



Government
Property
Function

Government Property Sustainability Strategy

2022-2030



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Foreword

The UK government is at the forefront of the global fight against climate change.

Since 2000, the UK has decarbonised our economy faster than any other G20 nation.

We have reduced UK emissions by more than 40% since 1990. In 2019, we became the first major economy in the world to pass laws to end our contribution to global warming by 2050.

As hosts of COP26, we led the way in calling for fast, decisive action to make economies more sustainable.

The Greening Government Commitments have been updated and expanded. Defra is leading improvements through the National Adaptation Programme. We are making progress on our 25-Year Environment Plan. We are progressing with decarbonisation of our estate, reducing reliance on fossil fuels and improving energy efficiency of our buildings.

These developments make it abundantly clear that delivering on our ambition to create a Net Zero UK is at the top of our list of priorities.

The built environment, and therefore the public estate, is fundamental in achieving that ambition. The UK government manages – by some margin – the biggest property portfolio in the country. We know that buildings account for a significant proportion of total emissions and so driving sustainability and reductions in energy consumption in our own estate could not be more important.

The Government Property Strategy makes a clear commitment to create a smaller, better, and greener public estate. Ensuring we can achieve the greener element of that commitment is why we have developed this strategy.

It provides the roadmap we will follow to improve the public estate, making it greener, more resilient and more sustainable. It describes how the public estate will support the achievement of the Greening Government Commitments.

The strategy will help us achieve our target to reduce direct emissions from public sector buildings by at least 50% by 2032.

I am delighted to support the Government Property Sustainability Strategy 2022-2030.

Alex Chisholm

Chief Operating Officer for the Civil Service and Permanent Secretary (Cabinet Office)



Introduction

This strategy supports the Government Property Strategy¹, in particular the drive towards a higher quality, fit for purpose, shared, more efficient, productive and sustainable estate **which is smaller, better and greener**.

A Smaller, Better and Greener public estate is one which:

- Is right-sized to meet business requirements, making efficient use of space, affordable and more flexible.
- Is safe, well-designed, well maintained, accessible and meets the diverse needs of citizens and employees.
- Contributes to meeting net-zero emissions, adapting to climate change, improving nature and using less resources.

The scale of the challenge – and the opportunity

The Department for the Environment, Food and Rural Affairs (Defra) has developed the 25YEP, setting goals to improve the environment, and the Greening Government Commitments (GGCs)², which provide specific targets and a delivery framework for departments and other governmental organisations to improve their sustainability.

The 25YEP sets out a vision for this generation to be the first to leave the environment in a better state than we found it. This commitment focuses primarily on restoring and enhancing our natural environment, as well as on protecting our national institutions and boosting economic productivity. This strategy sets out how the Property Function will contribute to the delivery of the 25YEP, maximising the positive impact of our built estate and natural assets, improving the environment while contributing to broader economic growth throughout the UK.³

Sustainability interventions have the potential to add value far beyond their direct impact upon the natural world. Investment in sustainable technology can drive forward the levelling-up agenda across the UK, stimulating the supply chain and creating jobs. As outlined below, this strategy takes a geographically-focused approach, with a commitment to work with communities and benefit from local experience and understanding in decision-making. This provides the ideal opportunity to level-up regions of the UK, through exploiting specialist skills and the potential offered by different landscapes across the country – for example in generation of renewables.

Moreover, investment in sustainability interventions can bring efficiencies, for example through renewables, or from using more energy efficient technology, such as LED lighting. In turn, these interventions drive down our reliance on fossil fuels and improve our energy security, building long-term resilience into our supply.

¹ Government Property Strategy (2022-2030) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1100869/Government_Property_Strategy_2_.pdf

² Greening Government Commitments 2021-2025. 2021. <https://www.gov.uk/government/publications/greening-government-commitments-2021-to-2025>

³ A Green Future: Our 25 Year Plan to Improve the Environment - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf.

Environmental sustainability is a developing industry, with emerging technologies, requirements and skill sets. Methodologies are yet to be developed for some of the challenges, but the government estate offers a testbed for innovative solutions, and we can lead the way in developing approaches and stimulating the supply chain to benefit the rest of the UK. We will work with experts across industry and academia to maximise the scope and reach of our positive impact.

The sheer size and breadth of the government estate means we have a significant opportunity and a clear leadership responsibility in this area. The government estate (including schools and hospitals) consists of more than 136,000 built assets, with an estimated value of £157.6bn⁴. Effective management of a portfolio including courts, military bases, prisons and offices is crucial to the delivery of key public services. But the estate is made up of much more than bricks and mortar. We are custodians of significant areas of rural estate, with the Ministry of Justice managing a diverse estate with a wealth of priority species and habitats⁵, while the Ministry of Defence is the largest owner of Sites of Special Scientific Interest (SSSI) in England; larger than even the National Trust or the Forestry Commission⁶.

Operating at such a scale means we have an opportunity to address climate related risks to public services whilst making a significant positive environmental impact through proactive management of the estate, with huge potential for the changes we make to be a force for good.

Where we are now

The 25YEP and GGCs respectively set out the long-term themes under which government plans to improve the environment, setting broad, high-level goals over the coming years, and the more immediate annual targets that set out what must be achieved. The primary focus of this strategy is to enable delivery of the GGCs, building consistent approaches across the Government Property Function to facilitate achievement of these targets.

The Environment Act⁷ enshrines some of the 25YEP commitments in law. The Act aims to improve air and water quality, tackle waste, increase recycling, halt the decline of species, and improve our natural environment. The government property function will show leadership and make a significant contribution towards these commitments.

Over recent years, we have become increasingly aware of the importance of access to the natural world in maintaining and improving our health and wellbeing, whilst at the same time, the climate emergency has been brought into sharp focus, with society beginning to understand the catastrophic impact that human activities are having on nature.

Emissions are a major contributor to this impact, but other interventions including adaptation, greening and biodiversity enhancement can also have a significant influence in mitigating and adapting to the impacts of climate change through improvements to the natural environment.

Nature-based solutions to climate change provide a massive opportunity to regenerate urban centres, in ways that will protect these communities and simultaneously build social value. Adapting the environment around citizens to reduce the harmful impacts of climate change can be achieved in a way that provides greater access to green spaces to the people who need it most, for example, or that enables cleaner air, or more plentiful water.

