QUINN SITE NEWPORT CWL01-02 DATA CENTRE

October 2023
PLANNING
27/10/2023

Gensler

REVISION	DATE	COMMENTS / STATUS
A	15.09.2022	Pre-Application
B	31.09.2023	Draft
C	27.10.2023	PAC Submission

QUINN SITE NEWPORT - CWL01-02 DATA CENTRE

Dyffryn Ln, Coedkernew, Marshfield

Newport

NP10 8FS

Wales

United Kingdom

September 2022

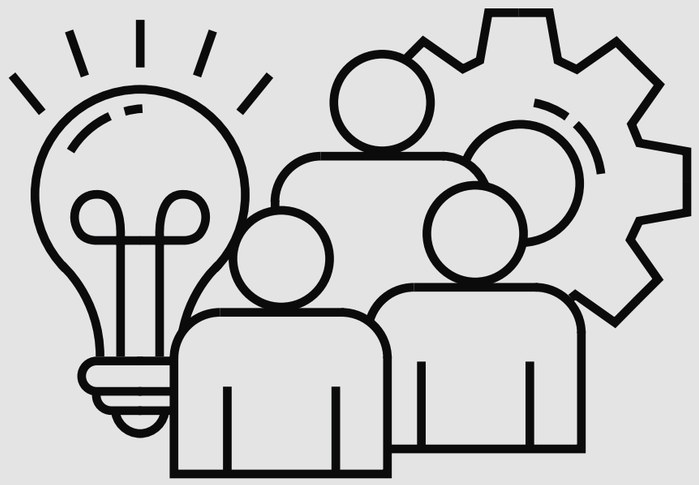
Newport Council

This document has been prepared in support of a detail planning application process with Newport Council and is intended to inform a baseline for future discussions between any future developer of the site and Newport Council.

As one of the largest design firms in the world, Gensler has continually and successfully planned, designed and delivered projects for all types of clients and has considerable knowledge of complex developments. Gensler has been responsible for implementing many innovative designs, using the highest international standards.

Thank you for your consideration.

DESIGN TEAM



Client	**Microsoft**
Design Manager	**RED Engineering Design**
Architect	**Gensler**
Landscape Architect	**Gensler**
Civil & Structure Engineer	**Pinnacle Consulting Engineers**
M&E Engineer	**RED Engineering Design**
Planning Consultant	**CarterJonas**
CDM Consultant	**RED Engineering Design**
Telecoms Consultant	**Infrastructure Design Solution**
Ecology Consultant	**Environmental Resources Management (ERM)**
Security Consultant	**Evolution Security**
Fire Consultant	**Hydrock**
Aboricultural	**Environmental Resources Management (ERM)**
Acoustic	**Environmental Resources Management (ERM)**
Air Quality	**Environmental Resources Management (ERM)**
Drainage and Suds	**Pinnacle Consulting Engineers**
Energy & Sustainability	**Red Engineering Design**
Highways & Transport	**Pinnacle Consulting Engineers**
Grounds Investigation	**Geotechnics**

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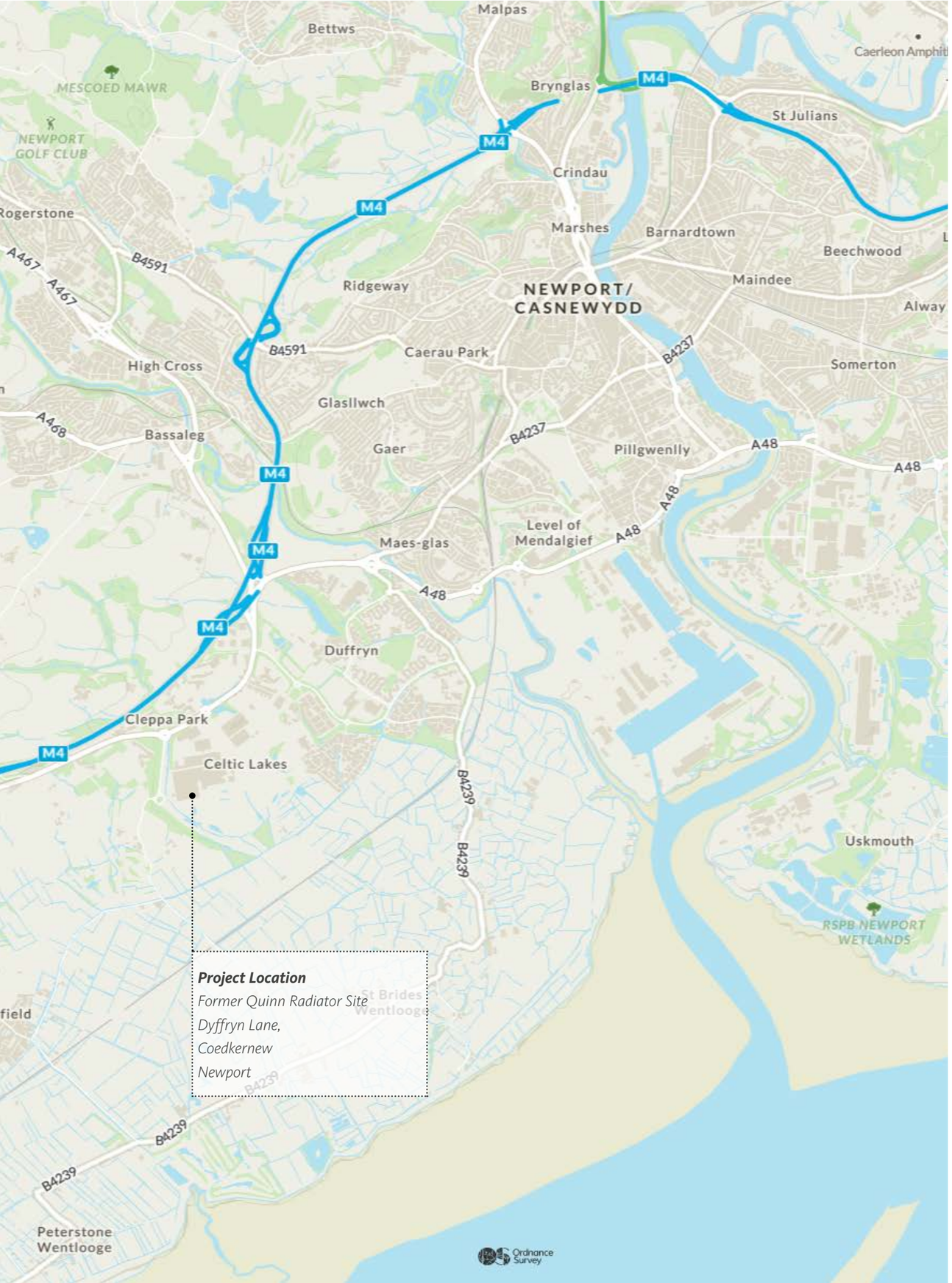
1.0 INTRODUCTION



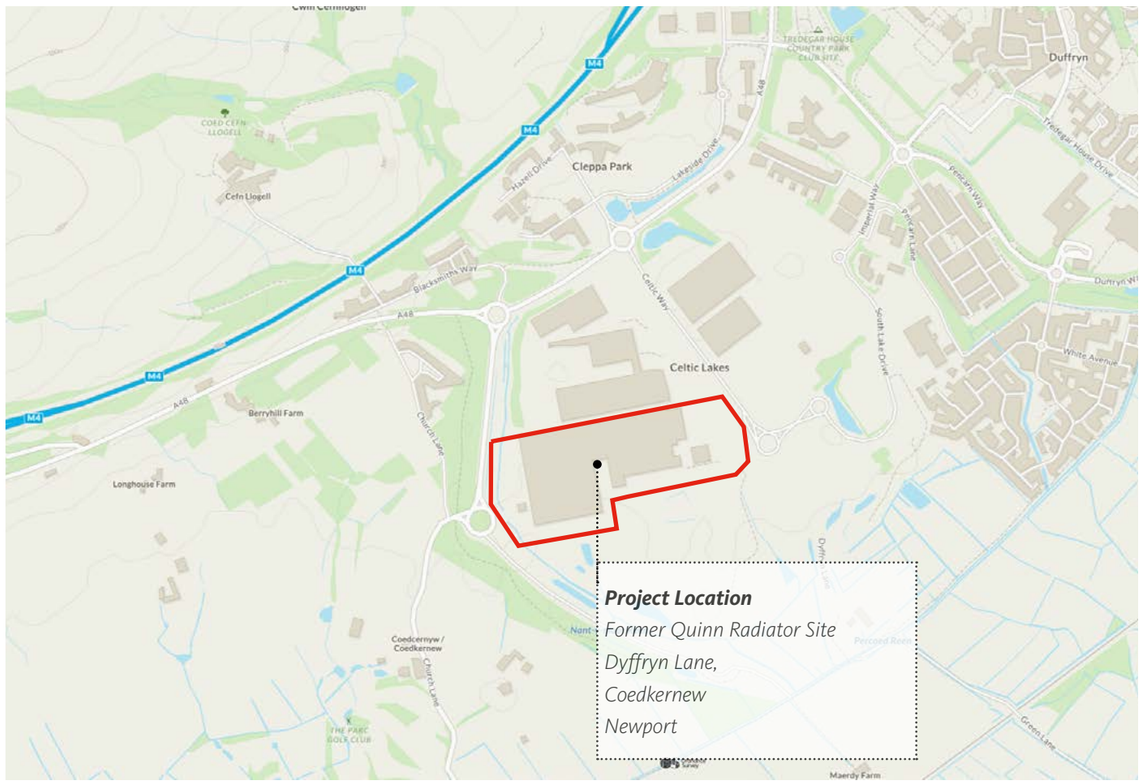
1.0 INTRODUCTION

1.1 Introduction to the project

This proposed scheme captures a Hyperscale Data Centre development on the site of the former Quinn Radiator Manufacturing Plant at Duffryn Lane, Coedkernew Newport for Microsoft Data Centre operations. Microsoft has the ambition to establish an Availability Zone with several Data Centres in South Wales; the proposed development on the Quinn site is part of realising this ambition.

The site is currently occupied by a large industrial building; and a number of support buildings for storage, technical functions, and office (approximate area 76,000 m2); with portions in a state of disrepair due to lack of maintenance and depreciation of construction materials.

For the proposed scheme, the existing structures will be demolished; and 2no. Hyperscale Data Centres, along with support structures for daily operations, will be built in its place (approximate area 37,000 m^2). In addition to a reduction in built surface area, the proposed scheme also includes a reduction in impermeable paved areas, uplift in landscape provision, enhancement to the biodiversity net gain and the inclusion of additional storm water retention.



1.2 Hyperscale Data Centre

How Data Centres Work

A Hyperscale Data Centre is a building where information from the Internet – the cloud - is processed and stored. 'Hyperscale' is almost interchangeable with the word 'cloud-computing'.

The word refers to scalable virtual networks: a digital framework, where physical parts of the internet connect into, regardless of their actual size or shape. Hyperscale Data Centres can be quite large, but the term does not refer to the size of the building.

It is generally more efficient to process and store information centrally in a Data Centre, than storing data on millions of individual PC's and laptops.

Not only is the data better to secure and is it easier to maintain, it is also more energy-efficient to store data on modern purpose-built data servers in a purpose-built Data Centre, than on home computers or on small office servers.

In theory, a Data Centre can be located anywhere in the world. In practice, there is a finite distance a Data Centre should be located from its customers. This is because of 'latency', the time it takes to send data across the internet between your home computer and the Data Centre. The longer the distance data has to travel, the greater the latency. Having a Data Centre close to you, improves your internet experience.

A Hyperscale Data Centre typically contains of the following elements:

- An office and logistics , where the security and Data Centre operations are monitored, and where administration are performed;
- Data halls, where the computers and server racks are housed and where data is processed and stored;
- Rooms for electrical equipment, such as transformers and power distribution equipment;
- Equipment for ventilation;
- Back up electrical generators, and battery systems, which are only used in emergencies.

Hyperscale Cooling Strategy

Data servers produce heat, which requires cooling. There are several ways Data Centres can be cooled; for example by means of air conditioning units (CRAC - units) inside the Data Centre, to direct liquid cooling of computer chips. Which method is chosen, is dependent on location, and the amount installed computing power.

For a Hyperscale Data Centre the cooling strategy is by means of direct air-cooling. Fresh outside air is drawn in through louvres in the façade. Large fans push the air into the data halls, where it is drawn through the data servers into a Hot Aisle Containment system (HAC) into a void above the ceiling plenum. From there, it is either recycled through the building, or rejected through vents in the façade. A deflection shield directs the exhaust air so it does not mix with fresh intake air.

Hyperscale Data Centres in the UK predominantly make use of this cooling method, because this is the most efficient cooling method for this category of Data Centre, in terms of energy use and ease of operation.

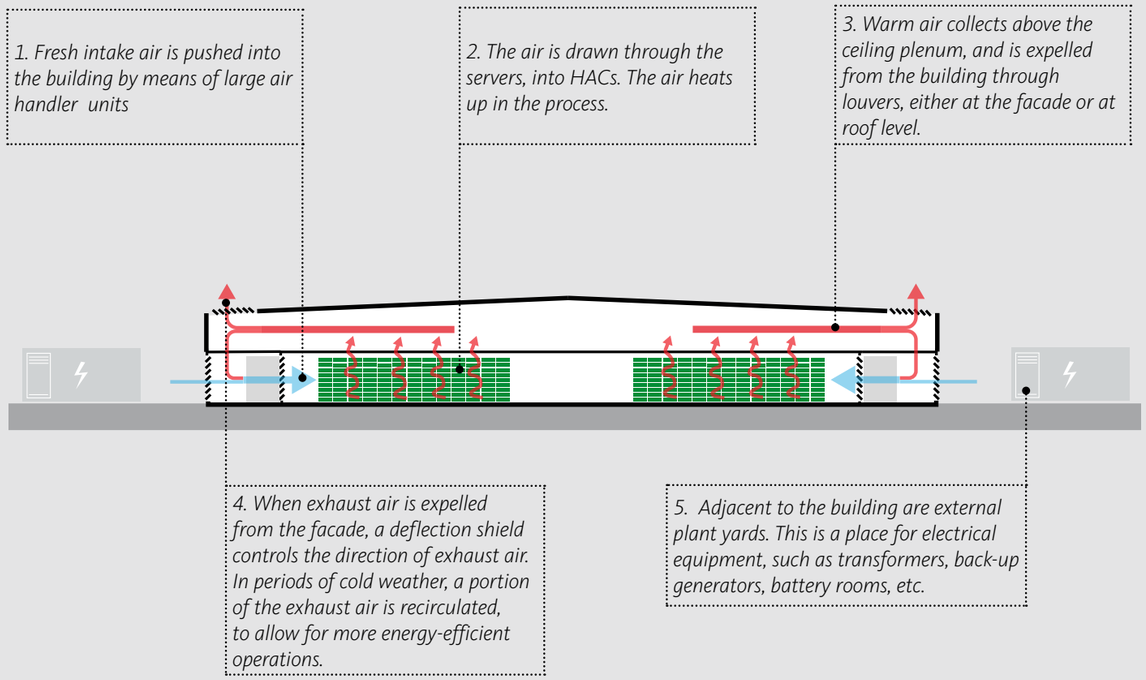
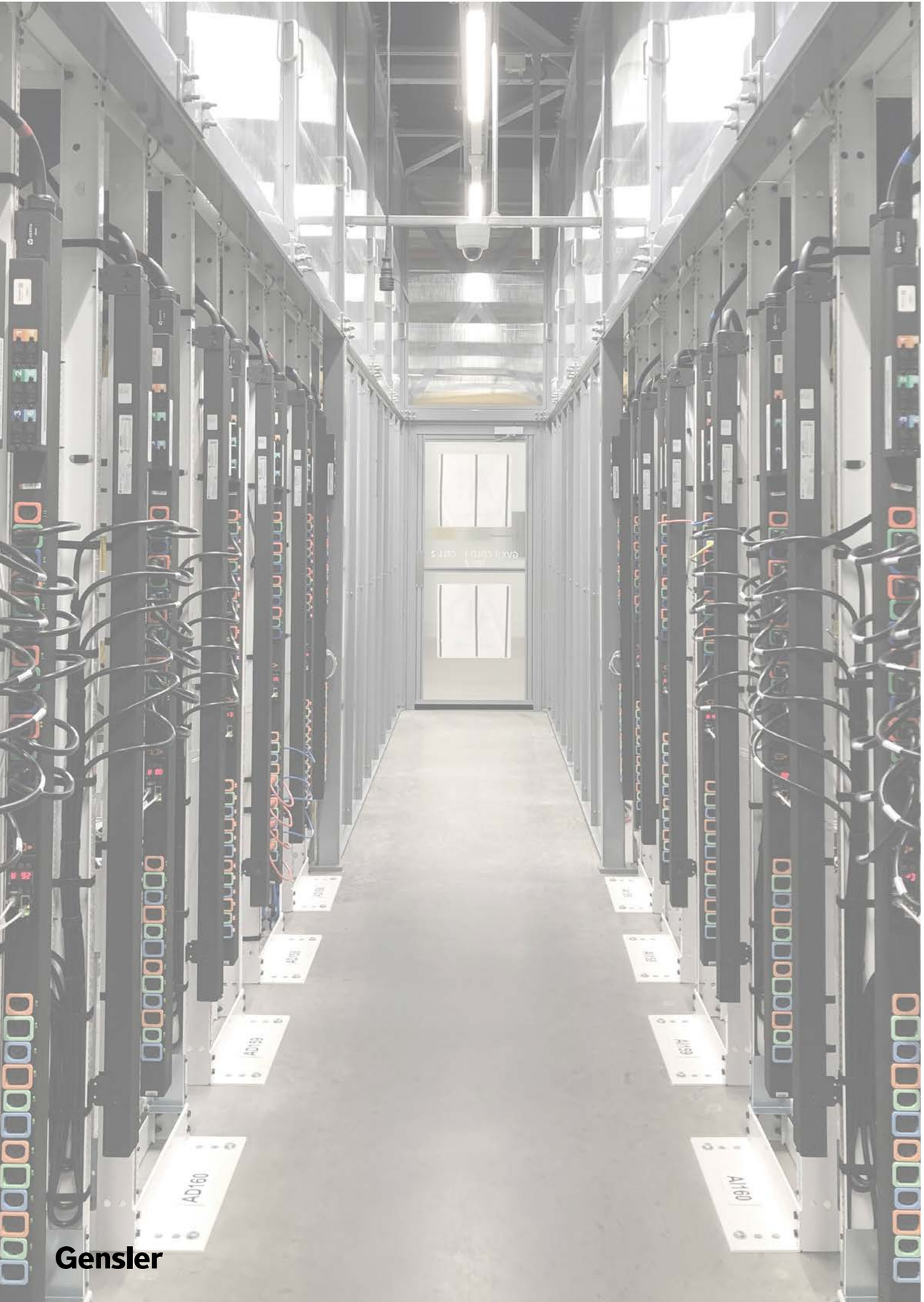


Diagram Data Centre Operations



1.3 Project Brief

2 SINGLE
STOREY BUILDINGS

37,000
m^2

TOTAL
APPROX GFA

120 STAFF
EMPLOYMENT, WHEN
FULLY OPERATIONAL

129 CAR
PARKING SPACES (INCLUDING
13 ACCESSIBLE & 22 EV SPACES)

BIODIVERSITY
ENHANCEMENT

LEED GOLD

2.0

PLANNING OVERVIEW

2.0 PLANNING OVERVIEW

2.1 Principles of Development

Planning Appraisal

This Planning Appraisal sets out the planning history and the planning policy pertinent to establishing a Data Centre at the former Quinn Radiator Factory at Imperial Park, Newport. The appraisal considers other B8 / Data Centre uses in proximity of the site and the likelihood of achieving planning permission for a Data Centre in this location. The appraisal concludes with details of the anticipated technical documents that will be required to support planning application submission, followed by recommendations and conclusions.

The circa 40.79 acres (16.5ha) site of the former Quinn Radiator Factory sits within the Imperial Park business park situated on the outskirts of Newport and comprises manufacturing, distribution and warehousing facilities and offices. The site lies within a wider strategic employment area that includes Airbus, R&D centres and Gocompare.com. The site itself contains five units currently for the uses of B2 (General Industrial) and B8 (Storage and Distribution). Ancillary to the factory is an office space which is established as a B1 (Business) use. The existing site has a range of elevations up to a maximum of 11.43m ridge height and incorporates the provision for 336 car parking spaces across three car parks with an additional lorry parking area.

The site is bound by industrial development to the north and east within Imperial Park. The western boundary is bounded by a dual-carriageway linking to the A48 and a small residential area further afield.

South of the site is undeveloped land. The Nant-y-Moor Reen is situated on the western boundary and an element of the western part of the site is known to have flooded in the past. There is a pumping station on the site. The site benefits from fences around its boundary and two security gates at its accesses. The site has an existing 24-hour security team in place monitoring the site and to restrict unauthorised access.

The site is currently assumed vacant; however it was most recently occupied by Quinn Radiators Limited as a radiator production facility. Access to the site is via the unnamed dual carriageway to the west that connects to the A48, in addition to southern access points appearing available via Dyffryn Lane off the Celtic Way roundabout to the east. The site is well located in terms of access to the M4 which enables travel to Newport, Cardiff, Swansea and Bristol.

Newport Quinn Radiator Factory

2.2 Planning History

A high-level assessment of the site's planning history has been undertaken using Newport City Council's on-line planning application search register. The site has an extensive planning history; an executive summary is provided below:

Application Reference	Location	Proposal	Decision Date	Decision
21/03/0344	Former Quinn Radiators Submitted by F55 Sterling Newport S.a r.l based in Luxembourg	Change of Use from B2 (General Industrial) and B8 (Storage and Distribution) Ancillary B1 to Flexible Use B1 (Business), B2 (General Industrial) and B8 (Storage) to allow subdivision to create 5 new units	07/07/2021	Granted with Conditions
07/0720	Celtic Way, Celtic Lakes	Certificate of Lawfulness for proposed use of existing buildings to accommodate electrical energy storage plant	26/09/2008	Refused
05/0207	Former LG Electronics Site, Imperial Park, Coedkernew, Newport	Change of use to radiator manufacturing plant together with alterations and extension	28/07/2005	Granted with Conditions
97/1072	Land at and Adjacent Imperial Park A48 (South of) Coedkernew 3	Land at and Adjacent Imperial Park A48 (South of) Coedkernew 3	17/12/1997	Granted with Conditions
96/0663	Land at and Adjacent Imperial Park A48 (South of) Coedkernew 3	Construction of an integrated plant for the manufacture of television monitors colour picture and colour display tubes other electronics equipment (LG Electronics Inc) a wafer fabrication and assembly plant (LG Semicon Co Ltd) including ancillary buildings and uses and associated buildings, engineering and other operations and landscaping (Class B2 of the Town and Country Planning (Use Classes) Order 1987) (involving the diversion of public footpaths 7 and 8 and the stopping up of public highways Celtic Way and Dyffryn Lane	24/09/1996	Granted with Conditions

2.3 Recent Planning Application To Adjacent Sites

Summary of other B8 / Data Centre Uses in Proximity

1 - *07/1533* - Land and buildings to East of Quinn Rad, Celtic Way, Celtic Lakes, Newport

Granted 18th March 2008 – Constructed

Re-use of existing FAB building as a Data Centre – and the construction of buildings to house stand-by generators, the provision of a security fence and a gatehouse

2 - *20/0039* - Land East of Celtic Technology Centres, Celtic Way, Celtic Lakes

Granted 10th September 2020

Erection of 4 no, three storey Data Centre buildings comprising B8 Use and Ancillary B1 Use, provision of emergency generators

3 - *20/1176* - Next Generation Data Land South of Unit 3, The Courtyard, Imperial Park

Granted 3rd March 2021

Erection of a two storey Data Centre building comprising B8 Use and ancillary B1C Use, provision of emergency generators

4 - *21/0988* - Land to the north east of and adjacent to Celtic Way, Celtic Lakes

Granted 6th July 2022

Construction of a three storey manufacturing and research and development facility and administration office, external plant, storage and gas storage compound, car parking, sustainable drainage, hard and soft landscaping, attenuation basin and associated works

5 - *18/0383* - Unit 12-21 Celtic Way, Celtic Lakes

Granted 20th December 2018

Hazardous substance consent for the storage and use of 0.447 tonnes of arsine (Arsenic Trihydride)

6 - *18/0233* - Land To North East Of And Adjacent To Celtic Way Celtic Lakes Newport

Granted 8th June 2018 - consutructed

Provision of staff and visitor car and cyle parking, a secure external plant compound with multiple covered storage area and single storey bunker

7 - *19/0427* - IP5 Celtic Way, Celtic Lakes, Newport NP10 8BE

Granted 7th June 2019 - constructed

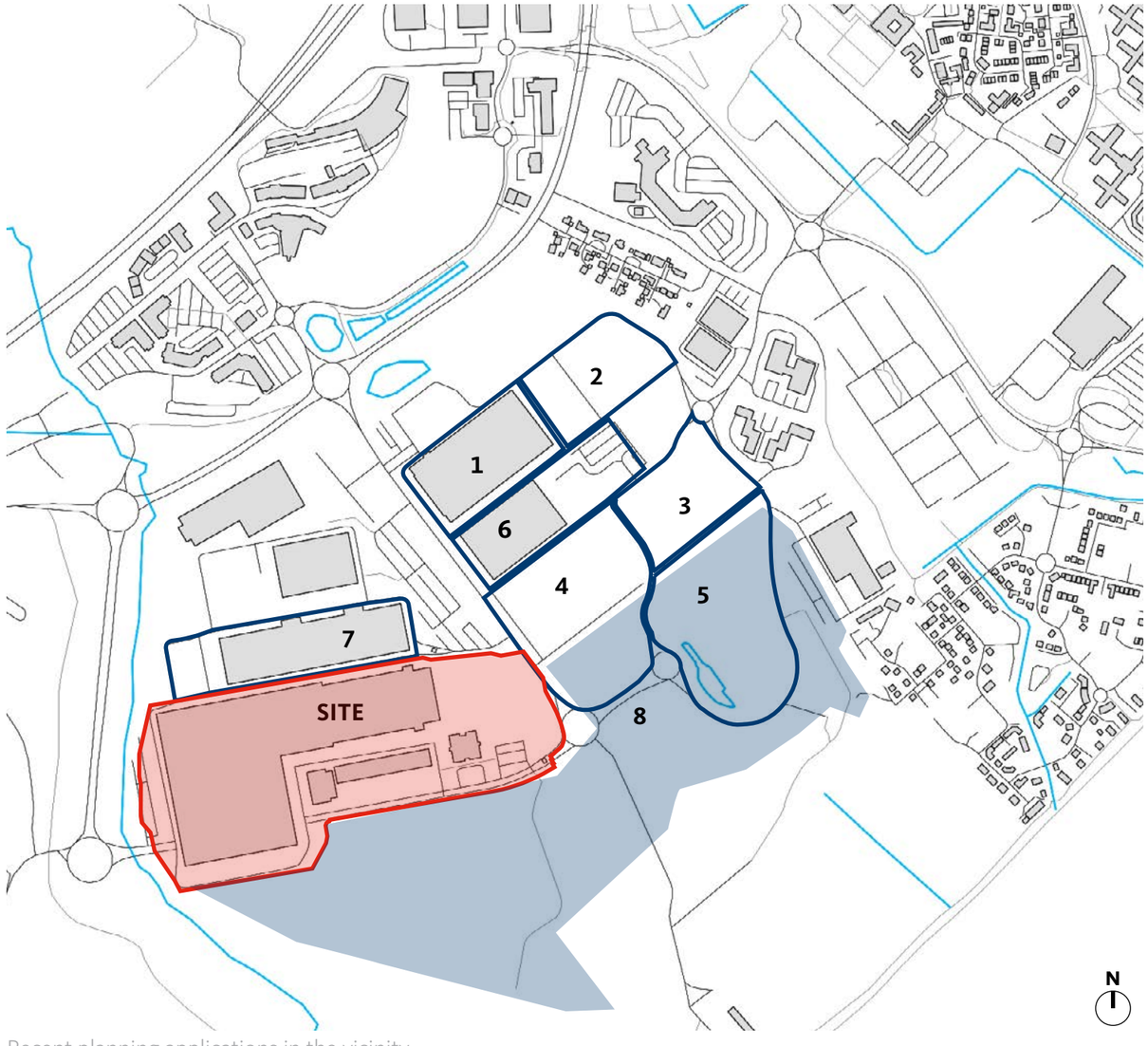
Change of use from Manufacturing B2 to Storage / Distribution B8

