DECEMBER 2025

Sustainability Statement

Cardiff East Park and Ride, Llanrumney

Iceni Projects Limited on behalf of
Curtis Hall Limited (Ltd.)

December 2025

ICENI PROJECTS LIMITED ON BEHALF OF CURTIS HALL LIMITED (LTD.)

Iceni Projects
London: Da Vinci House, 44 Saffron Hill, London, EC1N 8FH
Birmingham: The Colmore Building, 20 Colmore Circus Queensway, Birmingham, B4 6AT
Edinburgh: 14 – 18 Hill Street, Edinburgh, EH2 3JZ
Glasgow: 201 West George Street, Glasgow, G2 2LW
Manchester: WeWork, Dalton Place, 29 Dalton Street, Manchester, M2 6FW

t: 020 3640 8508 **| w:** iceniprojects.com | **e:** mail@iceniprojects.com
linkedin: linkedin.com/company/iceni-projects | **twitter**: @iceniprojects

CONTENTS

1. EXECUTIVE SUMMARY 1
2. INTRODUCTION 3
3. PLANNING AND REGULATORY CONTEXT 6
4. SUSTAINABILITY STATEMENT 14
5. SUMMARY 33

APPENDICES

A1. SITE PLAN

A2. GENERAL NOTES

1. EXECUTIVE SUMMARY

1.1 Iceni Projects Ltd was commissioned by Curtis Hall Limited to produce a Sustainability Statement to support the proposed redevelopment of Cardiff East Park and Ride, Eastern Avenue, Old St Mellons, Cardiff, CF23 8HH.

1.2 The hybrid application seeks outline planning permission for redevelopment of the Site to provide for a data centre use, with associated buildings and structures, car parking and internal access roads; and detailed planning permission for the demolition of existing structures on the Site, the construction of a new road, roundabout and vehicular bridge crossing the Rhymney River, enhanced access to the open space via minor diversions to the associated footpaths and rights of way, and associated landscaping.

1.3 Sustainability is a core consideration of the application and has been incorporated from the project outset. Notwithstanding the outline nature of the application as it relates to the proposed built development, resource and water efficiency have been maximised, whilst the production of waste and pollution is to be minimised, thus ensuring the impact of the proposals on its immediate surroundings and the environment as a whole is minimised.

1.4 Consideration has been given to the Cardiff City Council Local Development Plan in the overall formulation of this strategy, aiming to minimise the environmental impact of the proposed development during construction and operation, and to ensure the development is constructed to rigorous sustainability standards.

1.5 The proposed strategy has been based around the objectives of the Local Development Plan policies KP5, KP8, KP15 and KP18. In summary, based on this strategy, the proposed development will;

- make efficient use of land, seeking to develop a brownfield site;
- encourage the use of active and sustainable modes of transport;
- achieve a significant on-site reduction in CO_2 emissions, following the Energy Hierarchy methodology and through the specification of highly-efficient systems and technologies;
- minimise internal water consumption through the employment of water efficient fittings;
- incorporate low-impact materials, according to the BRE Green Guide to Specification;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;

- incorporate measures to improve site biodiversity, including biodiverse planting;
- reduce surface water runoff rates through the use of sustainable drainage measures, including swales, biodiversity attenuation basins, attenuation crates and filter drains; and
- ensure air, noise, vibration, ground, light and water pollution are minimised as far as possible.

1.6 Overall, the proposals constitute sustainable development in accordance with national and local policy requirements and, subject to future reserved matters applications, will provide a development that seeks to promote these principles in operation.

2. INTRODUCTION

2.1 Iceni Projects Ltd was commissioned by Curtis Hall Limited to produce a Sustainability Statement to support the application for the proposed redevelopment of Cardiff East Park and Ride, Pentwyn.

Report Objective

2.2 This document details the sustainable design and construction measures adopted by the proposed development and gives an overview of the design proposals that will ensure the development operates in a sustainable manner over the lifespan of the scheme. The Sustainability Statement report headlines will provide a framework for the project team to operate consistently within sustainability guidelines set out by Cardiff City Council.

2.3 The report is structured to meet these guidelines as follows:

- Section 3 discusses the planning context and policies which are relevant to sustainability;
- Section 4 discusses the development response to the policy drivers for sustainability; and
- Section 5 summarises the development's design response.

Site and Surroundings

2.4 The application site (Appendix A1) is located within the suburbs of Cardiff City, approximately 5.9 km to the northeast of the city centre. The site is bounded by A48 Eastern Avenue to the west, beyond which lies the residential area of Pentwyn. The Rhymney River runs along the eastern and southern boundaries of the site, with the Rhymney Trail running parallel to the river and the residential area of Llanrumney located to the east. The Rhymney Trail crosses the river via an existing footbridge to the south of the site.

2.5 The application site itself comprises approximately 23.4 hectares at the existing Cardiff Park and Ride East. The existing Park and Ride contains approximately 900 car parking spaces, and is accessed from the A48 Eastern Avenue. The site features an area of ancient woodland to the north, in addition to a number of TPO trees. The north of the site and a corridor along the river Rhymney lies in an area of high flood risk from rivers and the rest of the site lies in low flood risk.

2.6 The approximate site location is shown in Figure 2.1 below.

Figure 2.1 Site location

Approximate site boundary

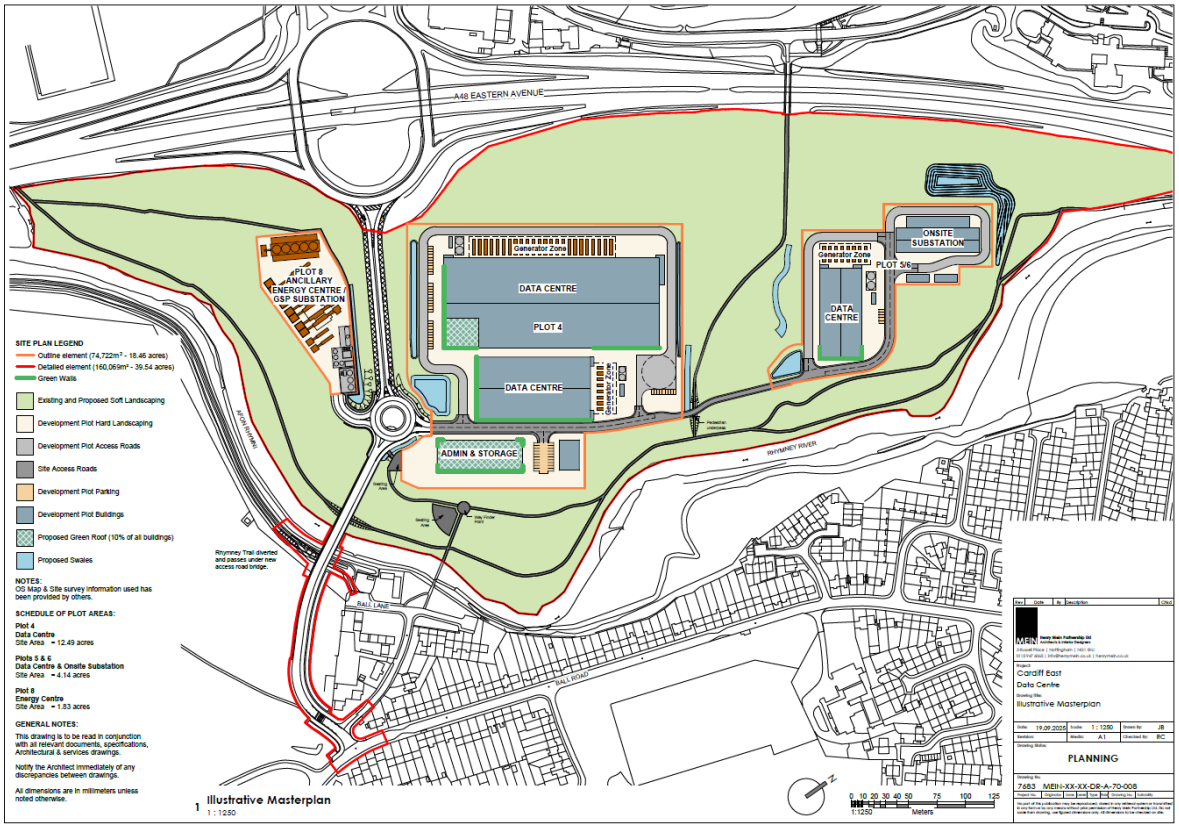
The Proposed Development

2.7 The description of development is as follows:

> *"Hybrid Planning Application (part full/part outline) for the demolition of existing structures and redevelopment of the site to provide a data centre and associated buildings and structures, associated car parking and access roads, a bridge across the Rhymney River, site wide landscaping and associated works."*

2.8 The image below shows the Illustrative Masterplan, prepared by Henry Mein, for the proposed scheme.

Figure 2.2 Illustrative Masterplan



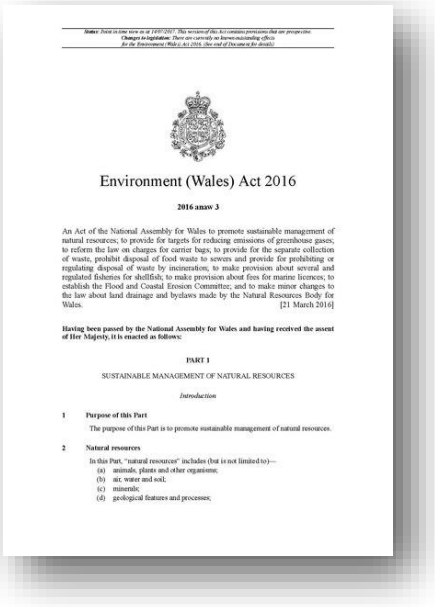
3. PLANNING AND REGULATORY CONTEXT

3.1 Built environment sustainability is incorporated within policy and regulation at a national and local level, as set out below.