⁴ State of the Estate report 2020-21 <https://www.gov.uk/government/publications/state-of-the-estate-in-2020-2021>

⁵ Ministry of Justice and the environment <https://www.gov.uk/guidance/ministry-of-justice-and-the-environment>

⁶ MoD Climate Change and Strategic Approach (2021) <https://www.gov.uk/government/publications/ministry-of-defence-climate-change-and-sustainability-strategic-approach>

⁷ Environment Act (2021) <https://www.gov.uk/government/news/world-leading-environment-act-becomes-law>

Themes

This strategy has four themes, detailed in the main body of the text, below. These themes are focused on:

Decarbonising the estate

In June 2019, the government committed to reaching net-zero emissions of greenhouse gases (GHG) by 2050. This was enshrined in legislation through the Climate Change Act 2008 (2050 Target Amendment) Order 2019. This commitment, combined with an interim ambition to halve direct emissions from the public sector by 2032 and reduce by 75% by 2037⁸, requires urgent, sustained action to decarbonise our buildings.

The UK government is the largest landowner in the UK, with the public sector estate accounting for approximately 9%⁹ of building emissions. It is essential we show leadership in this area and drive down our carbon emissions by utilising credible and consistent approaches to decarbonise the estate.

We are already making significant progress. Since 2000, the UK has decarbonised faster than any other G20 country. The UK has cut emissions by 44% since 1990¹⁰ and was the first major economy to pass laws committing to net zero carbon emissions by 2050. This legislative commitment has led to a significantly increased focus to decarbonise the government estate, as it has throughout the economy and society – but there are other interconnected challenges that must be addressed as part of our climate change response. It is imperative that the land and property which government (and society more broadly) uses will need to be adapted to address and minimise the impact of climate change.

Adapting to the impacts of climate change

The Department for the Environment, Food and Rural Affairs (Defra) is responsible for the National Adaptation Programme, which is reviewed every five years, the third iteration of which will be launched in 2023, during the early period covered by this strategy.

The Climate Change Committee (CCC) reports on progress against the ambitions in the National Adaptation Programme on a similar five-yearly basis. In their most recent (second) progress report, published in June 2021¹¹, the CCC advocated for the benefits of proactive planning to adapt to the impacts of climate change.

‘Climate and biodiversity loss are interconnected challenges that must be addressed together, alongside nature at the core of our climate change response. Climate change is having a devastating impact on our natural environment and ecosystem services, from drought, flooding, loss of non-native species or overheating, and will continue to intensify in the future. Proactive planning and response to these risks will reap far greater benefits than the initial cost, and help to build a more resilient, healthier and interlinked environment and society.’¹²

As such, this strategy will seek to adopt this proactive approach to building resilience in to the government estate.

⁸ Net Zero Strategy: Build Back Greener. (2021) <https://www.gov.uk/government/publications/net-zero-strategy>

⁹ Ibid

¹⁰ Ibid

¹¹ 2021 CCC Progress report to Parliament – <https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/>

¹² 25-Year Environmental Plan (25YEP) Annual Progress Report (2020-21). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1032472/25yep-progress-report-2021.pdf

Increasing Natural Capital

The Economics of Biodiversity (“the Dasgupta Review”)¹³, published in February 2021, sought to transform our relationship with nature. The Review was commissioned in 2019 by HM Treasury and was supported by an Advisory Panel drawn from public policy, science, economics, finance and business.

The Review calls for fundamental changes in our thinking and behaviour, including in how we value our assets and judge economic success. The report sets out a framework for a decision-making approach that takes full account of our impact on nature, informed by a broad and deep experience of nature’s relationship with the economy.

The report’s central recommendations are that, in order to reverse our unsustainable engagement with nature, we must always strive for biodiversity net gain by increasing the supply of natural capital and ensuring that demand does not exceed it; we must take account of the value of natural assets in making economic decisions; and we must transform our institutions and systems, particularly financial and educational structures, to deliver and maintain these changes. The requirement that biodiversity net gain is driven in all planning decisions and large infrastructure projects is now enshrined in the Environment Act 2021.

Making better use of our resources

The principles set out in the 25YEP and outlined below are directly relevant to our management of the government estate, with an opportunity to make the best use of our assets, minimise our use of resources and ensure that materials are reused or recycled wherever possible.

“Preventing unnecessary waste safeguards precious resources and reduces our greenhouse gas emissions, which arise from extraction, processing, manufacture, and disposal. The challenge presented by climate change must not be underestimated. By keeping products and materials in circulation for longer, we can reduce emissions, maximising their value, and minimising their environmental impact. Resource efficiency reduces emissions embedded in the products we import – which represent 46.1% of total UK greenhouse gas footprint emissions – and products produced domestically.

Why is it important that we take action? By improving the efficiency with which we use our resources, we can reduce harm to nature, cut carbon emissions from extraction, processing and manufacture, and increase our resource security whilst supporting domestic growth.”¹⁴

¹³ The Economics of Biodiversity – <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

