:

- **Carbon Net Zero:** Purchased goods and services remain GLAM's largest source of emissions. GLAM has set an initial target for **50% of total spend to be with suppliers who have a net zero goal**. A desktop analysis and supplier survey found that **35% of current spend** meets this criterion. This figure is heavily influenced by licensed library content and will require targeted engagement with key supplier categories, now underway. GLAM also focused on **waste reduction and recycling**, rolling out new waste facilities and introducing **visitor recycling options** at the **Ashmolean Museum** and the **Museum of Natural History**, in line with *Simpler Recycling* legislation.
- **Nature Positive*:** Baseline surveys across GLAM sites were completed, establishing a process for regular updates. A **draft biodiversity action plan** has been developed and piloted at the **Museum of Natural History**.
- **Climate Adaptation:** A **draft climate adaptation plan** was developed through scenario planning and risk assessments, identifying potential risks, opportunities, and actions across GLAM sites.
- **Engagement and Capacity Building:** Sustainability is being further embedded across GLAM through initiatives such as **Carbon Literacy Training** and the creation of a **sustainability-themed card game**. GLAM also extended its sphere of influence, including through a **keynote address at the London Book Fair** and **signing the Green Libraries Manifesto.**
- **Recognition and Data Development:** A new **carbon data model** has been developed to enhance understanding and reporting of emissions. This work was **highly commended at the University's Vice-Chancellor's Awards**.



**Nature Positive – the University has changed its use of 'biodiversity net gain' to Nature Positive as this aspect covers both direct and indirect impacts*

# Carbon footprint – Financial year 2024-25

The adjacent chart presents the **GLAM carbon footprint for 2024–25**, covering all emission categories within the defined carbon boundary. **Visitor and reader travel** are excluded, while **employee commuting and home working** data reflect the **baseline year** and may be refined in future updates.

Total emissions for the year were **13,0622tCO₂e**, representing a **no change compared with 2023–24** and a **1% increase from the baseline year (2021–22)**.

**Visitor numbers** continued to grow, reaching **3.6 million in 2024–25**, which contributed to increased **retail and catering activity**. Despite this growth, **carbon intensity per visitor** has declined substantially - from **4.12kgCO₂e per visitor in 2021–22** to **2.81kgCO₂e in 2024–25**. Similarly, **carbon intensity per £ of income** fell from **0.16kgCO₂e in 2021–22** to **0.14kgCO₂e in 2024–25**.

Encouragingly, **emissions from fuels, electricity, and waste** all decreased during the year. GLAM, through the University, continues to purchase electricity collectively, with ongoing discussions focusing on transitioning to a REGO-backed renewable tariff or a Power Purchase Agreement (PPA).

Within **Scope 3**, **purchased goods and services** remained the largest emissions source, increasing from **35% of total emissions in 2023–24** to **nearly 42% in 2024–25**. This trend is expected to continue as GLAM's **building emissions fall through ongoing decarbonisation efforts**.