National

Environment (Wales) Act 2016

3.2 On 21st March 2016, the National Assembly for Wales passed the Environment (Wales) Act. Within this framework, the Act sets out legislation to enable the planning and management of the natural resources of Wales in a more sustainable, pro-active and joined-up way. Under Part 2: Climate Change of the Act, an obligation has been placed on Welsh Ministers to achieve an 80% in reduction greenhouse gas emissions by 2050, compared to the given baseline year.



Environment (Wales) Act 2016

2016 anaw 3

An Act of the National Assembly for Wales to promote sustainable management of natural resources; to provide for targets for reducing emissions of greenhouse gases; to reform the law on charges for carrier bags; to provide for the separate collection of waste, prohibit disposal of food waste to sewers and provide for prohibiting or regulating disposal of waste by incineration; to make provision about several and regulated fisheries for shellfish; to make provision about fees for marine licences; to establish the Flood and Coastal Erosion Committee; and to make minor changes to the law about land drainage and byelaws made by the Natural Resources Body for Wales. [21 March 2016]

Having been passed by the National Assembly for Wales and having received the assent of Her Majesty, it is enacted as follows:

PART 1

SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

Introduction

1 Purpose of this Part

The purpose of this Part is to promote sustainable management of natural resources.

2 Natural resources

In this Part, "natural resources" includes (but is not limited to)—

(a) animals, plants and other organisms;
(b) air, water and soil;
(c) minerals;
(d) geological features and processes;

3.3 As required under Part 2 of the Environment (Wales) Act 2016, Net Zero Wales Carbon Budget 2 was published by the Welsh Government in October 2021. This sets out a budget for Wales's emissions for the period 2021 – 2025.

3.4 Following a commitment in March 2021, the Environment (Wales) Act 2016 has been amended to target net zero carbon emissions by 2050.

Future Wales: The National Plan 2040 (February 2021)

3.5 Future Wales – the National Plan 2040 is a national development framework, setting out the direction for development in Wales. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.

3.6 Future Wales and the spatial strategy contained within provides strategic direction for all scales of planning within Wales, and sets out policies and key issues that should be taken forward at the regional scale. Strategic policies related to sustainable development contained within Future Wales include:

- **Policy 8 – Flooding** states that flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported. The Welsh Government will work with Flood Risk Management Authorities and developers to plan and invest in new and improved infrastructure, promoting nature-based solutions as a priority. Opportunities for multiple social, economic and environmental benefits must be maximised when investing in flood risk management infrastructure. It must be ensured that projects do not have adverse impacts on international and national statutory designated sites for nature conservation and the features for which they have been designated

- **Policy 9 – Resilient Ecological Networks and Green Infrastructure** states that, to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:

  - identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development; and

  - identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.

  Planning authorities should include these areas and/or opportunities in their development plan strategies and policies in order to promote and safeguard the functions and opportunities they provide. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.

- **Policy 12 – Regional Connectivity** states that the Welsh Government will support and invest in improving regional connectivity. In urban areas, to support sustainable growth and regeneration, our priorities are improving and integrating active travel and public transport. In rural areas our priorities are supporting the uptake of ultra-low emission vehicles and diversifying and sustaining local bus services.

  The Welsh Government will work with Transport for Wales, local authorities, operators and partners to deliver the following measures to improve regional connectivity:

- Active Travel – Prioritising walking and cycling for all local travel. We will support the implementation of the Active Travel Act to create comprehensive networks of local walking and cycling routes that connect places that people need to get to for everyday purposes.

- Bus – Improve the legislative framework for how local bus services are planned and delivered. We will invest in the development of integrated regional and local bus networks to increase modal share of bus travel and improve access by bus to a wider range of trip destinations.

- Metros – Develop the South East Metro, South West Metro and North Wales Metro. We will create new integrated transport systems that provide faster, more frequent and joined-up services using trains, buses and light rail.

- Ultra-Low Emission Vehicles – Support the roll-out of suitable fuelling infrastructure to facilitate the adoption of ultra-low emission vehicles, particularly in rural areas.

Planning authorities must plan the growth and regeneration of the National and Regional Growth Areas to maximise opportunities arising from the investment in public transport, including identifying opportunities for higher density, mixed-use and car-free development around metro stations.

Active travel must be an essential and integral component of all new developments, large and small. Planning authorities must integrate site allocations, new development and infrastructure with active travel networks and, where appropriate, ensure new development contributes towards their expansion and improvement.

Planning authorities must act to reduce levels of car parking in urban areas, including supporting car-free developments in accessible locations and developments with car parking spaces that allow them to be converted to other uses over time. Where car parking is provided for new non-residential development, planning authorities should seek a minimum of 10% of car parking spaces to have electric vehicle charging points.

- **Policy 16 – Heat Networks** states that, within Priority Areas for District Heat Networks planning authorities should identify opportunities for District Heat Networks and plan positively for their implementation.

  Large scale mixed-use development should, where feasible, have a heat network with a renewable / low carbon or waste heat energy source. Planning applications for such development should prepare an Energy Masterplan to establish whether a heat network is the most effective energy supply option and, for feasible projects, a plan for its implementation.

- **Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure** states that the Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs.

  In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales's international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency. In Pre-Assessed Areas for Wind Energy the Welsh Government has already modelled the likely impact on the landscape and has found them to be capable of accommodating development in an acceptable way. There is a presumption in favour of large-scale wind energy development (including repowering) in these areas, subject to the criteria in policy 18.

  Applications for large-scale wind and solar will not be permitted in National Parks and Areas of Outstanding Natural Beauty and all proposals should demonstrate that they will not have an unacceptable adverse impact on the environment. Proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities.

  New strategic grid infrastructure for the transmission and distribution of energy should be designed to minimise visual impact on nearby communities. The Welsh Government will work with stakeholders, including National Grid and Distribution Network Operators, to transition to a multi-vector grid network and reduce the barriers to the implementation of new grid infrastructure.

- **Policy 18 – Renewable and Low Carbon Energy Developments of National Significance** states that proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:

  1. outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);

  2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;

  3. there are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);

4. there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;

5. the proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;

6. there are no unacceptable adverse impacts on statutorily protected built heritage assets;

7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;

8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);

9. there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;

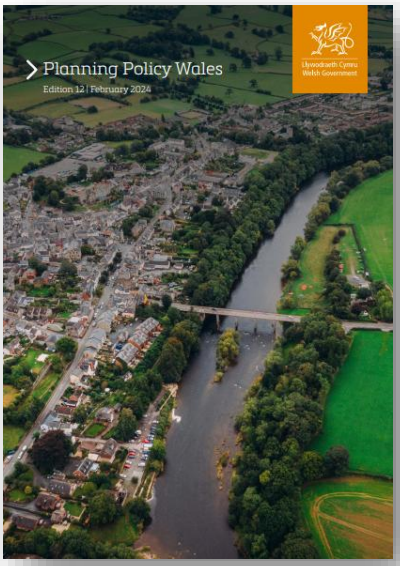
10. the proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;

11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.

The cumulative impacts of existing and consented renewable energy schemes should also be considered.

Planning Policies Wales (PPW)

3.7 PPW sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. Accordingly, the PPW, with the latest edition published in February 2024, aims to strengthen local decision making.

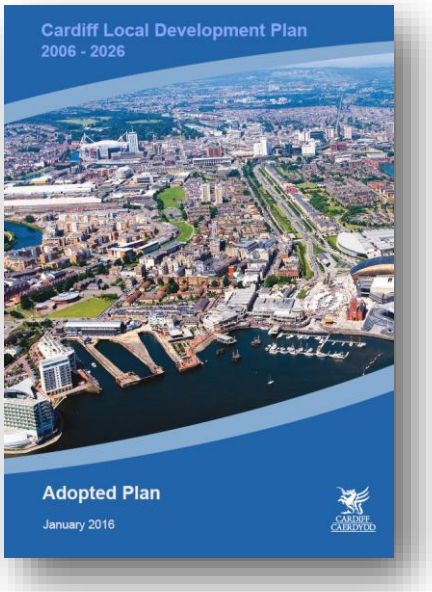


3.8 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

Local

3.9 In determining the local context, Cardiff Local Development Plan 2006 – 2026 (January 2016) sets out policy relevant to sustainable development.

