Cardiff East Park and Ride, Llanrumney
Environmental Statement
Chapter 3: Proposed Development, Demolition, Construction and Description of Alternatives

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behalf of Curtis Hall Ltd

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3. PROPOSED DEVELOPMENT, CONSTRUCTION AND DESCRIPTION OF ALTERNATIVES

3.1 This chapter provides a description of the Proposed Development, construction activities, and timescales. In accordance with the EIA Regulations (Wales), this chapter describes the reasonable alternatives to the Proposed Development considered by the Applicant.

3.2 This chapter is supported by the following appendices:

- **Appendix 3.1:** Planning Drawings;
- **Appendix 3.2:** Outline Construction Environmental Management Plan (CEMP); and
- **Appendix 3.3:** Noise Impact Assessment.

3.3 The Design and Access Statement (DAS) which accompanies the planning application includes design principles and provides a more detailed description of the Proposed Development with illustrations, however all relevant information on which the assessments undertaken within this ES is detailed within this chapter.

The Proposed Development

3.4 The Applicant is seeking hybrid planning permission for the following description of development:

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

3.5 The outline element of the hybrid application seeks approval for the maximum parameters of the Proposed Development, as defined by a series of parameter plans. The parameter plans have been developed to enable flexibility for the detailed design of the Proposed Development, that would be brought forward at a later stage and be subject to reserved matters application(s).

3.6 The outline proposals include for a maximum provision of 30,392.5 sqm GIA of development across four development plots ranging between 0.74 ha and 5.05 ha in size and totalling 7.48 ha.

3.7 With regards to these development plots, access, appearance, landscaping, layout and scale are all reserved matters and will be determined via a separate future planning application.

3.8 The surrounding area and main access roads and bridge will be proposed in detail. In summary, Proposed Development will comprise:

Detailed:

- New through-road and roundabout providing improved access through the Site.
- New bridge linking the A48 Eastern Avenue with Pentwyn and Llanrumney.
- Vehicular access between Plot 4 and Plot 5 / 6 and associated pedestrian underpass.
- Landscaping enhancements to provide recreational uses for the Rhymney Trail for walking and cycling.
- Engineering works to improve the Flood Risk level of the Site.

Outline:

- Data Centre (Use Class B8) uses (maximum 30,392.5sqm GIA; 150 MW capacity), including associated buildings and structures (including admin and storage areas, back-up generators, site substations).
- Associated internal access roads, car parking areas, drainage features and landscaped areas.
- Ancillary energy centre (maximum 47 MW capacity) / Grid Supply Point (GSP) substation.

3.9 The Site layout comprises a total of 23.4ha, of which only 7.4ha consists of the overall proposed surfaced development area, including buildings, carparks, service yards, roads, bridge and footpaths. The total area of the four development plots comprises up to 30,392.5sqm GIA.

3.10 The Proposed Development provides the opportunity to provide a key piece of economic and digital infrastructure in Cardiff, as well as ensuring improvements to landscaping, public access and habitat protections across the site. The Proposed Development would deliver a number of economic, environment and social benefits, including a new bridge connecting the site with Pentwyn and Llanrumney, and providing local jobs through the construction and operation of the Site.

3.11 The Proposed Development includes for the provision of a GSP substation which will transform energy directly from the grid for use by the data centre scheme. However, a connection to the grid may not be possible until after the data centres have been constructed and brought into use. To address this, the proposed development includes for a temporary energy centre to supply energy to the scheme in the interim, which would have a maximum energy generation capacity of 47 MW.

3.12 **Appendices 3.1** comprises the Planning Drawings, which are listed in **Table 3.1**.

Table 3.1 Planning Application Drawings

Title
Site Location Plan (Detailed / Outline / Hybrid)
Existing Site Plan
Proposed Layout Plan (Detailed)
Land Use Parameter Plan
Floor Levels and Heights Parameter Plan
Development Plots Parameter Plan
Access Parameter Plan
Basement Zone Parameter Plan (Outline)
Illustrative Masterplan
Existing Site Plan – Tree Constraints
Existing Site Plan – General Constraints
Existing Site Plan – Public Rights of Way
Proposed Public Rights of Way Plan
Proposed On / Off-Site Habitat Plan

Proposed Landscape Plan (overview only)
Proposed Boundary Plans
Proposed Schedule of Accommodation
Landscape drawings
Drainage drawings
Internal Access Road Design
Bridge Drawings

3.13 As detailed in **Chapter 1: Introduction and EIA Methodology of this ES**, the assessments provided within the ES have been undertaken on the basis of the parameter plans. Where further detail is required, such as to inform computational modelling, the Illustrative Masterplan has been used and the worst-case scenario assumed; the Illustrative Masterplan demonstrates how the Proposed Development may come forward under the parameters.