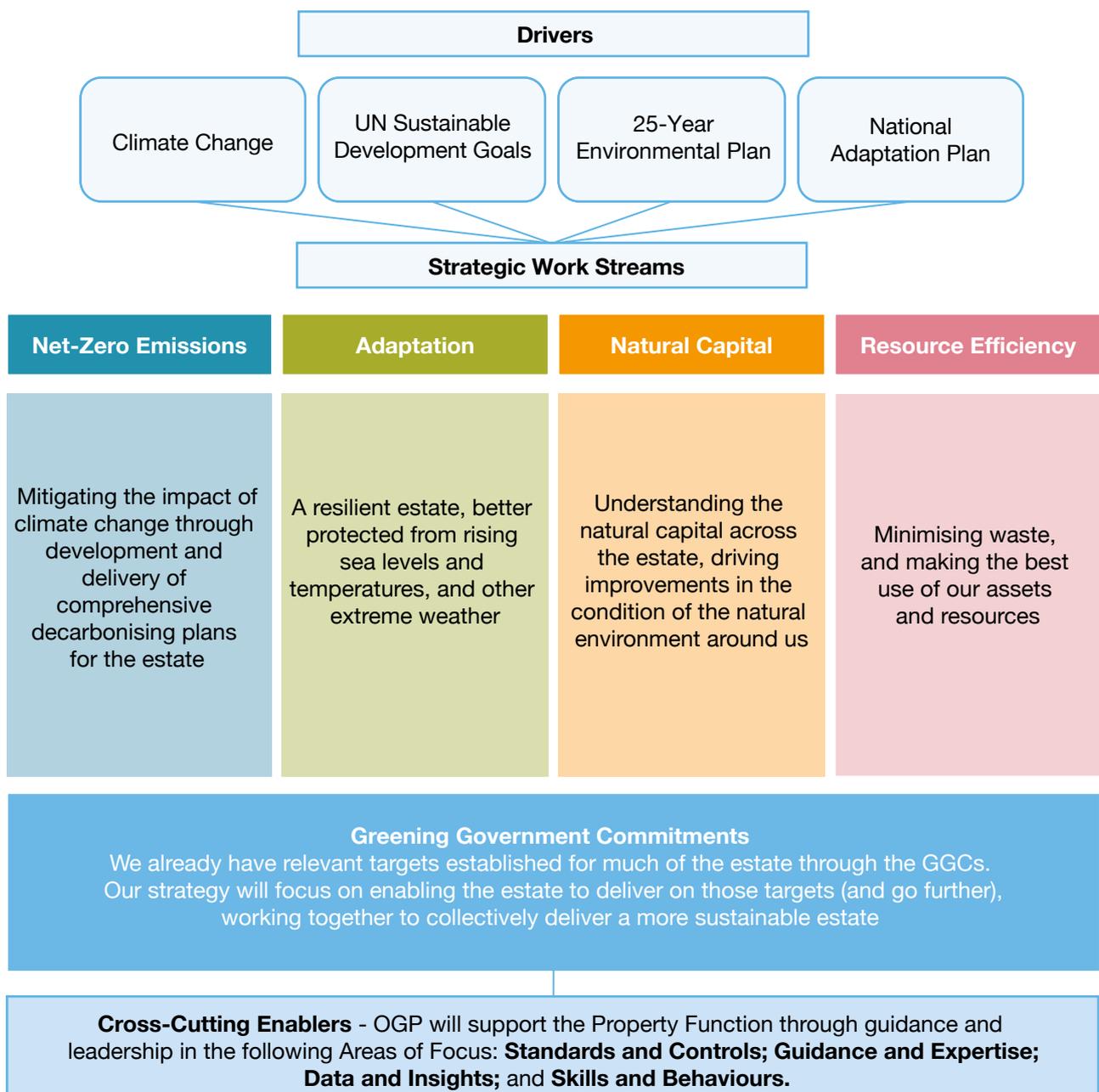
¹⁴ 25-Year Environmental Plan (25YEP) annual progress report 2020-21 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1032472/25yep-progress-report-2021.pdf

Structure

Vision for 2030, Strategic Work Streams and Areas of Focus

The diagram below shows our vision for 2030, the strategic work streams based upon the objectives derived from our vision, and common areas of focus across each of the four work streams. It illustrates the drivers that have informed the development of the strategic work streams which are each explained in separate sections of the strategy.

Strategy Structure



This strategy sets out activities that the Government Property Function will undertake collectively to deliver against the most relevant parts of the Greening Government Commitments (GGCs), which are coordinated by Defra. The current GGCs cover the period 2021-2025, introducing new measures on biodiversity, climate adaptation and food waste alongside stretching targets for emissions, water and waste. This strategy aims to incorporate broader cross-government strategies, policy and commitments, to go further than the GGCs wherever possible, and seeks to support the Property Function in making compelling bids for investment, both in business cases and in future Spending Reviews. As this strategy is implemented across the Function, we will maximise use of existing avenues for funding and seek to unlock additional funding streams, including through partnering with industry, and will ensure that the value of investing in sustainability measures is illustrated broadly – both for the direct positive impact on the environment around us and the wider benefits to the economy and through social value.

Perspectives

These core *Perspectives* have been used to inform the development of this strategy, and will feed through to the delivery and implementation phase:

- We take a regenerative approach, where possible and appropriate, improving or re-purposing what's already there, rather than replacing it with new.
- We take a cross-government, portfolio-wide approach to our work, taking advantage of the scale of the estate and the variety of assets and activities to maximise the impact of our positive interventions, and sharing learning to build on existing and tested solutions.
- Whilst taking this cross-government view, we simultaneously take a site-specific approach to the estate, with sensitivity to the different habitats and asset types and the potential that these differences afford.
- We take a place-based approach, working with local stakeholders and delivery partners to ensure that the benefits of our interventions are maximised.
- Building on this approach, we work with communities, acknowledging their needs and their understanding of the opportunities and limitations within their local areas and ensuring that our interventions take account of their experience.
- We make best use of technology, including renewables-generation such as solar PV, to reduce reliance on the grid and produce green energy from our estate.

Net-Zero Emissions

Mitigating the impact of climate change through development and delivery of comprehensive decarbonisation plans for the estate, setting us on the right track to achieve a 50% reduction in emissions by 2032 (compared to 2017 levels) and contribute to net-zero emissions for the UK by 2050.

The government has committed the UK to reaching net-zero emissions by 2050 in legislation, through the Climate Change Act 2008 (2050 Target Amendment) Order 2019¹⁵. Via this strategy, the Property Function will support departments to contribute to this commitment and ensure alignment to other related government strategies such as the Heat and Buildings Strategy, setting the ambition of phasing out the installation of new natural gas boilers from 2035; and the Net Zero Strategy, announcing the aim to reduce emissions from public sector buildings by 75% by 2037.

The Property Function has developed a suite of tools and guidance, including the Net Zero Estate Playbook¹⁶ and the Carbon Trajectory Tool¹⁷. The Net Zero Estate Playbook provides practical guidance to stakeholders to understand the complex landscape of decarbonisation. The Playbook draws together thinking from across industry and government, in a concise and accessible format, providing departments with a systematic approach to delivery, and drives consistency in the design, implementation and monitoring of Net Zero across the government estate. The Carbon Trajectory Tool allows departments to estimate the investment required to deliver the appropriate interventions at the right time to achieve decarbonisation commitments.

The Greening Government Commitments, Carbon Budgets and departmental planning processes provide the framework for estate decarbonisation trajectories. Through the period of this strategy we will improve cross government data and understanding of the required funding, risks and requirements to achieve decarbonisation targets. Specific departmental GGCs emissions targets are set out in Annex A.

The Property Function has developed electric vehicle infrastructure implementation guidance for the government estate, drawing on wider policy around electric vehicles, which BEIS and the Office of Zero-Emissions Vehicles (OZEV) lead on. This will facilitate a government estate that is suitable for and encourages the adoption of electric vehicles, by both organisations and individuals using the estate, support the commitment for a zero emission government car and van fleet by 2027 and start implementing the 1 in 10 Electric Vehicle charge points on all new builds and major above ground car park refurbishments.