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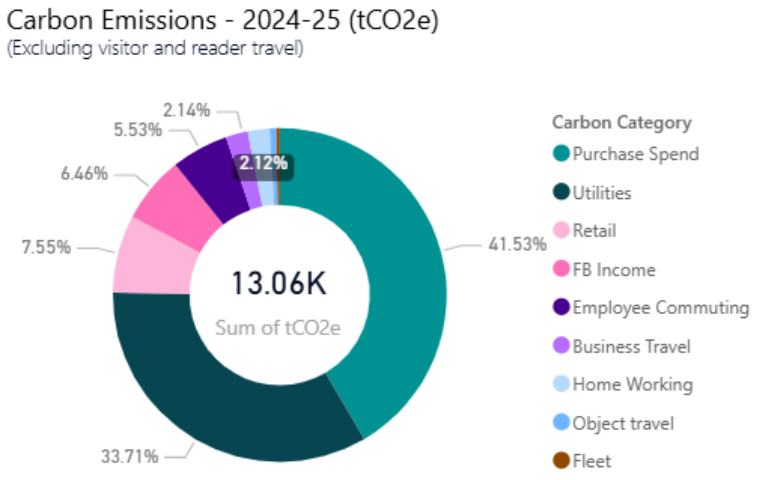
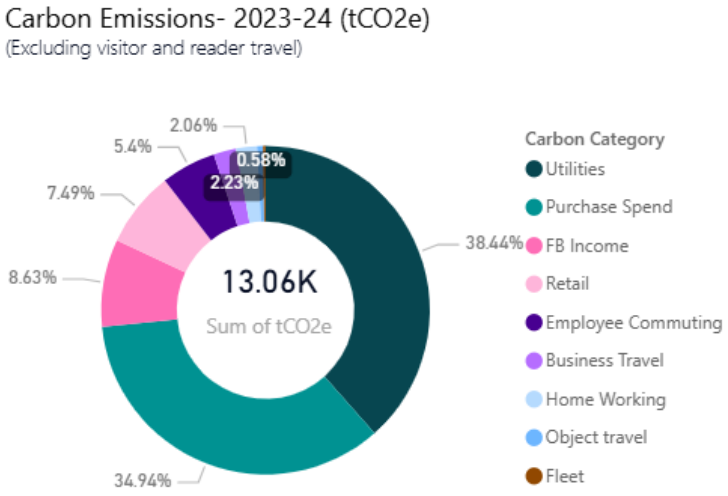
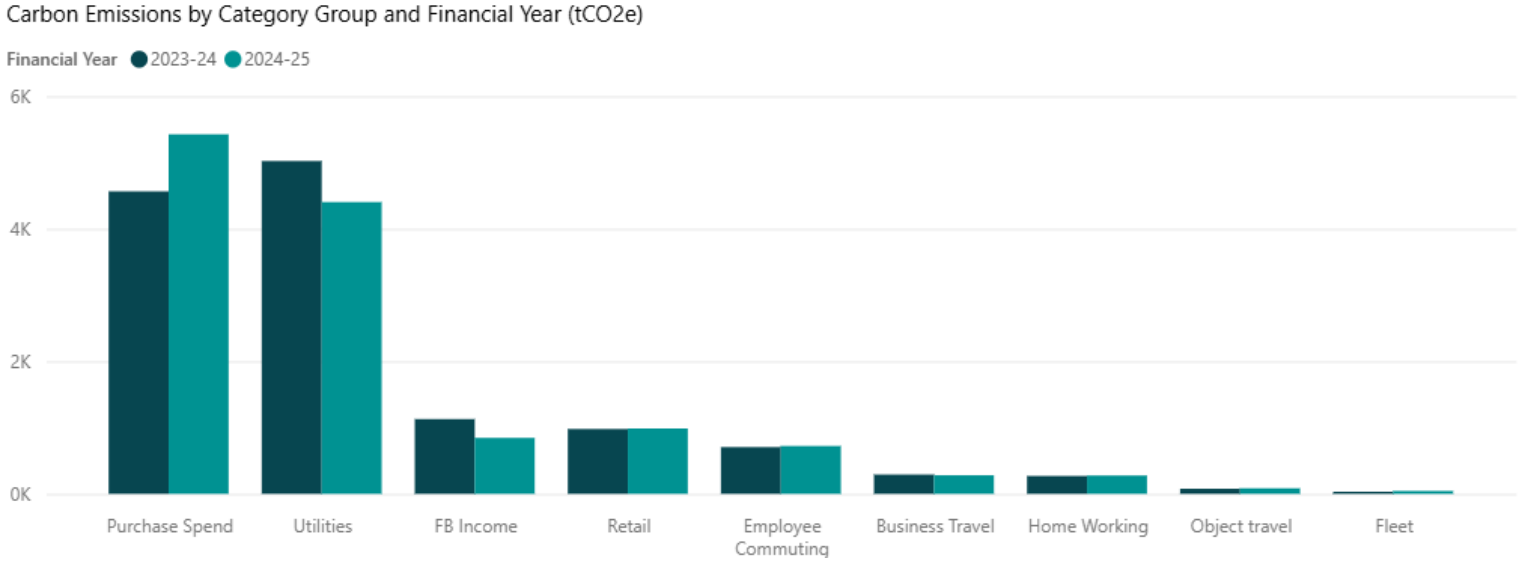


