



AUGUST 2022

Sustainability Statement

Cardiff Park and Ride East, Llanrumney, Cardiff

Iceni Projects Limited on behalf of
Curtis Hall Limited

August 2022

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Sustainability Statement
CARDIFF PARK AND RIDE EAST, LLANRUMNEY,
CARDIFF

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A2. GENERAL NOTES

1. EXECUTIVE SUMMARY

- 1.1 Icen Projects Ltd was commissioned by Curtis Hall Limited to produce a Sustainability Statement to support the proposed redevelopment of Cardiff Park and Ride East, Llanrumney, Cardiff.
- 1.2 The application proposes the demolition of existing structures and redevelopment of the site to provide commercial floorspace, associated drive-thru and car parking, the re-provision of the park and ride, and a bridge across the Rhymney River.
- 1.3 Sustainability is a core consideration of the application and has been incorporated from the project outset. 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;
- makes efficient use of land, seeking to develop a brownfield site;
 - will incorporate low-impact materials, according to the BRE Green Guide to Specification;
 - will minimise internal water consumption through the employment of water efficient fittings;
 - will incorporate measures to improve site biodiversity, including biodiverse planting;
 - will ensure air, noise, vibration, ground and light pollution are minimised as far as possible;
 - will minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
 - will achieve a significant on-site reduction in CO₂ emissions, following the Energy Hierarchy methodology; and
 - will reduce surface water runoff rates through the use of sustainable drainage measures, including swales, detention crates and filter drains.

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

2. INTRODUCTION

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

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 23.2 hectares at the existing Cardiff Park and Ride East. The existing Park and Ride contains approximately 1,000 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.

The Proposed Development

2.6 The description of development is as follows:

“Demolition of existing structures and redevelopment of the site to provide commercial floorspace (Use Classes B2, B8, E(b)) and/or ancillary Class E), associated drive-thru and car parking; the re-provision of the park and ride; a bridge across the Rhymsney River; site wide landscaping and associated works.”