8 - *16/0314* - Land to the South East of unit 12-21 Celtic Way, Celtic Lakes

EIA Screening Opinion for provision of industrial units (B1, B2, B8 Use) – ES Not Required

KEY

- Policy **EM1(i)** - 38.5 ha of land at Duffryn - Allocation for B1, B2 and B8 Uses
- Proposed Application Site
- Previous Applications' Boundary
- Existing Buildings



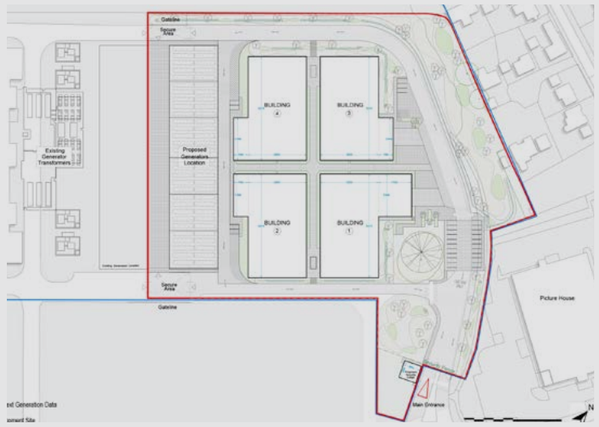
Recent planning applications in the vicinity

2.3 Planning Application to Adjacent Sites

Proposals for Adjacent Sites

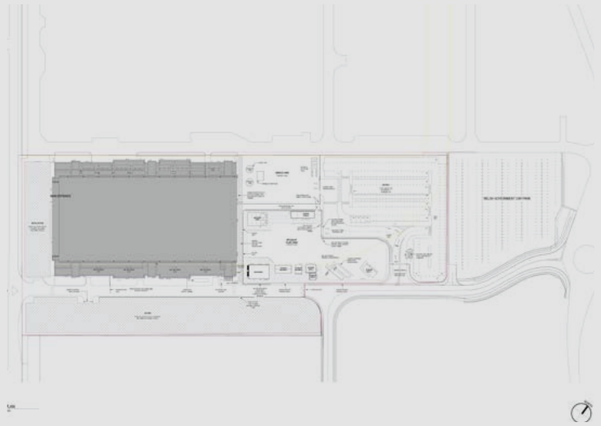
4 - *21/0988* - Land to the north east of and adjacent to Celtic Way, Celtic Lakes

2 - *20/0039* - Land East of Celtic Technology Centres, Celtic Way, Celtic Lakes



3 - *20/1176 (or 21/0756)* - Next Generation Data Land South of Unit 3, The Courtyard, Imperial Park

6 - *18/0233* - Land To North East Of And Adjacent To Celtic Way Celtic Lakes Newport



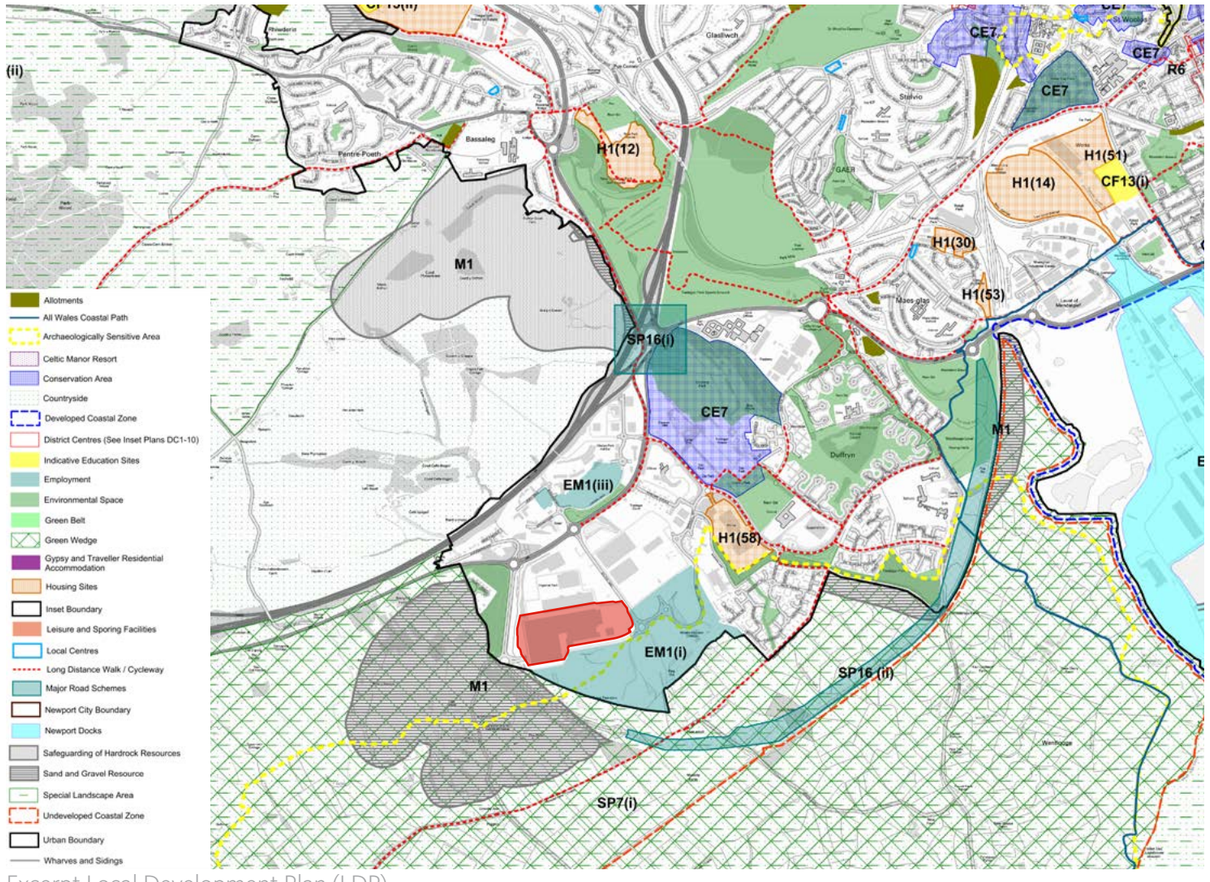
2.4 Local Development Plan

The Local Development Plan

As illustrated on the excerpt of the Local Development Plan 2011-2026(LDP), the site is located within the defined settlement boundary of Newport and is immediately north of the 95 acre Duffryn B1, B2 and B8 employment allocation. (policy EM1(i)). The area directly to the west is designated in the LDP as Countryside and Green Wedge (SP7(i)). Overlay zones directly to the south indicate "Archaeologically Sensitive Area" and a "Special Landscape Area".

Employment Land Allocations

The land allocated under Policy EM1 relates to net additional requirement for employment land. The land is needed to accommodate net growth in the stock and any losses from the existing employment stock will need replacing. Policy EM1(i) - 38.5 ha of land at Duffryn - Allocation for B1, B2 and B8 Uses. This is a large scale strategic development area well connected to the M4, containing some of the most prestigious employment developments within Newport. It is a well established area that has proceeded over a number of years on the basis of the Council's informal Duffryn development strategy set out in the 1990's.



Excerpt Local Development Plan (LDP) - Proposals Map West January 2015

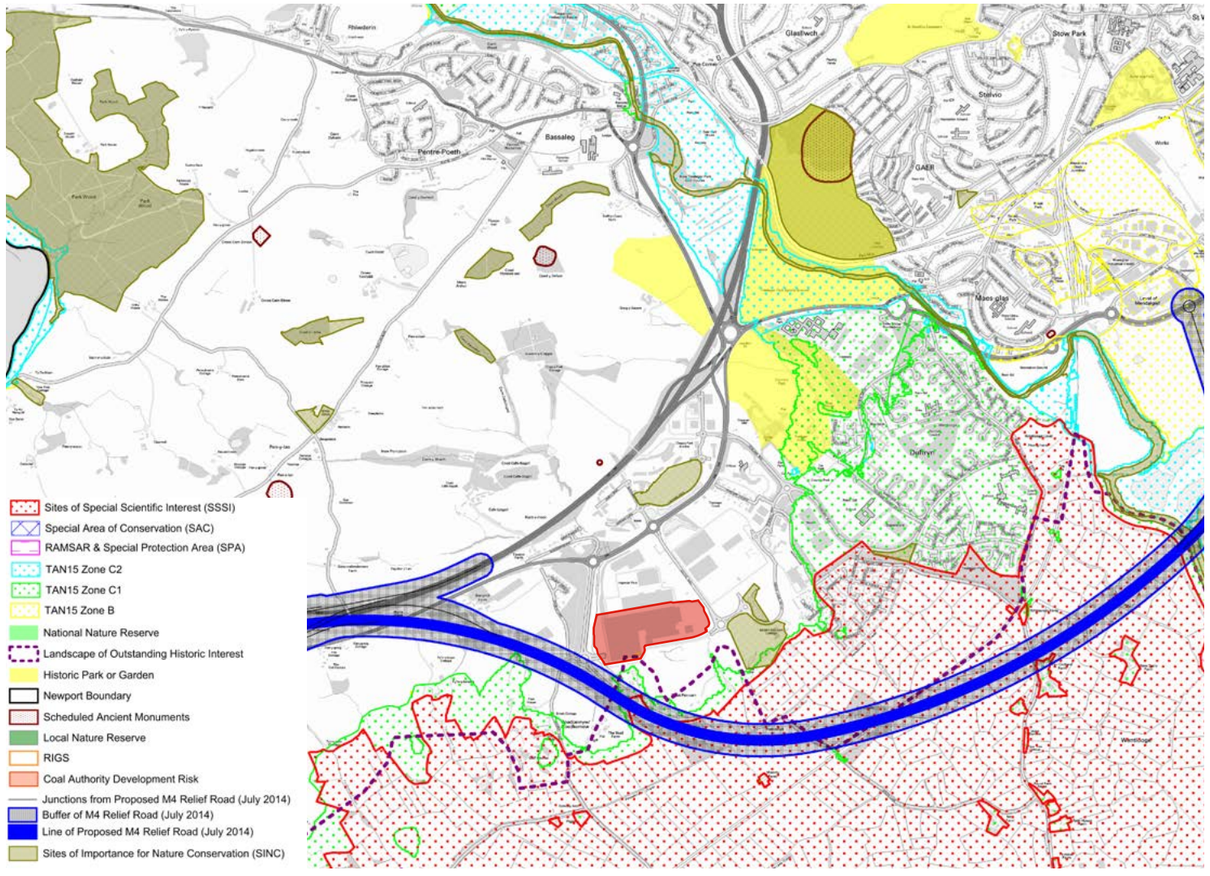
Newport, Wales

2.4 Local Development Plan

The Local Development Plan Constraints Plan

As illustrated below, the LDP Constraints Plan (January 2015) confirms that a corridor of land to the south of the site is safeguarded in the adopted LDP under Policy SP16 “Major Road Schemes” for the M4 Relief Road plans, which implementation was abandoned in 2021. Additionally, the site is in proximity to the Gwent Levels Sites of Special Scientific Interest (SSSI) and a “Landscape of Outstanding Historic Interest”.

It is understood the motorway plans are suspended as of 2021.



Excerpt Local Development Plan Constraints (LDP) Proposals Maps - January 2015

View from Hills

2.4 Pre-application Feedback

Introduction

In conjunction with Carter Jonas, Gensler engaged in pre-application process as part of the project.

The initial pre-application submission was issued to Newport City Council on with written feedback received on 27th January 2023. Overview

Overview

The salient architectural comments captured within the NCC's response are listed below:

- Policy GP1 General Development Principles – Climate Change states that development should be designed to withstand predicted climate change and reduce the risks and consequences of flooding, minimize energy requirements, reuse/recycle construction material and meet the relevant BREEAM or Code for Sustainable Homes Level.

- Sustainable Transport - Cycle Use: Use of cycles should be encouraged with secure covered cycle storage offered, particularly for the staff. This should also include shower and changing facilities close to cycle storage areas. The Council would expect information on these facilities to be provided at the planning stage.

- Parking: The TS states that there will be about 90 staff on site at any one time with an estimated 20 visitors giving a peak parking demand of 110 car parking spaces. 90 spaces are proposed which would leave a deficit of twenty spaces. Either the required number of spaces should be provided, or a planning application should provide suitable justification as to why a lesser provision is proposed, e.g. suitable options for alternative means of transport

Pre-Application Response

- Policy GP1 General Development Principles – Climate – the development targets Leed Gold level

- Sustainable transport – details of cycle shelter are being provided within this planning application; the facility has been designed with a shower/changing room withing an accessible setting. The employees are also encouraged to carpool, and 5 no of assigned carpool parking spaces have been provided on site.

- Parking - Parking layout has been updated to ensure that the number of parking spaces matched the number of expected employees and visitors on site.

2.5 Public Consulation Exhibition

Public Consultation Exhibition Event has taken place on 25th and 26th September 2023 at Parc Golf Club, Church Lane, Coedkernew, Newport, Blaenau Gwent NP10 8TU.

The aim of the consultation events was to present the proposals for the new data centre that Microsoft is planning to bring to Newport, engage with local residents and answer any questions they may have, as well as taking onboard all of their feedback.

The two days of consultation events were well attended, and the proposals well received from a range of different local residents, local organisations and political stakeholders. The project team stood on hand to answer a range of questions that attendees had. The team included community affairs, planning consultant, architect, demolition, and construction.

There was a total of 51 attendees across both the days. This consisted of 20 on Wednesday and 31 on Thursday.

An overview of the feedback provided by attendees is as follows:

"An excellent project using a brownfield site. Providing employment for the area and taking into account the environment"

"Very positive, bringing jobs to area and using land previously used as a factory site"

"Very impressed hope it comes to fruition as currently planned"

"Will be a vast improvement on current site"

"Impressive and thoughtful design which is sensitive with sustainability aims which are encouraging"

"Questions were answered by staff and architect on a clear and comprehensive way"

3.0 SITE ANALYSIS

3.0 SITE ANALYSIS
3.1 Site Location and Context

Site Location - Newport

Wider Context

Intermediate Context

Imperial Park - Newport

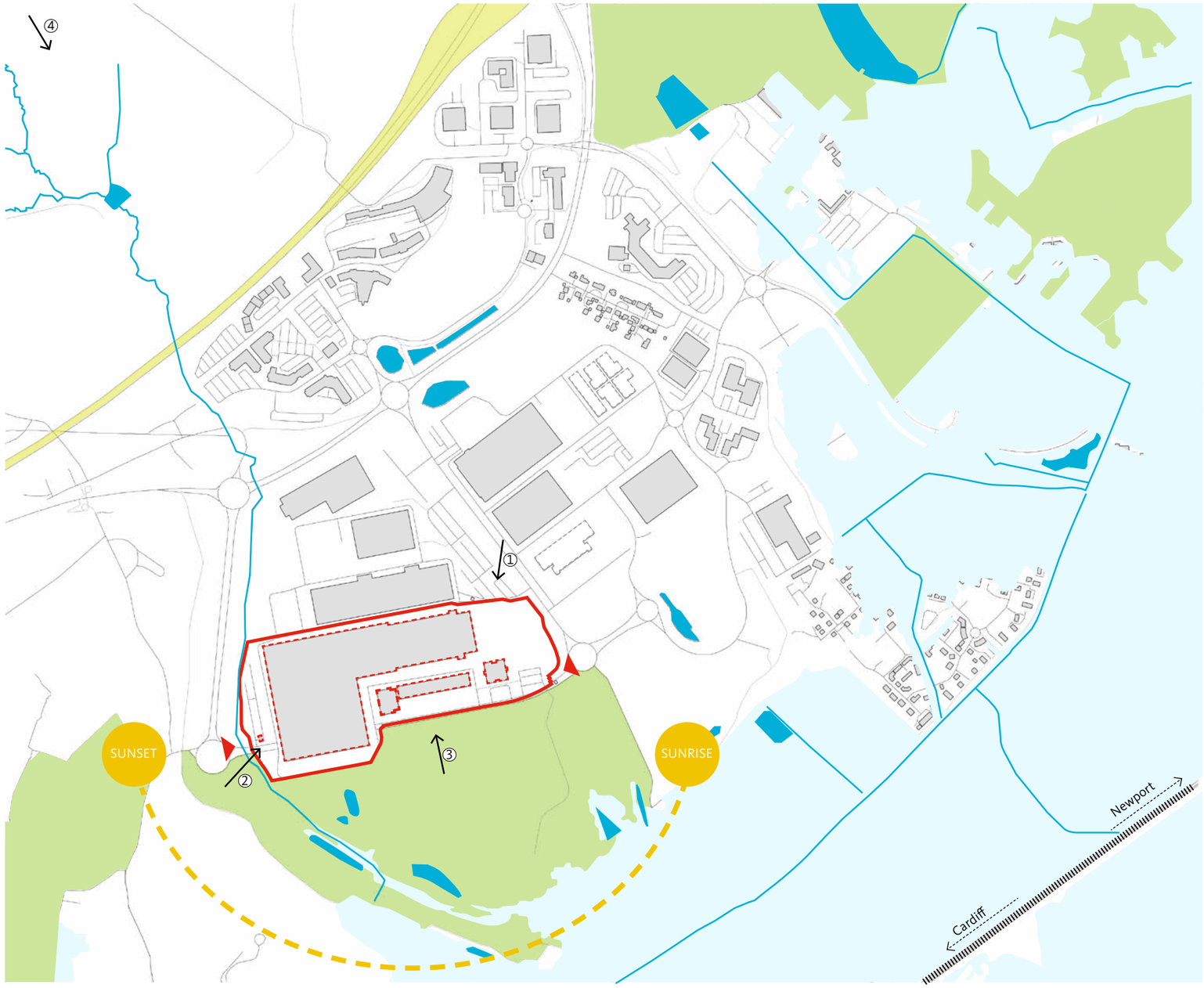
Imperial Park covers over 350 acres on the western edge of Newport, near Junction 28 of the M4 motorway.

Built in the 1990's as part of a High Tech manufacturing campus; Imperial Park comprises offices, including a serviced research and development centre, small, modern production units, large manufacturing and warehousing operations and Europe's largest Tier 3 Data Centre.

Major companies already operating at Imperial Park include Gocompare.com, Vantage, Smiths News, the NHS and Beachcroft.

3.1 Site Location and Context

Site Location

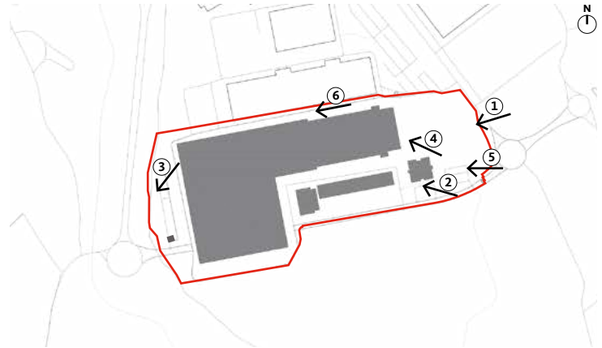


LEGEND:

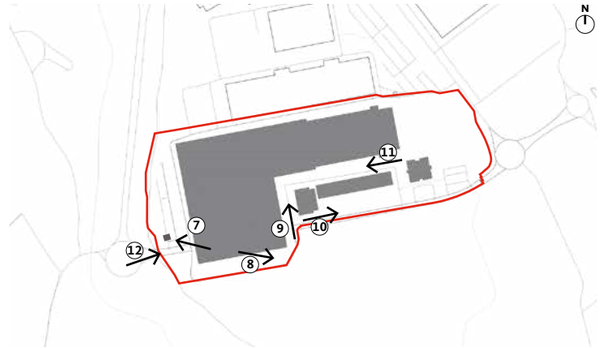
- Property Boundary
- Existing Buildings
- Proposed Buildings
- Buildings to be demolished
- Site Entrance
- Ponds
- Park / Green and Unbuilt Land
- M4 Motorway
- Low Flood Risk from River
- Train Line
- Sunpath
- Views

NTS

3.2 Site Photos



3.2 Site Photos

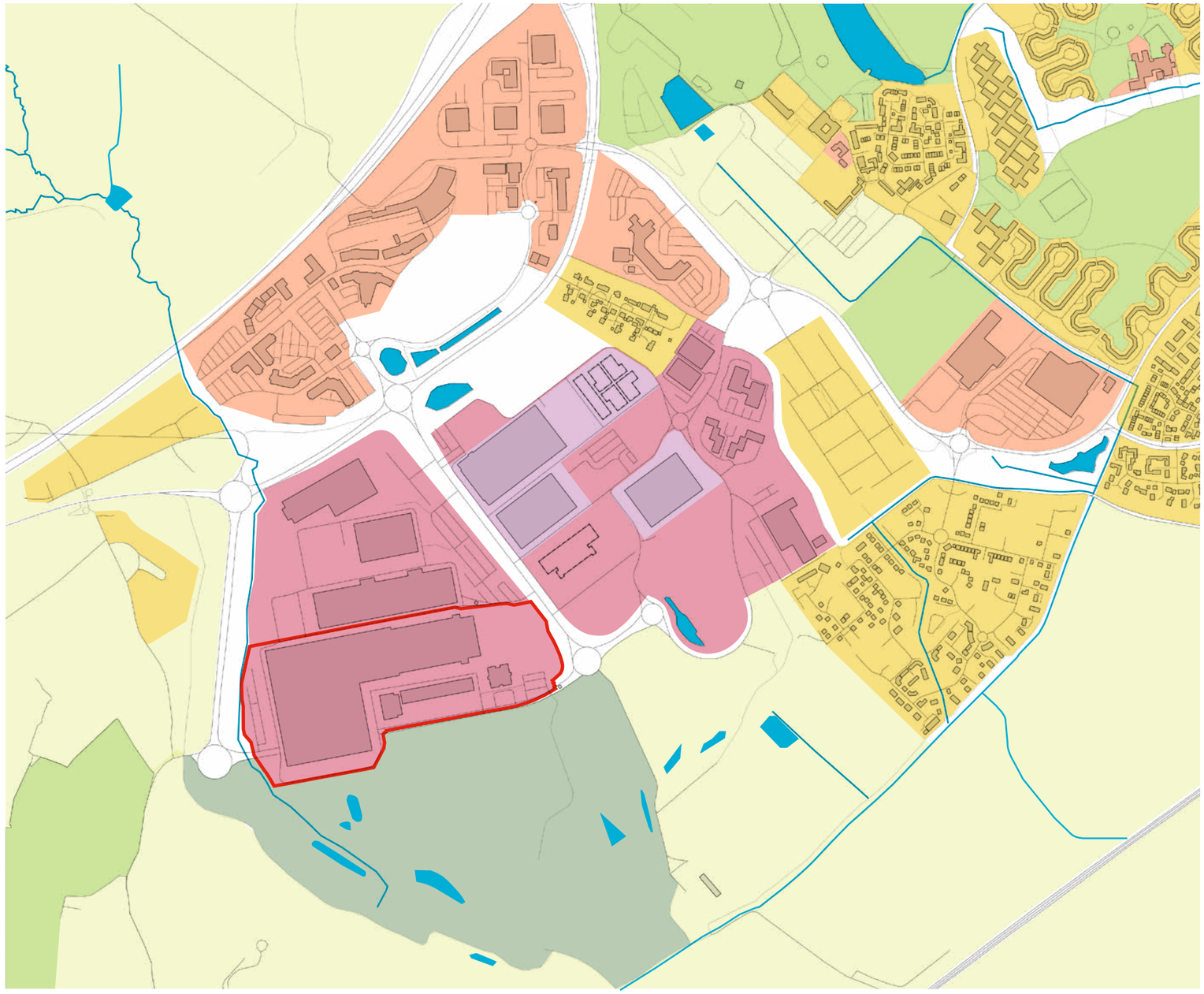


3.3 Existing Uses

The proposed site is located within a light industrial area, as illustrated. This is the main use of the zone adjacent to the M4 corridor with a few business and office amenities situated along the motorway too.

South and west of the property is agricultural land with the Gwent Levels SSSI further south.

The east side of the site is neighbouring a low density residential area which dates back to late 20th century.