Overview of the Proposed Development

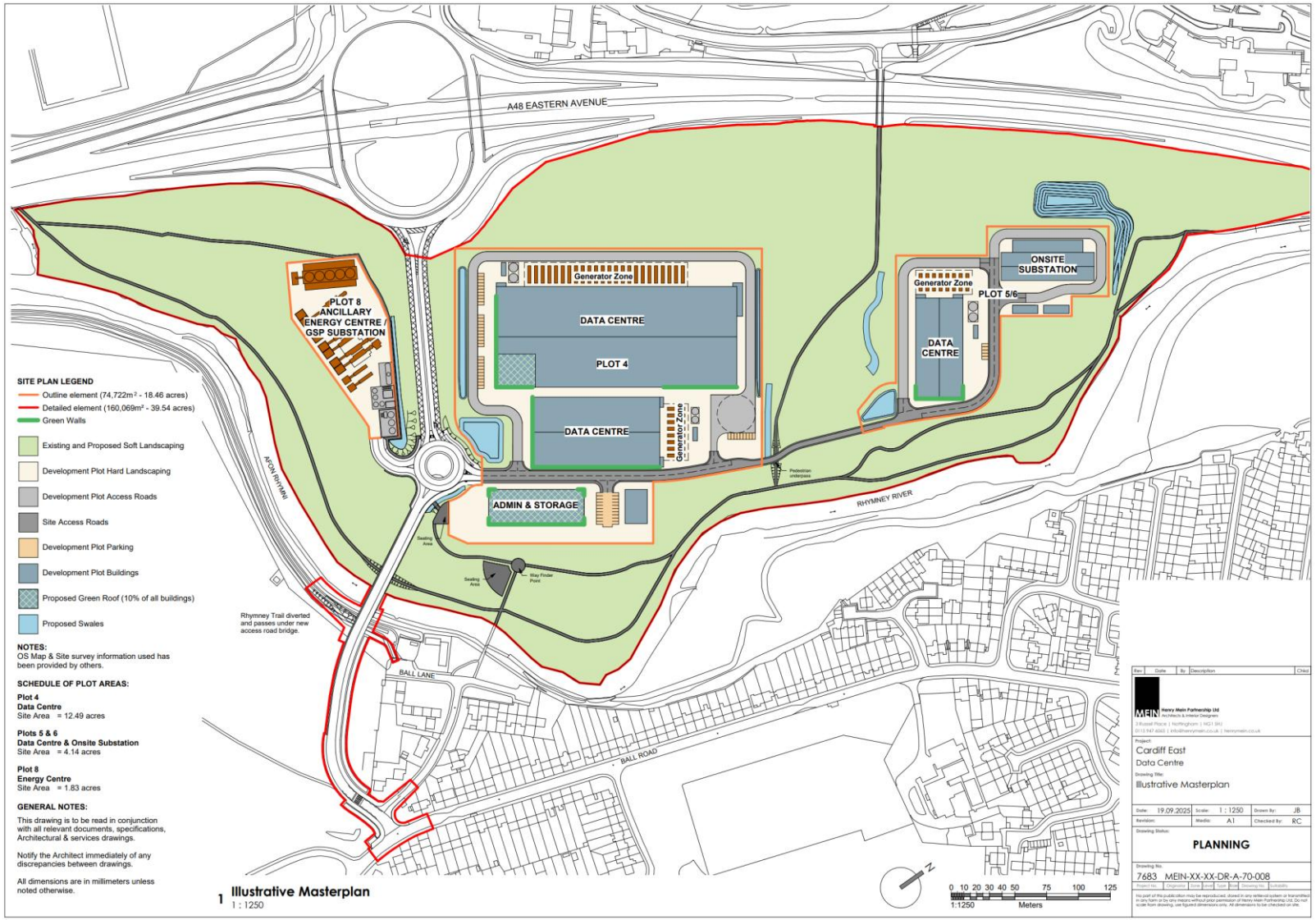
Land Uses

3.14 The planning application covers all land plots included within the red line boundary identified in Figure 3.1 below (Land Use Parameter Plan). The Proposed Development contains four plots between 0.74 ha and 5.05 ha in size and totalling 7.48 ha. As shown in Figure 3.1, the plots are labelled Plot 4, Plot 5, Plot 6 and Plot 8.

3.15 The Illustrative Masterplan is show in Figure 3.2 which shows how the Proposed Development could be delivered based on the Land Use Parameter Plan.

Figure 3.1 Land Use Parameter Plan

Figure 3.2 Illustrative Masterplan



3.16 The proposed maximum quantum of Use Classes for the Proposed Development is set out below in **Table 3.2.**

Table 3.2 Maximum Quantum of Use Classes

Land Use / Use Class	Maximum (up to) Quantum of Land Uses (sqm, unless otherwise stated)
Use Class B8 – Storage and distribution. Use for storage or as a distribution centre. This use class includes open air storage.	Up to 30,392.5sqm GIA