# Carbon reduction focus for 2025-26 & beyond

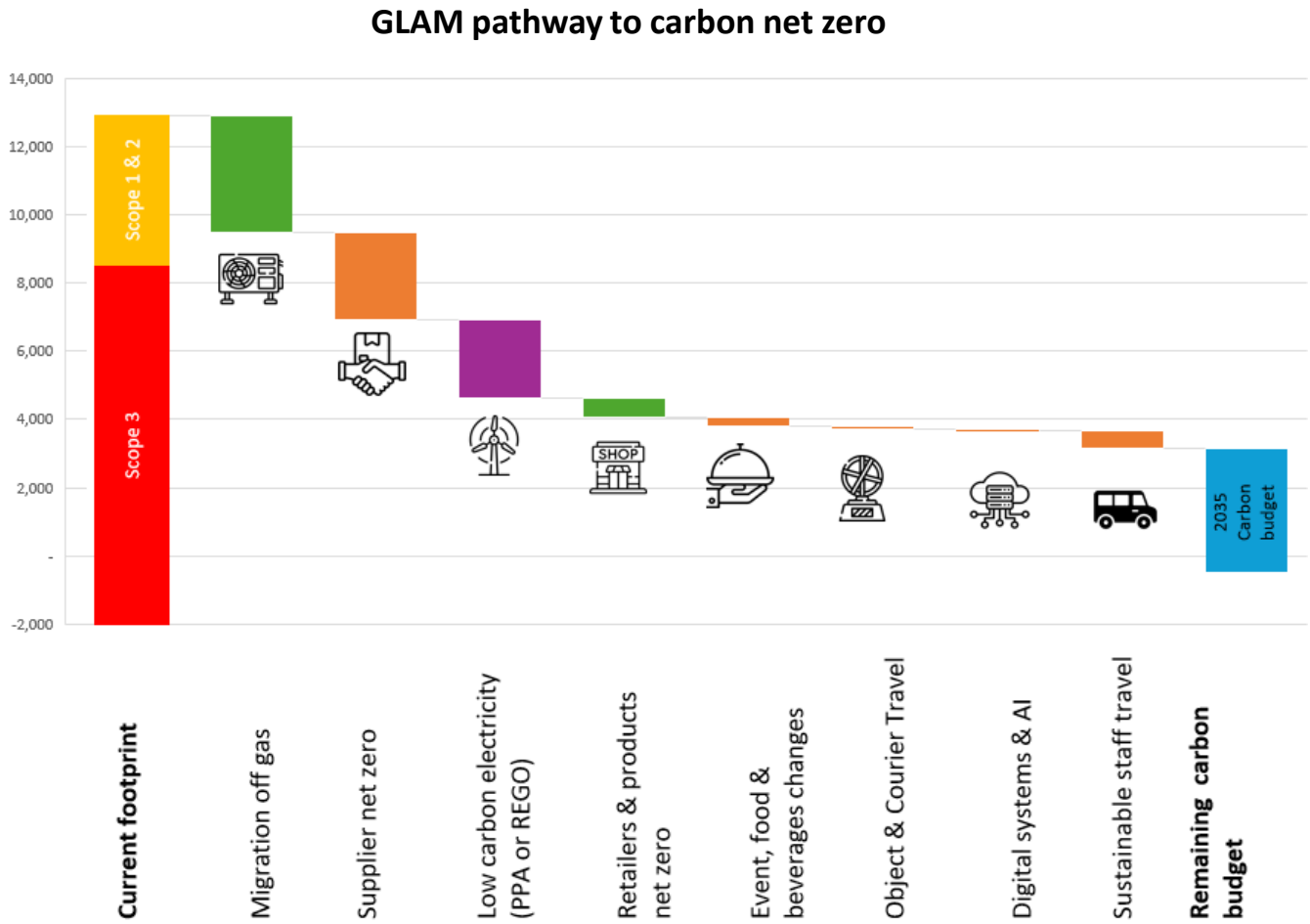
The **waterfall diagram** illustrates GLAM's pathway to achieving its **decarbonisation goals**. Six major areas of focus have been identified:

1. **Migration off gas:** Continue to support and work with **Estates** to deliver the University's **heat decarbonisation plans**, reducing reliance on fossil fuels across GLAM sites.
2. **Supplier net zero:** Engage suppliers to understand their **environmental commitments**, develop a structured **supplier engagement approach**, and more clearly **embed sustainability within procurement processes**.
3. **Low-carbon electricity:** Encourage the University to adopt a **Power Purchase Agreement (PPA)** for renewable energy or ensure that GLAM remains consistently supplied by a **verified renewable electricity tariff**.
4. **Retailers and product net zero:** Collaborate with retail suppliers to assess their **environmental performance** and explore introducing a **product grading system** to phase out unsustainable items.
5. **Events, food, and beverage:** Continue to expand **low-carbon menu options** and assess the **biodiversity impacts** associated with food and drink offerings across GLAM venues.
6. **Digital:** Develop a **digital carbon footprint** to identify emission sources and guide reduction actions.
7. **Sustainable staff travel:** Continue to use the University's **travel hierarchy** for business travel, analyse key drivers of air travel, and promote **lower-carbon alternatives** wherever possible.

Addressing these six priority areas is projected to **reduce GLAM's carbon footprint by more than 9,000 $tCO_2e$ by 2035**. Any residual emissions will be **offset in line with University policy;** the cost of this could be over £350,000 per year.

In parallel, GLAM will continue ongoing actions such as **reducing energy consumption**, **improving recycling rates**, and promoting sustainable operational practices.

The **full carbon action plans** are available internally for GLAM colleagues.



# Other areas for 2025-26 & beyond

GLAM's environmental commitments extend beyond carbon reduction. The following areas will remain key priorities throughout **2025–26**:

1. **Climate Risk and Adaptation:** An initial **climate adaptation action plan** has already been developed. The focus for 2025–26 will be on delivering the **first phase of actions**, including auditing existing policies and conducting building surveys in collaboration with the heritage team.

2. **Nature Positive:** GLAM is committed to achieving **nature positive by 2035**, in alignment with the **University of Oxford's target**. Collaboration with the **Museum of Natural History** has produced a **draft biodiversity action plan**, which will be refined and extended to other GLAM units during 2025–26. Work will continue on establishing **biodiversity baselines** and exploring **supply chain impacts** on biodiversity.

3. **Improving Insight and Data:** The **carbon data model**, developed in 2024–25, will be further enhanced to include detailed analyses of **exhibitions, visitor travel, and digital carbon footprints**. Building on the **carbon baseline established in 2023–24**, GLAM will focus on improving the quality and granularity of both **carbon** and **biodiversity footprint data**, particularly in relation to **food and beverage operations**.

4. **Engagement and Collaboration:** In 2025–26, GLAM will continue to promote the message that **'every job is a climate job'**, embedding sustainability into all roles. Efforts will also focus on **expanding GLAM's sphere of influence** by collaborating with the wider University, peer institutions and sector networks, including **AIM**, **ALVA**, **Fit for the Future**, and the **Green Libraries Campaign**.

GLAM, in line with the wider University, will prioritise **reducing its own emissions** to minimise the need for offsets before **beginning to offset residual emissions from 2030 onwards**. This approach aligns with the **Oxford Principles for Net Zero Aligned Carbon Offsetting** and ensures that offsetting efforts do not create unintended impacts on communities or ecosystems.