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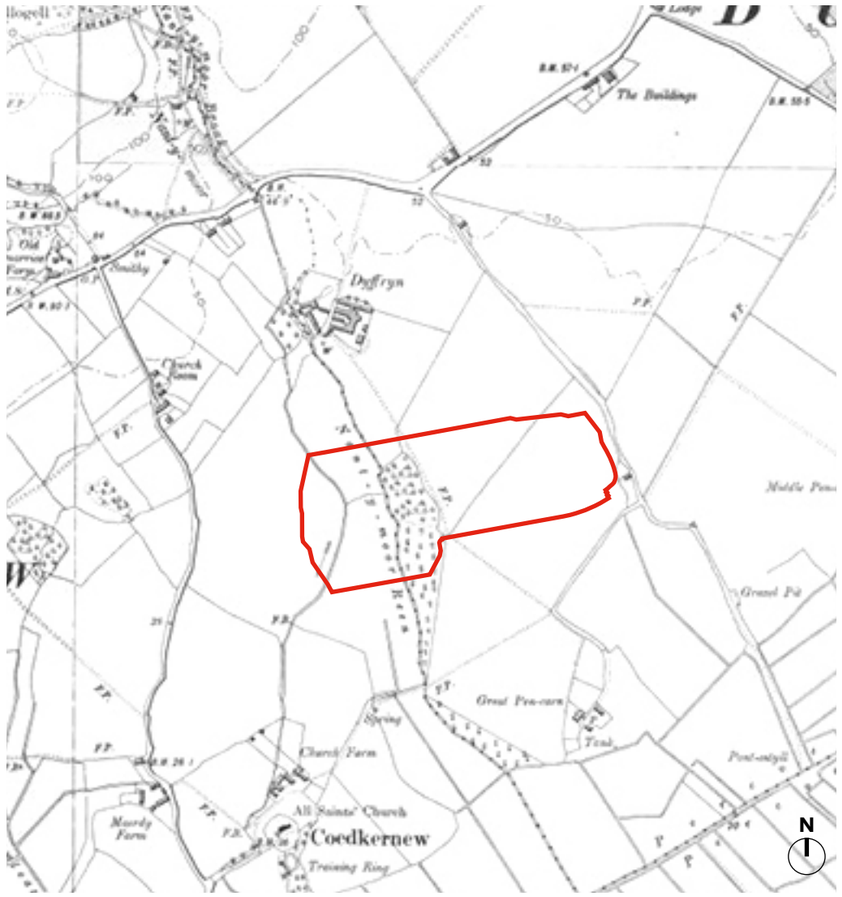
3.4 Historical Context



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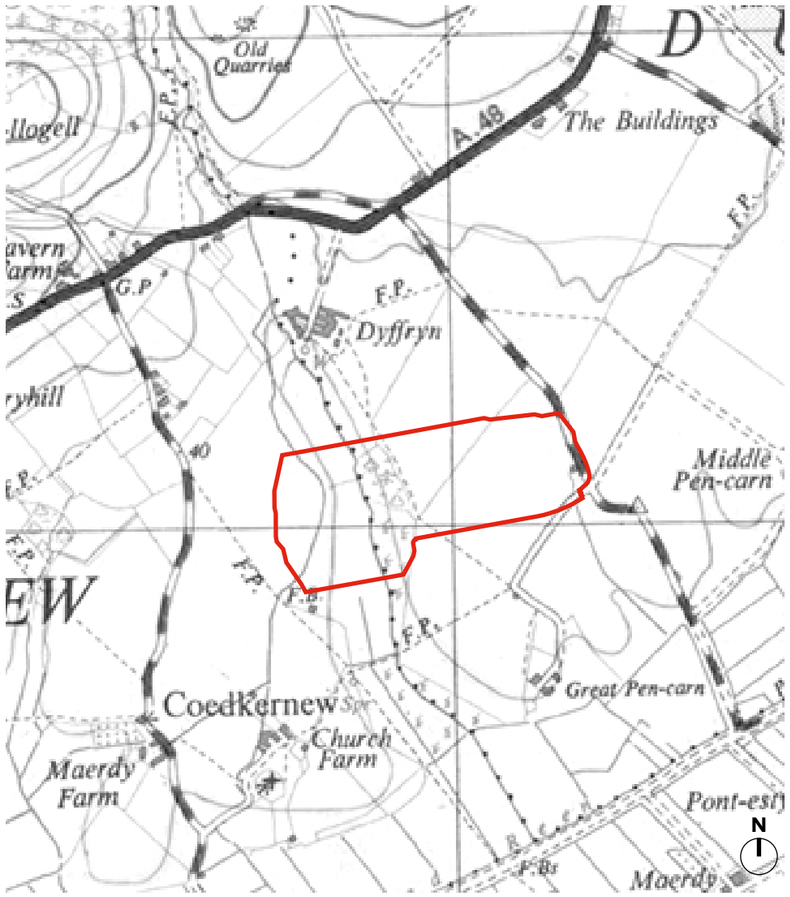
1880's

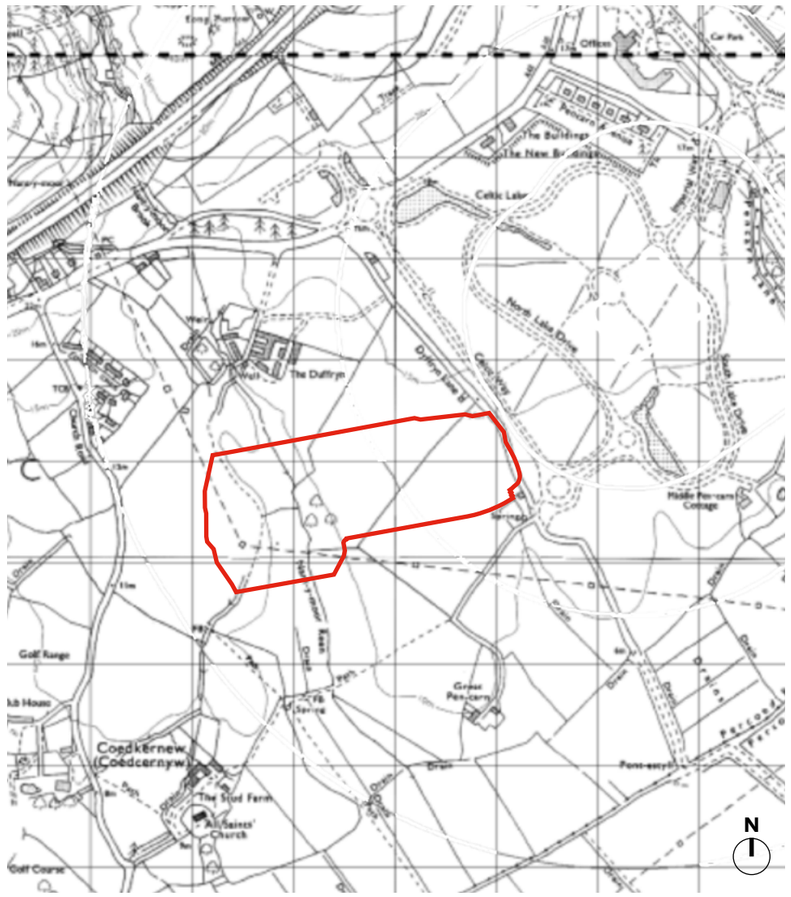
'Dyffryn' is shown on the 1st edition OS map (c.1887) as a substantial set of buildings set within the surrounding parkland of the Tredegar House estate and adjacent to Nant-y-Moor Reen. The Regional Historic Environment Records (HER) registers a house here dating to the medieval period, which is known to have been extant from at least the 14th century.



SCALE 1:10000

1960's

All traces of the historic landscape were obliterated during redevelopment for light industrial use (LG plant) in the late 20th century.



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1990's

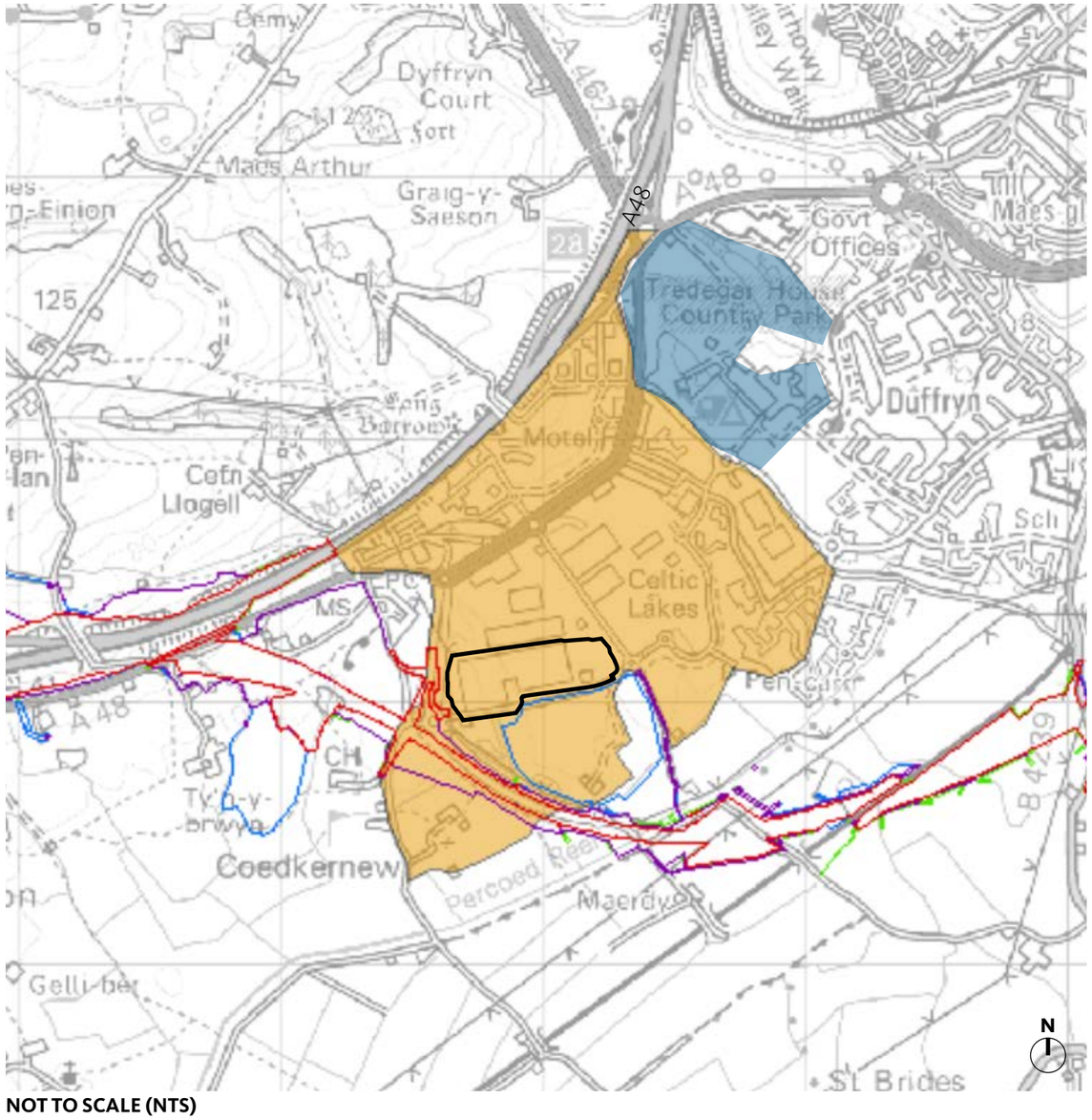
Development of light industrial uses began in 1996, when a new circular road layout was built adjacent to the East site perimeter. Further industrial estate can be seen on current OS maps dating back to early 2000's.

LEGEND:

Property Line

Note: All Information Extracted from: M4 Corridor around Newport , Environmental Statement Volume 3: Appendix 8.9

3.5 Historical Context ctd



NOT TO SCALE (NTS)

Illustration extracted from Welsh Government Report for M4 New Motorway Studies showing the HLCA 104 Duffryn/Pencarn, drawing number M4CaN-DJV-HER-ZG_GEN-AX-EN-0005 | At Issue | March 2016

Local Historic Character

The Historic Landscape Character Area of Duffryn area includes mainly industrial and business parks including Cleppa Park on the north side of the A48 and Celtic Park/Celtic Lakes on the south side of this road.

There are also modern hotels within the business parks and late 20th century residential development in the south eastern and north western corners. The former hamlet of Duffryn was located in the western edge of this HLCA (Historic Landscape Character Area); it is now within the industrial estate known as Celtic Park and no trace of the original hamlet has survived.

A second small hamlet at Coedkernew is still present in the south west corner of the HLCA. To the east of here is Great Pencarn, once the seat of a manorial holding but now disused land within which the remaining farm buildings have been recently demolished. This is separated from Coedkernew by a new road which is currently not in use.

Overall this HLCA is asigned a negligible value; the only part retaining any historic character is around Coedkernew.

Current Character Area:

- Modern industrial.

Key Historic Landscape Characteristics:

- Former parkland.

- Adjacent to Nant-y-Moor Reen.

*Note: Information extracted from Welsh Government Report for M4 New Motorway Studies: M4 Corridor around Newport Environmental Statement Volume 3: Appendix 8.9, page 11

LEGEND:

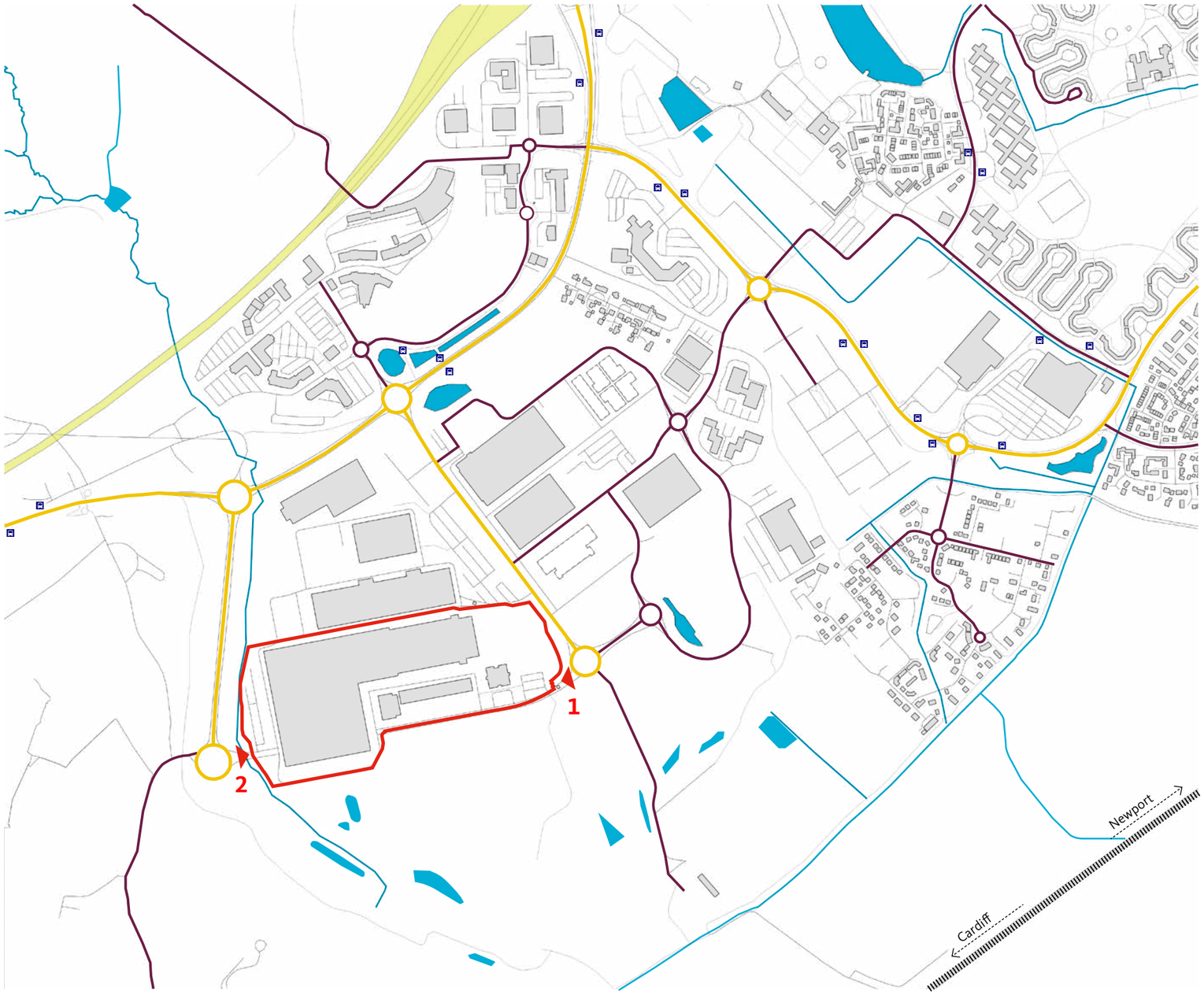
- Property Line of Proposed Site
- Historic Landscape Character Area (HLCA104 - Duffryn/Pencarn)
- Tredegar Park Conservation Area (47 Area Hectare)
- Proposed Permanent Highway
- Other Permanent Land take e.g. mitigation planting
- Temporary Construction Land
- Easement Only

3.6 Site Access and Highways

The proposed site is located just outside the west area of Newport, South Wales.

The property line is situated within a light industrial park along the M4 motorway corridor at junction 28 with the A48 principle road providing access towards the site.

The main access is via Dyffryn Lane at the roundabout with Celtic Way to East side and/or via Church Lane to west side.



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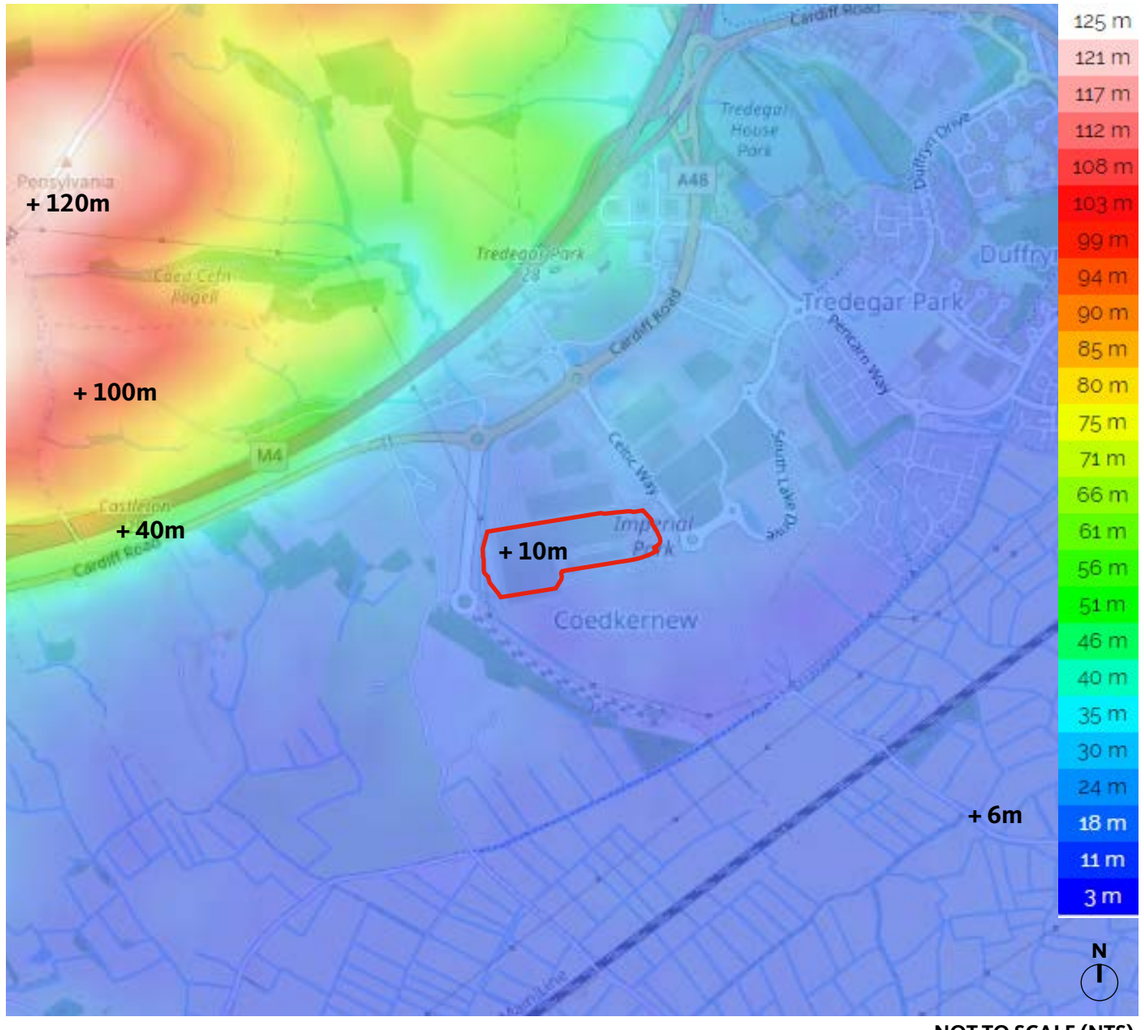
3.7 Site Topography



Information from Wales Topographic Map (topographic-map.com)

NOT TO SCALE (NTS)

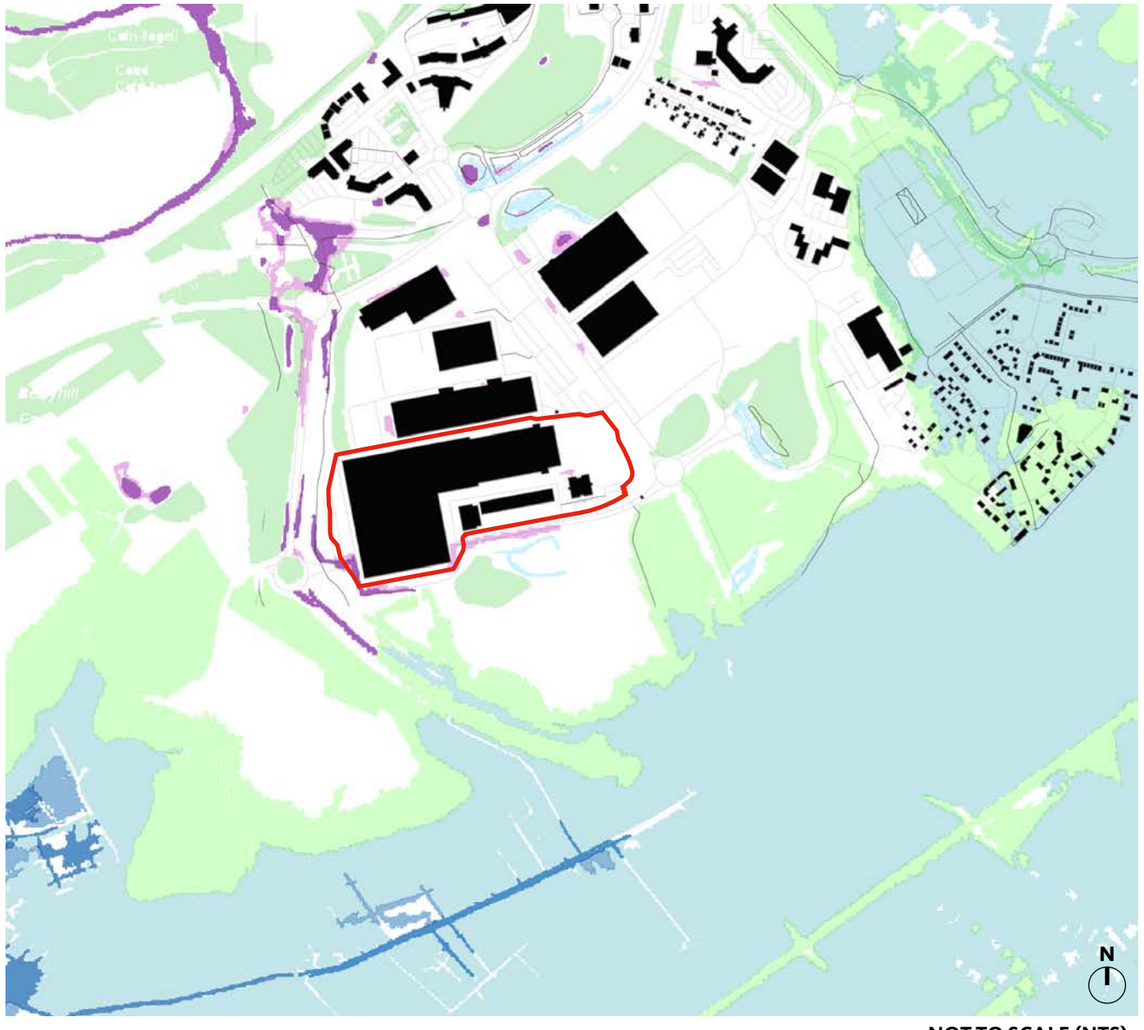
The levels around the southern area of the M4 motorway and along the perimeter of the proposed site are constantly flat, increasing to approximately 100m at the northern area of Pensylvania Hill, illustrated with red and white tones.

The height of the buildings that surround the site largely vary from 1 to 2 story, but by no means is there a set datum height.

LEGEND:

Property Line

3.8 Flooding Analysis



Information from Natural Resources Wales and UKCEH Environment Agency

NOT TO SCALE (NTS)

LEGEND:

Property Line

Flood Risk From River

- High
- Medium
- Low (between 1 in 1000 and 1 in 100)

Flood Risk From the Sea

- High
- Medium
- Low (between 1 in 1000 and 1 in 200)

Flood Risk From Surface Water

- High
- Medium
- Low

3.9 Ecology

The proposal for a new data centre complex on the former Quinn Radiators Factory site provides opportunity to achieve biodiversity enhancement on an industrial plot.

Extended Phase 1 Habitat Survey has been undertaken by ERM between May and September 2023, following the Preliminary Ecological Appraisal undertaken in July 2021. The site is not considered to be of ecological interest owing to its developed, fragmented, and amenity character Habitats found on site are common and widespread and do not qualify as Habitats of Principal Importance.

The Proposed Development will seek to enhance biodiversity by creating a more ecologically diverse landscape in line with national policy 6. This will include the planting of native trees, hedgerows, wildflower meadows, woodlands, and ponds. For full report and details refer ERM Extended Phase 1 Habitat Survey Report dated October 2023 and Gensler Landscape section within this document.

The Gwent Levels Site of Special Scientific Interest (SSSI) is located 175m to the south of the site.
In addition, seven sites of Importance for Nature Conservation (SINCs) are located within 2km.

No direct adverse impacts to statutory or non-statutory designated sites are expected providing pollution prevention measures outlined in Outline Environmental Management Plan (OEMP) prepared by ERM, will be employed during pre-commencement and construction. Sustainable Urban Drainage Systems (SuDS) will also be incorporated into the operational design. Refer Pinnacle information for details.

No adverse impacts to protected or priority species are expected providing precautionary measures outlined in OEMP (prepared by ERM) are employed.

A lighting strategy produced by RED Engineering LTD ensures light spill to the south and south-east of the site is minimised, thereby avoiding potential disturbance to commuting bats.

Post-construction, local fauna can benefit from the implementation of new native habitat features, including native species-rich hedgerows, waterbodies, scattered native trees, and wildflower meadows, complimented by artificial wildlife boxes.

3.10 Air Quality

In terms of air quality, during operation the key issue relates to the provision of back-up power for the Data Centre. This is required in the event of mains grid power loss. This is usually provided in the form of emergency diesel generators. These emergency generators require routine testing to ensure their functionality during an outage, and engines would operate in the event of a power outage. However, diesel generators have inherently high emissions of oxides of nitrogen, and to a lesser extent, particulate matter. Furthermore, the diesel generators are typically fitted with small stacks for aesthetic reasons or due to planning restrictions. These two factors combined can frequently lead to high ground level concentrations of oxides of nitrogen and nitrogen dioxide at receptors close to the Data Centre.

The former Quinn facility is located close to relevant human and ecological receptors. As the generators will operate for short periods, human receptors are essentially any off-site location where people may be exposed for the relevant period, so this can include residential locations, recreational areas, other businesses, day care centres, shops etc. For the CWL01 & 02 development this includes: Vantage Data Centre, IQE, NHS building adjacent to the site, Parc Golf Club, other commercial businesses in the wider business park and hotels and restaurants to the north. The ecological receptors are the LG Duffryn Sites 1 & 2 Site of Importance for Nature Conservation approximately 65m from the site, Gwent Levels Site of Special Scientific Interest (SSSI) approximately 200m from the edge the site and the Severn Estuary Special Area of Conservation, Special Protected Area and site of Special Scientific Interest amongst approximately 3km from the site.