2.7 The images below show sample plans and elevations of the scheme.

Figure 1.1 Proposed site layout

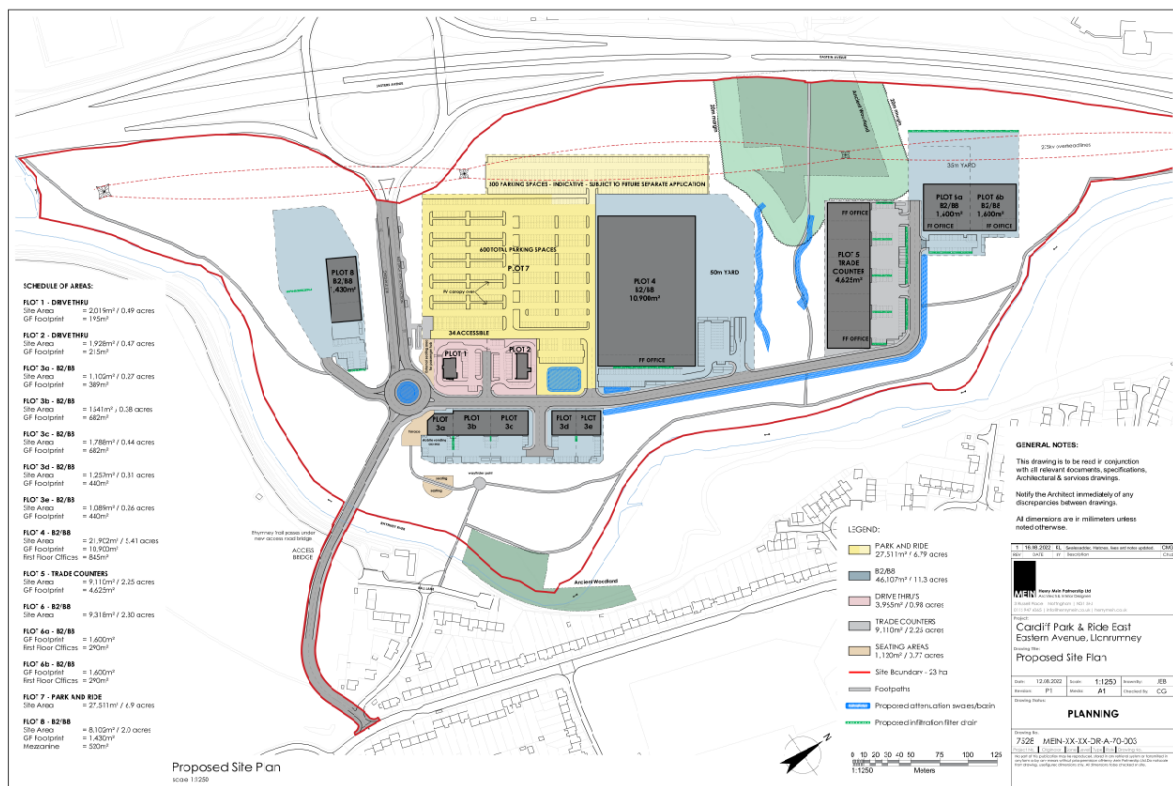


Figure 1.2 Plot 01 – Front Elevation

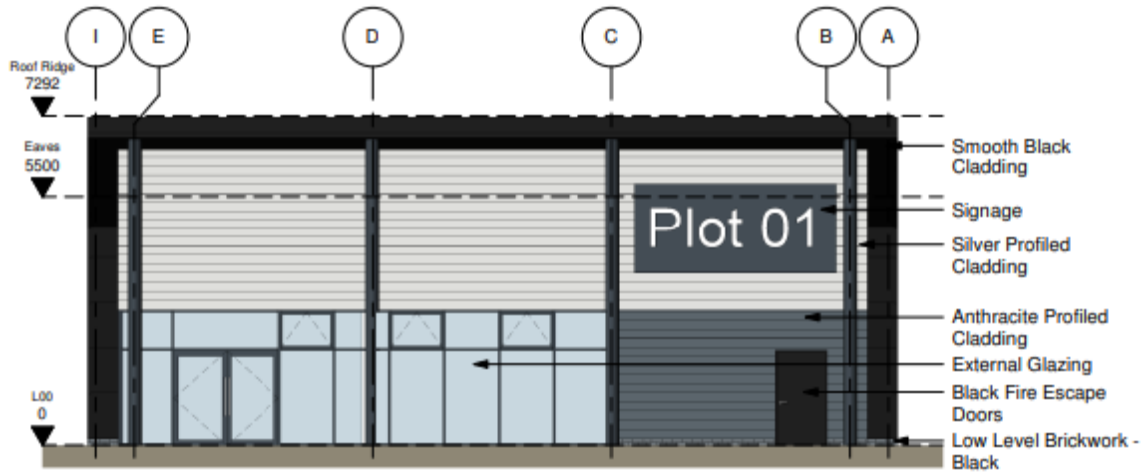


Figure 1.3 Plot 02 – Front Elevation



Figure 1.4 Plot 03 Building A – Front Elevation



Figure 1.5 Plot 03 Building B – Front Elevation

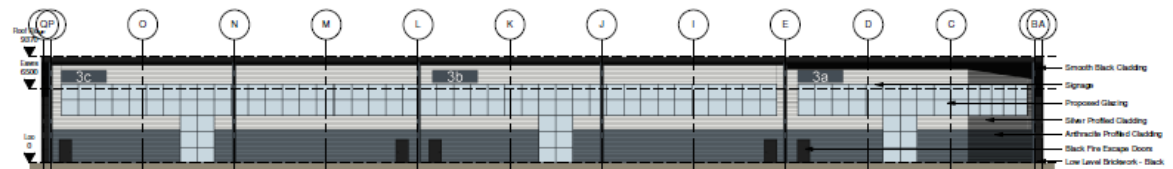


Figure 1.6 Plot 04 – Front Elevation

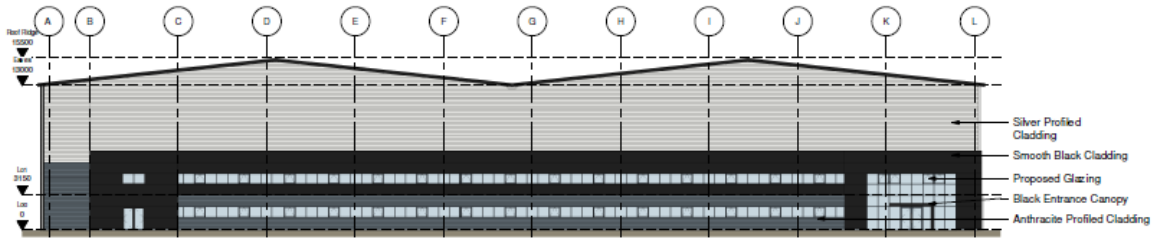


Figure 1.7 Plot 05 – Front Elevation



Figure 1.8 Plot 06 – Front Elevation

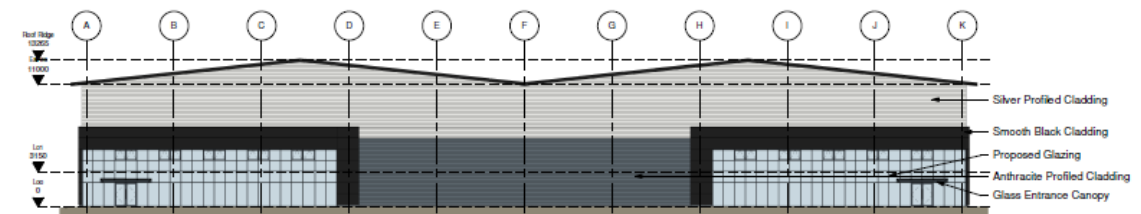
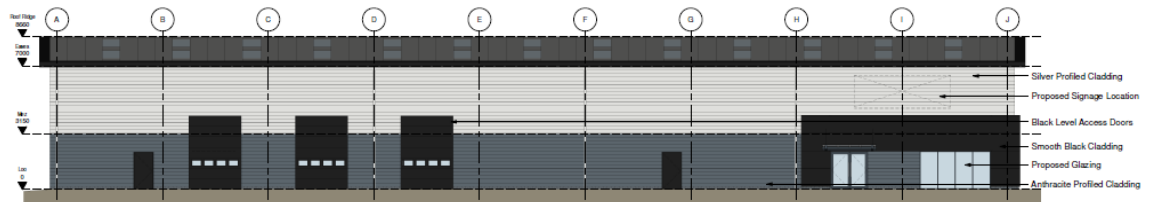


Figure 1.9 Plot 08 – Front Elevation



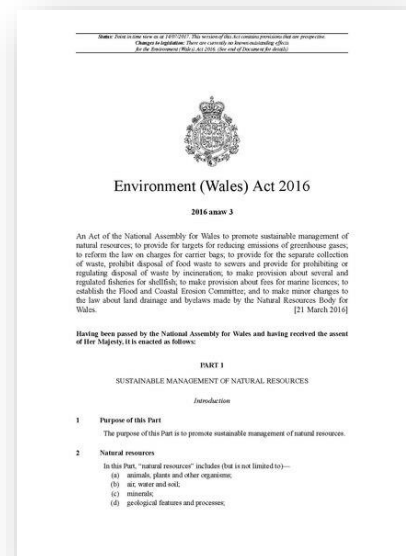
3. PLANNING AND REGULATORY CONTEXT

- 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, proactive 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.