Cardiff Local Development Plan 2006 – 2026 (January 2016)



3.10 The Local Development Plan demonstrates the importance the local authority places on maintaining and enhancing the natural environment. Policies of relevance include:

- **Policy KP5: Good Quality and Sustainable Design** sets out the design criteria in which the development will be assessed against. The design criteria include:
  - Responding to the local character and context of the built and landscape setting;
  - Providing a diversity of land uses to create balanced communities and add vibrancy throughout the day;
  - Providing a healthy and convenient environment for all users;
  - Maximising renewable energy;
  - Achieving resource efficient and climate responsive design that provides sustainable water and waste management solutions and minimises emissions from transport, homes and industry;
  - Achieving an adaptable design that can respond to future social, economic, technological and environmental requirements;
  - Promoting efficient use of land; and
  - Fostering inclusive design and ensuring that buildings are accessible to all.
- **Policy KP8: Sustainable Transport** states that, to meet planned levels of growth, developments in Cardiff must be integrated with transport infrastructure and services in order to achieve a number of targets including, but not limited to:
  - A reduced travel demand and dependence on the private car;
  - Enabling and maximising the use of sustainable and active transport modes;
  - Integrating travel modes; and

- Ensuring access to all, including those with disabilities.

- **KP15: Climate Change** states that, to mitigate the against the effects of climate change and to adapt to its impacts, development proposals should take into account the following factors:
  - Reducing carbon emissions;
  - Protecting and increasing carbon sinks;
  - Adapting to the implications of climate change at both a strategic and detailed design level;
  - Promoting energy efficiency and increasing the supply of renewable energy;
  - Avoiding areas susceptible to flood risk in the first instance in accordance with the sequential approach set out in national guidance; and
  - Preventing development that increases flood risk.

- **KP18: Natural Resources** states that, in the interest of the long-term sustainable development of Cardiff, development proposals must take fill account of the need to minimise impacts on the city's natural resources and minimise pollution, in particular the following elements:
  - Protecting the best and most versatile agricultural land;
  - Protecting the quality and quantity of water resources, including underground, surface and coastal waters;
  - Minimising air pollution from industrial, domestic and road transportation sources and managing air quality; and
  - Remediating land contamination through the redevelopment of contaminated sites.

Other Considerations

Declaration of a Climate Emergency (July 2019)

3.11 On the 28th March 2019, Cardiff City Council declared a climate change emergency, with the Council resolving to:

- Join with other councils across the UK in declaring a global 'climate emergency' in response to the findings of the IPCC report.

- Support the implementation of the Welsh Government's new Low Carbon Delivery Plan, as well as a range of measures to further reduce carbon emissions from the Council's own operations, to help achieve the Welsh Government's ambition for the public sector in Wales to be carbon neutral by 2030.

- Make representations to the Welsh and UK Governments, as appropriate, to provide the necessary powers, resources and technical support to local authorities in Wales to help them successfully meet the 2030 target.

- Continue to work with partners across the city and region to develop and implement best practice methods that can deliver carbon reductions and help limit global warming.

4. SUSTAINABILITY STATEMENT

4.1 The Sustainability Statement assesses the proposed development in line with the requirements of the Cardiff Local Development Plan 2006 – 2026. This enables a holistic and futureproofed sustainability approach for the proposed development. The Cardiff Local Development Plan 2006 – 2026 requires that all new development provides sustainable and energy efficient design, efficient use of resources and materials, water efficient design and is adaptable to the changing climate. This therefore represents best practice guidance to meeting high standards of sustainable design and construction.

Making Effective Use of Land

4.2 As shown below in Figure 4.1, the proposed scheme will redevelop the existing Park and Ride facilities. As part of the redevelopment, all existing structures on the site will be demolished, and a Data Centre provided, alongside associated Energy Centre and substation. The redevelopment will also provide access, parking, drainage, landscaping and associated works, alongside the delivery of a bridge across the River Rhymney.

Figure 4.1 Site location

Approximate site boundary

4.3 The proposed development will therefore make effective and efficient use of land, delivering a new Data Centre on previously a developed, brownfield site.

Location and Transport

4.4 As detailed within the Transport Assessment, prepared by SLR Consulting Limited, whilst there are no footways present on the A48 Eastern Avenue / Bryn Celyn Road junction, nor on the access route

to the existing Park & Ride facilities within the site in the existing case, a number of leisure walking routes are present within the immediate surroundings. These routes are noted to primarily comprise Public Rights of Way (PRoWs), providing connectivity to the north, east, south and west of the site, including a connection to Ball Lane to the east of the site via a footbridge over the Rhymney River. To the north, additional PRoWs provide connections to a footbridge over the A48, linking to Pentwyn Road and a number of local facilities. Further connectivity is provided via an additional footbridge across the A48 connected to the south of the site, which links to Circle Way East, and further local facilities. The PRoW routes in the surroundings of the site also provide connections to the 'Rhymney Trail', which is a leisure walking and cycling route around the Llanrumney Fields to the south. This route, which runs in a north-south direction along the Rhymney River, also connects to Newport Road to the south of the site, providing a direct pedestrian and cycle link to the centre of Cardiff City. To the north, the Rhymney Trail runs under the A48 Eastern Avenue, providing a route to Pentwyn Road, as well as towards the suburb of Pontprennau and St Mellons Road.

4.5 With respect to access to public transport services, a bus stop is currently located within the site, and is served by the H59 service, which provides connections to Heath Hospital. Services from this bus stop run with an approximate 20-minute frequency. Bus stops are also located along Bryn Celyn Road, to the west of the site, and are accessible via the PRoW routes and footbridges present over the A48. These stops are served by the number 58 service, which runs between Pontprennau and the City Centre, approximately every 20 minutes. Additional services are available to the east of the site. Bus stops located along Ball Road, which is accessed via the footbridge over the Rhymney River, are served by the number 49 and 50 services, running between St Mellons and the City Centre, as well as the number 101 and 102 services, which run between the City Centre and St Mellons / Llanrumney via Pentrebane and Heath Hospital. The nearest rail station to the site is Heath High Level Station, located approximately 4km to the southwest of the site. This station is accessible via an 18-minute cycle, or by using the H59 bus service from the Heath Hospital. Heath High Level Station, which is located on the Rhymney Line, provides access to the south towards Cardiff Queen Street, Cardiff Central and Penarth every 15 minutes, and to the north to Caerphilly, Ystrad Mynach and Bargoed.

4.6 Vehicular access to the site will be via the existing access to the Park & Ride site from the A48 roundabout, with an internal roundabout junction to be provided to allow access to the different land uses within the proposed development. Additionally, a new road will be constructed from the internal roundabout across the Rhymney River, connecting the site to Ball Road, and providing access to the site from Llanrumney. This road would be designed to standards for use by pedestrians, cyclists and motor vehicles. Further to this, it is proposed that ducting and space be provided for the future implementation of bus gates and Automatic Number Plate Recognition (ANPR) cameras. This will ensure that vehicular use of the bridge shall thereafter be restricted to public transport only between the hours of 07:00 and 10:00, and 15:00 and 19:00. This will be maintained for this scheme. Appropriate signage will be located on the link road to inform users of any restrictions.

4.7 To encourage active travel to and from the site, the new road over the Rhymney River will feature a 3.5m footway / cycleway, allowing pedestrians and cyclists to cross the Rhymney River and access Ball Road. It is noted that Ball Road has been designated an Advisory Cycle Route by Cardiff Council, and cyclists will therefore be able to continue journeys from the site through to Llanrumney. The Advisory Cycle Route continues to Newport Road to the southeast, from where there is potential that the Cardiff Cycleways scheme will continue to be extended with connections to the eastern areas of Cardiff, as well as further north to St Mellons, and southwest towards the City Centre. In addition to the new active travel link to be brought forward as part of the proposed development, some of the existing footpaths and PRoWs that currently run through or near the site will be diverted in places to ensure better integration with the development. Given the security need to protect the accesses to the Data Centres, it is proposed that one PRoW should divert into a subway underneath the connecting road between Plot 4 and Plot 5. This will maintain the PRoW connection whilst maintaining the security of the site. It is highlighted, however, that all current through routes will be maintained through the new and diverted routes and will deliver tangible benefits to the active travel infrastructure located near the site.

4.8 Car parking within the proposed development will align with the advice contained within Cardiff Council's Managing Transportation Impacts (Incorporating Parking Standards) Supplementary Planning Guidance (SPG; July 2018). An appropriate level of electric charging points will also be provided in all car parks, in line with national guidance. Future Wales requires a minimum of 10% of all car parking spaces to have a charging facility. Further to this, cycle and motorcycle parking will be provided in accordance with the Council's adopted standards.