In common with the large majority of UK protected habitats, the baseline at some of these receptors is already in excess of the Critical Loads that are set for the protection of the sensitive species within these sites. This means that there is minimal headroom for acceptable additional impact associated with the operation of the Data Centre, and impacts on ecology will be a key consideration in the planning process. An air quality impact assessment has been undertaken by ERM to ascertain baseline information which gathered from publicly available data including local council monitoring campaigns and DEFRA mapping. No bespoke monitoring is proposed for the project.

The site is located just off the A48 and the change to daily traffic numbers as a result of project construction and operation will determine whether emissions from traffic can be screened out. In this context due consideration will be given to local AQMAs that could be affected by the changes in traffic. Assessment of dust relating to demolition, earthworks, construction and traffic has also be considered based on available information within the ERM Air Quality Report.

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3.11 Noise

Based on early design information, including an acoustic report carried out by Sharps Redmore in 2021, combined with ERM's experience of similar Data Centre sites elsewhere in the UK, it is anticipated that the proposals would generate noise emissions from the following activities:

- demolition of existing buildings;
- construction of Data Centre complex;
- operational noise sources such as back-up generators, ventilation, air conditioning and cooling plant.

Given that there are a number of receptors around the site which are potentially sensitive to noise (closest residential ~230m away), there is the potential for noise impacts during both demolition, construction and building operation.

ERM have undertaken an assessment of noise and vibration from construction, operation and decommissioning of the Proposed Development. A number of noise receptors were placed around the proposed site and the data was collected during the summer months of 2023. For full details and recommendations refer to ERM's Noise Assessment Report dated October 2023.

3.12 Contamination

Based on the understanding of the site and surrounding environment plus Geotechnics' assessment of their available 2021 monitoring and testing data, the risk to identified receptors from existing potential contaminants arising from historical activities is generally considered to be low. This would be reassessed on receipt of additional investigation data.

The potential risk to identified ecological receptors from existing or future contaminant sources present at the site via migration in groundwater or surface water run-off has been identified within the conceptual site model. Ecological receptors include Gwent Levels St Brides SSSI and LG Duffryn Sites 1 & 2 SINC (Site of Substantive Nature Conservation Value), all located within 200m of the site and anticipated to be positioned downgradient. They are linked to the Nant-y-moor Reen that is located immediately adjacent to the western site boundary.

A further phase of ground investigation and assessment will be undertaken during the demolition stage to check for any presently unidentified impacts to soil and groundwater in those parts of the site that were inaccessible during the Geotechnics 2021 investigation. This is particularly the case in areas of potential concern within the former buildings.

Surface water sampling should be considered on adjacent watercourses and ponds downstream of the site for analysis. This relates to the previously identified risk of site run-off to surface waters.

Further desktop study by Geotechnics of ground gas at the site has determined the requirement for ground gas (Radon) protection measures in proposed on-site structures.

Where potential impacts from current potential contaminants are identified, mitigation measures either have been or will be considered to enable the site to be developed for the proposed Data Centre use. This includes anticipated measures to be contained within a CEMP (Construction Environmental Management Plan) to mitigate against potential impacts arising during construction of the proposed development.

Once the proposed development is operational, control measures will be implemented to mitigate against the risks of accidental discharge or leakage of future chemicals held on site to underlying soils, groundwater and surface water.

3.13 Heritage

The aim of this summary is to provide: a brief overview of the heritage context as known, consultation to date, and a preliminary statement on likely application requirements and mitigation strategy.

Baseline and Potential Impact - Key Points

The Site lies partly within the Gwent Levels Historic Landscape of Outstanding Historic Interest and immediately to the north of the Newport ASA (Archaeologically Sensitive Area). The Glamorgan-Gwent Archaeological Trust Historic Environment Record (GGHER) lists 31 non-designated heritage assets within 1km of the site, many of which were identified as a result of previous archaeological works in advance of development.

Yet within the site itself there has been significant below ground disturbance associated with the construction of the existing industrial facility. For this reason, there is only a low potential for encountering intact archaeological remains.

For details and recommendations refer ERM's Heritage and Archeology Assessment dated October 2023.

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3.14 Flood Risk & Drainage

The proposed development is located at National Grid Reference (NGR) ST279842 (327909, 184216) and can be accessed via Celtic Way, Coedkernew, Marshfield, Newport NP10 8FS. The 16.5ha site is currently situated south of the A48 and is within the Imperial Park Industrial estate, southwest of the city of Newport.

The proposed development has a "less vulnerable" development classification which matches the current classification for the site.

The proposed site is partially located in Zone B of Natural Resources Wales (NRW) Development Advice Map (DAM). Zone B is defined as areas of the floodplain that are known to have flooded before, as evidenced by sedimentary deposits. The Justification Tests of TAN15 do not apply to development in Zone B, although it is advised to apply the Acceptability Criteria.

This FCA has demonstrated that all acceptability criteria set out in TAN15 have been satisfied. Consequently, we conclude on the grounds of flood risk, the proposed development meets the principles and requirements set out in TAN15 and the aims of Planning Policy Wales.

This site is a brownfield site and has an operational existing below ground drainage system that discharges surface water from roof and hard standing area via a pipe network into the pond/ditch watercourse network at the south of the site. This discharge is unrestricted with limited treatment applied to the surface water with a petrol interceptor identified on site. The foul water discharges to the public combined water sewer located at the east of the site and discharges to the sewer via a pump station.

We are proposing to keep the existing discharge to the southern pond/ditches as existing but limiting the discharge to that of greenfield runoff rate. This will be achieved with a flow control device which will limit the site's discharge to 46.5l/s with surface water to be attenuated on site within on-site ponds for all storms up to a 1 in 100 year plus 40% for climate change.

SuDS treatment will be applied to all surface water from the site by having to pass through ponds located around the site. This will provide treatment through settling and biological uptake. There will be additional treatment to all road and yard areas via swales and petrol interceptors with fueling areas to use forecourt separators as a precaution to intercept larger potential fuel/oil spills.

The proposed drainage strategy, prepared by Pinnacle provides a significant betterment over the existing drainage discharge in both limiting the outfall from the site along with the quality of water discharged via a SuDS treatment train that is suitable for the level of contamination.

3.15 Infrastructure, Utilities and Services

The public sewers within the proposed site are being diverted externally to the site boundary by Welsh Water. The existing private sewers crossing the site are being diverted with respective easement within the site to accommodate the proposed development plan. The existing private foul water pumping station is being relocated within the site security fence. This pumping station will continue to serve the third-party site located north to the site.

A new surface water drainage system is proposed to collect the surface water runoff from various hard standing areas and to convey via proposed SuDS system for treatment and to discharge into the existing ponds located south of the site. Pollution prevention methods are proposed for each hard standing areas appropriately to remove the contaminants from the surface water discharge. Attenuation structure and flow control devices are proposed to limit the discharge rate to greenfield runoff rate.

A new foul water drainage system is proposed to collect the foul water domestic runoff from the proposed buildings and convey via a pipe network into the proposed adoptable pumping station. There will be a 24 hrs emergency storage provision for the foul water discharge in case of pump failure or power outage. The pumping station will have a duty and standby pumps for resilience.

3.16 Mechanical, Electrical and Plumbing Strategy

All existing supplies to the site will be isolated, made safe, disconnected, and removed from site as part of the planned demolition works. In developing the MEP servicing strategy for the site, consideration has been given to the proximity of any utility supplies adjacent to the site and how new supplies will be brought onto site to serve the new Data Centre.

Liaison with the local utilities has confirmed that there is sufficient capacity available to support the development of the Data Centre.

As part of the design, the following is considered:

- Rainwater utilisation for cooling;
- Rainwater used to flush toilets within the Admin Building and provide irrigation where required;
- Waste heat recovery to recirculate hot air return from the servers back into the air handling units to preheat incoming air;
- External lighting to minimise excessive light spill to minimise local disturbance to wildlife and protected species;
- Roof mounted solar PV arrays.

The project targets the following sustainability assessment:

- LEED Gold Certification.

3.17 Traffic and Transport

The impact assessment has confirmed that the proposed access arrangements would adequately accommodate anticipated levels of traffic visitation and that as such the traffic generated by the development would have no material adverse impact on the operation of all junctions modelled.

It has been shown by the application of recognised assessment techniques that there is a marginal uplift in traffic levels arising from the development and the distribution of resultant flows around the adjacent road network.

The movements and improvements to the site entrance junction will ensure there are minimal traffic impacts as result of the development. For detailed transport assessment refer Pinnacle report.

The below table notes the expected employee and visitor numbers per building during the operational phase.

Number per building	07-30-15:30	15:30-23:30	23:30-07:30
Weekdays			
Staff	35	35	10
Visitors	25	15	0
Deliveries (trucks in and out)	10	2	0
Weekends			
Staff	35	35	10
Visitors	5	0	0
Deliveries (trucks in and out)	0	0	0

3.18 Site Constraints and Opportunities

CONSTRAINTS:

- Existing building to be demolished - end of life or poor condition;
- Occasional flooding on site due to rainstorms, additional drainage requirement;
- Site directly South being used for motocross; security risk
- Proximity of the building to high voltage overhead cables to the West of the site and 30m easement zone;
- Marine Climate - high wear and tear on materials.
- Existing easement and sewers passing through site
- Site proximity to archaeological site of sensitivity

OPPORTUNITIES:

- Industrial neighbourhood;
- A cluster of existing and proposed Data Centres already in this area;
- Two entrances: diverse route to separate construction traffic;
- Space to create ponds for stormwater retention - opportunities for increased biodiversity;
- Plant/hedgerow screening to isolate from the South;
- Increasing permeable surfaces ;
- Power availability
- Existing roads and transport connectivity
- Relatively flat site
- South facing - daylight and opportunity to install PV panels on the roof.

4.0 DEMOLITION

4.0 DEMOLITION

4.1 Summary

In the proposed scheme, all buildings currently on site will be demolished.

The structures on site have been reviewed and are not considered to contain any unusual hazards that will affect demolition. The asbestos report notes the presence of asbestos within a number of pipe gaskets. These will require specialist removal. The bridge link to the neighbouring property has been demolished as part of separate, approved planning application.

Standard demolition techniques will be suitable for most of the site and each of the buildings, with deconstruction following the reverse of construction (i.e. soft strip and removal of cladding prior to removal of the structures). Demolition works in close proximity to the overhead power cables will require a risk analysis and hazard awareness report prepared by the Demolition Contractor.

The warehouses are portalised, with elevational bracing at each end, enabling deconstruction to commence from one end. To enable plant movement, it is expected that the service trenches in the floor will be infilled during superstructure deconstruction, and later excavated along with the floor slabs.

The office building is expected to take stability from the lift core, demolition is expected to be carried out from the perimeter, with the core being demolished last.

The RC (Reinforced Concrete) sprinkler building will need to be demolished from one end, avoiding partial removal of any frames.

Further investigation and discussion is needed prior to the confirmation of the final demolition process for the services support bridge. It is still uncertain whether the bridge is connected to the building to the North, and similarly, as the bridge contains equipment belonging to the neighbours, whether this equipment is operational. If a section of the bridge is to remain, it would be advantageous if there is positive connection; conversely, if the neighbour is keen to have the bridge dismantled, it would be preferable for there to be no connection between the bridge and their building structure.

Demolition spoil shall be screened, and all suitable material is to be crushed and stockpiled for reuse, contaminated soil will be assessed by the Demolition Contractor for remediation.

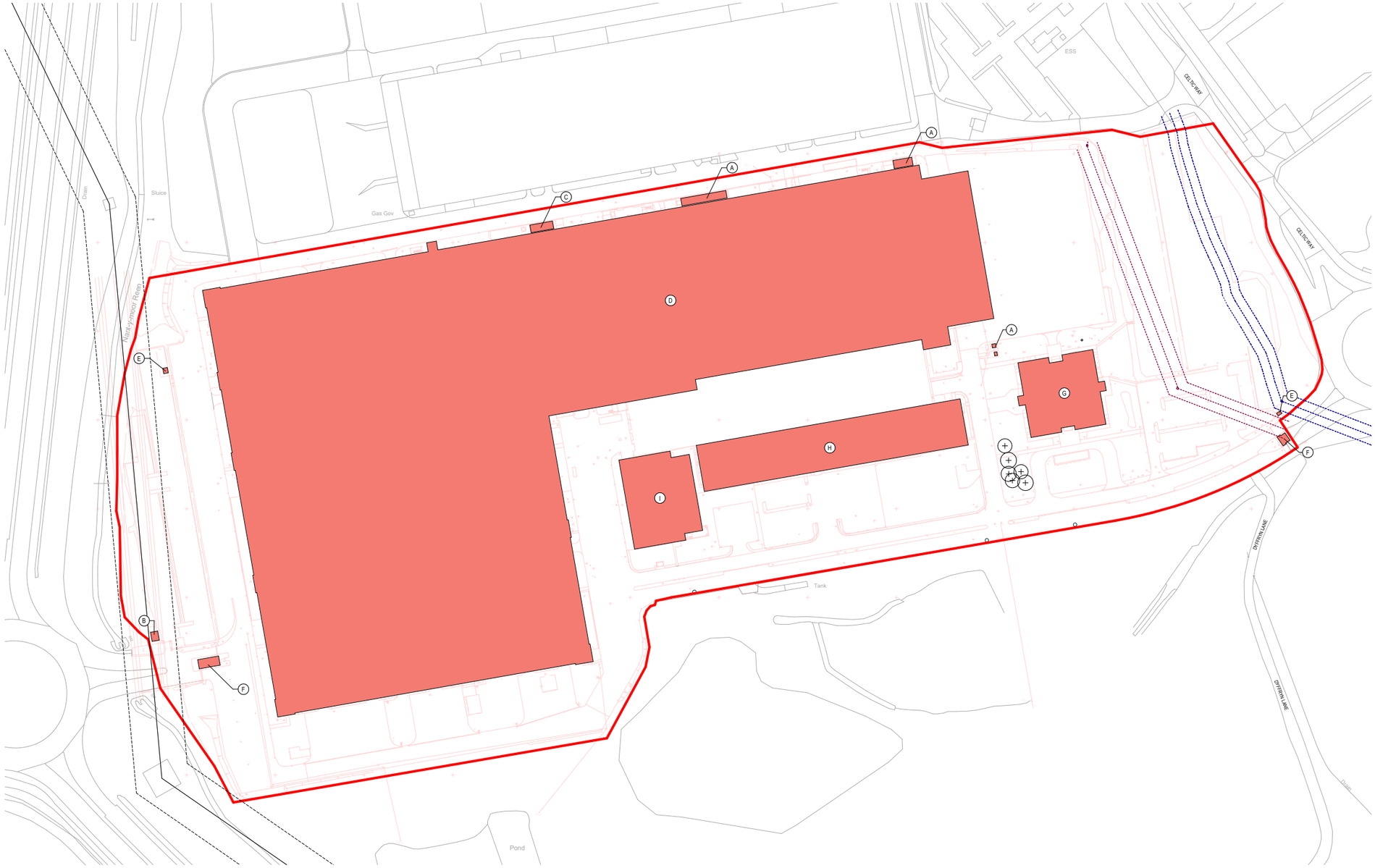
The excavation and demolition spoil that cannot be re-used will be removed from site and disposed of at a suitable licensed waste transfer facility. The waste facility information will be identified in the disposal certificates. No spoil will be discharged outside the site or be disposed of unlawfully.

Dust control will be in place as standard practice and wheel washing shall be utilised, to ensure that mud and debris is not deposited on the surrounding roads.

Significant trenches are located within the main warehouse building. The Demolition Contractor shall determine the position of all services with the aid of services plans, carrying out of GPR (Ground-Penetrating Radar) surveys, including hand-dug trial trenches where necessary, or any other means suitable, before any demolition shall commence.

Care will be taken to ensure that no damage is caused to surrounding structures, walls retaining consolidated materials or to services buried below consolidated materials, etc. Existing, underground public sewers are being diverted by Welsh Water, externally to the application site. Private sewer diversion is being diverted within the application site. Refer to Pinnacle sewer diversion information.

4.2 Extent of Demolition



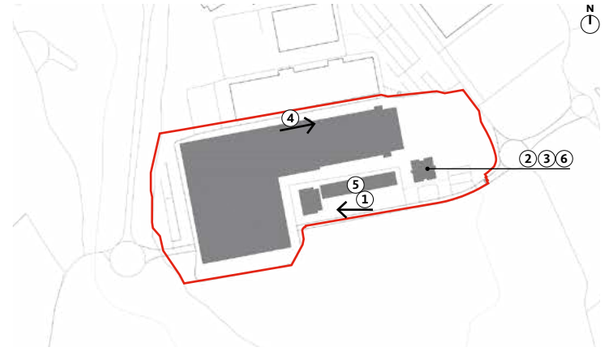
LEGEND:

- Property Line
- Building to be demolished
- Site Feature to be demolished
- Retained Existing Trees
- 400 kV HV overhead power cable
- Minimum clearance from 400kv line (30m from outer cable)
- Existing combined sewer to be diverted outside of boundary
- Existing storm water to be diverted outside of boundary

KEY:

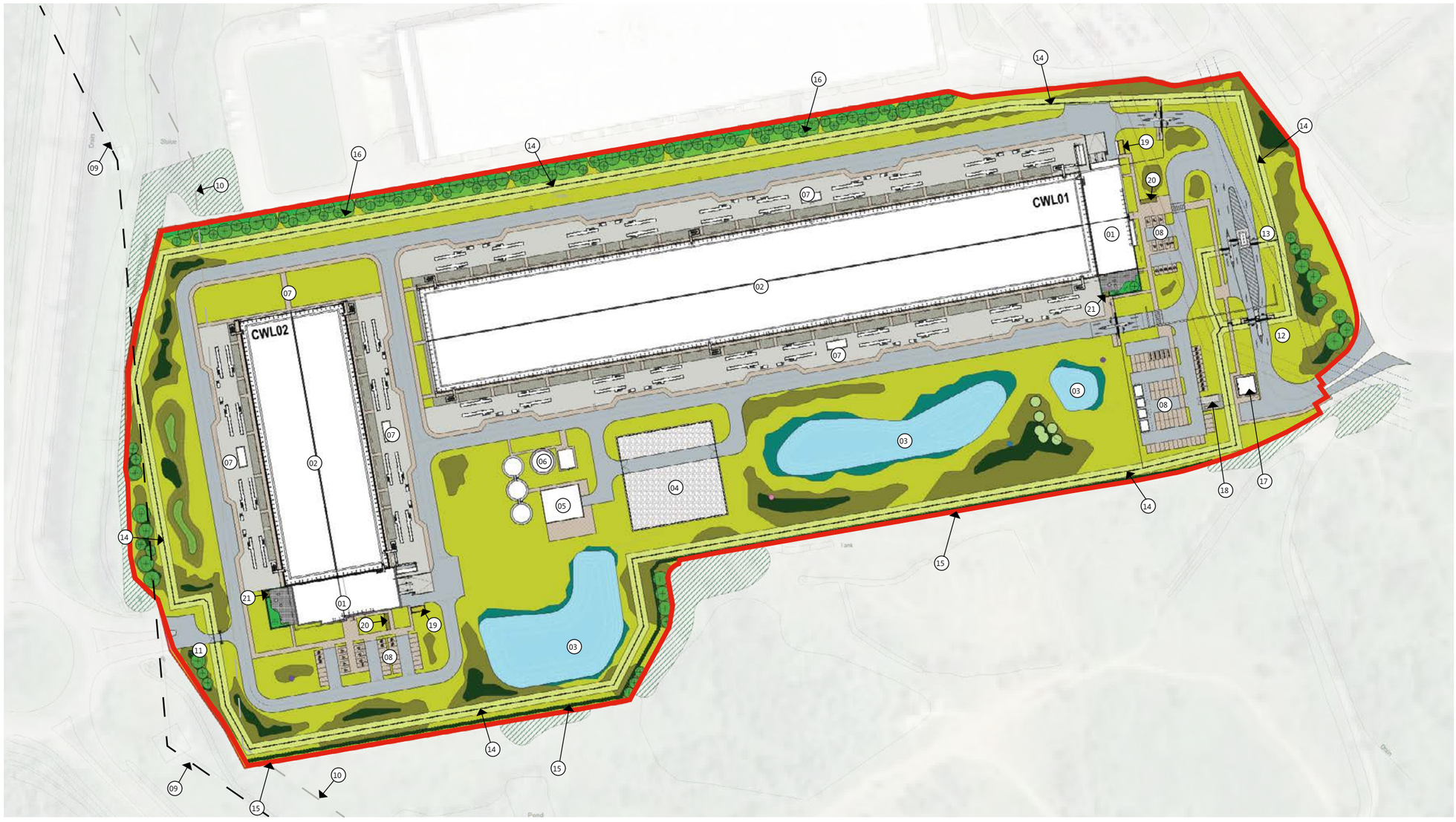
A	Technical Building	167m²
B	Gas Building	21m²
C	Sprinkler Tanks	55m²
D	Factory and Warehouse Buildings	68,800m²
E	Smoke Shelter	11m²
F	Gate House	90m²
G	Office Building	1825m²
H	Warehouse	3980m²
I	Pump Building	1940m²
Total Area Demolition:		**76,889m²**

4.3 Existing Building Photos



5.0 DESIGN

5.0 DESIGN
5.1 Proposed Site Plan



DESCRIPTION:

- Two Data Centre Buildings
- Direct evaporative cooling
- Easement/Clearance zone for 400 kV overhead power line at west side of site

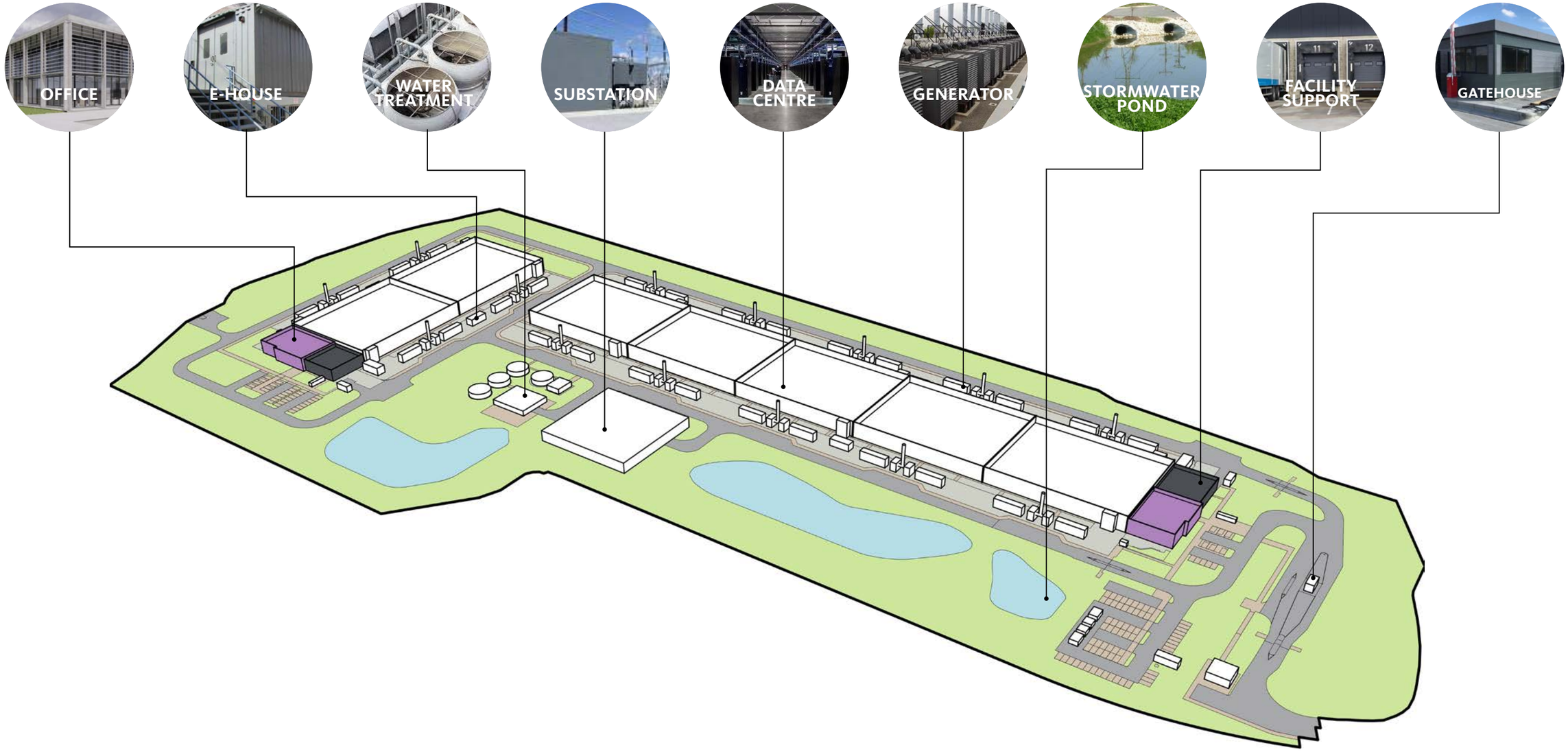
LEGEND:

- Property Line
- Existing combined sewer to be diverted outside of boundary
- Existing storm water to be diverted outside of boundary

KEY:

01 Office and logistics Area
02 Data Centre
03 Stormwater Pond Area
04 Substation
05 Water Treatment Facility
06 Sprinkler Tank and Pump House
07 e-Houses (an assembled, walk-in modular outdoor enclosure to house low voltage (LV) and medium voltage (MV) switchgear as well as secondary equipment)
08 Parking
09 400 kV HV overhead power cable
10 Minimum clearance from 400kv line (30m from outer cable)
11 Secondary entrance
12 Primary entrance
13 Gatehouse
14 Security Fence
15 Species-rich hedgerow for visual and vehicle mitigation
16 Planted landscape berm for visual and vehicle mitigation
17 Day 1 Substation
18 Sewer Pump Station
19 Bin Store
20 Cycle Storage
21 Smoking Shelter