¹⁵ Climate Change Act 2008 – <https://www.legislation.gov.uk/ukpga/2008/27/contents>

¹⁶ Net Zero Playbook – <https://www.gov.uk/government/publications/net-zero-estate-playbook>

¹⁷ Tools and Guidance – <https://e-pims.cabinetoffice.gov.uk/GPO/home/6131/Tools-and-Guidance>

Net-Zero Emissions Commitments

As a minimum, we will achieve the Greening Government Commitment:

Greening Government Commitment – Reduce the overall greenhouse gas emissions from a 2017 to 2018 baseline and also reduce direct greenhouse gas emissions from estate and operations from a 2017 to 2018 baseline (set by BEIS in agreement with individual departments).

NB: Full details of the Greening Government Commitments can be found on gov.uk¹⁸.

To enable achievement of these, we will:

- Develop and embed guidance for adoption of Whole Life Carbon methodology, building on existing cross-government work, such as the standard for new acquisitions and lease renewals set out in the Government Property Standard.
- Improve cross-government data consistency and quality to strengthen the case for increased investment in large scale, urgent decarbonisation interventions across the estate.
- Maximise the potential for renewables generation across the estate, including through central coordination and consistent approaches to data collection and analysis.
- Upskill all staff across the property function to improve carbon literacy, helping them to understand the relevance to their role and how they can make a positive difference.

¹⁸ Greening Government Commitments: <https://www.gov.uk/government/publications/greening-government-commitments-2021-to-2025>

Case Study

Greener NHS¹⁹

The Greener NHS programme works with staff, hospitals and partners to build on the great work being done by trusts across the country, sharing ideas on how to reduce the impact on public health and the environment, save money and reach net zero carbon.

The NHS has already reduced its emissions by 26% compared to the 1990 baseline, (NHS Carbon Footprint Plus including supply chain) exceeding its commitments under the Climate Change Act.

The NHS aims to be the world's first 'Net Zero' National Health Service and have outlined two targets in the Delivering a 'Net Zero' National Health Service report:

- The NHS Carbon Footprint: for the emissions directly controlled, net zero by 2040.
- The NHS Carbon Footprint Plus: for the emissions the NHS can influence, net zero by 2045.

The New Hospitals Programme will build 40 hospitals as part of the Health Infrastructure Plan by 2030. This will involve both the use of innovative, low-carbon materials, as well as new design that allows for flexibility and shifts in how care will be delivered in the future.

Better use of roofs and adjacent ground space will support a shift to on-site renewable energy and heat generation across the estate, bringing a potential saving of 580 ktCO₂e per year.

The Government Property Function will undertake a number of further activities that will contribute to decarbonisation by promoting renewable energy generation and low-carbon technologies. Work is underway to develop cross-government guidance for solar PV, maximising its potential across the estate.



¹⁹ A Greener NHS – Delivering a Net Zero NHS – <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

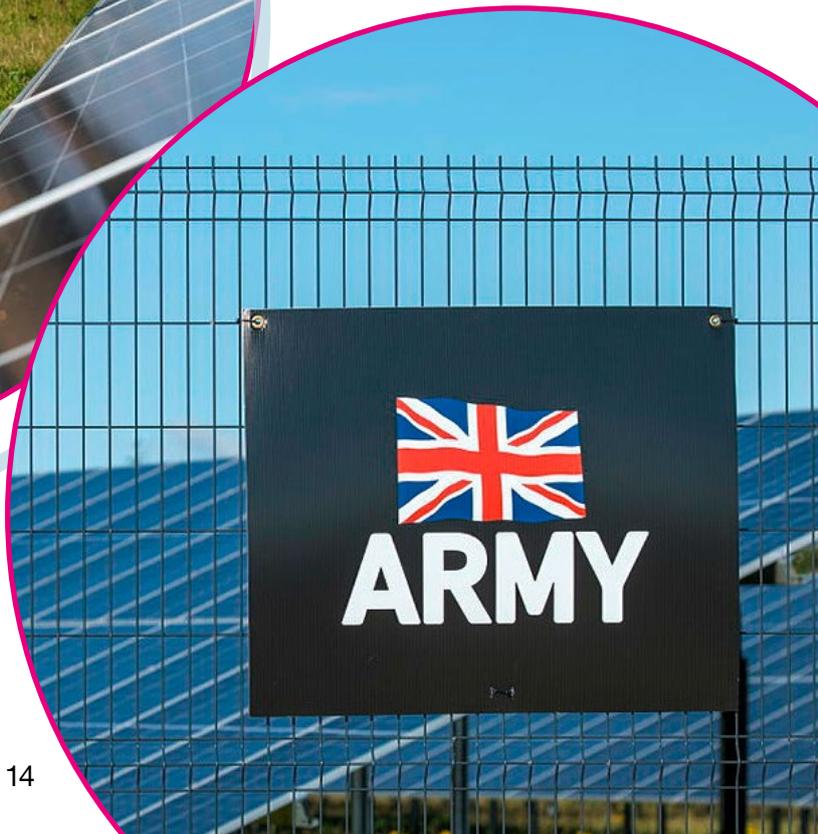
Case Study

Project Prometheus²⁰

The British Army's first photovoltaic Solar Farm opened in September 2021. The solar farm, the size of almost eight football pitches, is based at The Defence School of Transport (DST), Leconfield, and forms part of the British Army's £200 million Project Prometheus investment which is designed to see the Army using renewable energy.

Built by Centrica Business Solutions, the solar farm is made up of over 4,000 solar panels and is the first of four pilot sites to officially open. Spanning approximately four hectares and with a peak capacity of 2.3MegaWatts, it is projected to save 700 tonnes of carbon emissions and cut electricity bills by one third annually at DST.

The project estimates £1 million in efficiency savings and 2,000 tCO₂e (tonnes of carbon dioxide equivalent) annually across all four sites, with saving costs due to be reinvested into essential Army infrastructure.



²⁰ Project Prometheus – <https://www.gov.uk/government/news/british-army-opens-first-solar-farm>

Adaptation

Creating a resilient estate, better protected from the impacts of flooding, water stress and drought, high temperatures, and other extreme weather events.

Whilst it is essential that we mitigate against climate change and do everything possible to restrict rising temperatures to no more than 1.5 degrees, the impact of climate change is already being felt globally, manifested through more extreme weather such as rising temperatures, increasingly heavy rainfall and flooding. To help manage the impact of these increased risks, we will explore and promote the interventions needed to make the estate more resilient to climate change, capable of protecting our people, public services and buildings. Development of Climate Change Risk Assessments, Adaptation Strategies and Adaptation Action Plans are key requirements for all departments as part of the expanded GGCs.