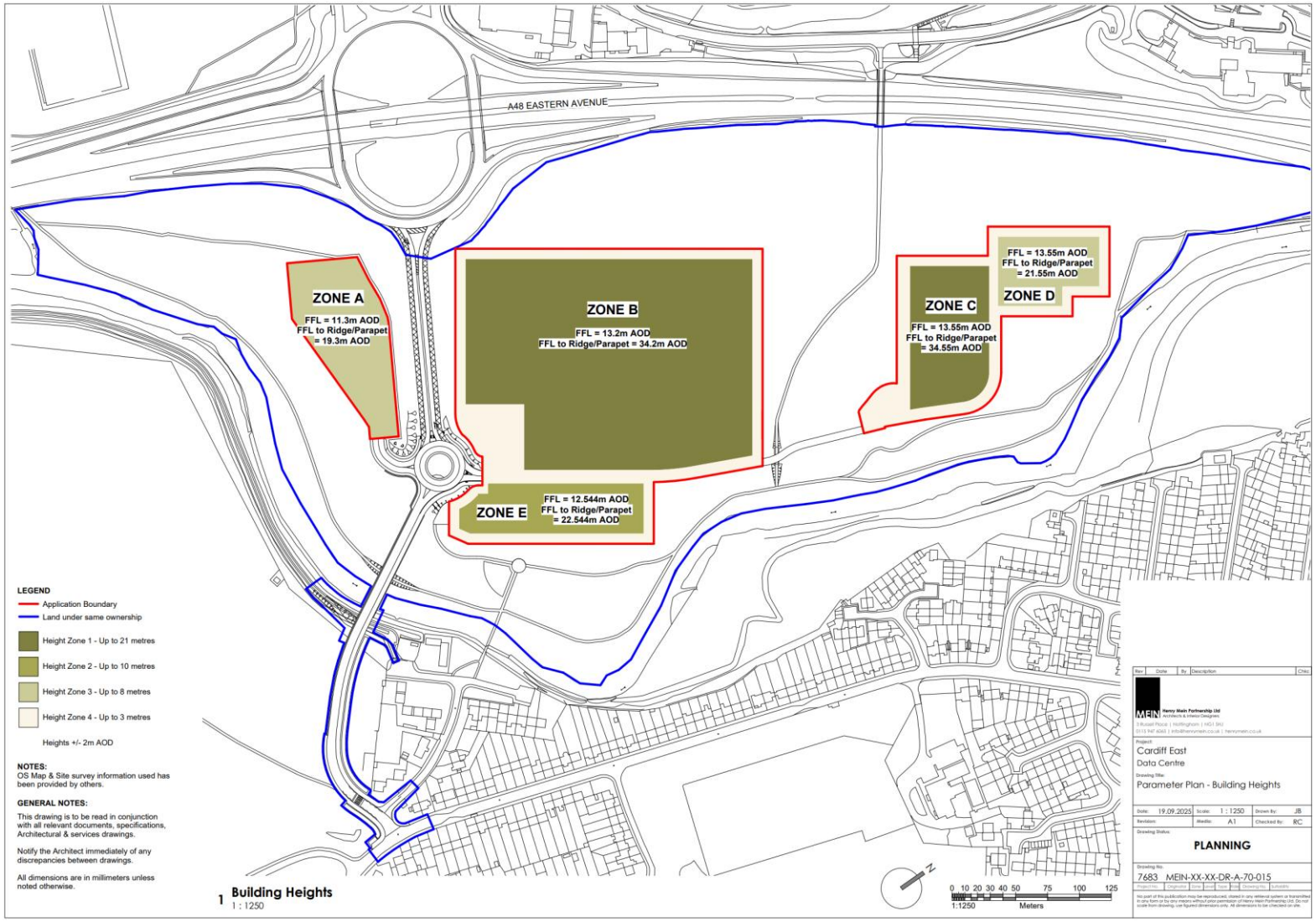
Scale, Density and Massing

3.17 As demonstrated in 'Parameter Plan – Building Heights' (Figure 3.3), the Proposed Development would feature buildings of varying heights and massing. The Proposed Development is categorised into four height zones, as follows:

- Height Zone 1 – Up to 21 metres;
- Height Zone 2 – Up to 10 metres;
- Height Zone 3 – Up to 8 metres; and
- Height Zone 4 – Up to 3 metres.

3.18 The tallest buildings (Height Zone 1) will be the largest data centre plot in the centre of the Site (Plot 4), and the data centre plot (Plot 5) in the east of the Site, which will have a height of up to 34.55mAOD. The easternmost and westernmost plots (the substation (Plot 6) and the energy centre/substation (Plot 8)) will be the smallest buildings (Height Zone 4) on the Site, with a height of up to 19.3mAOD.

Figure 3.3 Parameter Plan – Building Heights



Appearance and Massing

3.19 The details of individual building appearance, including elevations and façade treatment are reserved for future detailed approval. The Illustrative Masterplan at Figure 3.2 demonstrates how the scale of the development for which permission is sought can be achieved, as it illustrates how a 30,392.5sqm GIA data centre development could be configured within the Site.

3.20 It is envisaged that the Proposed Development will be of a scale and massing so that it responds sensitively to the existing townscape and landscape context surrounding the Site.

3.21 As per the Illustrative Masterplan (Figure 3.2), Plot 4 would incorporate two data centre buildings, as well as an admin and storage area. Plot 5 would include another smaller data centre, and Plot 6 would feature a substation associated with the data centre uses. These plots will also include for ancillary parking and surface water drainage features, as well as generator zones for the location of necessary back-up generators. The plots also include for internal access routes within the plots.

3.22 The data centre buildings would include green walls on key elevations to increase contributions to biodiversity and reduce any residual visual impacts.

3.23 The Illustrative Masterplan (Figure 3.2) shows associated development on Plot 8. This plot will include a GSP substation which would provide energy directly from the electricity grid to the data centres. It is possible that a temporary energy centre is required to supply power to the data centre use. Both of these scenarios have been assessed within the relevant planning application documents. Further details of these elements of the scheme will be agreed through future reserved matters applications.

3.24 Full details of the outline elements will be confirmed via future reserved matters applications, with agreement from Cardiff Council.

Landscaping, Open Space and Public Realm

3.25 The Proposed Development seeks detailed planning permission for the areas of public access, including open space. The Landscape Strategy (Figure 3.4) has been prepared and is subject to design approvals from Cardiff Council upon receipt of planning approval.

3.26 Public amenity / seating areas are proposed. The central amenity area would be located adjacent to the central roundabout and to an additional amenity area located further within the forested area and near to the existing pedestrian footbridge over the Rhymney river linking the Site to Llanrumney. Both seating areas would connect to the public rights of way, which have been retained, redirected and created in continuation from the Rhymney trail.

3.27 A number of interventions are proposed to enhance the screening of the site protect open space of amenity and nature conservation value against any impacts of development, including using native hedgerow, woodland edge and standard native trees to close the gap between existing vegetation while aiding to screen the development from Eastern Avenue. An enhanced landscape buffer would also be planted between the riverside and the development plots.