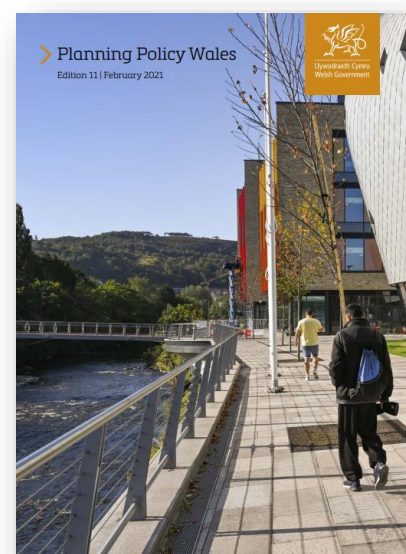


- 3.3 As required under Part 2 of the Environment (Wales) Act 2016, Net Zero Wales Carbon Budget 2 was published by the Welsh Government in October 2021. This sets out a budget for Wales's emissions for the period 2021 – 2025.

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

Planning Policies Wales (PPW)

- 3.5 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 2021, aims to strengthen local decision making.



- 3.6 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

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

Cardiff Local Development Plan 2006 – 2016 (January 2016)

- 3.8 The Local Development Plan demonstrates the importance the local authority places on maintaining and enhancing the natural environment.

- 3.9 **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.

- 3.10 **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



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- Ensuring access to all, including those with disabilities.

3.11 **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.

3.12 **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)

3.13 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 – 2016. This enables a holistic and futureproofed sustainability approach for the proposed development. The Cardiff Local Development Plan 2006 – 2016 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. The redevelopment will re-provide the Park and Ride facilities, whilst also providing new commercial floorspace, including Class B2/B8/E industrial units.

Figure 4.1 Site location

 Approximate site boundary



4.3 The proposed development will therefore re-provide the existing Park and Ride facilities at the site, whilst also providing additional commercial floorspace, therefore making efficient use of land.

Location and Transport

4.4 As detailed within the Transport Assessment, prepared by Vectos in August 2022, the Cardiff East Park and Ride facility is located within the site, and is therefore accessible via a direct bus link within the development site. A bus stop is located within the site, and is served by two bus routes, services H59 and X59, which provide connections to Heath Hospital and Cardiff City Centre, respectively.

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- 4.5 Vehicular access to the site will be via the existing Park and Ride access from the A48 roundabout on the western boundary. A new relief road will also be provided, which will cross the Rhymney River to connect to Ball Road, thereby providing access from Llanrumney to the east of the site. The new relief road will be open to all vehicular traffic outside of peak hours, allowing only bus and local traffic between the morning and evening peaks of 07:30 – 09:30 and 16:30 – 18:30, respectively. This will ensure the reliability of the bus services using the site, as well as providing a quiet route for cycling.
- 4.6 To encourage active travel to and from the site, the new relief road will feature a 2m footway on one side, and a 3m shared footway and cycleway on the other. Some Public Rights of Way (PRoW) that currently run through or near the site will be either re-routed or extinguished, however all current routes through the site will be maintained through either new or diverted routes, including routes to the existing footbridge over the Rhymney River.
- 4.7 A total of 597 car parking spaces will be provided, broken down as follows:
- 300 no. additional Park and Ride spaces
 - 184 no. B2/B8 spaces
 - 72 no. Trade Counter spaces
 - 41 no. Drive Thru spaces
- 4.8 This provision will include for electric vehicle (EV) charging, as appropriate and in line with national guidance. It is noted that a minimum of 10% of all car parking spaces will require charging facilities under Future Wales.
- 4.9 A cycle parking area will be provided in line with Cardiff City Council's adopted standards. The provision of cycle parking will enable future users of the site to take advantage of the existing cycle infrastructure in the area surrounding the site. This includes the Rhymney Trail, which runs north-to-south along the Rhymney River to the east of the site.
- 4.10 The Vehicle Trip Assessment, undertaken as part of the Transport Assessment, indicates that there will be approximately 241 vehicle movements during the morning peak (08:00 – 09:00), and 187 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.

4.11 A Workplace Travel Plan has also been prepared by Vectos in August 2022. 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 Staff Travel Pack for all new employees and a Travel Information Noticeboard that will detail local travel options and infrastructure with the aim of encouraging the use of sustainable travel modes.

Energy Strategy

4.12 An Energy Report – Energy Efficient & Low Carbon Strategies was produced by Hydrock KTA in August 2022 for the proposed development and is reported in a separate document, which accompanies this application. The strategy for emissions reduction is summarised below.