Government is currently in the early discovery phase of developing the third National Adaptation Programme (NAP3), work which is being led by Defra which involves significant cross-government collaboration, both within and beyond the Property Function. A major initial piece of work under this objective will involve working closely with Defra and other relevant stakeholders to ensure that the development of NAP3 takes full account of the requirements of the Government Property Function. This strategy does not therefore seek to preempt the findings of Defra and the conclusions that government draws in formulating NAP3, but outlines what have been identified as priority concerns and remedial activities to be undertaken to support climate adaptation.

A key principle behind our work in adaptation (as well as mitigation) will be to drive forward the adoption, wherever possible, of passive design principles and nature-based solutions to the issues that we face across the estate. For example, this could include mitigating flood risk through improving soil and limiting the impacts of erosion, or countering the urban heat island effect through methods such as innovative planting. This aligns closely with our perspective of improving our existing natural assets, rather than creating new ones.

The Environment Agency has reported that by 2050 parts of the country will face significant water deficits²¹. Ensuring the estate is making the most efficient use of water by utilising available technologies is critical for understanding usage and identifying irregularities such as leaks allowing rapid deployment of repairs to reduce waste.

Aside from flooding, climate change also brings the converse risk of drought. There is potential to alleviate both by improving water storage infrastructure on the estate and capturing water from heavier rainfall in winters for use in drier summers. The risk of drought is closely related to the threat of high temperatures and wildfires, which have been growing in frequency and severity both domestically and globally. Taking action to understand the risk and mitigate the impact of these on assets is another crucial undertaking for departments, and the Property Function will provide support to effectively and consistently approach Climate Change Risk Assessments and Adaptation Action Plans, required under the GGCs. This will build on and expand work already underway across government, particularly led by the Environment Agency, and inform long-term planning for the National Adaptation Programme 3, across both the Function and the government more broadly.

²¹ Escaping the jaws of death: ensuring enough water in 2050 – <https://www.gov.uk/government/speeches/escaping-the-jaws-of-death-ensuring-enough-water-in-2050>

Access to water and making better use of different types of wastewater are key goals of sustainable development. The government estate, with its broad range of assets and types of land and habitat, has the potential to capture and use rainwater for a variety of purposes, as well as reusing both grey and black wastewater where suitable. Moreover, there is the opportunity to investigate the possibility of using mine water, stored underground at a constant, warm temperature, for heating some of our assets.

Adaptation Commitments

As a minimum, we will achieve the Greening Government Commitment:

Greening Government Commitment – Develop an organisational Climate Change Adaptation Strategy across estates and operations. This headline commitment is broken down into 2 parts:

- departments should conduct a Climate Change Risk Assessment across their estates and operations to better understand risk and to target areas that need greater resilience; and
- departments should develop a Climate Change Adaptation Action Plan, including existing or planned actions in response to the risks identified.

Departments should develop a strategy as most appropriate to the size and diversity of their estates and operations and their existing approach to adaptation.

Activities

- Develop and embed standards for climate change adaptation on the government estate, aligned with the existing National Adaptation Programme (NAP) and closely engaging with the emerging third NAP (NAP3).
- Work across government to make the estate more resilient and better protected from extreme weather, using specialist mapping and analysis, building on work already underway to map flood risk and water and temperature stress.
- Develop and embed an adaptation framework to enable consistent high standards in development and use of Adaptation Risk Assessment and Action Plan methodologies.
- Develop guidance to maximise the potential for installation of nature-based solutions (such as green roofs and water capture) wherever appropriate across the estate.

Case study

Schools Water Strategy²²

The schools estate is vast with more than 24,000 schools and land area bigger than Birmingham. Significant numbers of schools are at risk of flooding, and schools are heavy users of water.

Working with partner organisations, the Department for Education (DfE) has assessed flood risk to the estate and is working to better understand its water usage.

Partnership is key to helping the estate understand and adapt to climate risk. The DfE are currently working with the Environment Agency, water wholesalers, water retailers and Local Authorities on joint programmes of flood risk reduction and water efficiency.

Green infrastructure using Sustainable Urban Drainage Systems are often the preferred solution to adapt to the significant risks from surface water flooding, as they offer significant wider benefits such as health, amenity and education.

A case in point is Merstham Primary, which flooded from surface water in Summer 2020. Rather than use flood doors, planters were fitted under 27 downpipes and a green berm installed to store, slow and divert surface water, away from the school to where there is underground water attenuation storage.



²² Case study and Photos credit: Department for Education

Case study

Geothermal Energy from Coal Mines – The Coal Authority²³

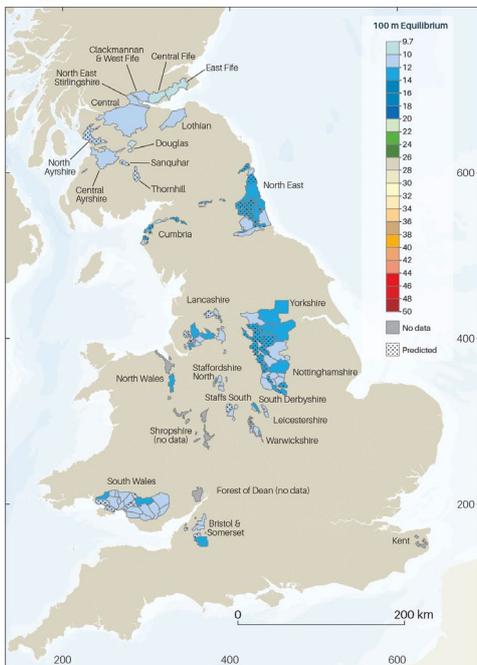
In November 2020 the British Geological Survey (BGS) and Coal Authority released maps that, for the first time, revealed the extent to which heat is stored in Britain's closed coal mines.

The abandoned coal mines in the UK present a significant opportunity to the UK as a source of geothermal energy. The mines are warmed by natural geothermal processes and where the mines are flooded, these are now being developed as a source of low carbon energy to heat residential and commercial buildings and can deliver carbon savings up to 75% compared to gas heating.

The tool – an interactive map showing where the mines are and the extent by which temperatures increase with depth – was made freely available to use for developers, planners and researchers to identify opportunities to investigate the use of mine water as a sustainable heat source. In addition The Coal Authority is reviewing more than 30 potential heat network opportunities using geothermal mine energy.

Technical specialists at the Coal Authority say there is potential to kick-start a new renewable industry, creating employment, tackling climate change and attracting investment to the coalfield communities previously disadvantaged by mine closures.