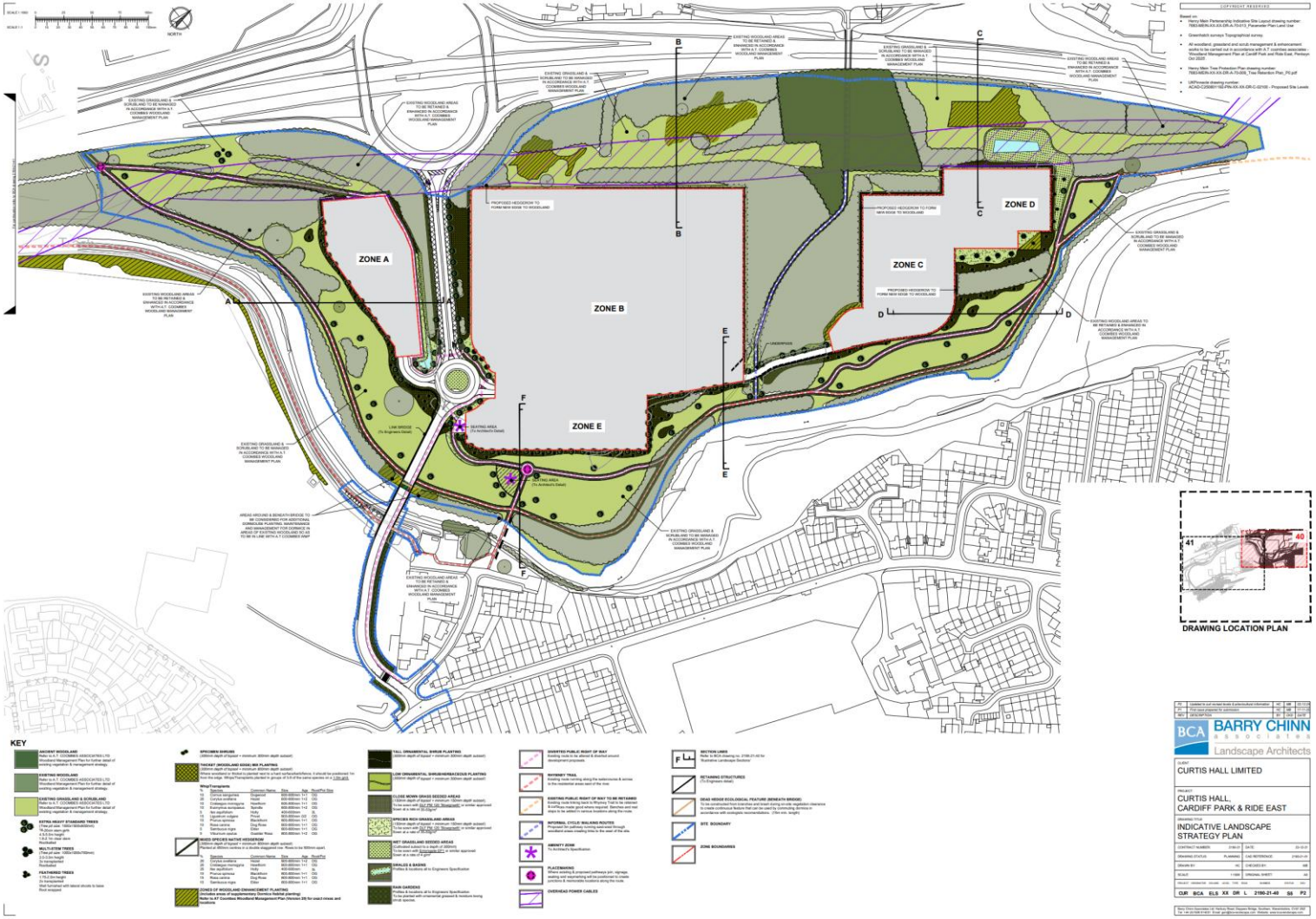
3.28 As part of the application, the footpaths and routes within the site would be retained and be brought into active management thereby improving the recreational resource. In addition to formalising the footpaths into walking routes, the Rhymney Trail would be upgraded through the introduction of sensitive lighting.

3.29 Existing woodland areas will be retained where possible, and enhanced in accordance with the Woodland Management Plan (WMP) which accompanies the planning application submission. Existing grassland and scrubland will also be managed in accordance with the WMP. New hedgerow planting is proposed to form new edges to woodland areas.

3.30 Areas around the bridge to be considered for additional planting for dormice. Maintenance and management of this will be in line with WMP and Dormouse Habitat Management Plan 2024-2049 (Appendix 5.10).

3.31 Retained areas of grassland is located along the River Rhymney Trail and ornamental species will be included around building envelopes and within prominent locations throughout the car park and adjacent to footpaths.

Figure 3.4 Landscape Strategy



Access, Movement and Parking

3.32 Access to and egress from the Site will be provided via the connecting bridge, which will provide access from the south. Access from the A48 will be provided via the first exit of the East Avenue North roundabout when travelling from the east, and the fourth exit when travelling from the west.

3.33 The Proposed Development will provide a new through-road and roundabout to improve access through the Site, a new bridge linking the A48 Eastern Avenue with Pentwyn and Llanrumney, vehicular access between Plots 4 and Plot 5 / 6, and an associated pedestrian underpass and new internal access roads.