5.2 Proposed Development's Elements




M4

5.3 Site Permeability

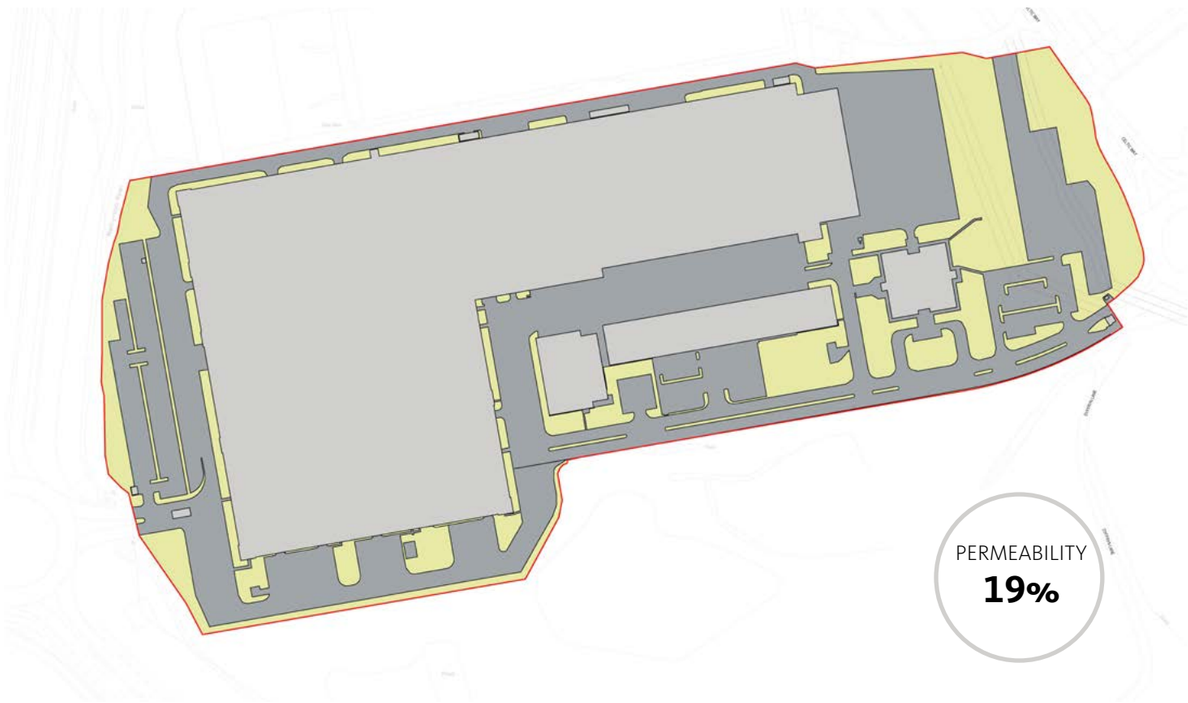
Existing Situation

TOTAL SITE AREA
165479 sqm

Building Footprint
76,887 sqm
46.5%

Hard Landscape
57,040 sqm
34.5%

Soft Landscape
31,552 sqm
19%



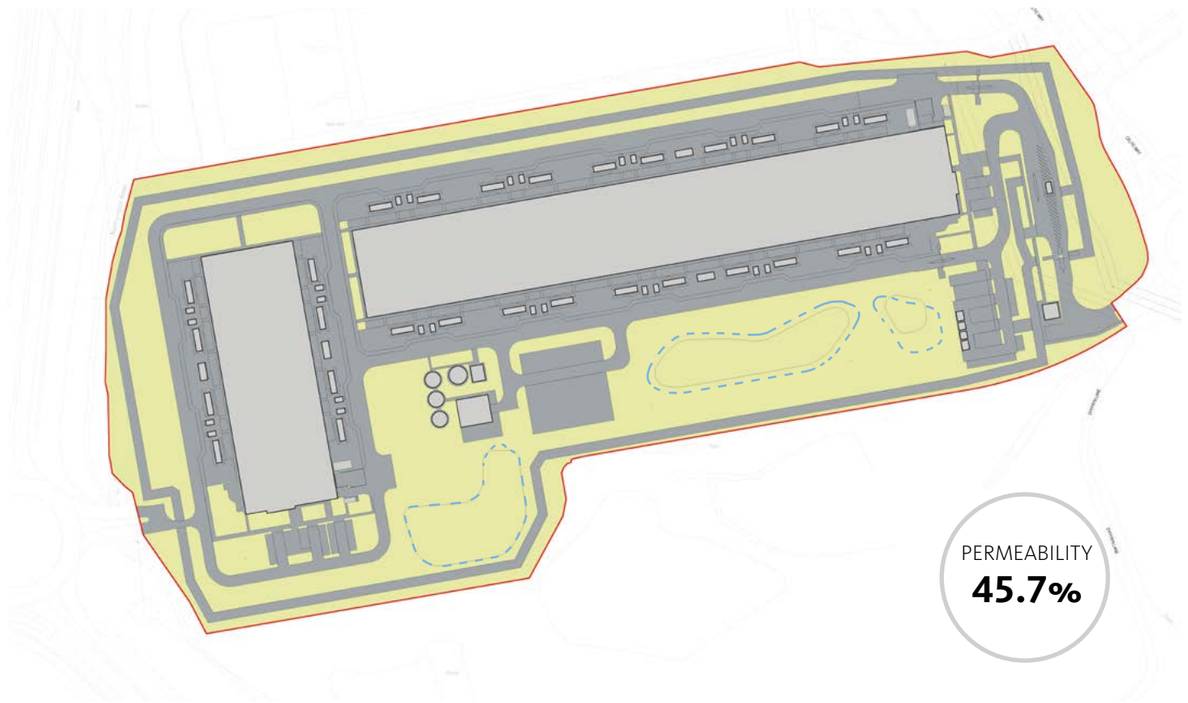
Proposed Situation

Building Footprint
34,578 sqm
21%

Hard Landscape
55,196 sqm
33.3%

Soft Landscape
66,659 sqm
40.2%

Water
9,046 sqm
5.5%

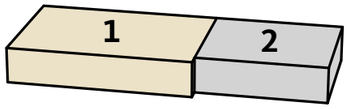


LEGEND:

- Property Line
- Impermeable - Building Footprint
- Impermeable - Hard Landscape
- Permeable - Soft Landscape
- Permeable - Water

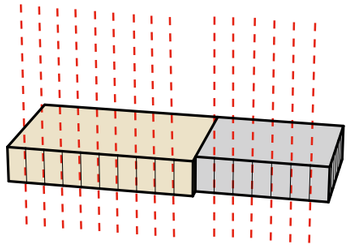
5.4 Proposed Facade Design

Office Building



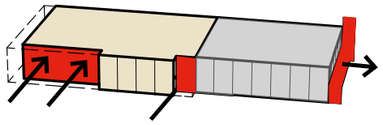
STEP 1

Two simple blocks, defined by function of the building.



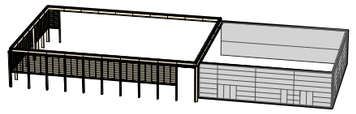
STEP 2

Overlay grid modules - introducing rhythm into the facade.



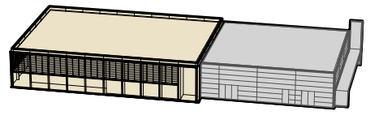
STEP 3

Push - Pull of the block generated by function.



STEP 4

Materializing skin of the building.
Office areas: enhanced with canopy.
Logistics: restrained.



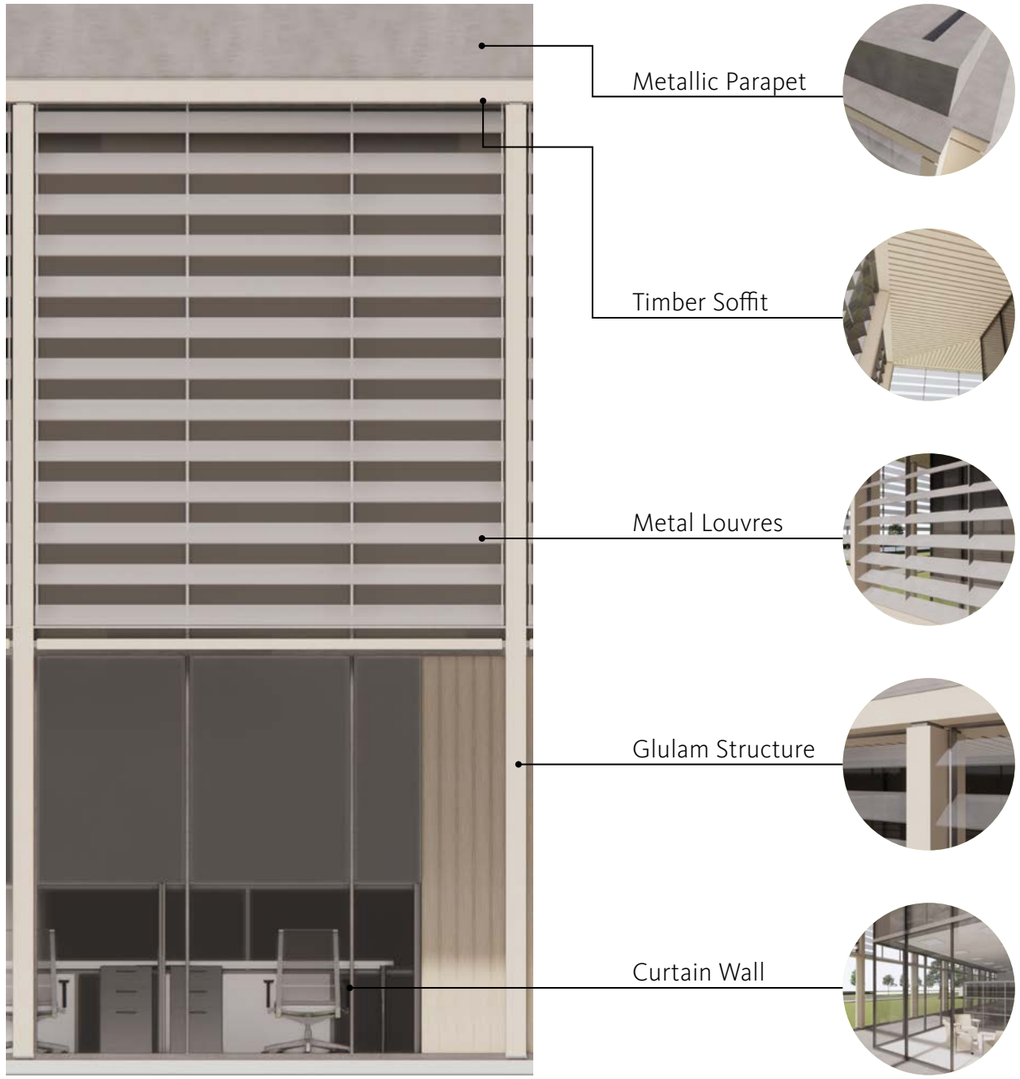
STEP 5

Combined Office building.

Office Building - Front Elevation

5.4 Proposed Facade Design - Admin

Office Building



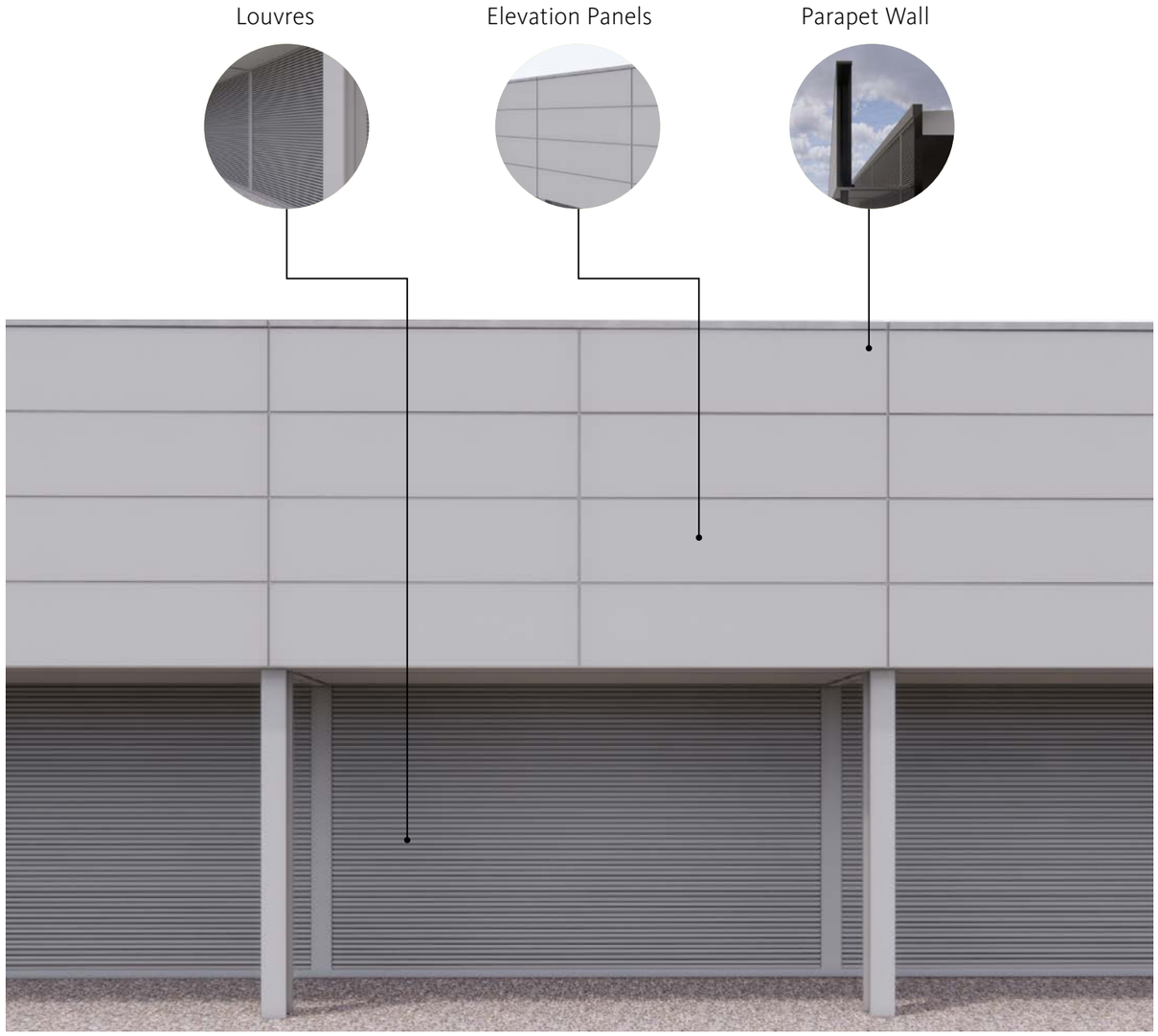
Typical Admin Bay View NTS

Admin Building - East View

Admin Building - South-East View

5.4 Proposed Facade Design - Data Hall

Data Hall



CWL01 Data Hall - South View

CWL01 Data Hall - South Elevation

CWL01 Data Hall - North-East View

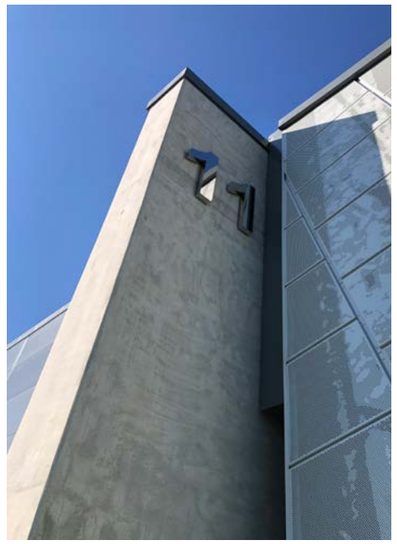
5.4 Proposed Facade Design

Overall South-East View

5.5 Data Centre Facade Precedent

Data Hall Building (Sweden)

Swedish Date Centre - Birdseye View



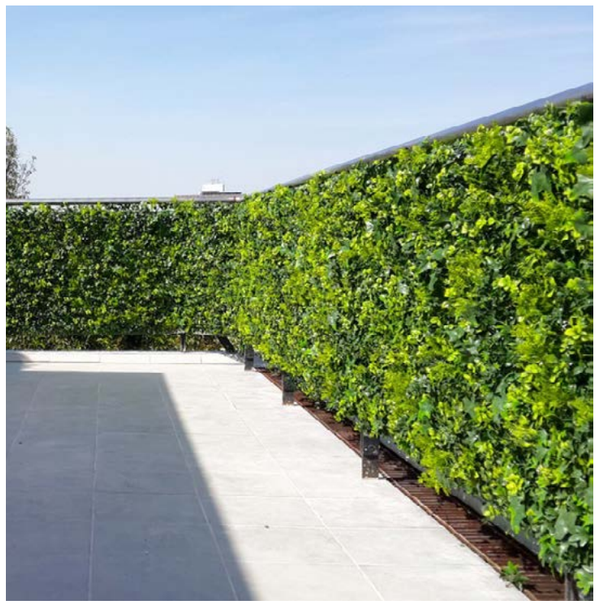
Swedish Date Centre - Admin Building Facade View

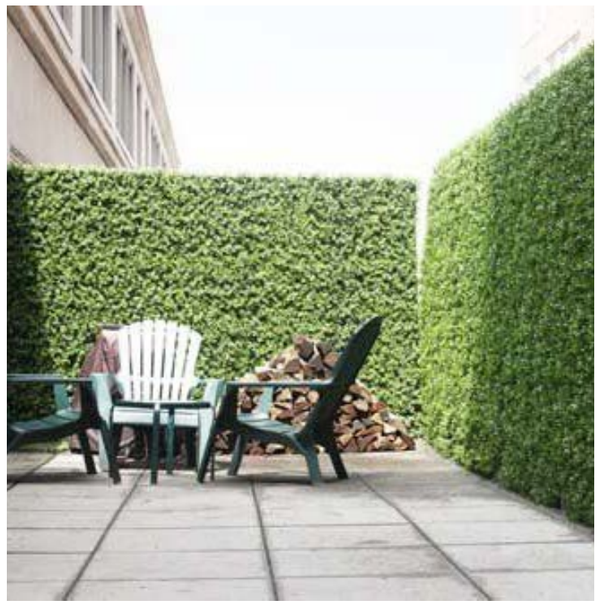
Swedish Date Centre - Admin Building Facade View

5.6 Bike, Bin Store and Outdoor Area Precedents

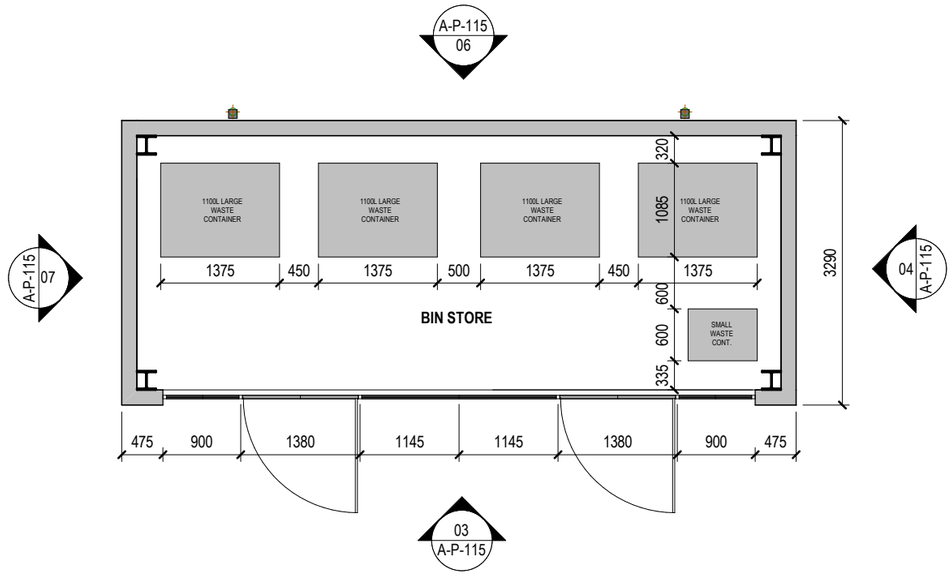
Bike Store / Smoke Shelter with Sedum Roof

Outside Area metal fence and beech hedge

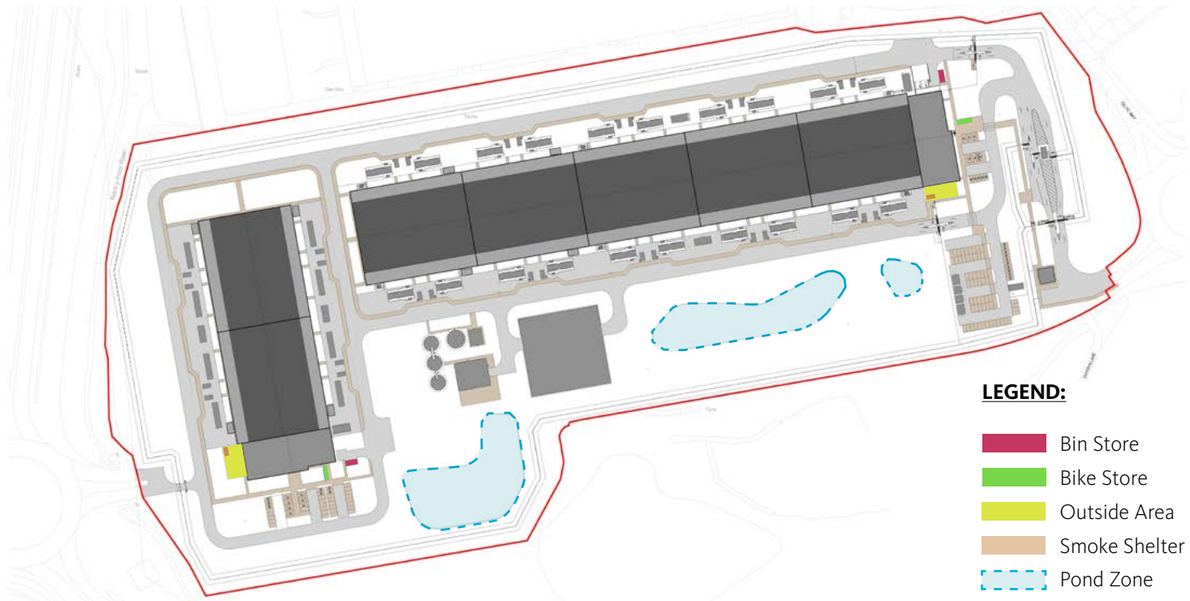




Bin Store with Sedum Roof



Location



5.7 Materials and Colours

The proposed materials and colour palette are driven by the site's industrial and coastal context, and the adjacencies to the SSSI (Site of Special Scientific Interest) to the south.

The site is relatively exposed; in the buildings, currently on site, this demonstrates itself in weathered/polluted facades, with peeling paint in certain locations.

Therefore, the base materials of the buildings will be metal panels (example: kingspan KS1000 with Microline profile), in a light grey tone.

This profile and this colour is highly tolerant of minor pollution; and the light colour is resistant to discolouration. External equipment around the building will match this colour.

The base colour for the office areas (both buildings) will be a slightly darker grey, matching the wooden canopy; which will weather to grey tones over time.

Key elements on both the office and the data hall buildings, such as entrance doors and louvres, will receive a darker accent colour, such as RAL 7016 (Anthracite Grey).

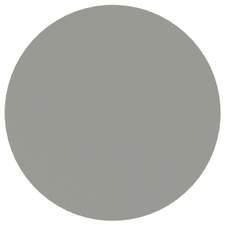
Warm grey tones are chosen to link the building to the natural landscape further to the south.

GLULAM

OFFICE - CANOPY

OFFICE - SOFFIT

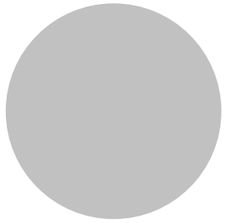
RAL 9007



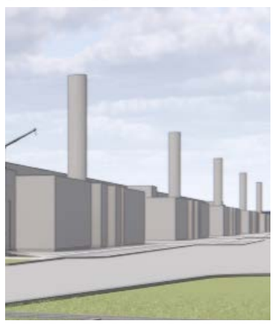
OFFICE - PANELS

OFFICE - ACCENT COLOUR - LOUVERS, CURTAIN WALLS

RAL 9006



DATA HALL

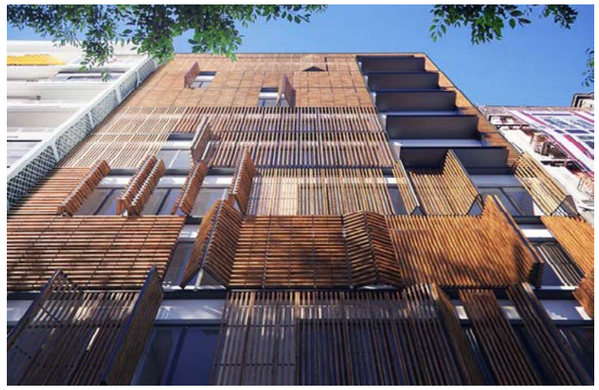


GENERATORS AND OTHER EQUIPMENT

5.8 Precedents

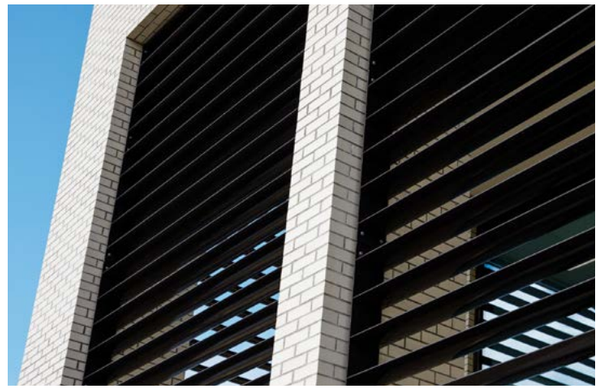
Cheese manufacture plant De Tijd, Westbeemster - Netherlands

Lisbon Wood Residential Building, Lisbon - Portugal

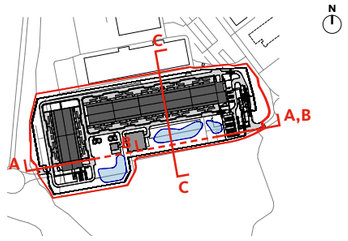


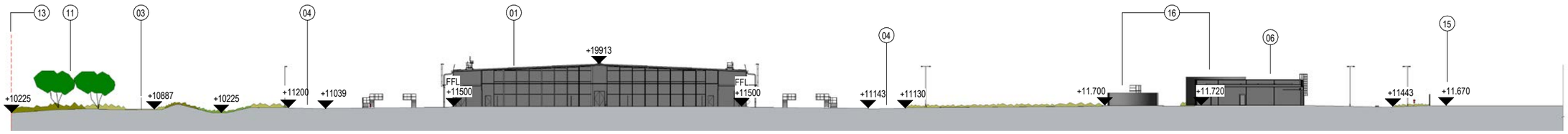
Ladderstile House, London

Les Quennevais School, Jersey

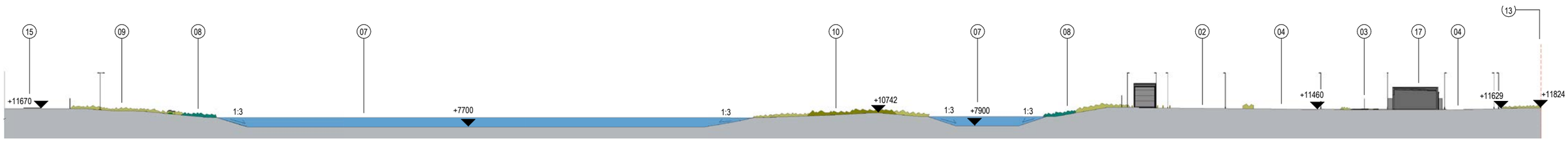


5.9 Site Cross Sections

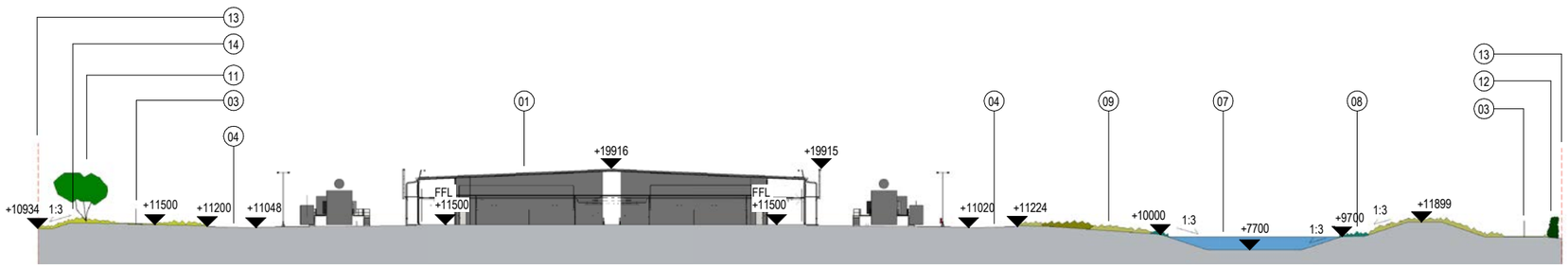




Site Section A-A NTS



Site Section B-B NTS



Site Section C-C NTS

KEY:

01 Proposed Data Centre Building
02 Proposed Car Park
03 Proposed Security Fence
04 Porposed Asphalt Road
06 Proposed Water Treatment Facility
07 Landscape Attenuation Ponds
08 Marginal and Aquatic Planting to Attenuation Ponds
09 Native Wildflower Meadow
10 Native Woodland Scrub Mix
11 Proposed Native Trees
12 Proposed Native Species-rich Hedgerow
13 Site Ownership Boundary
14 Proposed Landscape Berm
15 Future Primary Substation
16 Sprinkler Tank and Pump Room
17 Day 1 Substation

5.10 Security and Boundary

Security Fence

Physical Security is of utmost importance for the proposed hyperscale Data Centre Campus. Weak spots are not allowed in the site perimeter.