When aligned with the government's Ten Point Plan for a Green Industrial Revolution, the warm water in abandoned coal mines is now being seen as a viable new form of sustainable energy with the potential to play a vital role in making homes and public buildings greener, warmer and more energy efficient.



Reference: The temperature of Britain's coalfields, Farr et al 2020 <http://dx.doi.org/10.1144/qjgh2020-100>
BGS © UKRI 2020. All rights reserved. © The Coal Authority 2020. All rights reserved.
Contains Ordnance Survey data © Crown copyright and database right 2020.

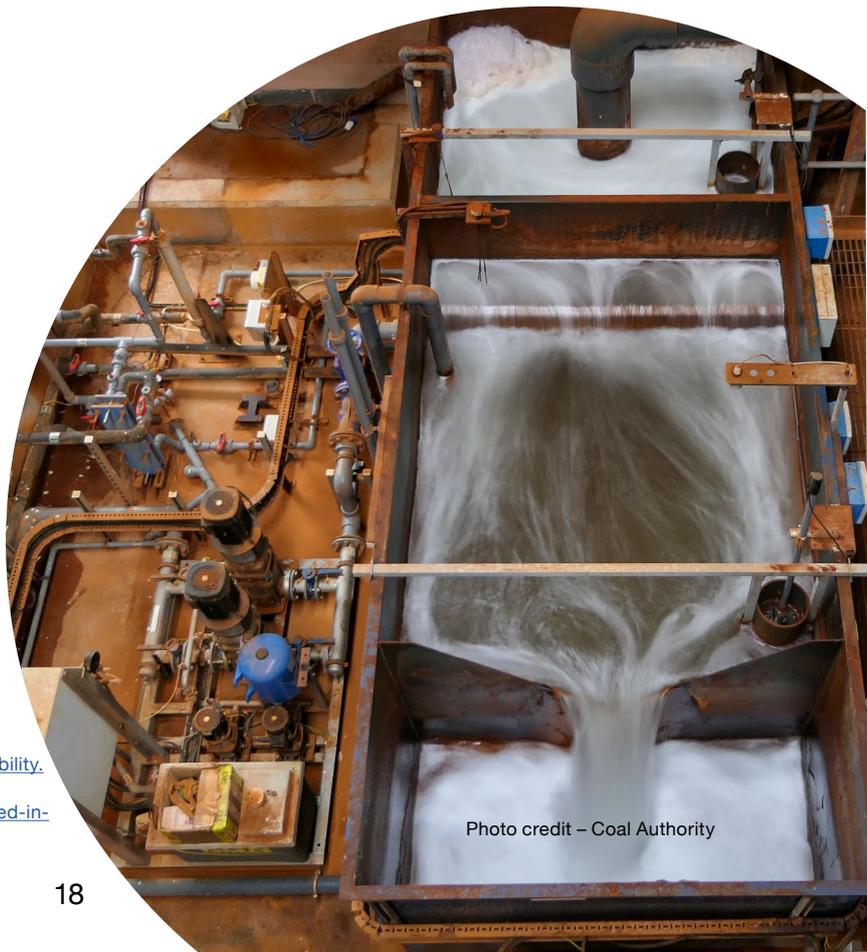


Photo credit – Coal Authority

²³ Geothermal Energy from Coal Mines – <https://www2.groundstability.com/geothermal-energy-from-abandoned-coal-mines/>
<https://www.gov.uk/government/news/new-maps-reveal-heat-stored-in-britains-abandoned-coal-mines>

Natural Capital

Building an understanding of and driving increases in the natural capital on and around the estate.

In recent years, there has been a growing understanding of the value of nature, and of the devastating impact that human activity has had on its abundance and diversity. The Economics of Biodiversity (“the Dasgupta Review”)²⁴, published in February 2021, sought to challenge the way we view our relationship with nature, starting from the premise that our economies are embedded within nature and not external to them. The report recommends that we increase natural capital and drive down demand whilst we improve supply; we measure economic success that accounts for our consumption of natural assets; and we transform our institutions and processes to facilitate the required paradigm shift in behaviour.

Government’s response²⁵ to the Dasgupta Report endorses his fundamental conclusion regarding the value of nature, and outlines existing and new work including investments relevant to the report’s findings. As such, a principle of this strategy is to adopt Dasgupta’s approach to the value of nature. We will work across functions to compile a body of relevant evidence and support the consistent application of this evidence to underpin funding bids and assist departments in recognising and demonstrating the value of nature as an asset, as well as broader social value. We will ensure that government seeks to maximise biodiversity net gain in its property and land-related decision-making, and embed sustainability considerations into institutional thinking.

The Government Property Function will develop and agree on an approach to improving the condition of nature across the estate, focusing on interventions that will drive up Natural Capital. Achieving net gain in biodiversity should inform all decision-making, including where any condition improvement is not the primary objective of the decision being made – ensuring that any major retrofits at least achieve 10% biodiversity net gain, aiming to exceed the minimum required under the Environment Act 2021. This will begin to embed the cultural shift that will be required to prevent catastrophic natural decline.

By drawing together these distinct areas of work under one theme, this strategy seeks to demonstrate the significant impact that small actions by individuals can have on increasing Natural Capital, and how in turn this can have a positive effect on both the individual and the institution. Moreover, this theme reinforces the inextricable link between nature and humanity and has a significant positive impact upon social value.

The other central part of this theme is engagement with the natural environment, which is a deliberately broad concept. As stated in Defra’s 25 YEP: *‘The economic benefits that flow from the natural world and our natural heritage have begun to take a greater prominence in policy-making, thanks in part to the ground-breaking work of Professor Dieter Helm’s Natural Capital Committee (NCC). We see these benefits in increased productivity from our natural resources and a lessening of the demands placed on them. We see them in the boost to our mental and physical wellbeing’.*

The Mental Health Foundation’s 2021 report, Nature: How connecting with nature benefits our mental health²⁶, provides a summary of evidence demonstrating how and why our relationship with nature is so important to our mental health.

²⁴ The Economics of Biodiversity – <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

²⁵ the Government’s response to the Dasgupta Report – <https://www.gov.uk/government/publications/the-economics-of-biodiversity-the-dasgupta-review-government-response>

²⁶ Mental Health Foundation’s report – Nature: How connecting with nature benefits our mental health – <https://www.mentalhealth.org.uk/campaigns/nature/nature-research>

The Property Function can play a key role driving and coordinating this agenda across the Civil Service, with much of this work undertaken by interested individuals or working-level networks within and across departments. We will support collaboration between central government and community stakeholders such as local government and charities, to drive forward and increase the opportunities for individuals to engage with the natural environment – be that through a community garden on government land, or planting and maintaining a wildflower meadow, or restoring a wetland habitat.