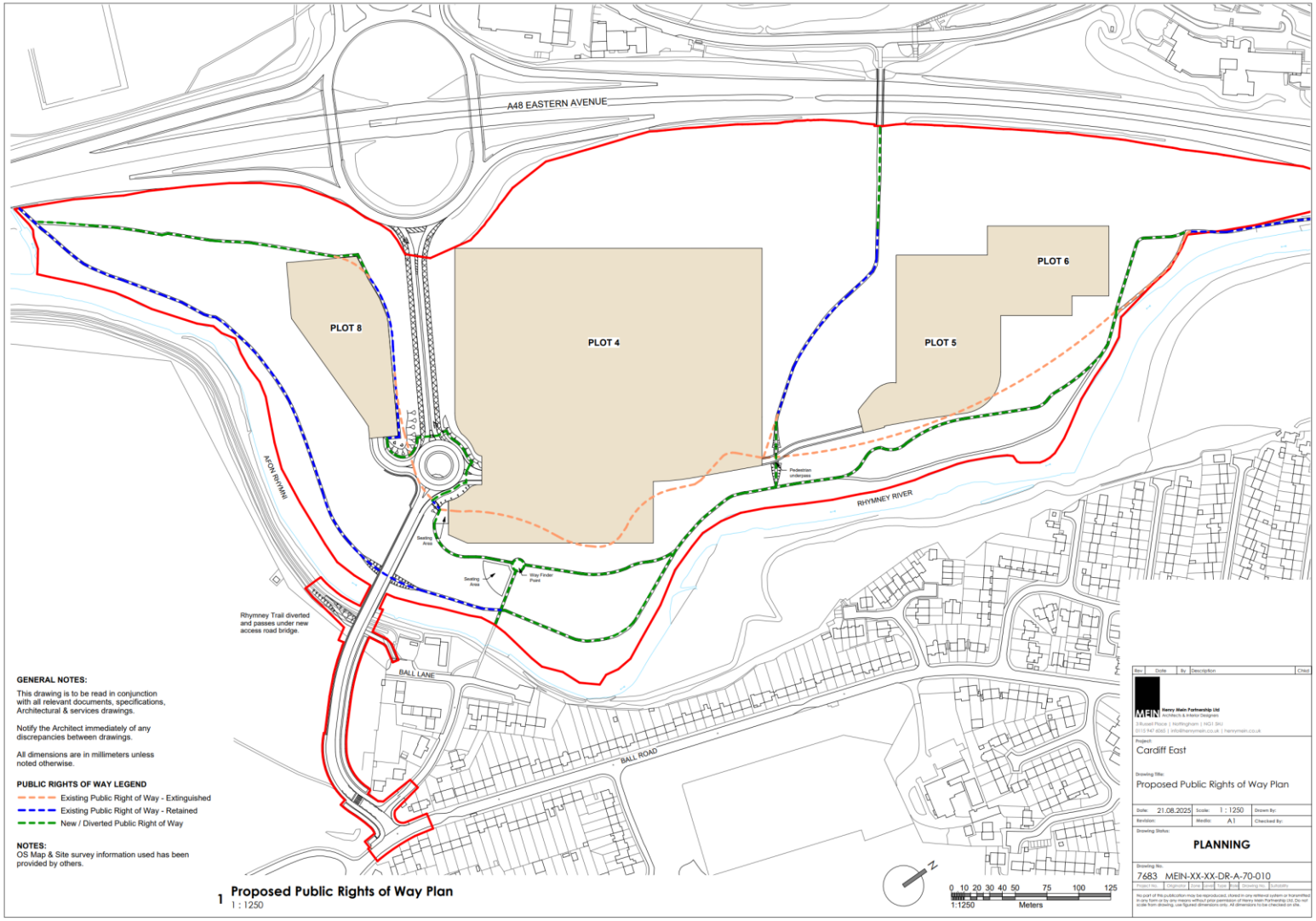
3.34 New car parking areas will be provided. Car parking spaces, including EV and Disabled spaces and cycle parking spaces will be provided in line with CC's guidance.

3.35 The Proposed Development will provide landscaping enhancements to provide recreational uses for the Rhymney Trail for walking and cycling.

3.36 There are a number of footpaths on the site some of which are formal public rights of way (PROWs) with a number being informal paths that often run parallel between the same location. The Rhymney Trail passes through the site, primarily along the line of the river, and crosses the foot bridge at Ball Lane, where it continues south.

3.37 The existing PRoWs on the Site will be retained, where possible, however it will be necessary to divert some PROWs across the Site to provide opportunities to enhance public access for recreational and amenity uses through more formalised routes including the provision of active travel routes across the site. There will be routes both east-west and north-south through the site, as shown in Figure 3.5.

Figure 3.5 Proposed Public Rights of Way Plan



Infrastructure and Services

Flood Risk and Drainage

3.38 The planning application submission will be accompanied by a Flood Risk Assessment. In terms of how drainage and flood risk is assessed, please see **Chapter 9: Water Resources and Flood Risk**.

Utilities

3.39 The Proposed Development will be served by the following utilities:

- The water system will be designed to support critical cooling, domestic, and fire protection requirements while ensuring reliability, efficiency, and compliance with UK standards. The design will endeavour to include primary supply, backup systems, and monitoring;

- National Grid have been contacted to assess the feasibility of establishing a Point of Connection from the existing overhead lines on the Site. A Grid Supply Point substation is included within the design of the Proposed Development to accommodate this; and

- Should a Point of Connection with the National Grid be unfeasible, a Primary Substation is also included within the design of the Proposed Development.