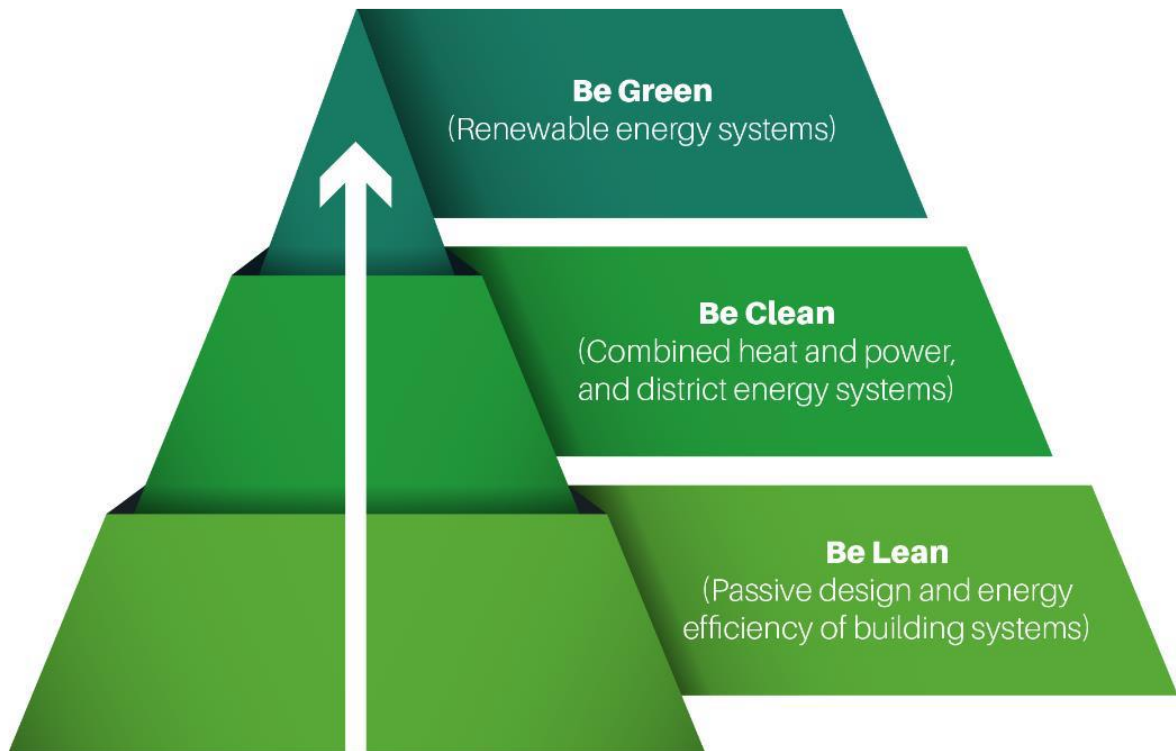
4.13 The proposed interventions to be incorporated as part of the scheme have been selected to target a best level of CO₂ emissions performance when assessed against Building Regulations Part L:2013 and associated policies, accounting for economic, technical and functional feasibility.

4.14 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.

4.15 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



- 4.16 Design recommendations were provided to Henry Mein Partnership Ltd to enable an energy strategy to develop from an early stage.
- 4.17 The proposed development has been designed to maximise the quantum of commercial floorspace and Park and Ride facilities, whilst ensuring that the scheme is not overly dense and 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.
- 4.18 The measures proposed at each level of the Energy Hierarchy are set out below.
- 4.19 The 'Be Lean' measures include:
- High levels of building fabric insulation to minimise heat loss
 - A balanced proportion of façade glazing and provision of rooflights to warehouse spaces to ensure natural daylight provision without increasing overheating risk
 - High levels of air tightness to reduce heat loss through infiltration
 - Low energy LED lighting, with presence detection, to minimise artificial lighting energy consumption

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- Mechanical ventilation with heat recovery to provide fresh air, with heat recovered from extract air
 - A high specification of heating controls to ensure operational efficiency
 - Installation of variable speed drives on pumps and fans to match flow rates with demand

4.20 The 'Be Green' measures include:

- Employment of a highly efficient air source heat pump (ASHP) systems to serve space heating and cooling demands
- Use of solar thermal systems to pre-heat water

4.21 The Energy Report 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
- Installation of CO₂ sensors and motorised dampers within large meeting rooms
- Use of external lighting control air lux to allow for each external light fitting to be controlled individually

4.22 Further details of each measure outlined above are provided within the Energy Report – Energy Efficient & Low Carbon Strategies, which accompanies this submission.

Reducing Water Consumption

4.23 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.

4.24 In order to reduce internal water consumption within the proposed scheme, it is intended that water-efficient fittings, such as low volume dual flush toilets and sensor taps, will be provided within the buildings. Rainwater harvesting will also be used for Plot 4 to contribute to urinal and toilet flushing, with the potential to reduce water consumption from these fittings by approximately 30%. Major leak detection will also be provided, with each incoming water position to the buildings being monitored to detect out-of-range readings and leaks.