4.9 The Vehicle Trip Assessment, undertaken as part of the Transport Assessment, indicates that there will be approximately 87 vehicle movements during the morning peak (08:00 – 09:00), and 53 vehicle movements during the evening peak (17:00 – 18:00), as a result of the proposed development. The projected traffic generation and distribution from the site is not considered to have an adverse impact on the surrounding highway network, and no further mitigation measures are proposed as part of the scheme to increase capacity at the existing junction within the area surrounding the development.

4.10 A Travel Plan has also been prepared by SLR Consulting Limited. This document has been developed as a long-term strategy with the aim of promoting sustainable modes of transport to reduce reliance on single occupancy private car travel. It is proposed that a number of measures be implemented in order to work towards the objectives and targets of the Travel Plan. These include the provision of a Travel Pack for all new employees and a Travel Noticeboard that will detail local travel options and infrastructure with the aim of encouraging the use of sustainable travel modes.

Energy Strategy

4.11 An Outline Energy Assessment has been produced by HasLid Services for the proposed development and is reported in a separate document, which accompanies this application. The strategy for emissions reduction is summarised below.

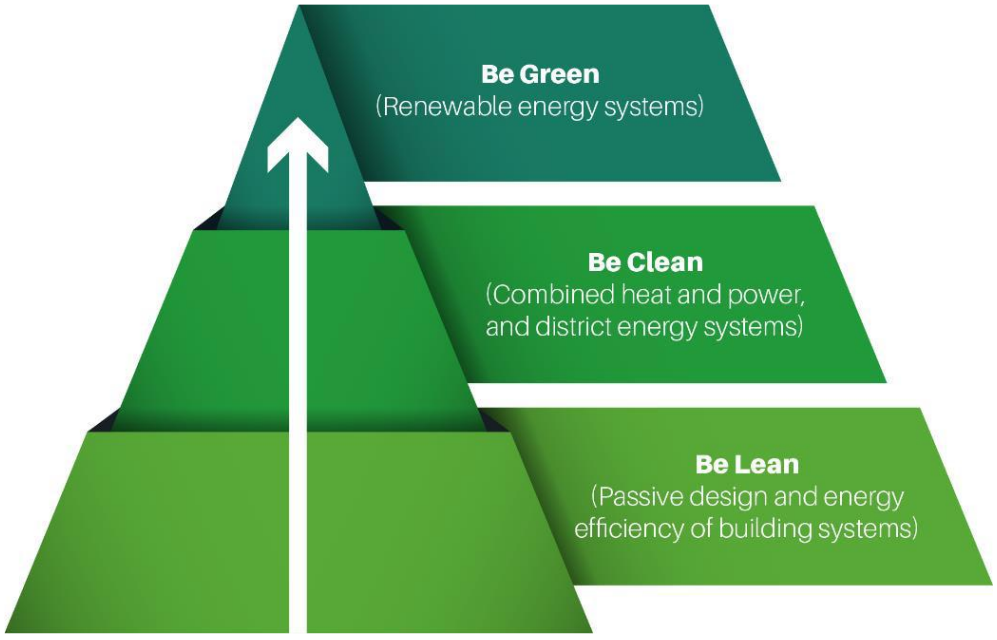
4.12 The proposed interventions to be incorporated as part of the scheme have been selected to target a best level of CO_2 emissions performance when assessed against Building Regulations Part L:2021 and associated policies, accounting for economic, technical and functional feasibility.

4.13 The proposed energy strategy is based upon the principles of the Energy Hierarchy on the basis that it is preferable to reduce carbon dioxide emissions through reduced energy consumption above decarbonisation through alternative energy sources.

4.14 The tiers of the Energy Hierarchy are:

- Be Lean Reduce energy demand through the passive design and layout of the scheme, using natural lighting and ventilation
- Be Clean Supply energy efficiently using either combined heat and power or district energy systems
- Be Green Use renewable energy systems to further reduce emissions

Figure 4.2 The Energy Hierarchy



4.15 The proposed development has been designed to maximise the capacity of the Data Centre, whilst ensuring that the scheme respects the scale and massing of the surrounding buildings. The massing

and orientation are therefore constrained somewhat by the site footprint shape and area, and the need to fit in with the surroundings.

4.16 The measures proposed at each level of the Energy Hierarchy are set out below.

4.17 The ‘Be Lean’ measures include:

- Targeting of high levels of building fabric insulation to minimise heat loss;
- Use of high-performance glazing with optimised U-values and solar transmittance (g-values) to reduce heat loss, maximise beneficial solar gain, and limit the potential for summertime overheating;
- Achievement of high levels of air tightness to reduce heat loss through infiltration and uncontrolled air leakage;
- Minimisation of thermal bridging at key junctions where building elements meet to reduce heat loss through these connections;
- Installation of low energy LED lighting both in internal and external spaces, with presence detection and automatic daylight dimming to be employed within internal spaces, to minimise artificial lighting energy consumption;
- Employment of heat recovery air handling units within internal areas to provide fresh air, with heat recovered from extract air;
- A high specification of heating controls to ensure operational efficiency, with a Building Management System (BMS) to be established to monitor and control chillers, air handling units, pumps, plant and internal environmental conditions;
- Connection of energy meters to the BMS to enable comprehensive monitoring of electricity, water and, where relevant, gas consumption across the site, and to aid the identification of abnormal consumption patterns that may then be investigated and addressed; and
- Installation of variable speed drives on pumps and fans to match flow rates with demand, therefore reducing electricity consumption.

4.18 The ‘Be Green’ measures include:

- Employment of highly efficient air source heat pump (ASHP) systems to serve space heating and cooling demands.

4.19 The Outline Energy Assessment notes that further carbon dioxide emissions reductions may be achieved through the following:

- Employment of large-scale, roof-mounted photovoltaic (PV) systems to generate zero-carbon electricity on-site; and
- Installation of a solar thermal system with roof-mounted panels to preheat water used within the buildings.

4.20 With respect to the proposed Data Centre uses, the following energy saving measures are set out:

- Employment of direct evaporative Air Handling Units (AHUs) with variable air volume conditioning to provide cooling and ventilation to the data processing and equipment rooms;
- Elevation of the Data Hall temperature to maximise the potential for free cooling and therefore energy efficiency;
- Use of a Data Hall aisle containment system to maximise cooling efficiency;
- Employment of energy-saving Electronically Commutated (EC) fans;
- Provision of low loss transformers (ECO tier 2) to minimise energy losses;
- Incorporation of market-leading, efficient Uninterruptible Power Supply (UPS) systems;
- Employment of direct evaporative Air Handling Units (AHUs) with variable air volume conditioning; and
- Design of the Data Centre uses to be heat network enabled, with protected routes for future heat network connections to be provided.

4.21 At the outline stage, it is also noted that the proposed Data Centre uses will be constructed in line with the 2024 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency. In addition, a high level of Power Usage Effectiveness (PUE), which is calculated as the total energy consumption of the Data Centre divided by the IT equipment energy consumption, will be targeted through the employment of highly efficient computing equipment.

4.22 As detailed within the Utility Services Report, prepared by HasLid Services, it is anticipated that the proposed Data Centre will require an electrical supply of 150MW. The electrical network of the proposed development is expected to include a Grid Supply Point (GSP) substation, and Primary Substations (PSS). The GSP would connect directly to the high-voltage transmission network, and would step the power down for distribution. The PSS would then further transform the voltage levels to supply local loads.

4.23 In an ideal scenario, the substation will be commissioned and operational prior to the data centre uses coming online. However, there is potential that a temporary power supply solution will be required to bridge the gap between data centre readiness and full substation availability. It is therefore proposed to generate approximately 49.9 MW of electricity using gas turbine technology connected to the Wales & West Utilities (WWU) gas network. The temporary power generation system is expected to comprise: 20 MW high-efficiency natural gas turbines; steam heat recovery units; large, slow-running condenser fans; small transformers; and temporary generators.

4.24 In addition, it is highlighted that data centre uses require continuous power in order to maintain operations. Standby generators are therefore employed to supply electricity in the event of a power outage, or interruption to power supply. This ensures that critical systems remain in operation without disruption. Testing of the standby generators will be undertaken regularly, including routine weekly tests of 30 minute duration, alongside black test or simulated power failure tests of two hour duration to be undertaken every six months.

4.25 Further details of the measures to be incorporated to minimise energy consumption and associated greenhouse gas emissions are provided within the Outline Energy Assessment, which accompanies this submission.

Reducing Water Consumption

4.26 The majority of the United Kingdom is under water stress, with more water often being consumed than is available during dry weather. As the population continues to grow, and with changes to the frequency of rainfall events projected as a result of climate change, this situation will be further exacerbated, with even greater pressure exerted on the supply of potable water.

4.27 In order to reduce internal water consumption within the proposed scheme, it is intended that water-efficient fittings be installed throughout the proposed development. Further to this, mains water supply to the buildings will be fitted with a primary meter, and sub-meters installed for all water-consuming plant and buildings areas. It is intended that all meters installed include an interface with the BMS, which would enable the effective monitoring and management of water consumption. It is expected that specifications would also include water leak detection systems and flow control devices to further limit water wastage.