Greenhouse Gas Emissions, Climate Change, Energy and Sustainability

3.40 The overarching aim of the Proposed Development is to develop a proposal with sustainability and energy saving at its core, with plans to incorporate carbon reduction measures wherever practicable.

3.41 The Outline Energy Statement and Sustainability Statement submitted with the planning application advises the Proposed Development's approach to energy efficiency and how design measures will be integrated into the Proposed Development to reduce emissions. Key measures include:

- Delivery of gas-free buildings and Data Centre uses;

- Employment of a fabric-first approach, including building materials with high levels of thermal performance (low u-values) and the targeting of high levels of air tightness, with an operational energy demand of 90kWh/m2/yr (Kilowatt Hours as a function of building area in square metres per year) to be targeted, where technically feasible and in line with the UK Green Building Council's (UKGBC) 'Energy performance targets for net zero carbon offices: Technical report and summary of consultation responses';

- Alignment with the European Commissions' '2024 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency';

- Targeting of a Power Usage Effectiveness (PUE) value of 1.4 for Data Centre uses, through the incorporation of highly efficient systems;

- Embedding of circular economy principles and employment of construction materials specified in consideration of their embodied carbon emissions;

- Achievement of climate resilient through the implementation of blue and green infrastructure to aid the mitigation of the risk of overheating, as well as to aid the mitigation of surface water flooding;

- Employment of water efficient appliances and systems and the use of direct evaporative Air Handling Units (AHUs) within the Data Centre uses to reduce the water consumption as far as possible; and

- Encouragement of the incorporation of drought-resistant planting to minimise external water consumption.

Waste and Servicing

3.42 It is envisaged that operational waste at the Site will be managed in accordance with best practice and in consultation with the Local Planning Authority.

Noise and Vibration

3.43 A noise impact assessment has been completed which provides an assessment of the impact of noise and vibration arising from the Proposed Development. (Appendix 3.3). It finds that the Proposed Development will generate noise but will not have an adverse impact on the existing noise sensitive properties. 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.

Demolition and Construction of the Proposed Development

3.44 The below sets out the indicative programme for the construction works for the Proposed Development, together with the key construction activities that would likely be undertaken on the Site. While the construction phasing is indicative and subject to planning permission, it gives an indication of how the Proposed Development could be brought forward. The exact strategy, phasing and delivery programme will be decided at the detailed design stage.

3.45 This is a descriptive section only. Assessment of construction impacts of the Proposed Development are provided in each technical chapter of this ES (i.e. Chapters 4-10). In addition, each technical chapter assesses the cumulative impacts of construction of the Proposed Development in conjunction with other schemes in the vicinity.

3.46 A CEMP is submitted with the planning application (Appendix 3.2). The CEMP includes details of which British Standards demolition and construction practices will adhere to.

Indicative Construction Programme

3.47 It is anticipated that the Proposed Development will be delivered over a 1.5-year period from 2026 to 2027.

Indicative Demolition and Construction Phasing

3.48 The indicative delivery programme for the Proposed Development is estimated to be approximately 18 months. Subject to planning permission being granted, construction is anticipated to commence in 2026 and be completed in 2028. The dates and timeframes used within the assessment are indicative and are subject to change, and that minor departments should not produce a material effect to the conclusions of the ES.

3.49 The demolition and construction will comprise several phases contributing to individual plot construction as well as additional earthworks and highway constructions. Whilst flexibility is sought in the consent, it is likely that the scheme will proceed through the following stages:

- Vegetation Site Clearance
    - A two-stage vegetation clearance is to be adopted.
    - First stage Veg/tree clearance (down to 300mm): Feb – March 2026
    - Second Phase clearance down to root/stumps: Mid Apr to Mid May 2026
    - Second Phase Backup: Mid Sept – End Oct 2026
- Dormouse Bridge Installation: April – June 2026
- Off Site Dormouse Habitat Creation: Feb – Mid April 2026
- GC Mobilisation: Aug 2026 – Sept 2026
- Central Plot Demolition and Earthworks: Nov 2026 – Apr 2027
- S278 Licence/Mobilisation for Highways works: Apr 2026 – Apr 2027
- New Roundabout & Spine Rd: July 2027 – Dec 2027

- Bridge & Highway: July 2027 – May 2028
- Data Halls: Apr 2027 – Dec 2028
- Onsite Substation: Aug 2027 – July 2028
- Energy Centre: Aug 2027 – Aug 2028
- PC: Dec 2028

3.50 The structures to be demolished include the existing office/amenity building on the right-hand-side upon entry to the car park and the bus shelters located along the entry road to the car park. Removal of fencing and container units is also required prior to construction. Images of the structures to be demolished are provided in Figure 3.6 below.

Figure 3.6 Existing Structures to be Demolished

Hours of Work

3.51 The prescribed hours of work would be agreed with CC. It is anticipated that the core working hours will be as follows:

- 08:00 – 18:00 hours weekdays;
- 08:00 – 13:00 hours Saturday; and
- No working on Sundays or Bank Holidays.

3.52 The following activities are expected to be permitted to take place within the period before and after normal working hours as outlined above:

- Arrival and departure of workforce on-site;
- Deliveries and unloading;
- Check and examinations of plant and machinery (including test running) and the carrying out of essential repairs / maintenance to plant and machinery;
- Site inspections and safety checks; and
- Site clean-up.

3.53 These hours will be strictly adhered to unless or in the event of:

- An emergency demands continuation of works on the grounds of safety;
- Minor internal works are being carried out within the confines of the building envelope; or
- Completion of an operation that would otherwise cause greater interference with the environment / general public if left unfinished.