*Carbon labelling of menus*

*New visitor recycling*

*New staff recycling*

*GLAM glove recycling*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Association of Independent Museums

Fit for the Future

ALVA
Association of Leading Visitor Attractions

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# Appendix

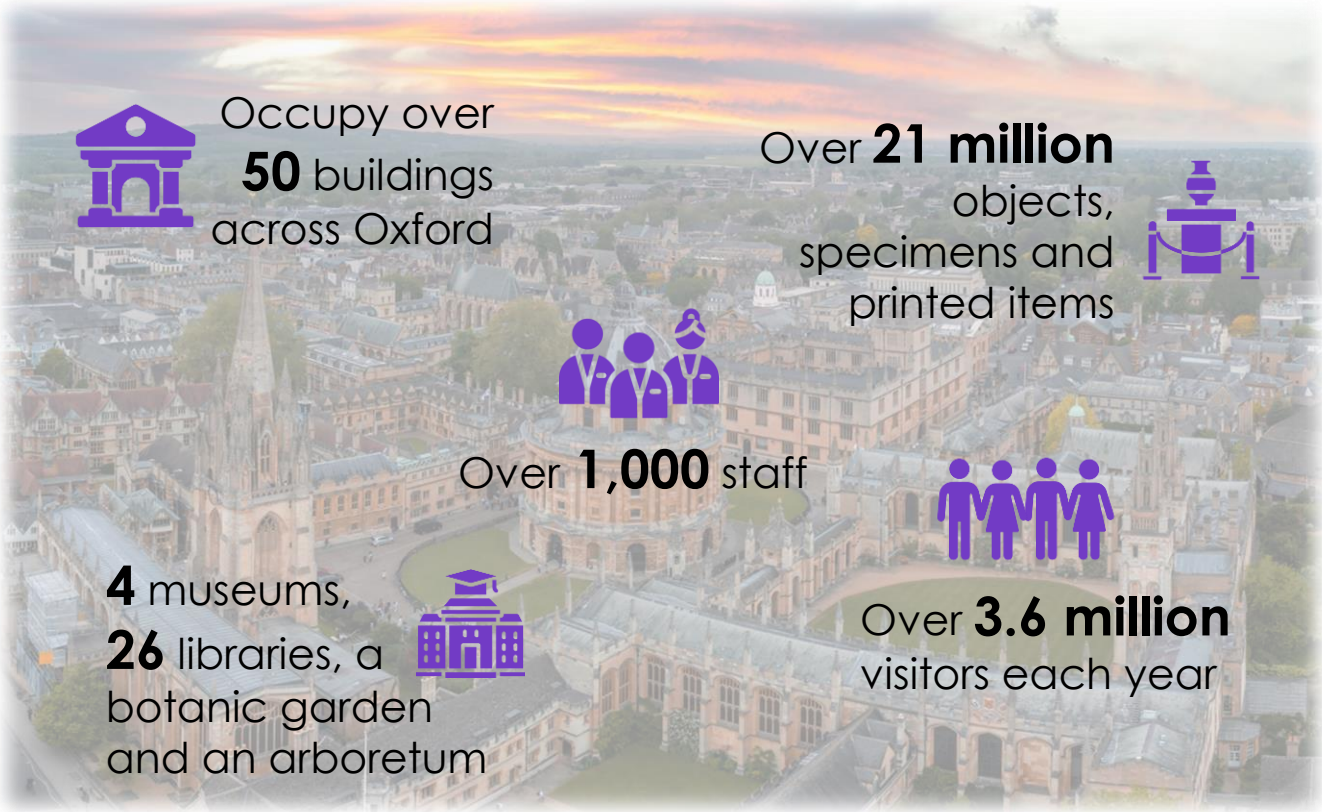
Overview of GLAM
Carbon Footprint – Boundaries and Methodology

# Overview of the gardens, libraries and museums

Oxford University's Gardens, Libraries, and Museums (GLAM) represent a diverse and prestigious group of institutions dedicated to the preservation, study and public dissemination of knowledge across a wide array of disciplines. GLAM comprises the:

- Oxford Botanic Garden and Arboretum
- Bodleian Libraries
- Ashmolean Museum of Art and Archaeology,
- History of Science Museum
- Museum of Natural History
- Pitt Rivers Museum
- GLAM Divisional Office.

Each institution holds a unique and significant collection of artefacts, specimens and documents, offering invaluable resources for both academic research and public education. The GLAM Strategic Framework has a guiding principle of environmental responsibility.