Materials and Waste

4.28 Materials should be responsibly sourced by the main contractor, and be specified to have a low embodied impact. Materials with a low embodied impact, as defined within the BRE Green Guide to Specification, should be selected for use in the building design and construction.

4.29 The selection of materials is determined by a variety of factors, such as the architectural context, design rationale, embodied carbon and maintenance requirements. For the proposed development,

consideration will be given to the lifecycle environmental performance with materials selected in consideration of the BRE's Green Guide to Specification, aiming for A or B rated materials wherever possible.

4.30 The use of locally sourced materials will be prioritised wherever possible to reduce the impacts associated with the transportation of materials. Using materials produced in the local area will also aid in developing the identity of the development, by ensuring it is in line with the local character and context. For the proposed development, there will be a focus on sustainable design, with materials selected that are in keeping with the local vernacular and landscape character, aiming for locally sourced materials where possible.

4.31 During detailed design of the building fabric, consideration will be given to minimising the environmental impact of materials, by selecting non-toxic and robust materials to ensure longevity and a minimal impact on the health of occupants.

4.32 Timber will be selected and purchased in consideration of sustainability certification. It is intended that all structural timber elements along with any timber used for temporary uses, such as scaffolding, will be sustainably sourced, e.g. from FSC and/or PEFC sources. It is intended that all non-timber materials will be certified with Environmental Management Systems (ISO 14001 or BES 6001) where possible.

4.33 During the construction phase, a Site Waste Management Plan (SWMP) will be produced to minimise the impact of construction waste on the environment. The SWMP will include benchmarks for resource efficiency, procedures to reduce hazardous and non-hazardous waste and guidance on monitoring waste streams.

Nature Conservation and Ecology

4.34 A Preliminary Ecological Appraisal (PEA) has been prepared by WSP, and forms an appendix to the Ecological Impact Assessment Chapter of the Environment Statement submitted as part of the planning application. There are seven international designated sites within a 30km radius of the site: Severn Estuary / Môr Hafren Special Area of Conservation (SAC); Severn Estuary Special Protection Area (SPA); Severn Estuary Ramsar; Cardiff Beech Woods SAC; Mendip Limestone Grasslands SAC; North Somerset and Mendip Bats SAC; and Wye Valley and Forest of Dean Bat Sites SAC. A Habitat Regulations Assessment (HRA) has been undertaken to assess the potential effects of the proposed development, either alone or in combination with other developments, on the identified designated sites located within 30km of the site. The HRA, prepared in accordance with the Habitats Regulations, is submitted as part of the planning application and is included as an appendix to the Ecological Impact Assessment Chapter of the Environment Statement submitted as part of the planning application. One nationally statutory designated site, Gwent Levels – Rumney and Peterstone Sites of Special Scientific Interest (SSSI), and one local statutory designated site,

Howardian Local Nature Reserves (LNR), are also located within 2km of the site. Further to this, a total of nine non-statutory designated sites are located within a 1km radius of the site, including the Rhymney River Site of Importance for Conservation (SINC), which is located within the site.

4.35 The site supports a mosaic of habitats in the existing case, including: semi-natural broadleaved woodland; dense scrub; scattered scrub; broadleaved parkland / scattered trees; a watercourse; and poor semi-improved grassland. In addition, a hardstanding car park is present within the central area of the site, alongside distinct pathways and access routes. Hardstanding footpaths also run through the southern and eastern extents of the site. Two parcels of Ancient Semi Natural Woodland (ASNW) are present within the site, with further parcels located within a 50m radius. These are irreplaceable habitats, and are noted to be of National Importance, due to their age, structure and biodiversity value. It is highlighted that, as part of the proposed development, the parcels of ASNW present on the site will be fully retained, in addition to a significant proportion of semi-natural broadleaved woodland and associated scrub and grassland. Whilst areas of woodland, scrub and grassland will be lost in order to facilitate the proposed development, this will be compensated for through new planting on-site, in addition to remedial tree and woody shrub planting on a neighbouring site located across the river to the southwest. Further to this, it is noted that, through the infilling of habitats, selective thinning, and the management of non-native species, the quality of the existing woodland will be enhanced. Existing habitats that are to be retained as part of the proposed development will be carefully managed, which will aid to safeguard the ecological value of the site, and to maintain habitat diversity.

4.36 The habitats present within the site have been identified as potentially supporting a number of protected and notable species. Surveys undertaken at the site identified 15 trees as having potential roost features (PRFs), including one features that may potentially be suitable for multiple bats or a maternity colony. In addition, the woodland edges, scrub, grassland margins, and the Rhymney River corridor were identified as key features for bat activity, with these habitats being used by commuting and foraging bats. Further to this, the river corridor is noted to form a commuting route for riparian species, with a kingfisher observed during surveys undertaken at the site. The linear woodland, scrub, scattered trees and grassland habitats are also considered to provide suitable nesting and foraging opportunities for a range of common and widespread bird species. Whilst no direct evidence of otter presence was recorded at the site, it is expected that the Rhymney River is used intermittently by this species for commuting and foraging. It is highlighted that the Ryhmney River SINC is known to support otters, as well as suitable prey species, such as brown trout. Whilst the presence of only one slow worm was recorded within the site, it is considered that the grassland, scrub and edge habitats present offer suitable conditions for small reptile populations. Further to this, the presence of badger within the site was confirmed, with evidence of foraging, commuting and sett-building recorded during surveys. The site and the woodland in the surrounding area are also noted to provide suitable scrub and woodland habitat for supporting populations of dormice. Similarly, suitable foraging and commuting habitats for hedgehog are present on the site in the form of connected

woodland edges, scrub and grassland, which are linked to the wider parkland and urban green space network. Whilst no ponds are present on the site nor within a 500m radius, and the site is therefore considered to be unsuitable for Great Crested Newts (GCNs), the linear woodland, scrub and grassland habitats may offer suitable foraging and hibernation opportunities for common amphibians. These habitats are also considered to provide suitable resources for common and widespread invertebrate species. Whilst the Rhymney River provides connectivity to the wider catchment, no aquatic species of conservation concern were identified during surveys of the site.

4.37 A number of mitigation measures have been proposed to ensure existing biodiversity is protected during the construction and operation of the scheme. These include:

- Mitigation in relation to the Severn Estuary SAC, SPA and Ramsar sites, as well as the Cardiff Beech Woods SAC, are set out within the HRA, which includes an Appropriate Assessment, and which forms an appendix to the Ecological Impact Assessment Chapter of the Environment Statement submitted as part of the planning application. Mitigation measures set out within the HRA with respect to designated sites include, where driven piling is required, the undertaking of these works outside the main salmonid migration period (October to March) to avoid disturbance to adult upstream movement. Similarly, should driven piling be required, this should be restricted to daylight hours over the period April to November, to ensure no direct or indirect disturbance to smolts or eels. In addition, piling operations should comply with BS 5228-2, with hammer energy and duration limited to the minimum required for engineering stability. Piling sessions should also be undertaken in line with soft-start procedures, with a reduced hammer energy employed at the start of works, to allow fish to move away prior to full-power operation. Further to this, an Ecological Clerk of Works (ECoW) should be present during key activities during the piling programme to monitor for signs of fish distress or unusual behaviour. Should these effects be observed, piling should be temporarily ceased, and further advice sought from the ECoW. It is noted that, through the incorporation of the mitigation measures set out within the Appropriate Assessment, the proposed development on its own or in combination with other plans and projects, will have not have an adverse effect on the Severn Estuary SAC, SPA and Ramsar. It is noted that, as it is located inland, over 5km from the site, and has no hydrological connections with the proposed development, no adverse impacts on the Cardiff Beech Woods SAC are anticipated as a result of the proposed development, and no specific mitigation is therefore required. Further to this, the Cardiff Beech Woods SAC does not include mobile species, such as bats, that could enter the site, therefore no specific mitigation measures are required with respect to these species.

- As detailed within the HRA, in the event of a fire occurring within the proposed development, there is potential for impacts on water quality of the Rhymney River to arise during the operational phase. As the proposed development will include the storage of electronics, batteries and other equipment, were a fire to occur, significant volumes of water or fire suppression agents may be used, which could result in contaminated fire-water runoff containing chemicals, heavy metals or

other battery-related pollutants. If not managed properly, such runoff could carry these hazardous substances into the Rhymney River, posing risks to qualifying habitats and species of the Severn Estuary SAC, SPA and Ramsar. To mitigate the potential for contaminated fire-water entering the Rhymney River, and subsequently the Severn Estuary SAC, SPA and Ramsar, it is proposed that 100% of all fire-water runoff arising from the maximum credible emergency event be captured. This is to be achieved through the provision of lagoon capacity on the site, to accommodate the combined volumes of fire-water generation during a suppression event, and a 1 in 100-year rainfall event, plus an allowance for climate change. To ensure no pollution of the Rhymney River from contaminated fire-water, there will be no uncontrolled release to surface waters, soils or groundwater. Runoff stored within the proposed lagoon will be treated via processes capable of achieving concentrations compliant with relevant environmental quality standards or site-specific thresholds protective of the Habitats Sites, and must address pollutants including hydrocarbons, suspended solids, battery-related contaminants, nitrogen compounds, chemical oxygen demand, metals and any combustion by-products. Any discharge from the proposed lagoon must occur only following verification that water quality meets the agreed protective thresholds, with discharge flow rates to be restricted to a level demonstrated to avoid hydraulic disturbance of the receiving waterbody during low-flow conditions. Should it not be possible to demonstrate compliance with the treatment and controlled discharge requirements set out in the HRA, fire-water runoff will continue to be collected in the proposed lagoon system, with the collected runoff taken for off-site disposal by third party contractors. This will ensure any potential of adverse effect on the integrity of the Severn Estuary SAC, SPA and Ramsar will be removed.