3.54 Approval from CC will be required for any works beyond the above that need to be undertaken outside of permitted hours.

Construction Vehicle Movements

3.55 The number of HGV movements resulting from the demolition and construction work is anticipated to vary from phase to phase, dependent on the build out rate of commercial/ industrial units, and other infrastructure activities. It is noted that there will be some overlap between the phases during which time there may be a higher number of daily movements depending on when the peak construction traffic is for each phase.

3.56 All construction traffic will enter and leave the site via the A48. The impact of construction vehicles will be controlled via an agreed Construction Environmental Management Plan (CEMP) and Construction Traffic Management Plan (CTMP) which will set out how construction traffic will be managed on the local highway network during the anticipated construction period. The purpose of this is to ensure that the effect of construction traffic is mitigated against, particularly in relation to local residents and any air quality issues.

3.57 The CEMP will control the timings, routing and volume of traffic entering/leaving the Site during this period. The vehicle movements will be spread over the course of the working day, with the prescribed hours of work to be agreed with CC.

3.58 A full assessment of the demolition and construction vehicle movements on the surrounding road network is presented in Chapter 8: Transport and within Appendix 8.1: Transport Assessment.

Construction Environmental Management and Mitigation Measures

Construction Environmental Management Plan

3.59 A CEMP is submitted with the full planning application and is appended to the ES (Appendix 3.2). The CEMP sets out the strategy, standards, control measures and monitoring procedures that will be implemented to manage and mitigate any adverse environmental effects of the demolition and construction process, including mitigation measures defined by the ES.

3.60 The CEMP will remain a live document to ensure that it is specific to the works and processes that are to be employed during construction site activities. The CEMP will include details on roles and responsibilities, control measures and activities to be undertaken to minimise environmental effects, as well as monitoring and record-keeping requirements. It will also provide a framework for engaging with local residents and communities and their representatives throughout the construction period.

3.61 The CEMP will include a Construction Method Statement (CMS) and will be subject to approval by CC.

Construction Traffic Management Plan

3.62 A CTMP will be prepared to control traffic during the temporary period of construction, which is expected to be secured by planning condition.

3.63 The CTMP will ensure that a strategy for planning of the construction access routes will be implemented to take into account current legislation, police, fire authority and Health and Safety Executive guidance, local authority transport schemes and neighbourhood lorry restrictions.

3.64 The CTMP would enable and manage all types of HGVs to and from the Site during construction. This would improve the safety and reliability of deliveries to the Site, reducing congestion and minimise the environmental effects.

3.65 Directional signage will be implemented to ensure that construction traffic utilises designated routes to minimise the effect on the surrounding road network. Locations for temporary signage for the approved route will be discussed with the CC Highway Officers.

3.66 HGV movements will be restricted as far as reasonably possible to avoid peak traffic flow periods (i.e. from 08h00-09h00 and 17h00-18h00). All construction traffic entering and leaving the Site will be closely controlled and during delivery times traffic marshals will be positioned, as necessary, at the entry and exit points to control and record entry and exit movements.

Dust, Air Quality, Noise and Vibration

3.67 Dust emissions escaping the work area may cause nuisance through, for example, surface soiling, loss of visibility due to deposition, and effects on nearby flora and fauna. Since it is difficult to suppress dust once it is airborne, it is optimal, where possible to prevent dust from being generated at source and good practice site mitigation measures, such as covering of stockpiles, on-site traffic management, wheel washing and good plant and vehicle maintenance, will be employed to minimise these effects as far as practicable.

3.68 Potential sources of noise and vibration include (but are not restricted to) plant and usage of heavy machinery, piling activities, crushing activities and vehicles movements. The Principal Contractor will implement the necessary management and operational controls on-site in order to minimise adverse noise and vibration impacts on nearby sensitive receptors from construction site activities.

3.69 Good practice site measures will seek to minimise potentially adverse noise and vibration effects that result from these activities. Should a complaint be received regarding noise and/or vibration, the Principal Contractor will consider installing monitoring equipment to measure the level of vibration being caused and, if it is deemed necessary, additional mitigation measures will be implemented to further reduce these impacts.

Water Resources and Land Pollution

3.70 Surface water, groundwater, foul water, potable water and land, will be protected from polluting materials through the demolition and construction process through adequate bunding, provision of spill kits, implementation of correct storage measures and adherence to washing down and refuelling procedures. In the incidences of a spill work will be halted and the Site Manager will be notified.

3.71 The CEMP details strategies implemented to ensure that construction onsite considers both the resource of the soil and the river to preserve the horticultural, ecological and structural condition of the Site.

3.72 In areas where any soft landscaping is to be stripped, permanently or temporarily, topsoil is to be identified and stockpiled in an area safe to do so, where contamination will be minimal. Stockpiling of the soil when wet will be avoided.

3.73 To prevent contamination of the topsoil during construction, the stockpile is to be quarantined by fencing or by matting. If topsoil is being stored on car parking surfaces, cleaning or matting is

required. Topsoil is not to be stored in the east of the site, adjacent to the river. This is to prevent washing of the topsoil into the river. As topsoil cannot be compacted, to preserve horticultural benefit, the topsoil must have a buffer to allow recoverable runoff from any stockpiles.

3.74 If any imported soils are required, the source will need to be confirmed, and the material tested for the attached suite of contaminants, to comply with the maximum screening values listed. The frequency is to be congruent with the site remedial strategy. Further detail of these strategies can be identified in Section 4 of the CEMP.