The campus will be surrounded by a 2.4m high security fence (Colour Black).

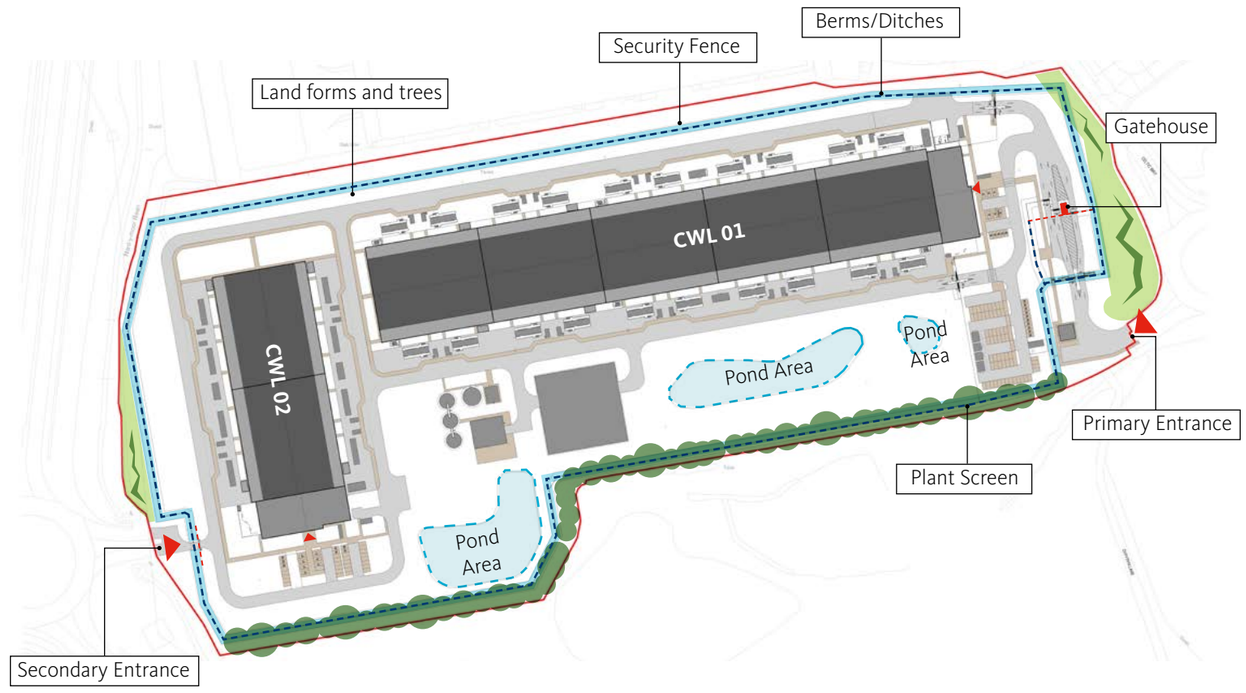
Security Gates, Barrier and Gatehouse

The front gate will be protected by security gates, a security barrier and a gatehouse.

Landscape

The landscaping aids in security of the site. Earth berms, and hedgerows along the perimeter of the campus aid with hostile vehicle mitigation. On the site itself, vegetation is restrained, to allow for clear lines of sight for Security Operations.

Operational Security - Access and Circulation



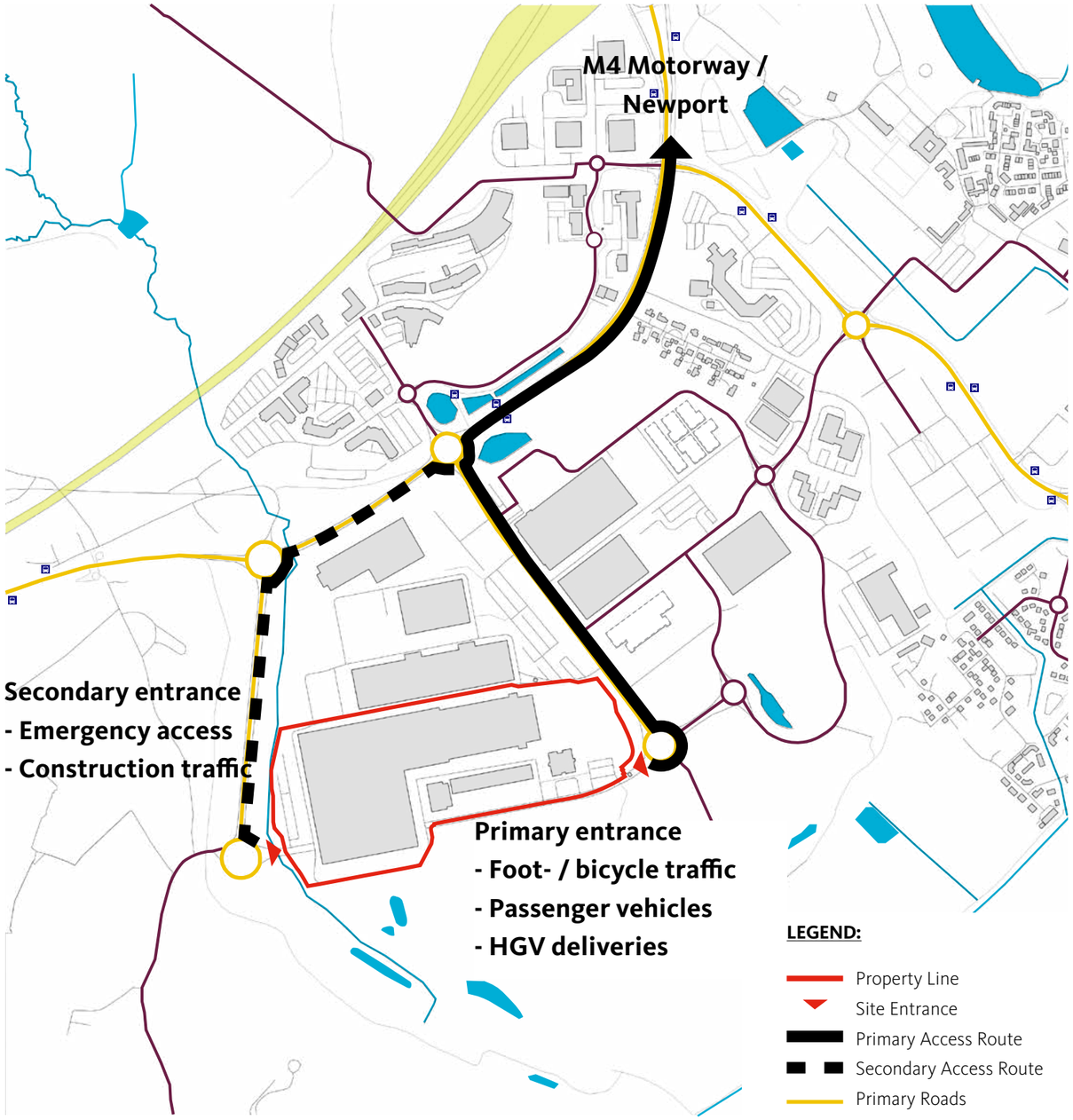
Security and Boundary

The Primary means of security of the campus will be a 2.4m high security fence (Barkers StronGuard or similar), which is set back from the actual property boundary. Additional security measures are taken on the external face of the High security fence. These include berms, plant screens, ditches.

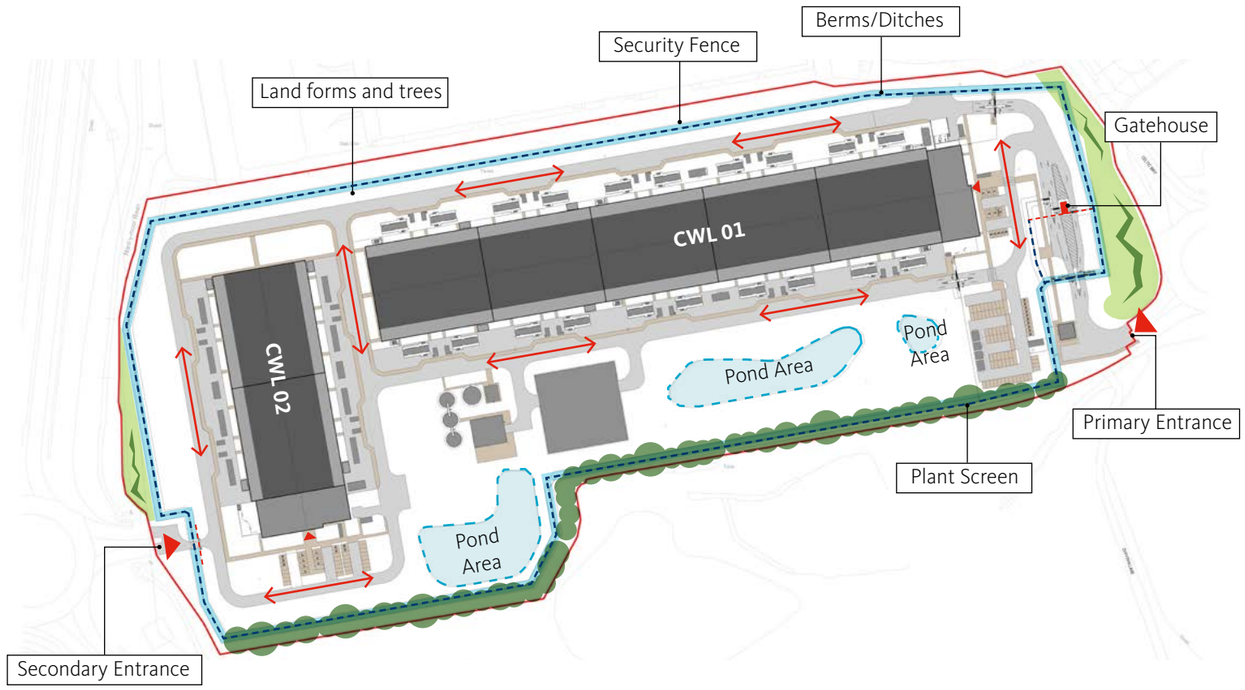
The primary entrance has two stages of security: a sliding gate, set at a 90 degree angle for the public road to avoid high speed collisions, forms the first line of defense. Beyond that, a manned guard house and barriers provide a second line of defense. During normal operating hours, the sliding gates will be in an open state to prevent queuing.

When the campus is fully built out, the secondary entrance will only be used during emergency situations; as such it will be an ordinary swing gate.

5.11 Site Accessibility



Internal Access and Circulation



Access and Internal Circulation Diagram

The Primary access to the Data Centre Campus will be from the roundabout at Dyffryn Lane in the East. A secondary entrance on the West side of the campus offers an alternate access to the facility, should the primary entrance become unusable (for example, because of an accident or because of scheduled maintenance).

As large Data Centres are fitted out over a period of time, and the two buildings will be built sequentially; this secondary entrance will also allow a direct access route for construction traffic, without hindering traffic flow on Dyffryn Lane to the west of the site.

Internal to the site, parking facilities are located close to the building entrances for easy access. A separated footpath and cycle paths leads from the roundabout to the entrance of the main building. Footpaths, cycle paths and roadways surround the buildings.

6.0 LANDSCAPE

6.0 LANDSCAPE

6.1 Landscape Context Assessment

The former industrial site for Quinn Radiator Factory is 165,047.900 m2 of land located on the southern edge of Imperial Park, and surrounded by industrial buildings and agricultural land.

There is a series of non-designated historic parks and gardens as well as open space areas within walking distance from the site. One of the most notable landscape features is the adjacent designated site of 'The Gwent Levels - St Brides' Site of Special Scientific Interest (SSSI), a habitat rich area of reclaimed wet pasture, the largest of its kind in Wales.

The site is in close proximity to Gwent Levels 'Landscape of Outstanding Historic Interest' from its southern boundary. "Archaeologically Sensitive Area" lies to the south of the site, as well as the "Regional Historic Landscape" designation abuts a short portion of southern perimeter.

A series of water bodies are identified from desktop survey, demonstrating rich corridor of aquatic habitats in the region.

LEGEND:

- Site Property Line
- Site Of Special Scientific Interest (Sssi)
- Site Of Interest For Nature Conservation (Sinc)
- Historic Park Or Garden
- Green Infrastructure
- Blue Infrastructure
- Archaeologically Sensitive Area
- Long Distance Walk/Cycleway

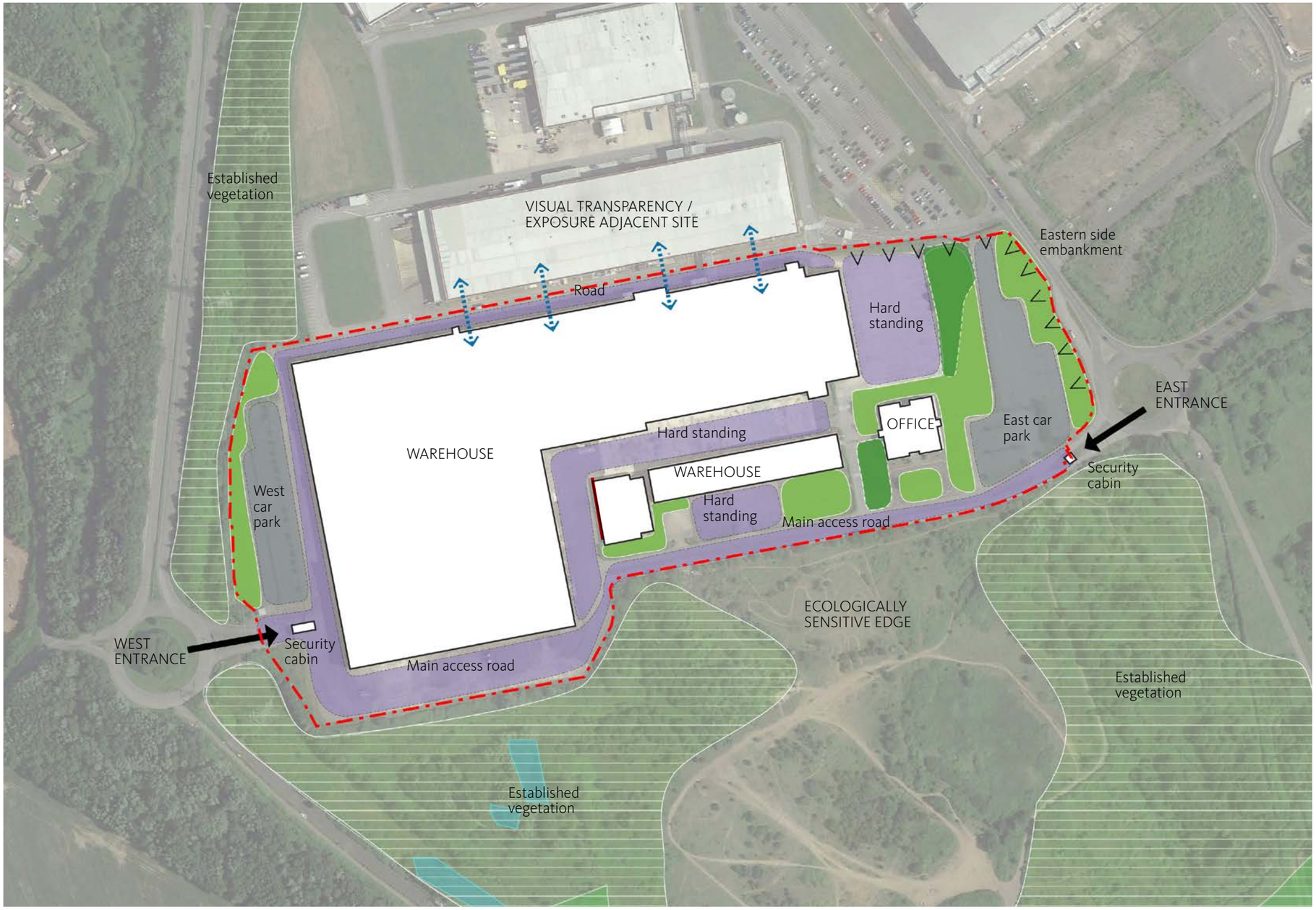
Source: Newport Local Development Plan 2011-2026 Constraints Map-West (January 2015)
Newport Local Development Plan 2011-2026 Proposals Map-West (January 2015)

6.2 Landscape Site Analysis: Zoning

The majority of the site comprises existing development including buildings and bare hard-standing. The site is accessed through two security gates, one on the east and another one on the west.

Around the office building and on the eastern side, amenity grassland provides a touch of greenery on site. On the western side, semi-improved grassland inhabits the edges.

The northeast and east edges are framed by a steep vegetated slopes. A similar condition occurs on the west. Along the southern boundary, dense vegetation from the adjacent land forms a soft enclosed edge. This privacy contrast with the exposure to the north side, where the permeable fence and the lack of vegetation allows for direct views with the neighbouring industrial plot.



LEGEND:

- Property Line
- Amenity Grassland
- Higher Quality Soft Landscape Areas
- Car Park
- Hard Standing Area
- Adjacent Established Vegetation
- Site Access Point
- Existing views into site

6.3 Landscape Site Analysis: Hardscape

The existing site layout is the legacy of the former Quinn Radiators factory. Being part of the industrial park, the site inherits bold, practical, robust and simple design language and the hardscape material reflects this.

The hardscape consists of four main palettes - asphalt, concrete, block pavers and loose gravel.

The majority of hard surface is taken up by road circulation spaces, which is either finished with asphalt or concrete. Some of the asphalt surface course is removed and gullies are above the road level.

Block pavers are used for the pedestrian circulation to the south of the site, mainly around the former office block. The gravel is present at building interfaces and landscape boarders.

The majority of hardscape is expected to be removed or resurfaced, subject to civil engineer's proposals on site levels, drainage and build-up strategies.

LEGEND:

- Property Line
- Tarmac
- Concrete Block Pavers
- Loose Gravel
- Soft landsacpe

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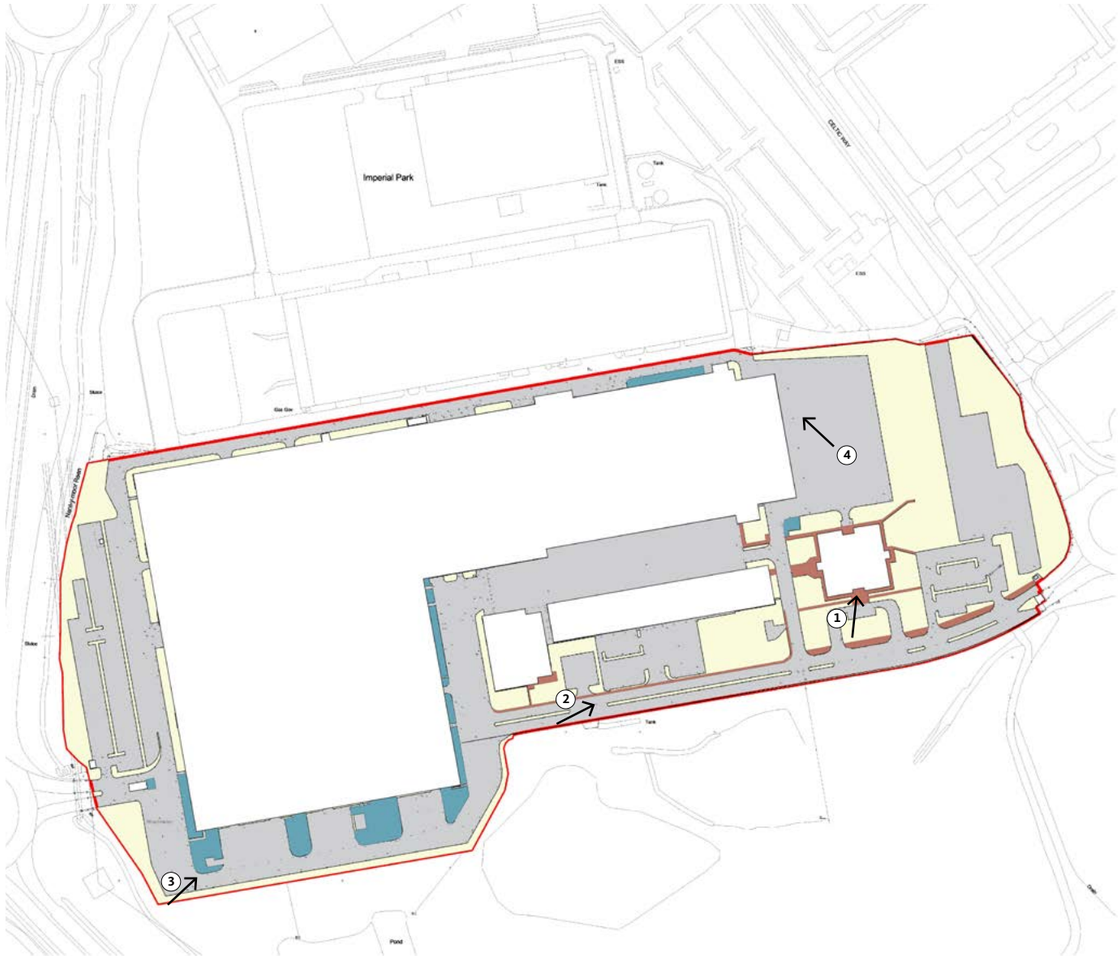


6.4 Landscape Site Analysis: Softscape

A desktop study of Preliminary Ecology Survey was made, followed by a site visit for assessment of the existing landscape.

There are limited areas of soft landscape within the site boundary. However, the site is characterised by ruderal vegetation, perennials and natural grassland at the boundary and adjoining the site, offering a rural landscape setting within the industrial park.

Notable landscape character areas as follows:

- **A** Managed amenity grassland with specimen shrubs and trees to the south of office block.
- **B** Semi-improved neutral grassland. Less intensively managed.
- **C** Mown, but less uniform amenity grassland.
- **D** Tall ruderal vegetation and ephemeral short perennial.
- **E** Small area of dense scrub at north-eastern site boundary.
- **F** Scattered scrub, including immature white poplar (Polulus alba)

LEGEND:

- Property Line
- Amenity Grassland
- Neutral Grassland, Semi-Improved
- Introduced Shrub
- Tall Ruderal
- Hedge, Species-Poor
- Scrub - Dense/ Continuous

1

2

3

4

The development footprint will cover a large proportion of the site, however the boundary planting will be maintained as much as possible. The proposed masterplan seeks to work with the existing diverse planting species at boundary and neigbouring site, offering landscape and ecological improvement to the area.

Centaurium Erythraea

Chamaenerion angustifolium

Norway Maple

Yorkshire-Fog

6.5 Landscape Site Analysis: Trees

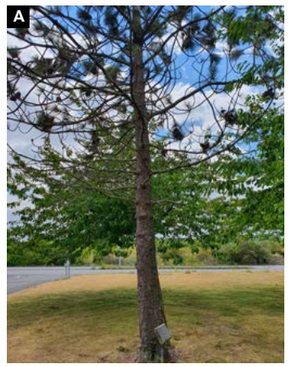
The Arboricultural Impact Assessment has been carried out by SEED. Based on the Landscape Architect site layout, Arboriculturist has recommended the retention or removal of existing trees.