- All retained habitats should be protected through the implementation of a Construction Environmental Management Plan (CEMP) during construction works. Areas of woodland, scrub and grassland that are to be retained will be protected with tree root protection zones, in addition to the provision of barriers installed in compliance with British Standard (BS) 5837:2012. Where trees are subject to Tree Preservation Orders (TPOs), the relevant permission will be adhered to. Further to this, dust and pollution controls, such as the dampening of exposed surface, wheel washing, and restrictions on the handling of chemicals, will be put in place to minimise indirect impacts on retained habitats.

- Where vegetation is to be removed in order to facilitate the delivery of the proposed development, this will be undertaken in phases, to maintain habitat connectivity where possible. A 20m buffer will also be maintained around areas of retained ancient woodland, and native hedgerow planting will be implemented to discourage access, whilst also providing additional edge habitat.

- A Woodland Management Plan (WMP) will be implemented, along with appropriate new planting, to ensure the ancient woodland and other woodland to be retained as part of the proposed development are suitably protected and enhanced.

- Where required, additional surveys will be undertaken with respect to potential roosting features. These surveys will be undertaken by a qualified and appropriately licensed ecologist to identify the presence or likely absence of roosting bats. Should bats be identified during these surveys, works will be postponed, and Natural Resources Wales (NRW) consulted for licensing.

- During both the construction and operation of the proposed development, sensitive lighting will be installed to reduce disruption to bats, and to avoid light spill onto the River Rhymney and associated river corridor, to maintain commuting and foraging routes.

- Any vegetation clearance works will be undertaken outside of the bid nesting season (March to August), where practicable. If, however, clearance works are deemed to be necessary during the nesting period, they should proceed under a Precautionary Method of Works (PMoW), with detailed pre-works checks to be undertaken by an ECoW immediately prior to the commencement of works which, where no nesting birds are to be affected, should proceed within 24 hours. Buffer demarcation should also be implemented to ensure any nests present on the site are protected.

- Where the boundaries of the site are formed by the Rhymney River, a 15 – 20m buffer will be implemented to ensure disturbance to the river corridor is minimise and to prevent harm to species present. It is recommended that an otter ledge be integrated into bridge works to avoid the need for otters to travel onto the road above the bridge. During the construction of the proposed development, open pits or trenches should not be left uncovered or, where this is not possible, mammal ramps should be provided overnight. Where habitats that are considered to be suitable for otters are likely to be directly impacted by the construction of the proposed development, works should be undertaken under a PMoW, with necessary pre-works checks undertaken by an ECoW.

- Exclusion zones should be installed around identified badger setts, and a pre-commencement badger check should be undertaken at the site prior to the commencement of works, to ensure no new setts have been established.

- The proposed development has been designed to ensure the built form is located away from key dormouse habitats. The clearance of vegetation on the site will be undertaken in two stages: the first will take place between November and March to clear above-ground vegetation; and the second will taken place between April and May, with root balls and stumps to be removed. By taking a two-stage approach, potential disturbance to and destruction of hibernation habitats before the dormouse hibernation period will be minimised. In addition, toolbox talks will be given to site contractors, informing them of the presence of dormice on the site, as well as outlining the protective measures that are to be put in place, and to explain the steps that should be taken in the event that a dormouse is unexpectedly found during the works.

- Pre-works checks will be undertaken to determine the presence or absence of hedgehogs prior to the clearance of vegetation. Should individual hedgehogs be discovered on the site, they will be moved to safe areas of retained habitat, under ecological supervision.

- Biosecurity measures will be put in place to prevent the spread of Himalayan balsam and Japanses knotweed during the construction of the proposed development.

4.38 To provide biodiversity enhancements post-development the following measures have been recommended for incorporation as part of the proposed scheme:

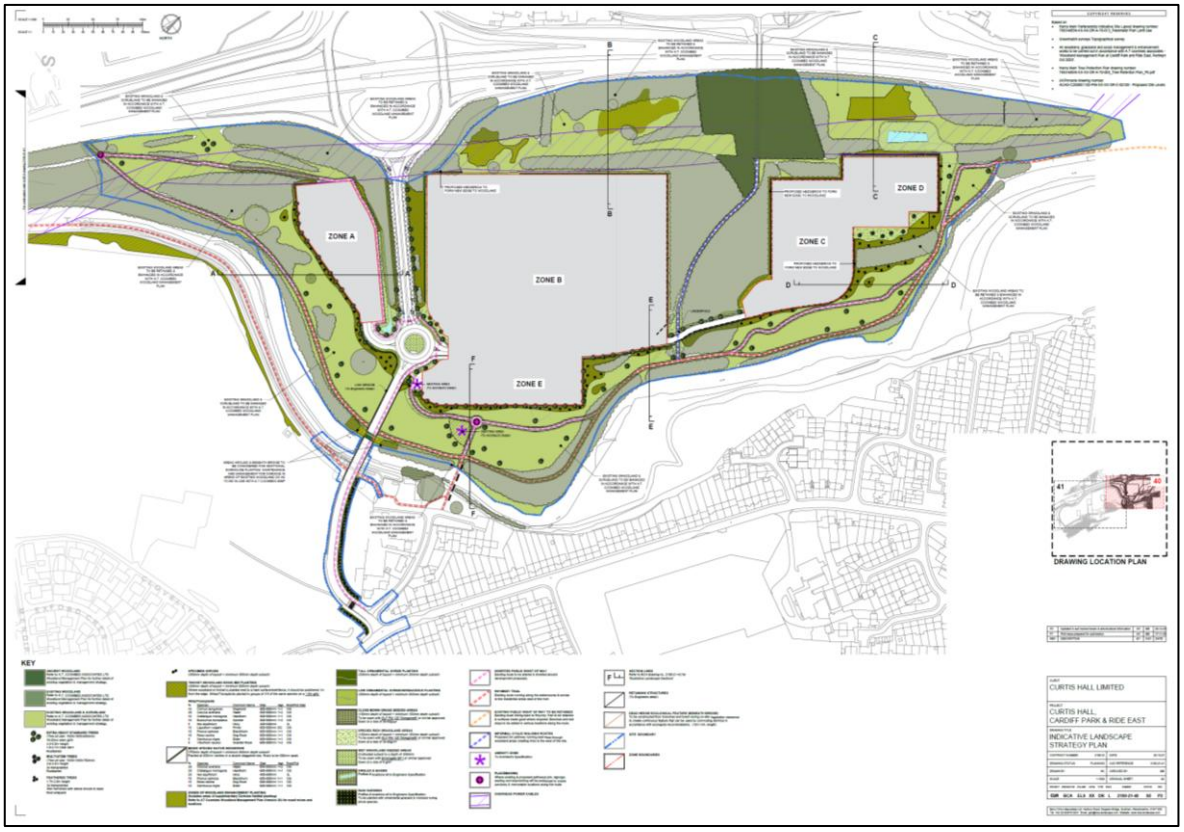
- The landscape strategy for the proposed development seeks to retain and enhance as much of the existing established vegetation as possible, which is to be achieved through the implementation of selective management regimes and the bolstering of vegetation, were required, through the provision of mixed species hedgerows around the periphery of the woodland zones.

- The boundaries of the development zones should be planted with mixed native species hedging, which should be managed to create a high-level boundary treatment. This will aid to restrict views into the working areas of the proposed development, whilst also creating a clean visual edge that can be easily maintained. Within frontage landscape, and along the central spine road, rain gardens and swales are proposed to capture and attenuate surface water runoff, with native species to be incorporated within these areas to aid habitat creation, biodiversity and ecology. Some ornamental features will also be planted in prominent locations to create varied visual interest through the addition of colour. Mown grass zones have also been designated to expand out from the rain gardens, to create a sinuous flowing verge, as well as a clean edge to the footpaths and road-scene.

- Within the wider setting many of the existing formal/informal footpath routes are to be retained and enhanced. This will include surfacing treatments, selective management of site lines to improve forward visibility and prevent over sailing of vegetation and improved way marking.