Materials and Waste

- 4.25 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.
- 4.26 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.
- 4.27 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.
- 4.28 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.
- 4.29 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.
- 4.30 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

- 4.31 An Ecological Impact Assessment has been prepared by Delta-Simons Environmental Consultants Ltd in August 2022, based on a Phase 1 Habitat Survey. The survey concluded that site comprises an expanse of broadleaved, semi-natural woodland, with large areas of dense scrub and bracken, as well as a number of footpaths. The southern extent of site is confirmed to comprise the existing hardstanding car park, used as a Park and Ride, with scattered scrub and a security building. An area of bare ground was also noted to be present to the east of the car park, whilst areas of poor,

semi-improved grassland were recorded within the eastern and northern areas of the site. A small section of the River Rhymney is also present within the south-eastern portion of the site. The features of greatest ecological value, namely the ancient woodland and the section of the River Rhymney, are to be retained and protected as part of the proposed development, in addition to significant areas of other woodland.

- 4.32 There are three international designated sites within a 6km radius of the site: the Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar. A Habitat Regulations Assessment (HRA) is to be undertaken to determine whether the proposed development is likely to have any significant effects, either alone or in combination with other developments, on the identified designated sites. A number of national statutory designated sites are also located within 2km of the site: the River Rhymney Site of Importance for Nature Conservation (SINC), which falls partially within the site along the eastern boundary; the Llanedeyrn Woodlands Complex SINC; and the Pontprennau Wood SINC.
- 4.33 The Assessment noted that the woodland, scrub and scattered trees present on the site provide opportunities for nesting birds. Further to this, the grassland, scrub and woodland present opportunities for reptiles, badgers and hedgehogs. Whilst no evidence of these species was recorded on the site during the survey, there are records of this species occurring in the surrounding area. The woodland also has potential to support hazel dormice, which are also known to have previously occurred on the site. In addition, all habitats present on the site were noted to be suitable for supporting roosting, foraging and commuting bats.
- 4.34 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 will be identified upon assessment of the development plans in view of the HRA screening process. However, standard environmental best practice measures will be adopted, including the maintenance of a 15-20m buffer from the watercourse, the implementation of a Construction Environmental Management Plan (CEMP) to minimise the impact of the construction of the proposed development on surrounding designated sites, and the implementation of a Biodiversity Management and Monitoring Plan (BMMP) to ensure the protection of habitats within the River Rhymney SINC.
 - A Woodland Management Plan (WMP) should 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. All retained habitats should be protected through the implementation of a CEMP during construction works, and a BMMP during the operation of the proposed development. Where trees and woodland are to be retained,

appropriate protection should be provided through the implementation of root protection zones and barriers, in accordance with BS5837:2012.

- Any clearance works to the scattered trees, woodland and scrub should be undertaken outside of the bird nesting season (early March to late August, inclusive). If, however, clearance works are deemed to be necessary during the nesting period, an experienced ecologist will be required to check the habitats immediately prior to the commencement of works, to ensure no nesting birds will be affected.
- A precautionary approach should be taken with respect to the felling of any trees identified as having a low bat roost potential. This may include the undertaking of a single dawn survey, to be completed during the active bat season (April to October, inclusive) on the morning of proposed works. Alternatively, an aerial inspection of the potential roost features may be undertaken by a licensed bat ecologist prior to the commencement of works.
- The detailed lighting design within the site should be functional and directional, in compliance with the current guidance, in order to minimise the disturbance of bats.
- It is recommended that no excavations or trenches are left uncovered overnight during the development works in order to prevent species such as badgers, hedgehogs and other mammals from becoming trapped. Where this is not possible, it is recommended that ramps be provided to enable trapped animals to climb out of excavations or trenches.
- Care should be taken to check for the presence of hedgehogs during clearance of scrub habitat, and any found must be moved to a place of safety outside of the development footprint.
- A comprehensive invasive weed survey should be conducted during the peak growing season (May-July, inclusive), and eradication plans for Japanese knotweed and Himalayan balsam should be developed. Prior to the eradication of these species, it should be ensured that none of the invasive plants are allowed to spread off-site, where not already present.

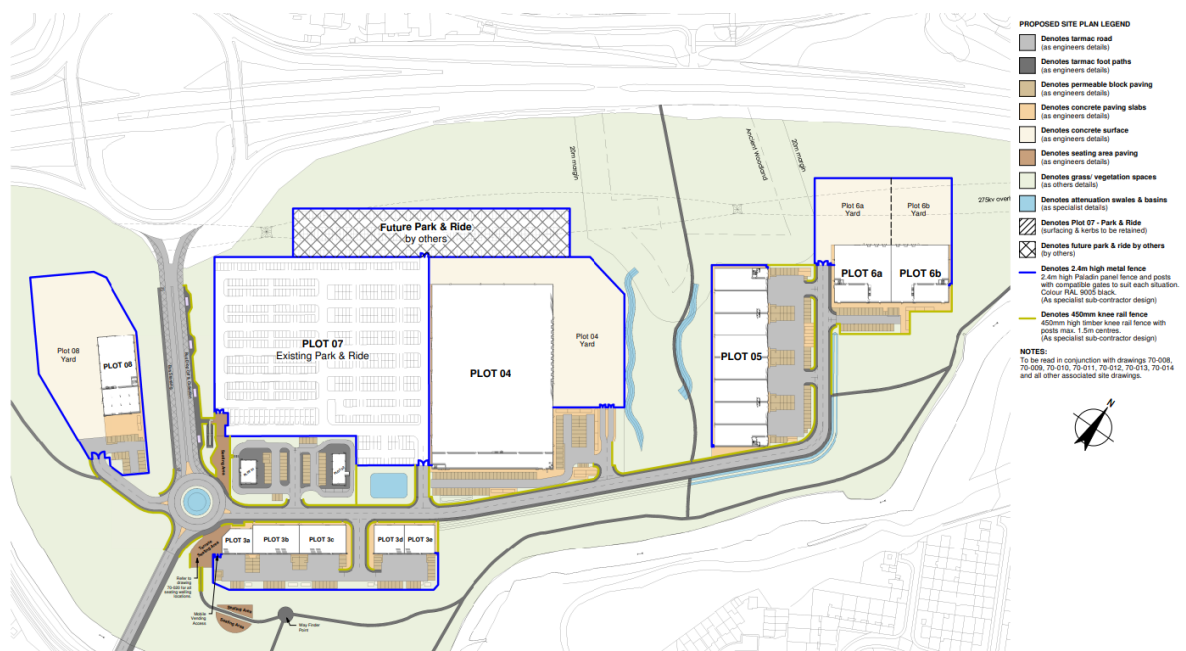
4.35 To provide biodiversity enhancements post-development the following measures have been recommended for incorporation as part of the proposed scheme:

- Planting should aim to enhance retained or adjacent vegetation and be of native species, or those of known value to wildlife, sourced from local nurseries to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on the site. It is recommended that where trees are planted, they have a functional understorey.
- The proposed landscape buffer to the River Rhymney SINC will comprise planting of additional native woodland blocks, native scrub and native hedgerows around the site boundaries with species that complement those present within the site.

- Areas of SuDS and wildflower grassland, which incorporate flowering species to attract pollinators will be created.
- Bird and boxes should be installed on new buildings or retained trees at the site. Further advice on the type and locations of bird and bat boxes for the site will be provided as the plans for the proposed development continue to be refined.

4.36 The proposed Landscape and Boundaries Plan, prepared by Henry Mein Partnership Ltd in August 2022 is shown in Figure 4.3 below.

Figure 4.3 Proposed Landscape and Boundaries Plan

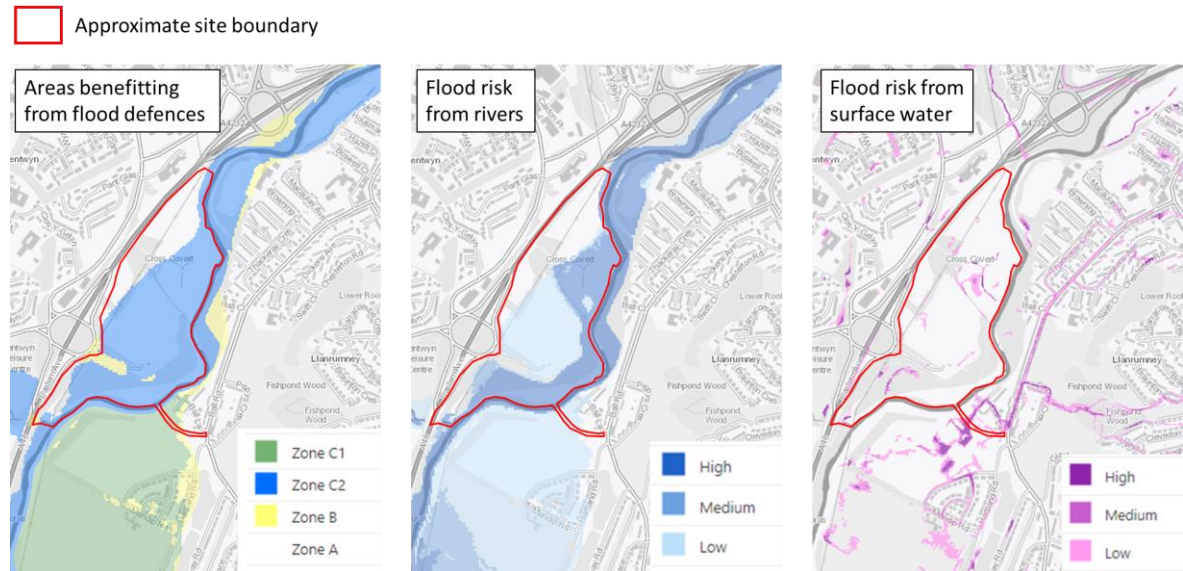


Reducing Flood Risk and Surface Water Runoff

4.37 Figure 4.4 below, based on the Natural Resources Wales Flood Maps, suggest that the majority of the site is located within Development Advice Map (DAM) Zone C. This indicates that these areas of the site are not currently defended by significant flood defence infrastructure. The figure below also demonstrates that the proposed development site falls mostly within Flood Zones 2 and 3, which 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 area 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 Rhywny River, which forms the eastern boundary of the site. Figure 4.3 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 Risk Assessment, prepared by WSP in August 2022, that due to the fact that these areas comprise minor, isolated pockets of flood risk,

it is reasonable to assume that they are not associated with significant overland flow paths, and are therefore the result of low spots of topography where surface water ponding occurs.

Figure 4.4 Natural Resources Wales Flood Map



4.38 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 Strategy, prepared by Pinnacle Consulting Engineers in August 2022, 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, bioretention systems, detention crates, filter drains and proprietary treatment systems, 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 set at 300mm above the predicted flood levels in order to mitigate the risk of danger to site users and damage to the buildings.