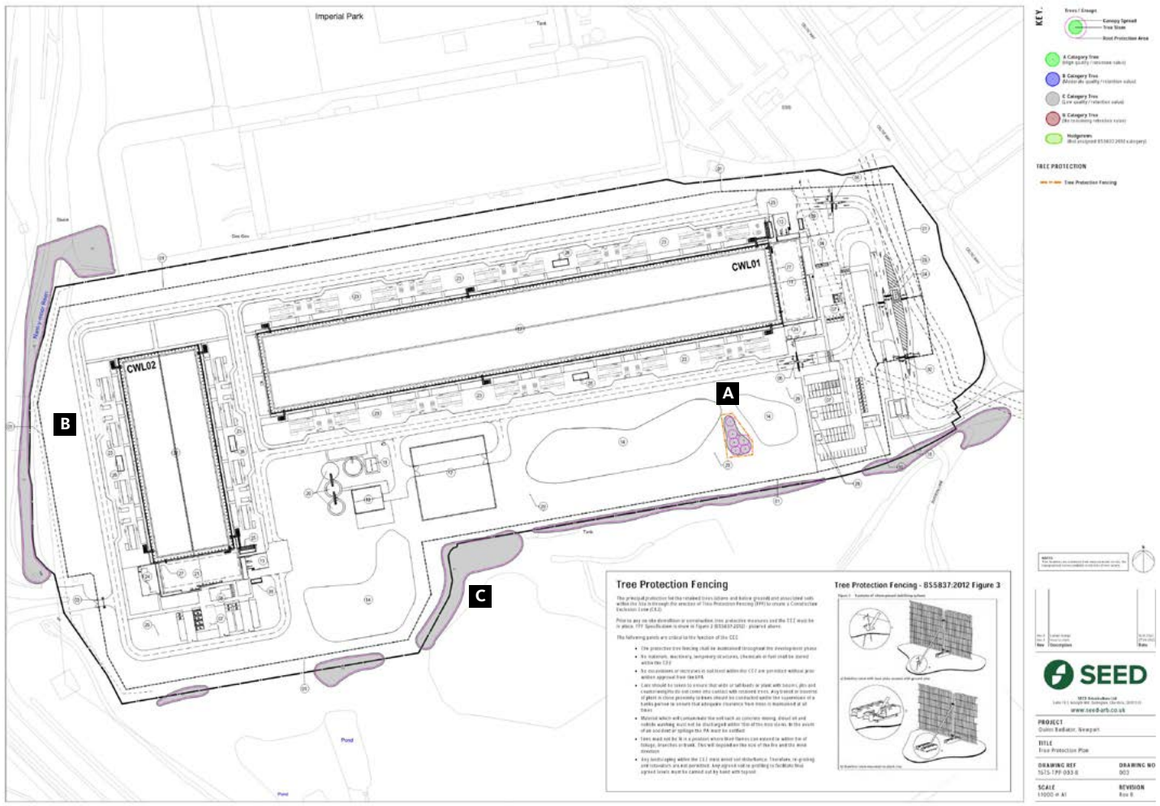
A: Amenity trees to the south of Office Block within managed grassland will be retained . 5nr of Cherry Trees in a grid add formality to the landscape setting and seasonal interests, providing human scale canopies under wide canopies. Within the Cherry Tree grid, 1nr Pine Tree is present with a wooden plaque explaining the link to historic site tenant.

B: A line of amenity trees along the fence breaks up the hardscape dominant landscape. They are planted within the narrow softscape strips between road kerbs, immediately next to asphalt surface on either side. These trees are subject to removal, however ongoing design efforts will be made to provide new planting in a more appropriate setting.

C: A group of trees of field maple, silver birch, common hazel and goat willow are present at the southern boundary. Some overgrown plants and roots will be cut back to the boundary line, however the boundary will be enhanced with a proposed hedgerow mix to achieve stronger connection to the existing ecology to the south of the site. See 6.11 for more information.

Source: Preliminary Ecological Assessment, BSG Ecology (09.07.21)





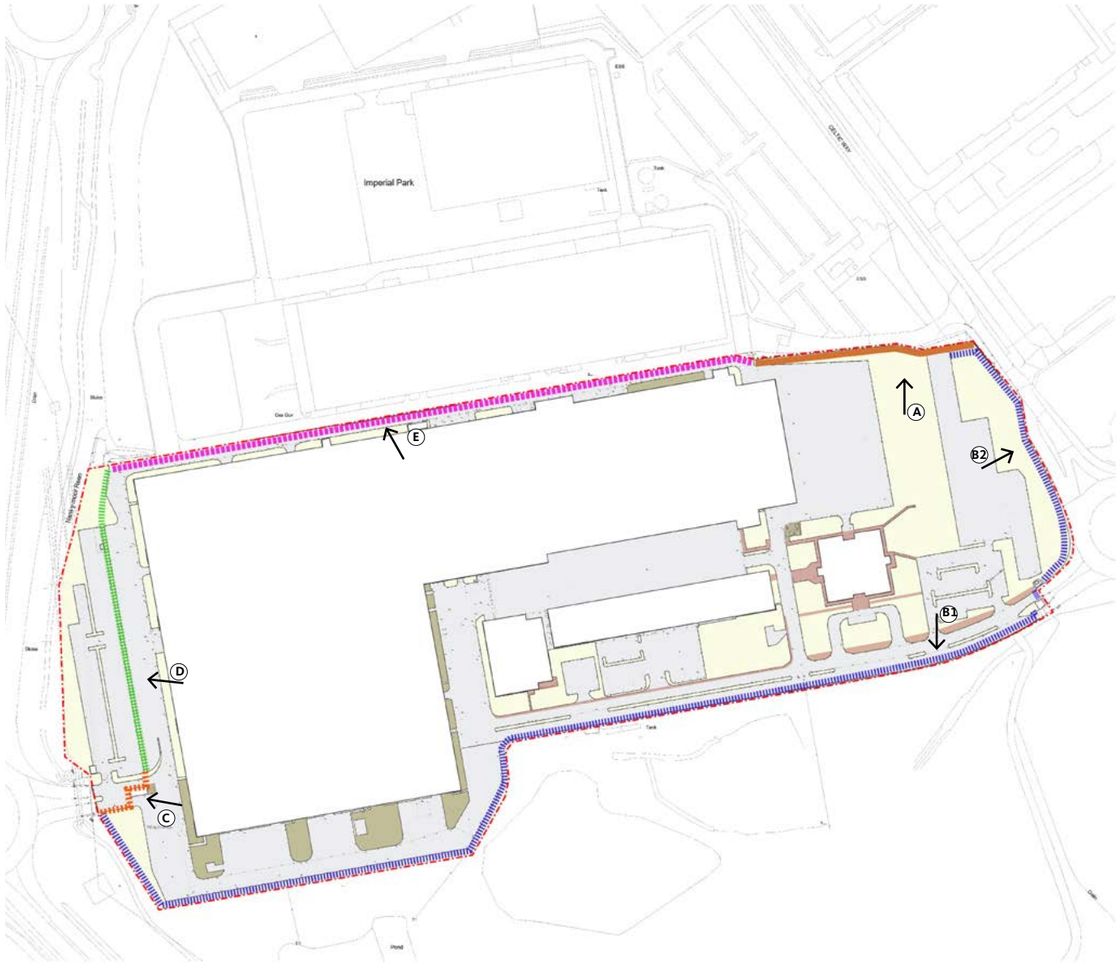
Source: arboricultural impact assessment, SEED (18.10.23)

6.6 Existing Site Boundary Conditions

The conditions across the existing site boundary consist predominantly of metal fencing, with a small extent of the northern boundary having vertical timber board fencing. In general, many areas of fencing are in poor condition and sit within or in close proximity to worn uneven asphalt. The metal fencing does offer good visual permeability out to the surrounding context but offers little in regards to security. With the addition of an internal security fence included within the proposed scheme there is potential opportunities to soften the existing boundaries and enhance ecological connections along the length of the site through various landscape approaches.

LEGEND:

- Property Line
- A. Vertical Wood Board Fence
- B. Metal Mesh Fence
- C. Metal Fence
- D. Metal Fence
- E. Metal Mesh Fence



6.7 Landscape Opportunities

One of the main opportunities of the site is the enhancement of the retained existing habitats, as well as the creation of new ones. The majority of landscape enhancement is provided to the site perimeter, surrounding buildings and roads. This arrangement results in effective visual buffering to the new development, as well as strengthening the connections to the local SSSI and the 'Landscape of Outstanding Historic Interest'.

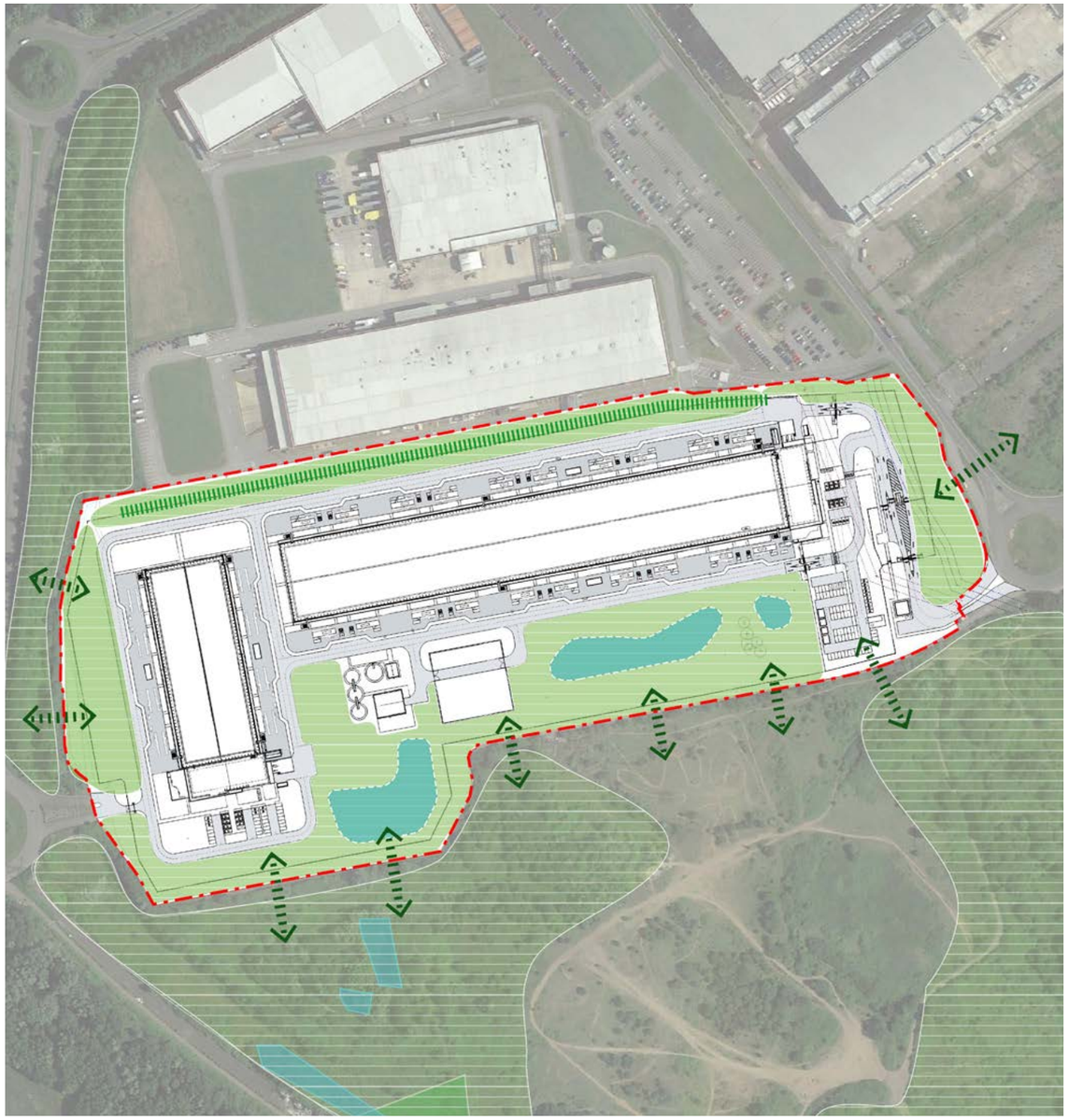
These objectives will not only be achieved through planting but also with the construction of a series of storm management ponds that will provide both a sustainable drainage system and new marginal and aquatic habitats.

Proposed Biodiversity enhancement includes:

- Native trees, hedges and scrub planting along boundary where possible to provide continued connectivity across the Site and provide a continued foraging /sheltering resource to benefit foraging bats and breeding birds.

- Increasing the extent of habitat across the Site, including tree, scrub and grassland planting within the Site to benefit a range of protected and priority species. This includes recreating areas of species rich grassland to benefit terrestrial invertebrate species.

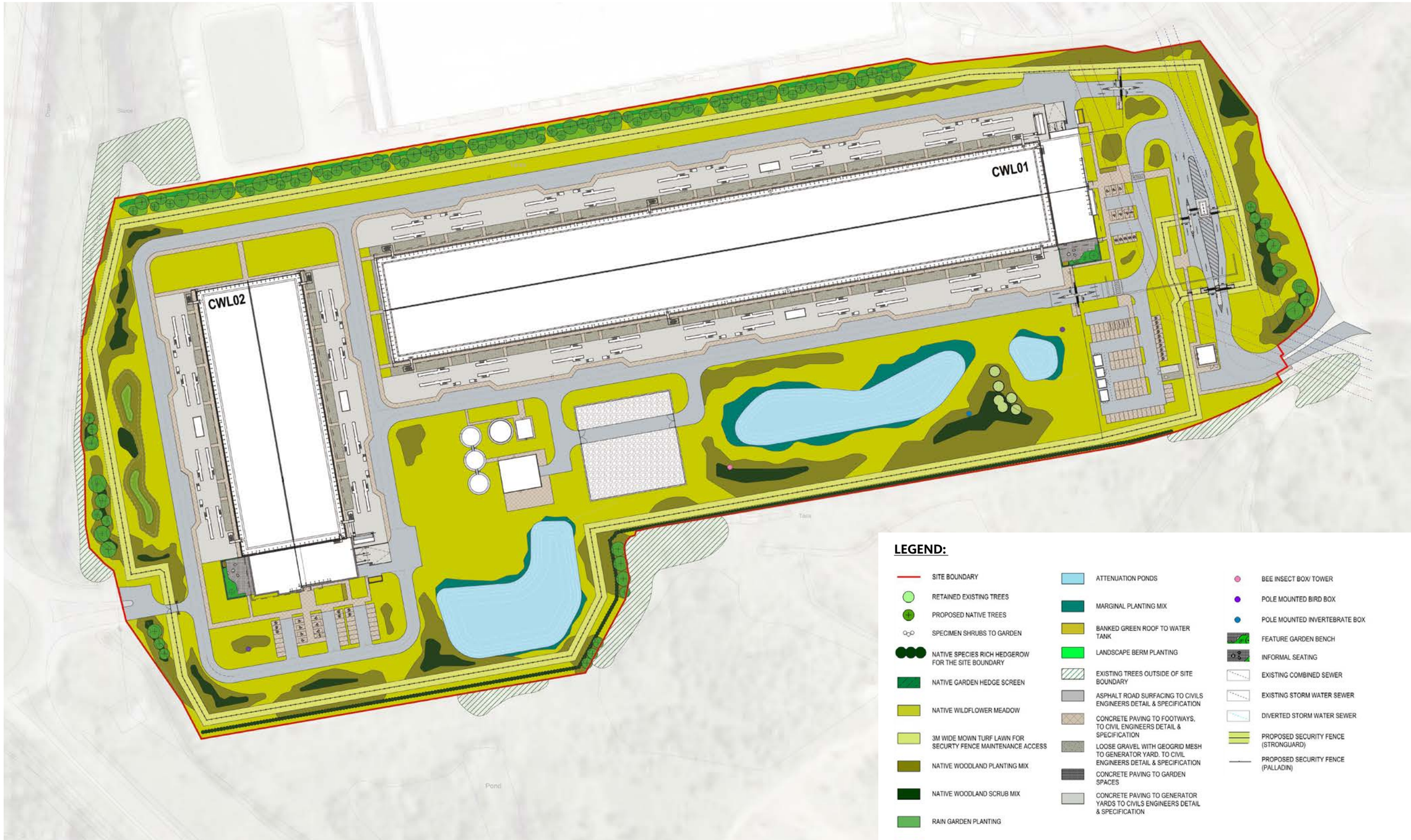
- Creation of storm water management ponds to be designed to benefit wetland species, aquatic invertebrates and amphibians.



LEGEND:

- Property Line
- Existing ecology context
- Strategic design links to existing ecology
- Proposed soft landscape
- Proposed trees and landscape berm
- Storm water pond

6.8 Proposed Illustrative Masterplan



6.9 Proposed Softscape Strategy

A site-specific planting palette will be developed to respond to the needs of the data centre both in terms of its scale, security requirements and functionality. A range of native plants are proposed, with high durability and low water demand. Aquatic and marginal planting is proposed to pond edges. The predominant use of native species will enable the site to reflect its locality whilst providing seasonal colour, variety and texture within the landscape. The soft-works strategy aims to achieve the following:

Biodiversity Promotion Zones

Diversification of native species and hedgerows bordering security fences to create strips on the external perimeter of the site for promoting biodiversity.

Native Tree Canopies

Where possible (such as parking lots) to provide shading, visual screening to contribute towards a reduced heat island effect.

Foraging Areas For Insects

Native plant species, insect friendly grasses (native wildflower grasses).

Sloped Embankments

With marginal planting to provide natural drainage of storm water and run-off.

Enhancement of Habitats & Green Links

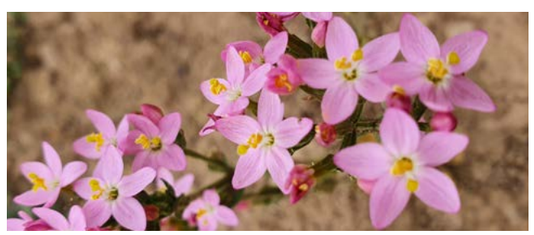
Contributing to, and connecting the site to the wider context.

Wildflower Meadows - Native species

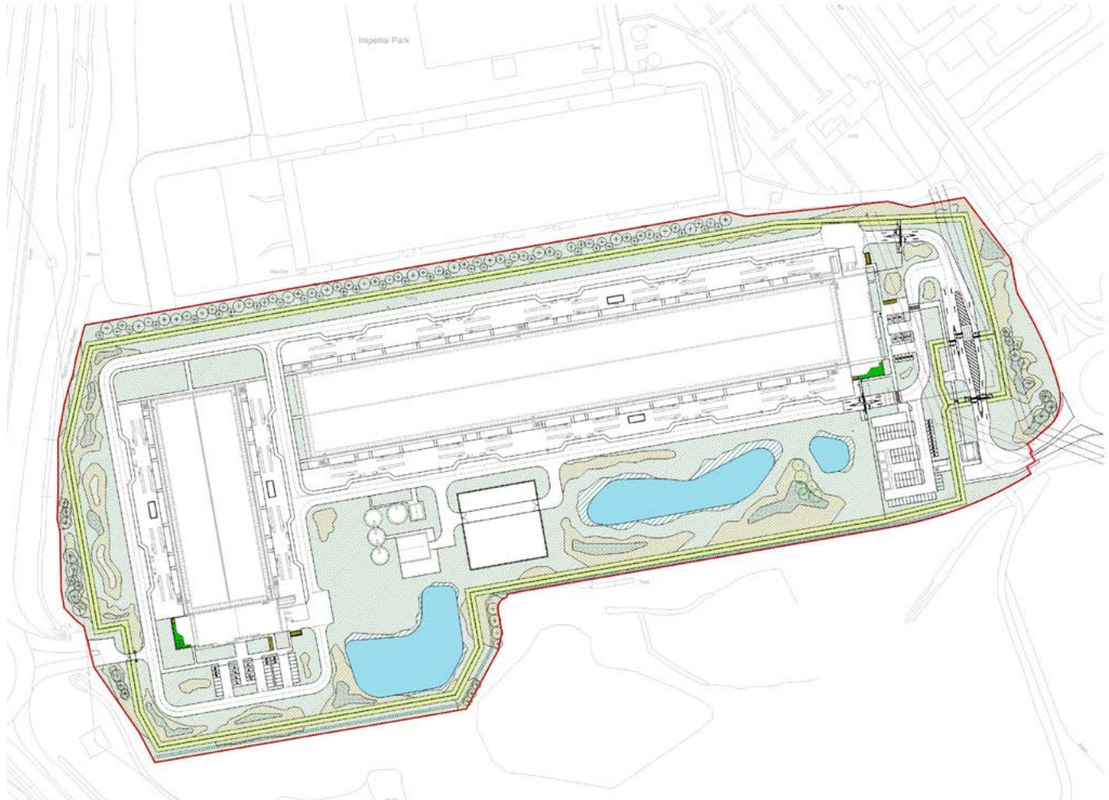
Attenuation Ponds

Native Tree Planting

Species Rich (Native) Hedgerow



Native Ornamental Planting



LEGEND:

- Property Line
- Native species rich hedgerow
- Native wildflower meadow mix
- Native woodland planting mix
- Native woodland scrub mix
- Native rain garden planting mix
- Native marginal planting mix
- Garden planting mix
- Mowed turf lawn to fencing maintenance strip
- Sedum green roofs
- Attentuation ponds
- Proposed native trees
- Existing trees retained

6.10 Proposed Softscape Strategy: Trees

A site wide tree strategy has been developed to ensure the site strengthens its connectivity to its surrounding context both in terms of wildlife commuting corridors as well as habitat creation. The species selected have been carefully considered with the ecologist team.

The existing scattered trees comprises cherry with occasional pine and Norway maple. The existing tree habitat is unlikely to meet the definition of any priority habitat or meet the criteria for local designation.

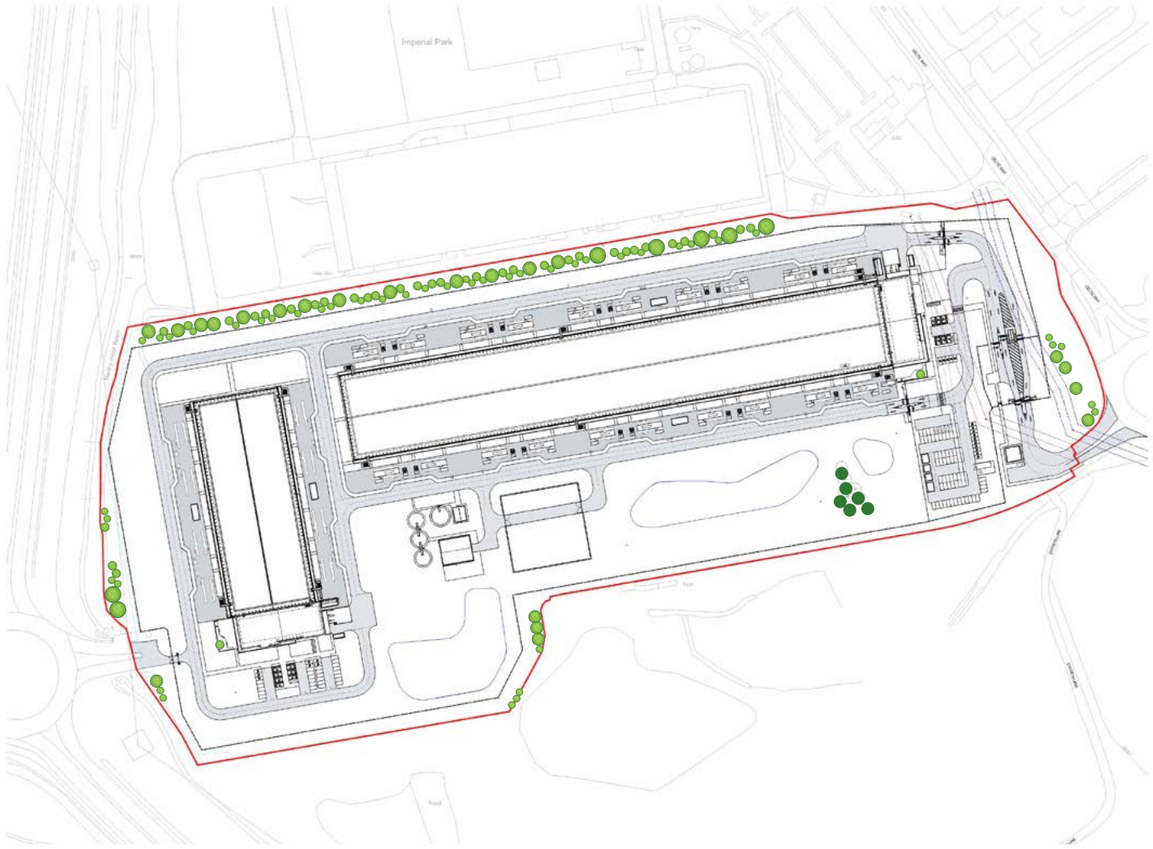
Selecting only native species will allow this new network of trees to integrate within its surrounding to enrich biodiversity as well as provide vertical greening, visual buffers as well as seasonal colour and interest. Native tree species selected includes but not limited to:

Betula Pendula

Alnus Glutinosa

Sorbus Aucuparia

Acer Campestre



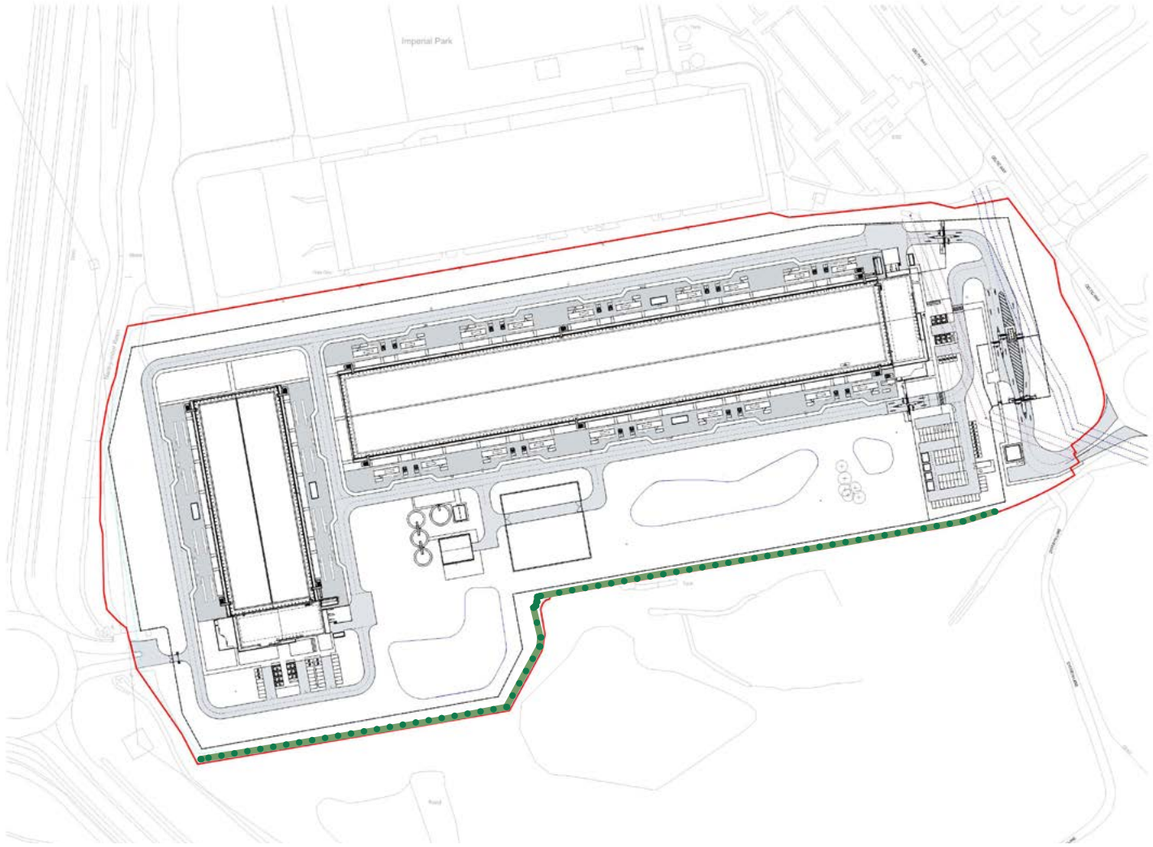
LEGEND:

- Proposed Native Trees
- Retained Existing Trees in accordance with Arboriculturist Method Statement

6.11 Proposed Softscape Strategy: Hedgerow

To strengthen the sites connectivity to its neighbouring habitat-rich site 'The Gwent Levels', a proposed species-rich hedgerow has been implemented into the scheme. Liaising with ecologists a mix of species have been chosen to create this new linear corridor, the aim to provide migratory opportunities for wildlife allowing biodiversity to flourish through the site and out towards the SSSI site. The hedgerow will also provide natural and colourful visual screening of the site, to further improve its integration into its surrounding landscape context. The following native species are proposed to form the species-rich hedgerow:

1. Crataegus monogyna
2. Prunus spinosa
3. Ulex europaeus
4. Acer campestre
5. Rhamnus cathartica
6. Viburnum opulus.



LEGEND:

Property line

Native species rich hedgerow bordering the southern boundary

6.12 Proposed Softscape: Site wide planting

A site-specific plant palette have been developed to respond to the needs of the data centre both in terms of its scale, security requirements and functionality. A range of native plants are proposed, with high durability and low water demand. The planting mixes selected aim to boost local biodiversity, and enable the site to blend ecologically with its surrounding context.