We will work closely with the HR function to promote and encourage volunteering to improve the natural environment across the government estate, building on work already underway, such as the Ministry of Justice’s sustainability-related prisoner training programmes.

We will further collaborate with the HR function to build capability across all areas of sustainability, through the development and sharing of learning resources and appropriate training recommendations.

Natural Capital Commitments

As a minimum, we will achieve the Greening Government Commitment:

Greening Government Commitment – Departments and partner organisations with the greatest potential to improve biodiversity should develop and deliver Nature Recovery Plans for their land, estates, development, and operations.

All other departments and partner organisations should consider what they can do to support the government’s commitment to improve nature and develop and deliver Nature Recovery Plans for their organisations, where suitable.

Activities

- Work with Defra to agree a consistent approach to Nature Recovery Plans and support work to understand the high-level natural capital landscape for the cross-government estate - including a methodology to understand the relative potential of different departmental estates to support this agenda.
- Engage with local communities and other regional stakeholders to ensure that departmental Nature Recovery Plans are aligned with other local plans, maximising the benefit derived through taking this broad approach and mitigating the limitations of estate boundaries.
- Develop and embed biodiversity and natural capital guidance for estates teams, including guidance to maximise the impact of interventions in constrained urban sites.
- Encourage civil servant volunteering in support of local schemes to enhance the natural environment, including on the estate, engaging with staff networks across government.

Case Study

Northern Arc Scheme²⁷

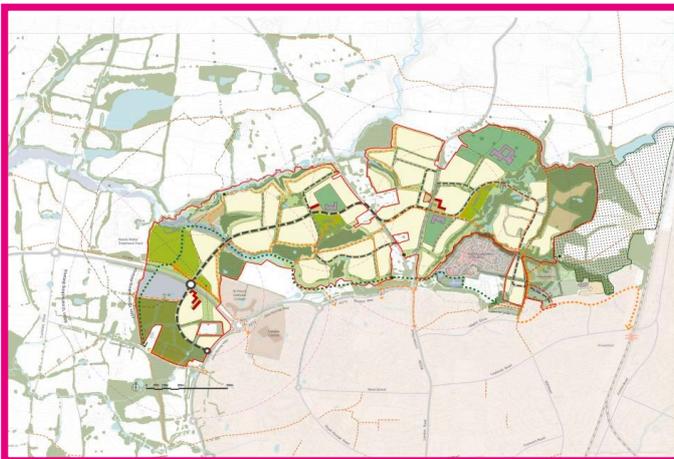
The Northern Arc Scheme in Mid Sussex is a 200-hectare strategic 3,500 home development being delivered by Homes England in its master developer role, on a former Ministry of Defence site. It is set within a mature landscape of habitats including ancient woodland, mature trees, species-rich hedgerows, semi-improved grassland, watercourses and ponds. Protecting and enhancing this existing habitat is vital to ensure the Northern Arc has a long-term positive impact on local biodiversity and wildlife.

Satellite data, aerial imagery and data from Defra were used from the outset to highlight areas of woodland which should be protected.

The information collected from surveys were used to categorise all the trees within the development and nearby surrounding area. The trees are categorised by their quality, value and estimated remaining lifespan. The design of the Northern Arc was refined to protect as many higher value trees as possible.

Where tree loss is unavoidable, a tree planting plan was developed to counterbalance this. The new trees will be planted to complement the existing species.

The new woodland planting will create a varied woodland mosaic to provide a diverse range of habitats for biodiversity, as well as extending existing habitat corridors, boosting resilience to future climate change, pests and disease.



²⁷ The Northern Arc – Burgess Hill – <https://www.gov.uk/government/news/protecting-and-enhancing-biodiversity-at-the-northern-arc-burgess-hill>

Case Study

National Highways Wildflower Planting²⁸

Dorset Council's Weymouth Relief Road illustrates National Highways' success in driving forward wildflower planting around their infrastructure. Here, wide chalk cuttings were left bare, with minimal top soil (max 15mm thick), and seeded with wildflowers that thrive in chalk. These cuttings are now supporting over 140 plant species and 30 species of butterflies and in the 10 years since construction, the verges have required minimal maintenance, some none at all.

This step change in the way it improves roads, will breathe new life and colour into the verges and land around the country's motorways and major roads – a policy which will cover hundreds of miles in the second road investment period.

On all major schemes, contractors are instructed to follow a new Low Nutrient Grasslands policy aimed at keeping away the 'bullying' plant species and allowing wildflowers to thrive, creating vital habitat for insects and other wildlife as well as improving the aesthetics of the area, positively impacting the wellbeing of millions of road users.



Photo credit – National Highways

²⁸ National Highways – Wildflower Planting – - <https://www.gov.uk/government/news/breaking-new-ground-with-eco-drive-to-bring-the-countrys-verges-to-life>

Resource Efficiency

Minimising waste and making the best use of our assets and resources.

Making the best use of our resources throughout their entire lifecycle and reducing waste as far as possible are simple but effective ways of minimising our negative impact on the environment, covering everything from small individual actions to institutional culture change, and encouraging innovation at the forefront of technology.

Adopting an approach that focuses on the whole lifecycle will enable government to maximise the benefit derived from each asset and prolong its useful life – ensuring that sustainability considerations are accounted for at all stages.

As part of this, we will continue to work with the Government Commercial Function to strengthen sustainable procurement policies. Work in this area to date includes development of procurement standards (PPN 05/21²⁹ and PPN 06/21³⁰), with PPN 05/21 requiring contracting authorities to have regard to national strategic priorities for public procurement, including tackling climate change and reducing waste. PPN 06/21 introduced a new selection criteria, requiring suppliers bidding for in-scope procurements of £5m per annum and above to provide a Carbon Reduction Plan (where related and proportionate to the contract). This Carbon Reduction Plan confirms their commitment to achieving Net Zero by 2050 in the UK, and sets out the environmental management measures that they have in place and which will be in effect and utilised during the performance of the contract.