Description of Alternatives

3.75 In line with the EIA Regulations (Wales), this chapter describes the 'reasonable alternatives' to the Proposed Development studied by the Applicant, prior to selection of the final design and provides an indication of the main reasons for selecting the final chosen option, including a comparison of the environmental effects.

3.76 The alternatives that are considered in this chapter include:

- Option 1: Alternative Sites / Site Boundaries;
- Option 2: 'Do Nothing' Alternative;
- Option 3: Alternative Designs (e.g. layout, heights, massing and other aspects).

Option 1: Alternative Sites / Site boundaries

3.77 No alternative sites were considered by the Applicant due to their 'subject to planning' ownership of the full Site area.

Option 2: 'Do Nothing' Alternative

3.78 In line with best practice, this section broadly outlines the consequences of no development taking place at the Site and it remaining in its current state. **Chapters 4 – 10** and **Volume II** set out the baseline conditions of the Site together with the future baseline conditions which are likely to arise in the absence of the Proposed Development. These are not repeated here.

3.79 In the absence of the Proposed Development, it is reasonable to assume that the Site would largely remain in its present condition i.e., the existing Cardiff Park and Ride East facility and associated land.

3.80 The Site was originally marketed as a strategic development opportunity by Cardiff Council with a gross area stated as 22.8 hectares. The developable area was estimated at 10 hectares approximately. The particulars stated that the illustrated masterplan was indicative only and the

successful developer would be adopting their own designs. A mix of uses was envisaged including drive through operations, a petrol filling station, supermarket, retail warehousing and warehousing / logistics accommodation.

3.81 Inevitably, the adverse environmental effects related to demolition and construction would not occur, for example disruption relation to construction traffic with relation to diver delay, pedestrian amenity and construction noise. However, these effects have been found by the EIA process to be not significant.

3.82 In the absence of development, leaving the Site in its current state would avoid potential adverse significant environmental effects associated with the completed and operational Proposed Development, such as:

- Moderate adverse visual effects at Ball Lane, Clovelly Crescent, Glastonbury Terrace and Ball Road (during operation); and

- Moderate adverse climate change effects on the global climate from the production of GHG emissions if the National Grid is not decarbonised.

3.83 In the absence of the Proposed Development, the significant environmental benefits of the scheme would not be realised:

- Minor to moderate beneficial socio-economics effects to deprivation.

3.84 In the 'Do Nothing' scenario, there is the potential for the extant permission to be built out. This is detailed below.

Option 3: Alternative Designs

3.85 The Site benefits from extant permission granted 25th June 2024 for the following description of development:

"Demolition of existing structures and redevelopment of the site to provide commercial floorspace (Use Classes B1, B2, B8, A3) and/or ancillary Class A1), associated drive-thru and car parking; the re-provision of the park and ride; a bridge across the Rhymney River; site wide landscaping and associated works."

3.86 The design of the extant permission evolved over several iterations since April 2021 through consultation with various stakeholders and interested parties, including CC, Welsh Water and Natural Resources Wales. Environmental testing was undertaken to inform the design, such as energy and sustainability assessments, flood risk and drainage assessments and transport assessments.

3.87 This alternative design is not being taken forward, and instead the Proposed Development is being taken forward as there is an opportunity to provide critical national digital and economic infrastructure and related employment. As of September 2024, data centres are designated as Critical National Infrastructure (CNI) due to their significance in supporting essential services such as healthcare, finance and communication.

3.88 The primary goal was to fit the Data Centre layouts within the confines of the development plot areas as per the extant planning permission, therefore allowing the agreed mitigation measures, landscape and biodiversity enhancements, PROW's, access road and bridge construction to proceed in accordance with this permission.

Environmental Constraints and Responding Design

3.89 As presented in Table 3.3, the existing constraints and opportunities on the Site and within the local environment, and the character of the surrounding area and landscape, have informed the design of the Proposed Development, inclusive of embedded mitigation incorporated into the design of the Proposed Development.

Table 3.3 Summary of Design Response to Environmental Constraints

Opportunity / Constraint	Assessment
Opportunity to use brownfield land	The middle, brownfield portion of the Site was identified as the most suitable area for built development, due to its topography, existing access, and distance from the most sensitive ecological and visual receptors. The placement of built development within this portion of the Site has ensured retention of habitat and provision of recreational features within the outer extents of the Site.

Opportunity for the provision of recreational space	Due to the existing formal and informal footpaths and established habitat within the Site, the existing PRoWs on the Site are viewed as an opportunity to enhance public access for recreational and amenity uses through more formalised routes, including provision of active travel routes. This will encourage active and healthier lifestyles of the Site users and local community once operational, and contribute towards the provision of ecological value on the Site.
On-Site Habitat Provision	Retention, management and enhancement of the habitats is an integral aspect of the Proposed Development. Ecological provisions such as the enhancement of the Ancient Woodland on the Site and provision of dormouse habitat are proposed.
Existing Woodland	Significant opportunity for a thorough woodland management plan to be designed and implemented. This would result in an improvement for habitat and biodiversity.
Invasive Species	Removal of invasive species like Japanese Knotweed and Himalayan balsam improving site biodiversity.

Consultation and Responding Design

3.90 The Proposed Development has evolved through consultation with CC. The following design refinements have arisen in response to the feedback from technical consultees and CC officers:

- The corner of the Plot 5 has been refined, so as not to incur into the 20m buffer around the Ancient Woodland;
- The implementation of green walls will be considered at Reserved Matters Stage to add visual interest and character to the data centre buildings; and

- Engineering works to improve the Flood Risk level of the Site are proposed to ensure the Proposed Development is not at risk of flooding.