# Carbon footprint – our boundaries

Our approach is informed by the Greenhouse Gas (GHG) protocol. This protocol is the world's most widely used greenhouse gas accounting standard.

This identifies the material emissions sources to be included and defining this allows for repeatability in future assessments. This enables effective measurement and management to guide clear reduction efforts.

The diagram adjacent provides an overview of the applicable emissions sources included in the boundary for GLAM's carbon footprint assessment

## SCOPE 1 & 2

- Building Electricity Consumption
- Building Gas Consumption
- Fleet Fuel Consumption
- Refrigerant Leakage

## SCOPE 3

- T&D and WTT*
- Waste
- Upstream fleet
- Water
- Purchases
- Object travel
- Retail
- Homeworking
- Business travel
- Food and beverage (F&B)
- Employee commuting

| | |
|---|---|
| Investments, Grants & Fundraising | No data available |
| Cloud-based IT Services & University IT Services | No data available |
| Visitor travel | **Analysis included but not within formal boundary** |

* T&D (Transmission and Distribution) and WTT (well-to-tank) represent the emissions associated with processing and distribution of fuels/energy which are classified as Scope 1 & 2 emissions (e.g. natural gas, electricity, diesel).

# Carbon footprint – data sources and approach

| SCOPE | EMISSIONS AREA | DESCRIPTION OF DATA SOURCE |
|---|---|---|
| 1 | Fuels | Monthly apportioned fuel (natural gas) consumption data via SystemsLink. Litres of diesel used for the sprinkler system in the Swindon Book Storage Facility also included. |
| | Fleet | Total distance travelled |
| | Refrigerants | Engineer reports containing leak test data, including leakages, additions and refrigerant type within the baseline year. |
| 2 | Electricity | Monthly apportioned electricity consumption data via SystemsLink. |
| 3 | T&D and WTT | Data is the same as 'Fuels' and 'Electricity' – generated using carbon conversion factors. |
| | Upstream Fleet | Data is the same as 'Fleet' – generated using carbon conversion factors. |
| | Waste | Tonnes per waste stream including disposal route provided through SystemsLink. |
| | Water | Water consumption in $m^3$ provided through SystemsLink. |

| SCOPE | EMISSIONS AREA | DESCRIPTION OF DATA SOURCE |
|---|---|---|
| 3 | Purchased Goods and Services | Procurement spend including department, supplier, category and description. |
| | Retail | Procurement spend including department, supplier, product type and description. |
| | Food & Beverage (F&B) | F&B quantities with associated supplier provided LCAs, and catering commission from specific suppliers used for venue hire. |
| | Employee & Volunteer Commuting | Staff survey on commuting and working from home. Data extrapolated from survey respondents to total staff. A separate volunteer survey also used. This data is refreshed as required |
| | Working from home | |
| | Business Travel | Flight data is based on the University's flight levy model – based on actual distance and class travelled. Other business travel is based on the University's expense system, Concur, and a cost-based method is used. Distance estimated based on cost. Flight levy data used for flight data. |
| | Book, Manuscript & Object Travel | Transport mode and start and end destinations for all object and courier travel, including inward and outward loans. Tonnage provided for some journeys. |
| | Visitor & Reader Travel | Estimations of travel mode and distance based on audience survey providing partial postcodes or country of origin, and number of readers by types. This data is refreshed as required. |

For reporting purposes, fuels, refrigerants, electricity, T&D and WTT, waste and water are reported collectively as 'utilities'.

# Carbon footprint – buildings included

*The operational boundary for the carbon baseline includes the buildings utilised by GLAM in 2024-25 as indicated in the below table.*