We will work to ensure that our construction methods (both in undertaking refurbishment and new-builds where necessary) are sustainable, promoting best practice such as Modern Methods of Construction (MMC), which produces less construction waste than traditional building methods. This builds on government's reaffirmed commitment to driving the adoption of MMC, particularly in home-building, through seed funding and the establishment of a taskforce³¹. This further incorporates key themes behind the Project Delivery function's Transforming Infrastructure Performance: Roadmap to 2030 and National Infrastructure Strategy which include ambitions for major projects to contribute towards net-zero carbon and replenishing our natural environment.

The GGCs target resource efficiencies including waste, water use and plastic use. We will work together to meet these by collating best practice and developing training to influence user behaviour. We will also improve efficiency by encouraging the use of efficient materials and technologies across the government estate, in both retrofit and construction.

We will seek to influence user behaviour towards more sustainable practices, creating protocols around the use of our assets, covering everything from individual actions such as using less plastic to institutional changes and instilling a paradigm shift in how government views its own estate. This will take full account of the whole lifecycle of assets and ensure a detailed understanding of the risks and opportunities associated with the management of our assets and resources.

²⁹ Procurement Policy Note 05/21: National Procurement Policy Statement – <https://www.gov.uk/government/publications/procurement-policy-note-0521-national-procurement-policy-statement>

³⁰ Procurement Policy Note 06/21: Taking account of Carbon Reduction Plans in the procurement of major government contracts -<https://www.gov.uk/government/publications/procurement-policy-note-0621-taking-account-of-carbon-reduction-plans-in-the-procurement-of-major-government-contracts>

³¹ Latest figures show increase in new energy efficient homes – <https://www.gov.uk/government/news/latest-figures-show-increase-in-new-energy-efficient-homes>

Resource Efficiency Commitments

As a minimum, we will achieve the Greening Government Commitments:

Greening Government Commitment – Reduce the overall amount of waste generated by 15% from the 2017 to 2018 baseline.

Greening Government Commitment – Reduce water consumption by at least 8% from the 2017 to 2018 baseline.

Activities

- Develop departmental skills as an Intelligent Client - incorporating sustainability considerations into cross-government property decision-making, with a focus on procurement requirements and collaborative working with third party suppliers.
- Work across the Function to drive forward the water efficiency agenda, sharing best practice approaches to water usage across the estate – including making better use of rain water and wastewater.
- Build on sustainability requirements and standards for the whole lifecycle of the property – from procurement to construction to end of life – to set high standards for refurbishments, new acquisitions and construction.
- Maximise the effectiveness of cross-government data collection, reporting, and insights to reduce resource consumption – making use of multiple data points to understand their resource requirements and estate.

Case Study

Government Workplace Design Guide³²

The Government Workplace Design Guide was published by the Government Property Agency in January 2021, setting standards for government office spaces. Workplaces will maximise the use of sustainable, clean technologies and low and zero carbon energy wherever possible, including:

- Improving energy efficiency through insulation and reduced consumption by optimising heating, ventilation and air conditioning (HVAC) and building management system (BMS) technology, use of micrometers, sensors and light-emitting diode (LED) lighting.
- Using green energy and moving to decarbonised electric by switching to a renewable supplier.
- Reducing embodied carbon during construction by recycling and reuse of materials and through cost management and value engineering.
- Generating and storing renewable energy locally through integrated generation, storage and use.
- Locating our sites close to public transport.
- Maintaining indoor air quality and ensuring carbon dioxide levels remain within acceptable limits.
- Providing cycle and changing facilities suited to the site and occupants.
- Ensuring real-time intelligent management of the workplace environment via smart building technology.



³² Government workplace design guide – <https://www.gov.uk/government/publications/the-government-workplace-design-guide>

Purpose, Coverage and Timescales

Purpose

This strategy supplements the wider Government Property Strategy and brings a cross-government, focused approach to government estate sustainability. It recognises the role that the government estate can play by improving sustainability outcomes across its complex and varied portfolio and the wider public benefits this brings.

The strategy provides a vision and strategic objectives that set out key activities to assist departments in achieving the new Greening Government Commitments and set them on a trajectory to go further, to meet longer-term policy objectives set by both BEIS and Defra.

Plans for implementation of the strategy will be set out by departments in their Strategic Asset Management Plans (SAMPs), and collated in to cross-cutting themes in the annual cross-government delivery coordination plan – the Property Function Plan. Progress will be reported annually through the State of the Estate report.

Coverage

Aligning to the Government Property Strategy, this strategy applies to all government departments and their arms length bodies. It covers the property that these organisations hold or manage, including properties held on their behalf. As with the Government Functional Standard, other public sector organisations, devolved or local, might find this strategy useful and may use it to inform activity.

This strategy principally covers land and buildings; wider UK infrastructure such as roads and railways are out of scope and covered by the National Infrastructure Strategy³³.

Throughout this document we have included case studies of work already underway in support of the strategic objectives, which the strategy seeks to build on going forward.

Timescales

This Strategy covers the period to 2030 and is aligned to the overarching timeline of the Government Property Strategy but will be updated to reflect subsequent GGC frameworks, for example in 2026. This timescale reflects the extended horizon of many property projects and investments: estates change in 2030 and beyond is dependent on actions in the next few years and decisions made now will invariably have long-term consequences.

Greening Government Commitments to 2025 are published and many of the activities detailed in this strategy are focused on enabling their delivery. The strategy's ambitions for 2030 will be more directional and will in due course steer departments' thinking for future Spending Reviews.

The State of the Estate report provides information on the efficiency and sustainability of the government estate and is laid before Parliament each year. Future reports will report on progress of this Strategy, as part of wider updates on the overall Government Property Strategy.

³³ National Infrastructure Strategy – <https://www.gov.uk/government/publications/national-infrastructure-strategy>

Annex A:

Greening Government Commitments: table of individual departmental emissions targets

Department	Overall Emission Reduction Target	Direct Emission Reduction Target
AGO	49%	25%
BEIS	62%	30%
CO	52%	20%
DCMS	58%	33%
DFE	56%	36%
DFT	62%	19%
DHSC	44%	20%
DIT	48%	20%
DWP	45%	17%
FCDO	56%	30%
FSA	27%	21%
HMRC	60%	40%
HMT/UKEF	69%	25%
HO	44%	25%
DLUHC	47%	25%
MOD	30%	10%
MOJ	41%	23%
NCA	43%	15%
ONS	38%	43%

Guidance on direct greenhouse gas emissions target under the Greening Government Commitments:

- This target comprises direct emissions from estate and operations. This includes emissions arising from fuel use and fugitive emissions across the estate and on sites.
- This target does not include transport emissions or emissions arising from grid electricity use – these are still captured under the overall emissions target under the Greening Government Commitments.