4.39 The Indicative Landscape Strategy Plan, prepared by Barry Chinn Associates is shown in Figure 4.3 below.

Figure 4.3 Indicative Landscape Strategy Plan

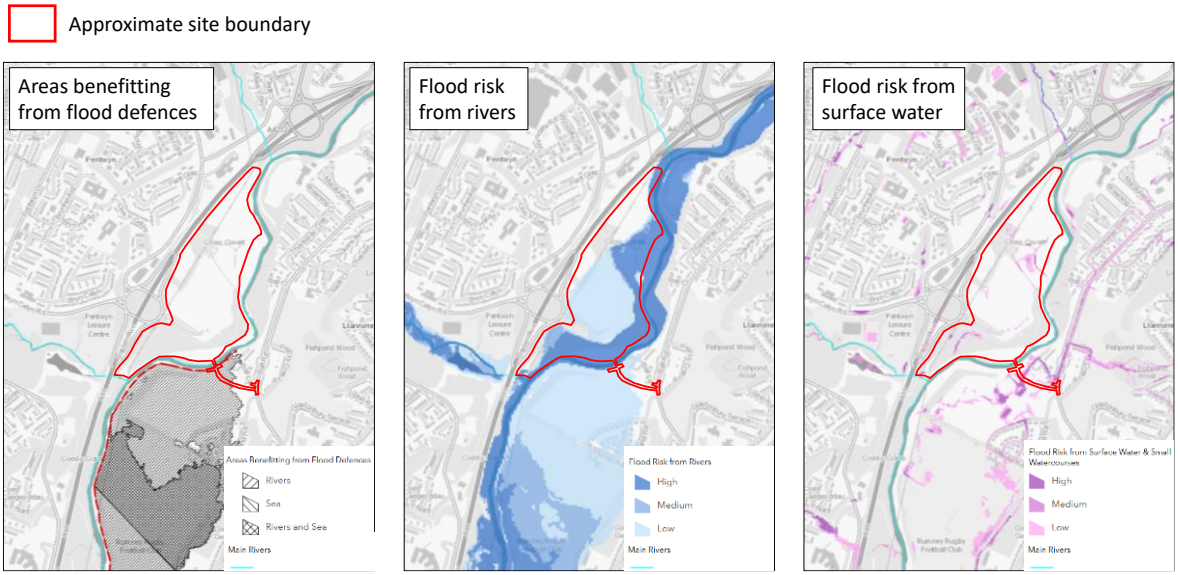


Reducing Flood Risk and Surface Water Runoff

4.40 Figure 4.4 below, based on the Natural Resources Wales Flood Maps, demonstrates that the proposed development site falls mostly within Flood Zones 2 and 3, with limited areas along the north-west site boundary located within Flood Zone 1. Areas located within Flood Zone 3 are defined as having a greater than 1% annual probability of flooding from fluvial/tidal sources, whilst those areas located within Flood Zone 2 are defined as having an annual probability of flooding from fluvial/tidal sources between 0.1% and 1%. This indicates that the proposed development site is at medium to high risk of flooding from the Rhymney River, which forms the eastern boundary of the site. it is noted that existing flood defences are present along the southern bank of the River Rhymney, which may be subject to a potential managed realignment to the south of Llanrumney Fields, subject to active review by Cardiff City Council and Natural Resources Wales. It is understood that the intention of this scheme would be to provide space for salt marsh habitat to develop over the medium to long-term. Should this scheme come forward, it is noted that there is potential that this would provide additional floodplain capacity, which may also aid to reduce flood risk at the proposed development site. The existing flood defences in their current state are understood to provide a design standard of protection for the events of magnitude up to the 75-year return period, and they are considered to be in 'Fair' condition, based on data from 2017. It is highlighted, however, that these defences do not provide any direct benefits to the proposed development site.

4.41 As part of the proposed development, it is intended that ground raising be undertaken to ensure that all proposed buildings and the majority of the development area is not predicted to flood during a 1 in 100 year + climate change allowance magnitude flood event. The footprint of the proposed development will also be raised to ensure it meets the acceptability criteria for a 1 in 1,000 year + climate change allowance magnitude flood event. It is noted that the intended ground raising could displace flood water, which has the potential to increase the risk of flooding locally. However, mitigation measures are currently being explored to prevent the risk of flooding in the local area being increased as a result of the proposed ground raising. This includes the potential introduction of a cantilever in the southern area of the site, and ground lowering to the west of, but not on, the plot containing the proposed on-site substation. This is to be confirmed through the continued undertaking of hydraulic modelling.

Figure 4.4 Natural Resources Wales Flood Map



4.42 Figure 4.4 above also demonstrates that the site is currently largely at low risk of surface water flooding, although there are limited areas at risk of surface water flooding within the site, all of which are locally arising. It is noted within the Flood Consequences Assessment, prepared by WSP, that as these areas comprise minor, isolated areas of flood risk, it may be reasonable to assume that these are not consistence with significant overland flow paths on the site, but rather are the result of low points of topography, where surface water ponding occurs. The potential exception to this is considered to the be surface water risk shown to occur around the southern approach of the proposed viaduct at Ball Lane. It is noted that, whilst the surface water flood risk present on the site may be amplified dur to the proposed increase in impermeable surfaces, the integration of the proposed sustainable drainage strategy will aid to mitigate the residual risk of surface water flooding at the site.

4.43 The Flood Consequences Assessment confirms that the site is not located within a groundwater source protection zone. It is noted within the Cardiff Flood Risk Management Plan (2015), that there

is no historic information on groundwater flooding within Cardiff, suggesting the risk from this source of flooding is low. Similarly, the Catchment Flood Management Plan (2009) notes that groundwater flooding is not considered to be a significant catchment-scale issue in the Eastern Valleys, although there is potential for it to be significant at a local scale. It is noted in the Flood Consequences Assessment that the groundwater table at the site would likely be dominated by the Rhymney River. The proposed development does not include for basements or sub-levels and, given the intention to raise the finished floor levels (FFLs) of the buildings, the risk of groundwater flooding to the proposed development is considered to be minimal.

4.44 The Natural Resources Wales Flood Maps indicate that the proposed development site lies partially within the zone of influence from nearby reservoirs, with the Nant Glandulas, and subsequently the River Rhymney, acting as a conveyance channel in the event of flooding from the Llanishen Reservoir, located approximately 2.3k to the northwest of the site. It is noted, however that flooding would only occur in the event of a failure or breach of the reservoir, the residual risk of which is considered to be low, given the legal requirement for reservoirs to be inspected and maintained in the UK. Further to this, it is considered that the risk of flooding to the site arising form lakes, ponds and canals is also low, given the lack of significant features of these types within the vicinity of the site. The risk of flooding arising from sewers is also considered to be low, subject to the approval of the foul and surface water sewer systems to be delivered as part of the proposed development by the Sustainable Drainage Approval Body (SAB) and statutory undertakers.

4.45 In order to manage the risk of flooding at the proposed development site, the proposed scheme has incorporated a comprehensive sustainable drainage strategy. As detailed within the Drainage Statement, prepared by Pinnacle Consulting Engineers, it is intended that surface water arising from the developed area of the site will be collected onsite within a network of swales and channel drainage. Numerous sustainable drainage features will be integrated across the site, including swales, biodiversity attenuation systems, attenuation crates and filter drains, in order to deliver storm water treatment, conveyance and attenuation. Where feasible, it is intended that attenuated storm water will be allowed to infiltrate into the ground. However, where this is not possible, it is intended that surface water runoff collected on the site will be discharged to the Rhymney River. It is noted that the proposed surface water drainage strategy has been designed to ensure that the natural ancient woodlands and associated trails will remain unaffected by the development. It is also noted that, should a storm event occur that is greater than the 1 in 100-year 40% climate change and the surface water drainage network flood, the finished floor levels of the proposed buildings will be elevated above the predicted flood levels in order to mitigate the risk of danger to site users and damage to the buildings.

Pollution

4.46 Air quality, noise, ground contamination, external lighting and water pollution have been considered as part of the assessments prepared as part of the planning application, with the following conclusions drawn:

- As detailed within the Air Quality Assessment, prepared by Tetra Tech, during the construction phase, the release of dust and particulate matter can be effectively mitigated, for example through the implementation of a Dust Management Plan (DMP), such that the resultant effects are not considered to be significant. During the operation of the proposed development, it is considered that the long-term effects associated with traffic movements associated with the proposed development will be negligible with respect to nitrogen dioxide (NO_2), and particulate matter (PM_{10} and $PM_{2.5}$) exposure. With respect to the temporary power supply solution, which will include for gas turbines, it is predicted that the long- and short-term concentrations of air pollutants (NO_2 and fine particulate matter), will remain below the relevant air quality objectives (AQOs) at all neighbouring sensitive receptors. Similarly, the predicted annual mean and daily mean NO_2 concentrations at the ecologically designated sites located in the vicinity of the site are predicted to be below the relevant critical level for the protection of vegetation and ecosystems. The long- and short-term effects of NO_2 on ecologically designated sites associated with the temporary power supply solution are therefore considered to be not significant. Further to this, it is considered that the regular weekly testing of the back up generators to be provided at the site will not be significant with respect to short term NO_2 concentrations. It is noted that, whilst the effect of NO_2 emissions associated with the six-monthly black test or simulated power failure tests is 'significant' on some sensitive receptors located to the east and west of the site, it is unlikely that worst-case meteorological conditions would coincide with the operation of the backup generators. To ensure potential effects are mitigated, it is recommended therefore that the testing of the backup generators is avoided during period where the wind direction is easterly or westerly. It is highlighted that the effects of the six-monthly black test or simulated power failure tests on sensitive receptors to the southwest of the site with respect to short-term NO_2 emission will not be significant. Finally, it is concluded that that short-term impact of NO_2 emissions from the backup emergency generators, when operated more than 30 minutes, would result in the exceedance of the short-term NO_2 AQO. It is therefore recommended that, should the emergency use of the backup generators be necessary, operators take additional precautions to limit exposure, including informing neighbouring residents that they should stay inside and keep windows closed.