## GLAM Buildings list (based on data available)

| BUILDING NAME | ASHMOLEAN MUSUEM | BODLEIAN LIBRARIES | BOTANIC GARDEN & ARBORETUM | DIVISIONAL OFFICE | HISTORY OF SCIENCE MUSEUM | MUSUEM OF NATURAL HISTORY | PITT RIVERS MUSEUM |
|---|---|---|---|---|---|---|---|
| Alden Press Annexe | ✓ | | | | ✓ | ✓ | ✓ |
| Arboretum Peacock Lodge | | | ✓ | | | | |
| Arboretum Staff Tea Room | | | ✓ | | | | |
| Arboretum Ticket Office | | | ✓ | | | | |
| Ashmolean Museum | ✓ | ✓ | | ✓ | | | |
| Atmospheric Physics | | | | | | ✓ | |
| Banbury Road 45 | | ✓ | | | | | |
| Beaumont Street 37 | ✓ | | | | | | |
| Bodleian Art, Archaeology and Ancient World Library | | ✓ | | | | | |
| Bodleian Library (Old) | | ✓ | | | | | |
| Botanic Garden | | | ✓ | | | | |
| Botanic Garden Charlotte Building | | | ✓ | | | | |
| Botanic Garden Cottage (Rose Cottage) | | | ✓ | | | | |

# Carbon footprint – buildings included

## GLAM Buildings list (based on data available)

| BUILDING NAME | ASHMOLEAN MUSUEM | BODLEIAN LIBRARIES | BOTANIC GARDEN & ARBORETUM | DIVISIONAL OFFICE | HISTORY OF SCIENCE MUSEUM | MUSUEM OF NATURAL HISTORY | PITT RIVERS MUSEUM |
|---|---|---|---|---|---|---|---|
| Botanic Garden Ticket Office | | | ✓ | | | | |
| Cast Gallery | ✓ | | | | | | |
| Clarendon Building | | ✓ | | | ✓ | | |
| Clarendon Institute | | ✓ | | | | | |
| Denys Wilkinson Building | | | | | | | ✓ |
| Dickson Poon Building | | ✓ | | | | | |
| Ewert House | | | | ✓ | | | |
| History of Science Museum | | | | | ✓ | | |
| Inorganic Chemistry | | | | | | ✓ | ✓ |
| JR Academic | | ✓ | | | | | |
| Littlegate House | | | | ✓ | | | |
| Manor Road Building | | ✓ | | | | | |
| Music Faculty | | ✓ | | | | | |

# Carbon footprint – buildings included

## GLAM Buildings list (based on data available)

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|---|---|---|---|---|---|---|---|
| Nissan Institute | | ✓ | | | | | |
| Norham Gardens 15 | | ✓ | | | | | |
| Old Road Campus Research Building | | | ✓ | | | | |
| Osney One Building | | ✓ | | | | | |
| Pitt Rivers Museum | | | | ✓ | | | ✓ |
| Pusey Lane Building | | ✓ | | | | | |
| Radcliffe Camera | | ✓ | | | | | |
| Radcliffe Science Library | | ✓ | | | | | |
| Robert Hooke Building | | | | | | ✓ | ✓ |
| ROQ Radcliffe Humanities | | ✓ | | | | | |
| Rothermere American Institute | | ✓ | | | | | |
| Said Business School | | ✓ | | | | | |

# Carbon footprint – buildings included

## GLAM Buildings list (based on data available)

| BUILDING NAME | ASHMOLEAN MUSUEM | BODLEIAN LIBRARIES | BOTANIC GARDEN & ARBORETUM | DIVISIONAL OFFICE | HISTORY OF SCIENCE MUSEUM | MUSUEM OF NATURAL HISTORY | PITT RIVERS MUSEUM |
|---|---|---|---|---|---|---|---|
| SERS | ✓ | ✓ | | ✓ | | | ✓ |
| St Cross Building | | ✓ | | | | | |
| Swindon Book Storage Facility | | ✓ | | | | | |
| Taylor Institution | | ✓ | | | | | |
| University Museum | | | | ✓ | | ✓ | |
| University Museum Lodge | | | | | | ✓ | |
| Wellington Square 01-07 (Rewley House) | | ✓ | | | | | |
| Weston Library | | ✓ | | | | | |

Other building are not available via SystemsLink and have been treated manually:

- Upper Heyford
- Girdlestone Memorial Library
- Horton Hospital Library
- Latin American Centre
- Cairns Library
- Japanese Library
- K B Chen China Centre Library

Radcliffe Science Library has no data available at all.

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