Pollution

4.39 Air quality, noise and vibration, ground contamination, and external lighting were considered as part of the Air Quality Assessment, prepared by Tetra Tech in August 2022, the Noise Assessment, prepared by K R Associates in August 2022, the Geo-environmental Investigation and Assessment, prepared by Bradbrook Consulting in August 2022, and the External Lighting Strategy Report, prepared by Kelly Taylor & Associates in August 2022, which concluded:

- 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 considered to be negligible.
- The projected increases in traffic related pollution concentrations during the operational phase of the development are predicted to be negligible. It is concluded that existing receptors in the area surrounding the site, including the Rhymney River Site of Special Scientific Interest (SSSI), will therefore not be exposed to a significant increase in pollutant concentrations above the existing levels, and air quality is therefore not considered to pose a constraint to the proposed development of the site.
- As detailed within the Noise Assessment, the proposed development will generate noise and some vibration during operation. This will be associated with traffic and mechanical and electrical plant. It is noted, however, that the levels of noise and vibration generated will not have an adverse impact on the surrounding existing residential properties. The design of the proposed development has incorporated passive mitigation measures to minimise the levels of noise and vibration. For example, a maximum speed limit of 20mph will be employed to minimise the noise emitted by cars, buses and delivery vehicles. In addition, mechanical equipment required to service each of the proposed units will be placed on the north-western facades of the building, to ensure they are located away from the residential dwellings located to the south-east of the site. It is concluded that, through the employment of the recommended mitigation measures, the proposed development will have no adverse impact on the surrounding existing properties with respect to noise and vibration.
- The Geo-environmental Investigation and Assessment confirms that the site is currently in use as a Park and 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 and 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 and 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

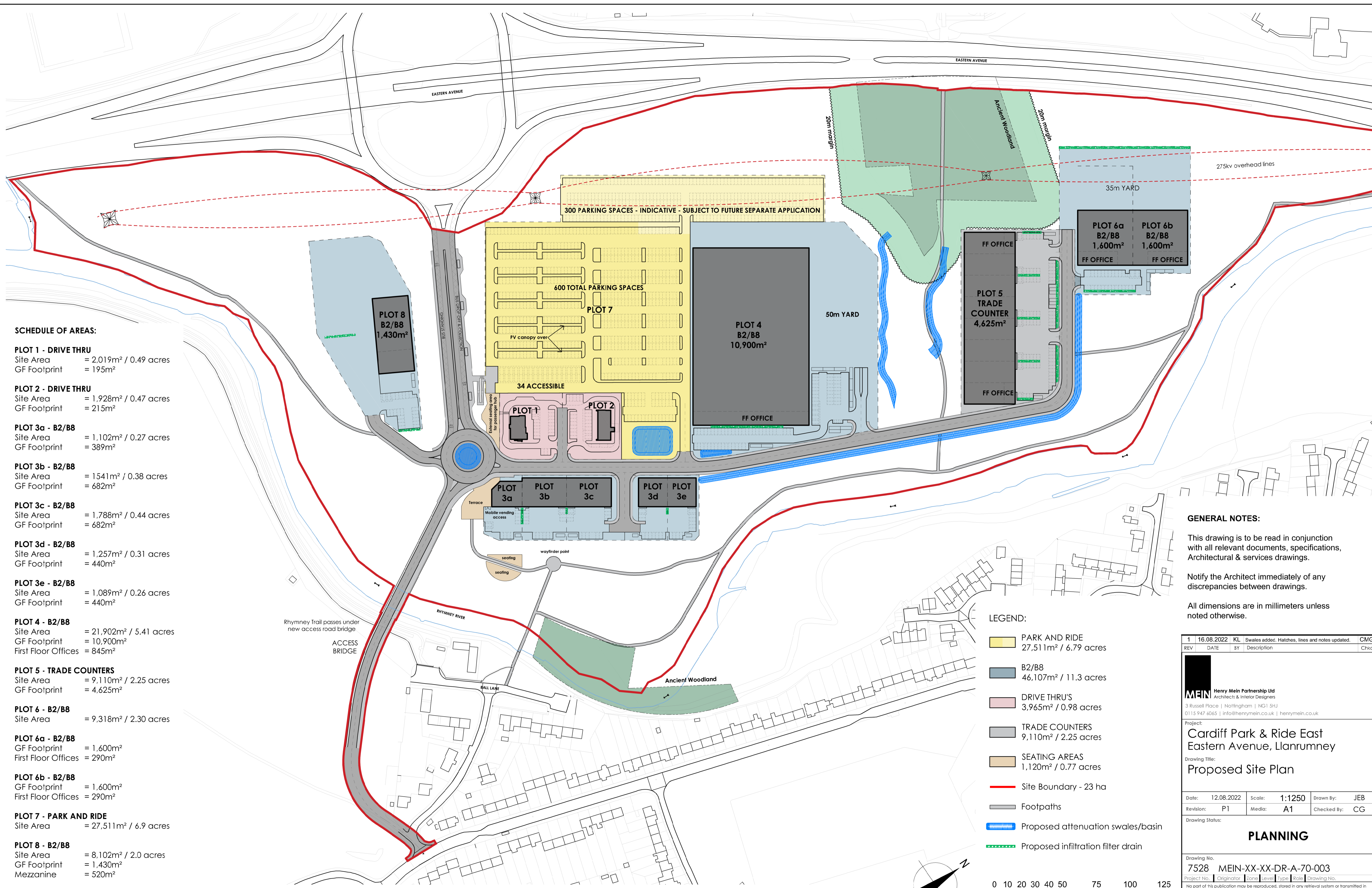
hydrocarbons (PAH), and it may be necessary remove the Made Ground in these areas as part of the proposed redevelopment of the site. The monitoring of ground gases undertaken on the site did not record elevated concentrations of carbon dioxide or methane, and it is therefore considered that special gas 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 Strategy Report, provides detailed on the number and types of lighting installations, the beam orientations, 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, LED lighting without UV elements will be employed and no upward lighting luminaires will be utilised in order to avoid excessive up-lighting, back lighting and lightspill onto boundary hedgerows and trees. Furthermore, a warm white spectrum should be used to reduce the blue light component. It is intended that the external lighting strategy for the proposed development will be designed in line with best practice, and in consideration of the Institute of Lighting Professionals' Guidance Notes. Further details are provided within the External Lighting Strategy Report submitted in support of this application.