- As detailed within the Noise Impact Assessment, prepared by KR Associates, the proposed development will generate noise during operation. This will be associated with traffic and mechanical and electrical plant, including turbines, transformers, coolers and generators. It is concluded that, should equipment be specified with acoustic performance that aligns with the assumptions set out within the Noise Impact Assessment, the proposed development will not have an adverse impact on the existing noise sensitive properties located within the surroundings

of the site. It is highlighted that, should equipment be specified that generate levels of noise that exceed the requirements set out within the Noise Impact Assessment, it may be necessary to provide acoustic screening around the gas turbines, substation and possibly some or all of the temporary generators, to ensure no adverse impacts arise with respect to noise. It is concluded that the design of the scheme has been maximised with passive mitigation measures to ensure that impact of noise and vibration is kept to a minimum.

- The Geo-environmental Investigation and Assessment, prepared by I&L Consulting Limited, references the Geo-environmental Investigation and Assessment prepared by HDR Consulting in August 2022, and which was submitted as part of the extant planning permission (ref. 22/02673/FUL). The Geo-environmental Investigation and Assessment confirms that the site is currently in use as a Park & Ride facility, with associated yards and areas of green space to the north, north east and east. It is noted that, prior to the construction of the Park & Ride facility in 2009, and the construction of the A48 along the western boundary of the site in 1984, the site was historically occupied by fields and farm buildings. Asphalt and gravel are present at the ground level within the Park & Ride facility, with the underlying Made Ground generally comprising sandy gravel. This is underlain by Alluvium, with Glaciofluvial deposits present within some locations. The bedrock underlying the site comprises Raglan Mudstone Formation. Laboratory chemical analysis of the soils present at the site did not indicate significant chemical contamination, with no asbestos identified within the samples. Isolated areas of Made Ground were identified to potentially contain marginally elevated concentrations of Polycyclic aromatic hydrocarbons (PAH), and it may be necessary remove the Made Ground in these areas as part of the proposed redevelopment of the site. The monitoring of ground gases undertaken on the site did not record elevated concentrations of carbon dioxide or methane, and it is therefore considered that special gas protection measures are not required. It is noted that the site is located within an area where the background levels of naturally occurring radon gas are such that basic radon protection is recommended for all new buildings. It is concluded that conventional shallow pad foundations with ground improvement would be appropriate for the proposed buildings, and it is recommended that the advice of a specialist ground improvement contractor is sought regarding the foundation design. For the proposed bridge across the Rhymney River, it is anticipated that piled foundations would be most appropriate.

- As outlined in the External Lighting Assessment Report, prepared by HasLid Services, provides details on the number and types of lighting installations, a schedule of equipment and the proposed lighting levels within and beyond the site. External lighting to be provided as part of the proposed development should have a clear purpose, and should be concentrated where lighting is needed. Floodlighting should be directed away from surrounding residential receptors in order to minimise light pollution. In order to mitigate the potential impact of artificial lighting on roosting, migrating and foraging bats, neutral-white LED luminaires will be employed in ecologically sensitive areas, with lighting installed in these areas to be functional and directional only to ensure no light spill onto any retained vegetated corridors. Lighting will be installed in

consideration of the requirements of the Institute of Lighting Professionals' Guidance Note GN08/23, as well as the guidelines set out by the Bat Conservation Trust. Further details are provided within the External Lighting Assessment Report submitted in support of this application.

- The implementation of the proposed sustainable drainage strategy, outlined within the Drainage Statement, prepared by Pinnacle Consulting Engineers, will include appropriate pollution control to minimise the risk of pollution entering the ground from surface water runoff from the Proposed Development. This is in compliance with the EA's Pollution Prevention Guidance. An appropriate SuDS treatment train, consisting of a range of features including swales, biodiversity attenuation systems, attenuation crates and filter drains, will be implemented within the proposed development to treat surface water runoff before it is discharged to the ground or to the Rhymney River. It is recommended that additional measures will also be adopted during construction to minimise the risk of ground and surface water pollution, including:
    - Oil separators;
    - Clear marking and signage of drainage stems;
    - Full bunding of on-Site fuel or oil delivery areas;
    - Bunding of areas to be used for cleaning activities; and
    - Best practice measures, implemented as part of a CEMP, to mitigate the impacts of construction-related dust and emissions.

5. SUMMARY

5.1 This Sustainability Statement provides an overview as to how the redevelopment of the Cardiff East Park and Ride, Llanrumney contributes to sustainable development in the context of the strategic, design and construction considerations.

5.2 Consideration has been given to the Cardiff City Council Local Development Plan in the formulation of this statement. The overall development has been assessed using the guidance outlined in Policies KP5 (Good Quality and Sustainable Design), KP8 (Sustainable Transport), KP15 (Climate Change) and KP18 (Natural Resources) of the Local Development Plan, providing a holistic sustainability approach for the proposals.

5.3 Sections 4 of this statement demonstrates that the siting and design of the proposals support relevant policies relating to sustainable development. This shows that the proposed development will:

- make efficient use of land, seeking to develop a brownfield site;
- encourage the use of active and sustainable modes of transport;
- achieve a significant on-site reduction in CO_2 emissions, following the Energy Hierarchy methodology and through the specification of highly-efficient systems and technologies;
- minimise internal water consumption through the employment of water efficient fittings;
- incorporate low-impact materials, according to the BRE Green Guide to Specification;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
- incorporate measures to improve site biodiversity, including biodiverse planting;
- reduce surface water runoff rates through the use of sustainable drainage measures, including swales, biodiversity attenuation basins, attenuation crates and filter drains; and
- ensure air, noise, vibration, ground, light and water pollution are minimised as far as possible.

5.4 Overall, the proposals for the scheme are in line with the principles of sustainable development as well as the policy requirements of the PPW and the Cardiff City Council, and, subject to the confirmation of the details of the data centre uses through future reserved matters applications, will provide a development that promotes these principles in operation.

A1. SITE PLAN

GENERAL NOTES:

This drawing is to be read in conjunction with all relevant documents, specifications, Architectural & services drawings.

Notify the Architect immediately of any discrepancies between drawings.

All dimensions are in millimeters unless noted otherwise.

LOCATION PLAN LEGEND

Site Boundary

NOTES:

OS Map & Site survey information used has been provided by others.

0 20 40 60 80 100 125 150 200

1:2000 Meters

N

1 **Site Location Plan - Hybrid**

1 : 2000

Rev	Date	By	Description	Chkd

MEIN **Henry Mein Partnership Ltd**
Architects & Interior Designers

3 Russell Place | Nottingham | NG1 5HJ
0115 947 6065 | info@henrymein.co.uk | henrymein.co.uk

Project:
Cardiff East
Data Centre

Drawing Title:
Site Location Plan - Hybrid

Date:	19.09.2025	**Scale:**	As indicated	**Drawn By:**	JB
Revision:		**Media:**	A1	**Checked By:**	RC

Drawing Status:

PLANNING

Drawing No.

7683 MEIN-XX-XX-DR-A-70-001

Project No.	Originator	Zone	Level	Type	Role	Drawing No.	Suitability

No part of this publication may be reproduced, stored in any retrieval system or transmitted in any form or by any means without prior permission of Henry Mein Partnership Ltd. Do not scale from drawing, use figured dimensions only. All dimensions to be checked on site.

A2. GENERAL NOTES

A2.1 The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Iceni Projects Ltd for inaccuracies in the data supplied by any other party.

A2.2 The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.

A2.3 No site visits have been carried out, unless otherwise specified.

A2.4 This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in guidance may necessitate a re-interpretation of the report in whole or in part after its original submission.

A2.5 The copyright in the written materials shall remain the property of Iceni Projects Ltd but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to Iceni Projects Ltd by the client of the outstanding amounts.

A2.6 The report is provided for sole use by the client and is confidential to them and their professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the client, unless otherwise agreed.

A2.7 These terms apply in addition to the Iceni Projects Ltd "Standard Terms of Business" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms of Business the said Standard Terms of Business shall prevail.). In the absence of such a written contract the Standard Terms of Business will apply.