5. SUMMARY

- 5.1 This Sustainability Statement provides an overview as to how the redevelopment of the Cardiff Park and Ride East, Llanrumney, Cardiff 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:
- makes efficient use of land, seeking to develop a brownfield site;
 - will incorporate low-impact materials, according to the BRE Green Guide to Specification;
 - will minimise internal water consumption through the employment of water efficient fittings;
 - will incorporate measures to improve site biodiversity, including biodiverse planting;
 - will ensure air, noise, vibration, ground and light pollution are minimised as far as possible;
 - will minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
 - will achieve a significant on-site reduction in CO₂ emissions, following the Energy Hierarchy methodology; and
 - will reduce surface water runoff rates through the use of sustainable drainage measures, including swales, detention crates and filter drains.
- 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 will provide a development that promotes these principles in operation.

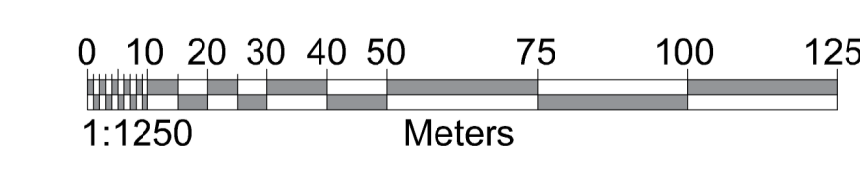
A1. SITE PLAN



SCHEDULE OF AREAS:

PLOT 1 - DRIVE THRU	Site Area = 2,019m ² / 0.49 acres
	GF Footprint = 195m ²
PLOT 2 - DRIVE THRU	Site Area = 1,928m ² / 0.47 acres
	GF Footprint = 215m ²
PLOT 3a - B2/B8	Site Area = 1,102m ² / 0.27 acres
	GF Footprint = 389m ²
PLOT 3b - B2/B8	Site Area = 1,541m ² / 0.38 acres
	GF Footprint = 682m ²
PLOT 3c - B2/B8	Site Area = 1,788m ² / 0.44 acres
	GF Footprint = 682m ²
PLOT 3d - B2/B8	Site Area = 1,257m ² / 0.31 acres
	GF Footprint = 440m ²
PLOT 3e - B2/B8	Site Area = 1,089m ² / 0.26 acres
	GF Footprint = 440m ²
PLOT 4 - B2/B8	Site Area = 21,902m ² / 5.41 acres
	GF Footprint = 10,900m ²
	First Floor Offices = 845m ²
PLOT 5 - TRADE COUNTERS	Site Area = 9,110m ² / 2.25 acres
	GF Footprint = 4,625m ²
PLOT 6 - B2/B8	Site Area = 9,318m ² / 2.30 acres
PLOT 6a - B2/B8	GF Footprint = 1,600m ²
	First Floor Offices = 290m ²
PLOT 6b - B2/B8	GF Footprint = 1,600m ²
	First Floor Offices = 290m ²
PLOT 7 - PARK AND RIDE	Site Area = 27,511m ² / 6.9 acres
PLOT 8 - B2/B8	Site Area = 8,102m ² / 2.0 acres
	GF Footprint = 1,430m ²
	Mezzanine = 520m ²

- LEGEND:**
- PARK AND RIDE
27,511m² / 6.79 acres
 - B2/B8
46,107m² / 11.3 acres
 - DRIVE THRU'S
3,965m² / 0.98 acres
 - TRADE COUNTERS
9,110m² / 2.25 acres
 - SEATING AREAS
1,120m² / 0.77 acres
 - Site Boundary - 23 ha
 - Footpaths
 - Proposed attenuation swales/basin
 - Proposed infiltration filter drain



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.

1	16.08.2022	KL	Swales added. Hatches, lines and notes updated.	CMG
REV	DATE	BY	Description	Chkd
<p>Henry Mein Partnership Ltd Architects & Interior Designers 3 Russell Place Nottingham NG1 5HJ 0115 947 6065 info@henrymein.co.uk henrymein.co.uk</p>				
Project: Cardiff Park & Ride East Eastern Avenue, Llanrumney				
Drawing Title: Proposed Site Plan				
Date:	12.08.2022	Scale:	1:1250	Drawn By: JEB
Revision:	P1	Media:	A1	Checked By: CG
Drawing Status: PLANNING				
Drawing No. 7528 MEIN-XX-XX-DR-A-70-003				
Project No. Originator Zone Level Type Role Drawing No.				
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Proposed Site Plan
scale 1:1250

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 Icen 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 Icen Projects Ltd but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to Icen Projects Ltd by the client of the outstanding amounts.
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