Native Windflower Mix is chosen as a landscape base palette, which itself provides site-wide wildlife corridor. **Native Woodland Plating Mix**, **Native Woodland Scrub Mix** provide dense vegetation to enhance biodiversity and seasonality. They are planted to the east, south and west perimeter of the site, where generous landscape butter corridor was strategically reserved to benefit adjacent ecology.

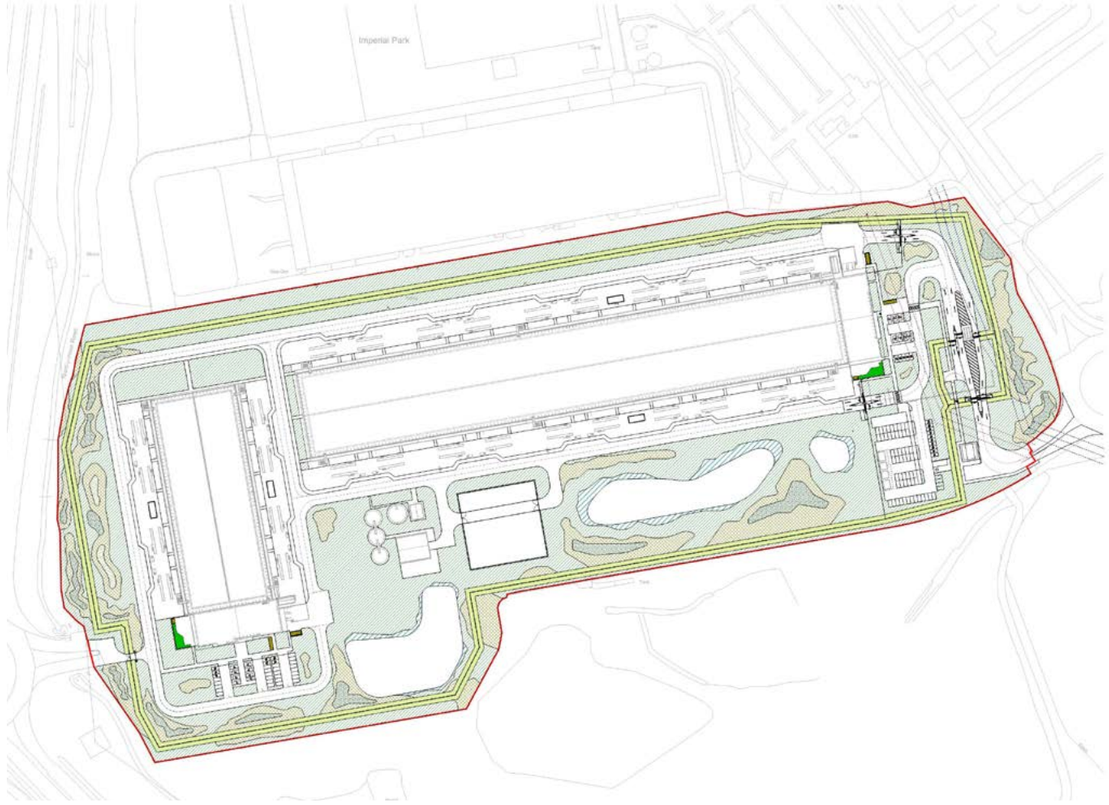
Please refer to the landscape planting schedule CWL01-02-L-P-16 for full list of species.

Native Wildflower Mix

Ornamental Garden Mix

Native Woodland Planting Mix (examples): Salix lanata, Claytonia sibirica, Sambucus nigra, Oxalis acetosella

Native Woodland Scrub Mix: Cornus sanguinea, Crataegus monogyna, Prunus spinosa, Corylus avellana



LEGEND:

- Property Line
- Native wildflower meadow mix
- Native woodland planting mix
- Native woodland scrub mix
- Native rain garden planting mix
- Native marginal planting mix
- Garden planting mix
- Mowed turf lawn to fencing maintenance strip
- Sedum green roofs

6.13 Proposed Softscape: Marginal & Rain Garden

Marginal or rain garden plant species are provided where data centre buildings meeting landscape.

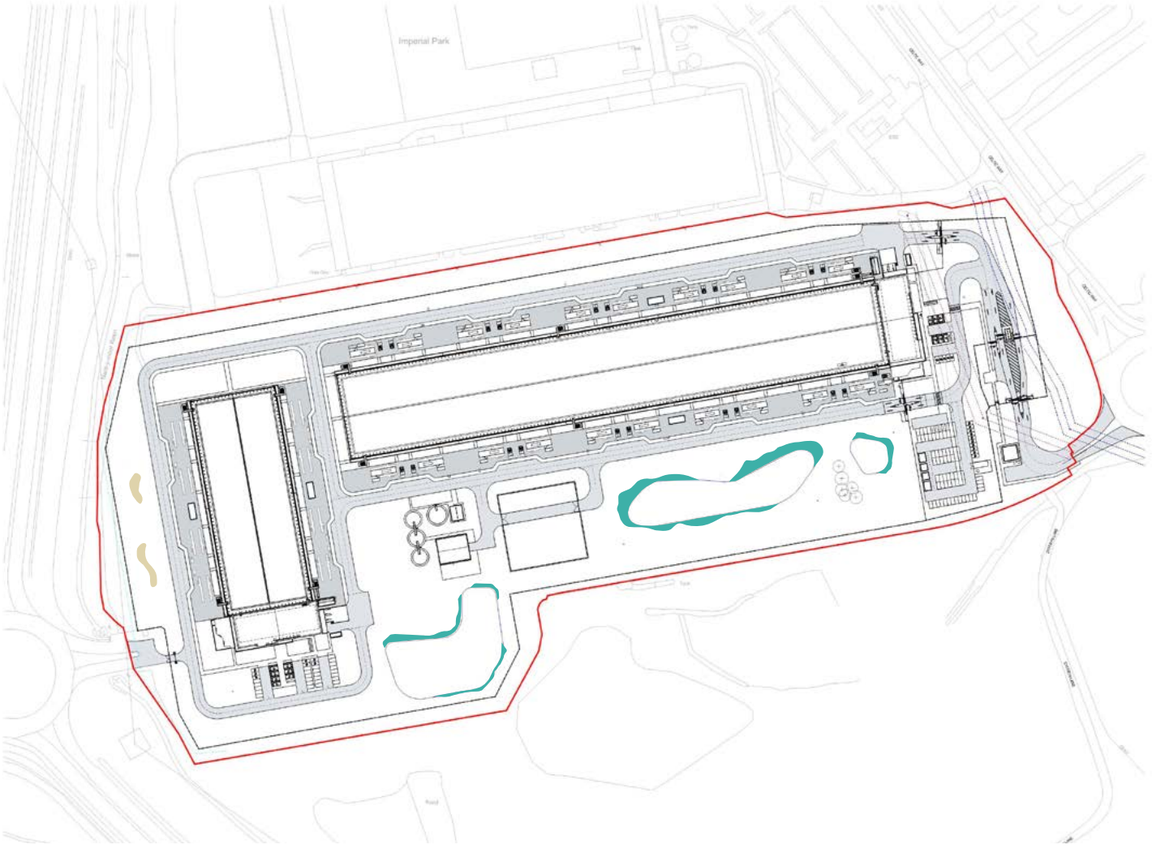
Native Marginal Planting Mix is proposed to edges of storm water ponds to the south of the site. **Native Rain Garden** is located to the west of the site, where landscape depressions are formed to collect rainwater.

Altogether, they provide additional planting diversity, opportunities for wildlife and seasonal visual interests.

Landforms have been carefully coordinated with civil engineers to ensure that landscape scheme works in line with site wide water flow strategy.

Native species have chosen to ensure this new network of planting integrates successfully with its specific Newport context.

For the full planting list please refer to the landscape planting schedule CWL01-02-L-P-16.



Native Rain Garden Planting Mix (example): Carex pendula, Juncus effusus, Ranunculus flammula, Campanula glomerata

Marginal Planting Mix (examples): Iris pseudacorus, Lythrum Salicaria, Digitalis purpurea, Sparganium erectum

6.14 Proposed Hardscape Strategy

Hardscape General Material

The hardscape material palette specification will be lead by Civil Engineers to ensure the proposal meets the technical DC requirements in terms of loading and site wide drainage.

General Circulation: Vehicular

The majority of the sites hardscape area consists of vehicular circulation and parking bays. For this purpose the strategy adopts robust materials; asphalt with concrete kerbs, subject to the site-wide drainage and storm water management strategy by the Civil Engineers.

General Circulation: Pedestrian

For areas of the site concerning pedestrian movement between carparks and the buildings the hardscape strategy consists of predominantly concrete paving. Using warm tones and a running bond pattern this will create more aesthetically pleasing footpaths.

Loose gravel areas will also be present with the data centre generator yards to further ensure surface water drainage is effectively collected and drained.

6.15 Proposed Furniture Strategy

Security furniture

The site wide external furniture palette consists of elements specifically in place to secure the perimeter, entrances and exits of the site. Foundations and fixings for such items will follow suppliers detail and recommendations as well as Civil Engineers drawings to ensure all elements meet the technical DC requirements.

Bollard Strategy

Throughout the site there will be a range of bollard types to provide differing protection and security measures (ranging from protecting equipment to protection against ram-raiding).

Galvanised mild steel bollard finished in Polyester powder coated Signal yellow (RAL 1003).

Security gates

Given the security measures surrounding the site, there are also various entry / exit gates required. The front of house entrance gate will be a cantilevered sliding gate finished in Jet black, RAL 9005. Internal gates to the substation are proposed as wicket swing gates with fence pales to match the surrounding stronguard fencing type.

Pedestrian gates

Working together with the site wide access strategy there are also a range of pedestrian gates. Attached to the secure fence line there are secure turnstile gates, mild steel, finished in jet black RAL9005 to match the fencing. Pedestrian gates within the secure perimeter will be single leaf swing gates with pales to match the ajoining fencing.

Bike store

Arriving on site by bicycle, once within the secure perimeter, there will be a cycle store located in close proximity to each data centre building entrance. A canopy with a sedum carpet roof provides weather protection to bicycle parking areas. The canopy frames will be constructed from galvanised steel and finished in powder coated RAL 7012 Basalt Grey. Cycle hoops to be stainless steel standard sheffield hoops.

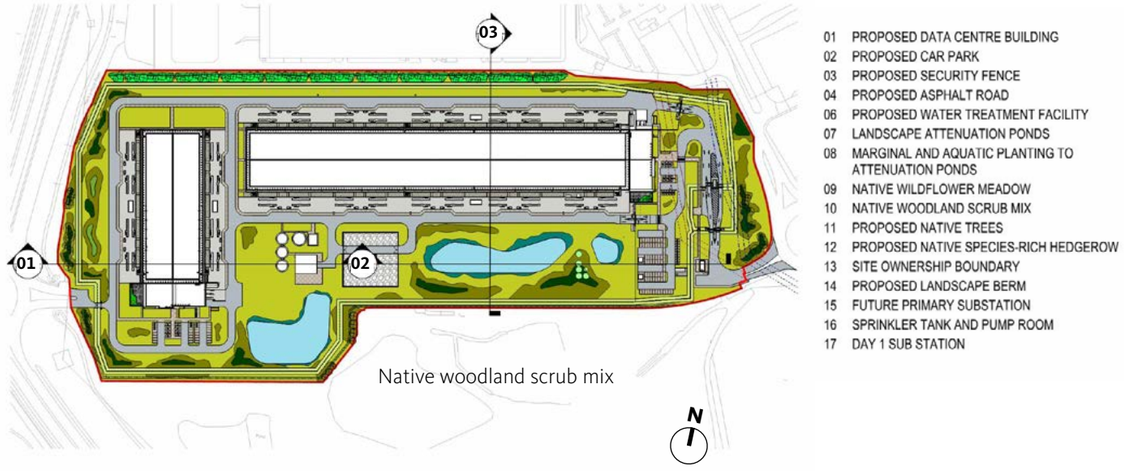
6.16 Proposed Site Sections

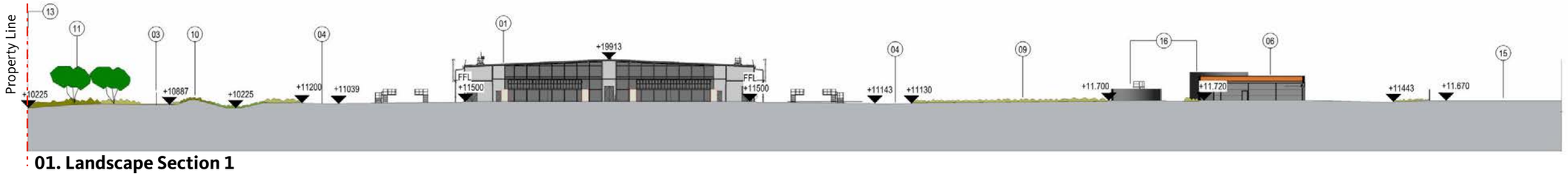
The site levels have been led by civil engineers based on the storm water management, drainage strategies, site cut and fill, existing topographies and proposed building finish levels. Areas affecting landscape design have been carefully coordinated to ensure all of design intent are consistently developed from concept to site implementation.

To the north, landscape berms are proposed with new tree planting to form green buffers between adjacent development and the site.

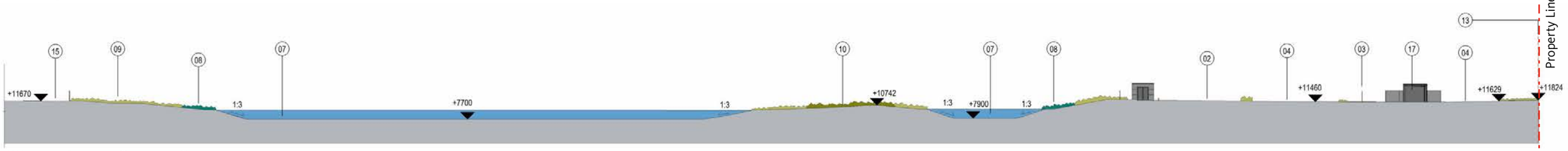
To the west, softscape depressions for rain gardens are addressed in proposed landforms.

Three ponds are accommodated to the south of the site, all edges no steeper than 1 in 3 gradients. Where a group of existing trees are retained between ponds, existing Root Protection Zones will be intact and protected.

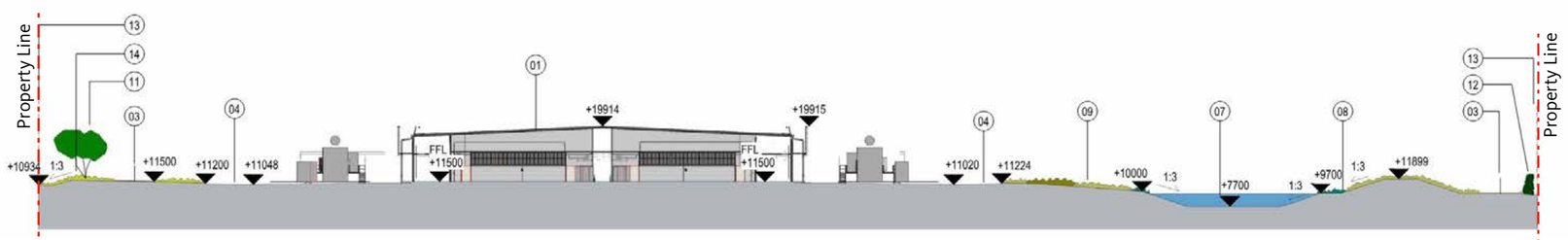




01. Landscape Section 1



02. Landscape Section 2



03. Landscape Section 3

6.17 Proposed Site Boundary Strategy: Fencing

Security fencing

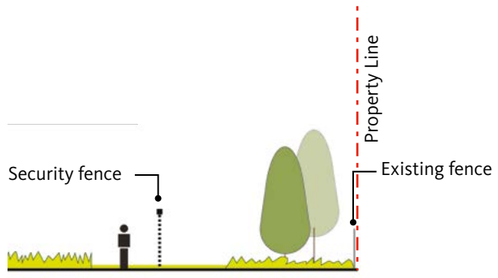
The landscape strategy and boundary fencing has been developed to respond to both the security requirements of the data centre and the varied boundary conditions of the site.

Throughout the site there will be a range of fence types to provide differing protection and security measures. All fencing will be finished with a polyester powder coating in RAL 9005 Jet black.

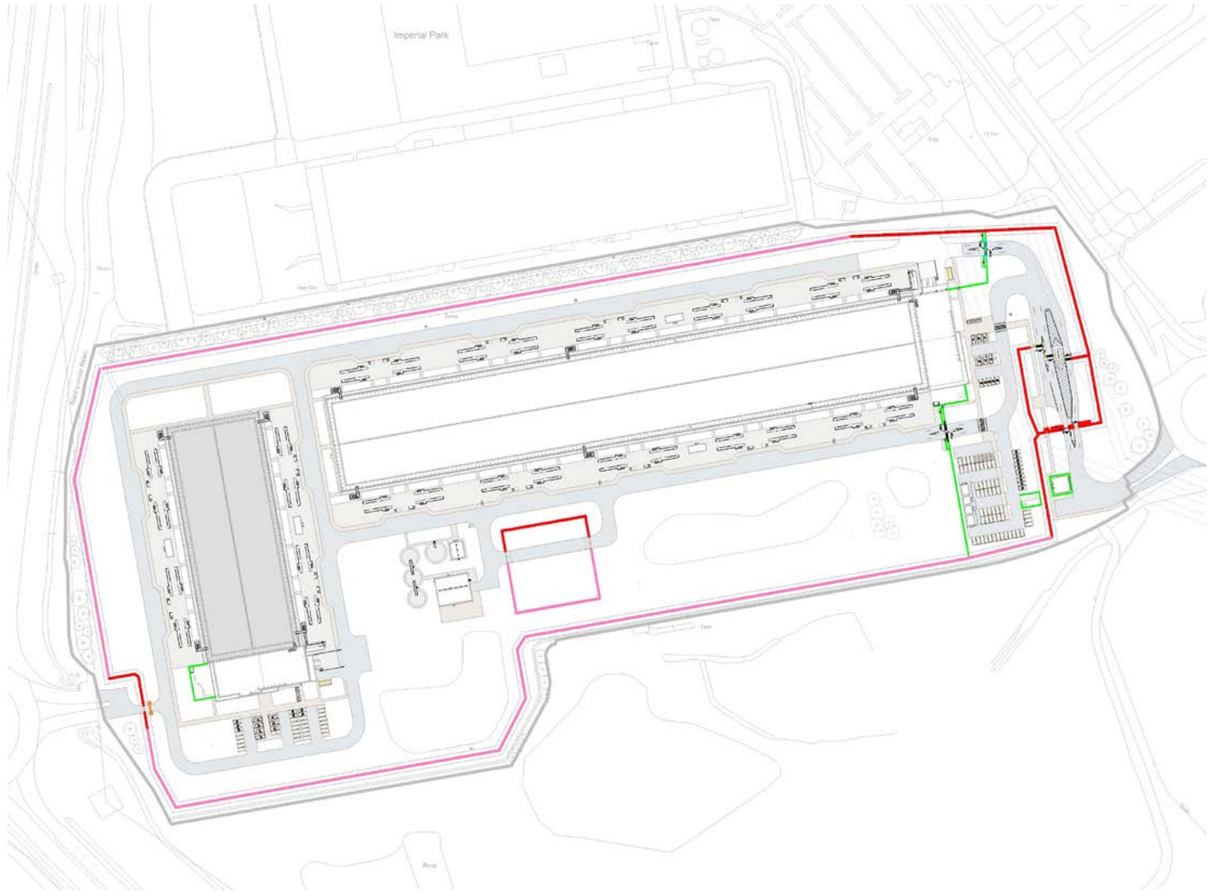
Within the site boundary, new security fence will be erected to the client and industry security standard. Within the perimeter boundary, the sections exposed to public will be of PAS68 quality. All perimeter fences are provided with 3m clear strips for security and maintenance.

Perimeter security fence finished in Jet black, RAL 9005

Internal fence in Jet black RAL 9005



Typical perimeter security fence setting



LEGEND:

- Security fence PAS68 rated Stronguard
- Security fence Stronguard
- Security fence Palladin

6.18 Ecological Enhancement Opportunity

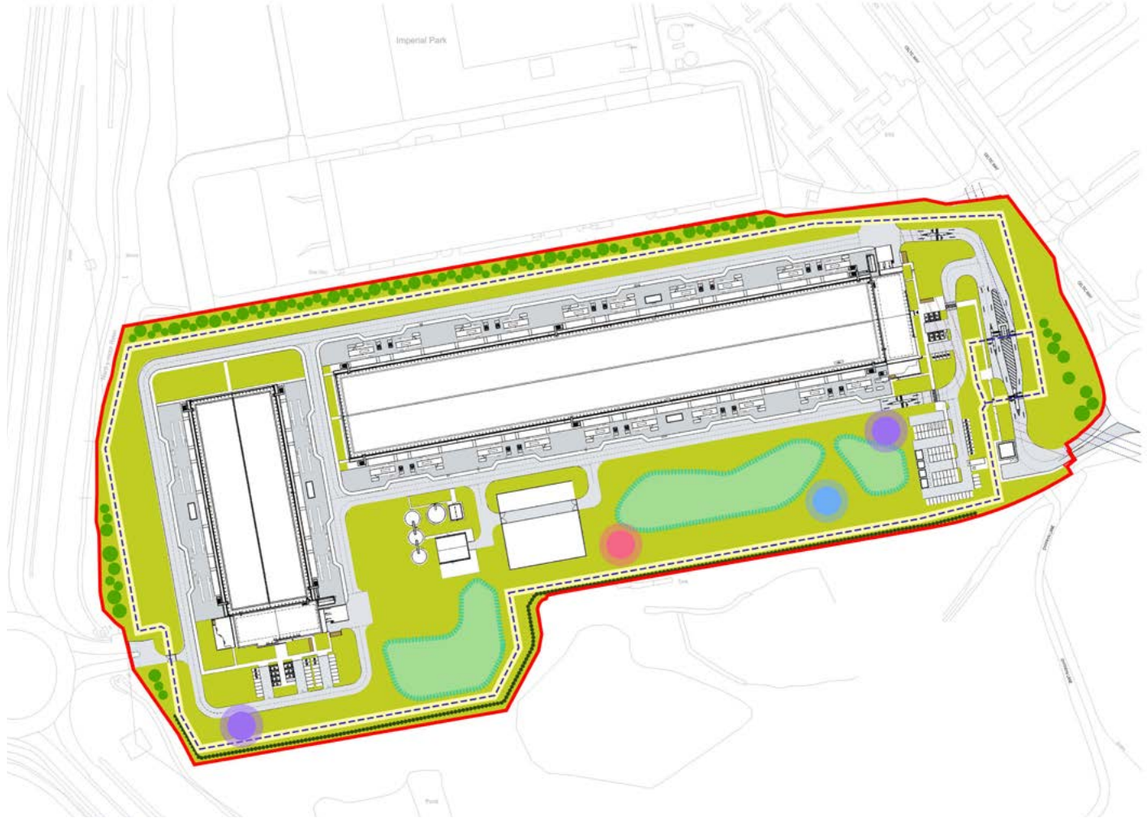
There is currently no wildlife on the site, however, ecological landscape measures will be introduced to provide habitats away from the building façade; encouraging nesting in areas that will remain undisturbed by facility operation.

Boundary habitats such as semi-improved neutral grassland and scattered scrub within the Survey Area are of ecological interest due to their potential to support a range of protected species.

Inclusion of native species

Built habitats, amenity grassland and ornamental planting are of low ecological value and pose no issue with regard to development. The proposal will enhancing any retained habitats on site through additional planting and sensitive management, to benefit foraging bats, breeding birds, reptiles and invertebrate species. There are opportunities for new habitat creation within the development (e.g., Sustainable Drainage Scheme (SuDS) ponds or basins to be designed to benefit wetland species, aquatic invertebrates, and amphibians).

Log piles or hibernacula can be incorporated into areas of retained habitat to benefit reptiles, amphibians, invertebrates and small mammals. Bat and bird boxes can be included within the building design to provide additional roost/nesting resources.



LEGEND:

- Property Line
- Security Fence
- Pole Mounted Bird Box
- Bee Insect Box/Tower
- Pole Mounted Invertebrate Box
- Species Rich Native Hedgerow
- Native Wildflower Meado
- Native Emergent Flora
- Scattered Native Tree Species

7.0

ENVIRONMENTAL DESIGN

7.0 ENVIRONMENTAL DESIGN
7.1 Sustainability

This Sustainability Statement provides an overview as to how the proposed scheme contributes to sustainable development in the context of the strategic, design and construction considerations. Sustainability is a broad concept and covers a range of environmental, social and economic considerations. A review of Newport Local Development Planning Policy January 2015 has identified a number of requirements relating to sustainability. Of these, SP1 (Sustainability) and 4.35 (The Natural Environment) are considered most pertinent.

Resource Consumption

A range of sustainable design and construction features are proposed including:

- Leaner cooling systems/ Data Centre heat utilisation
- Power Usage Effectiveness (PUE) appropriate to the location
- Certified building LEED GOLD
- Full life cycle assessment of the building
- Climate Neutral Data Centre Pact to ensure that electricity demand will be matched by 75% renewable energy or hourly carbon-free energy by December 31, 2025 and 100% by December 31, 2030.
- The incorporation of biobased materials within the building
- Smart energy efficient lighting
- Water efficient fittings and appliances; and potential inclusion of a greywater system

There is a increase in biodiversity within the proposal including:s

- Inclusion of bioswales on site, reduction in amount of paved and impermeable area
- Native vegetation in landscaping design, aimed to increase biodiversity on location
- Perimeter ecological boundary treatment

Resilience and Flexible Systems:

The resilience of the building as well as considering producing an environmentally friendly design suitable for the future is considered most pertinent. The following is therefore proposed:

- Water infiltration and flood prevention
- Parking places with rechargeable capabilities

7.2 LEED

The proposed Data Centre will be enrolled in the LEED certification programme, with the aim of achieving LEED GOLD.

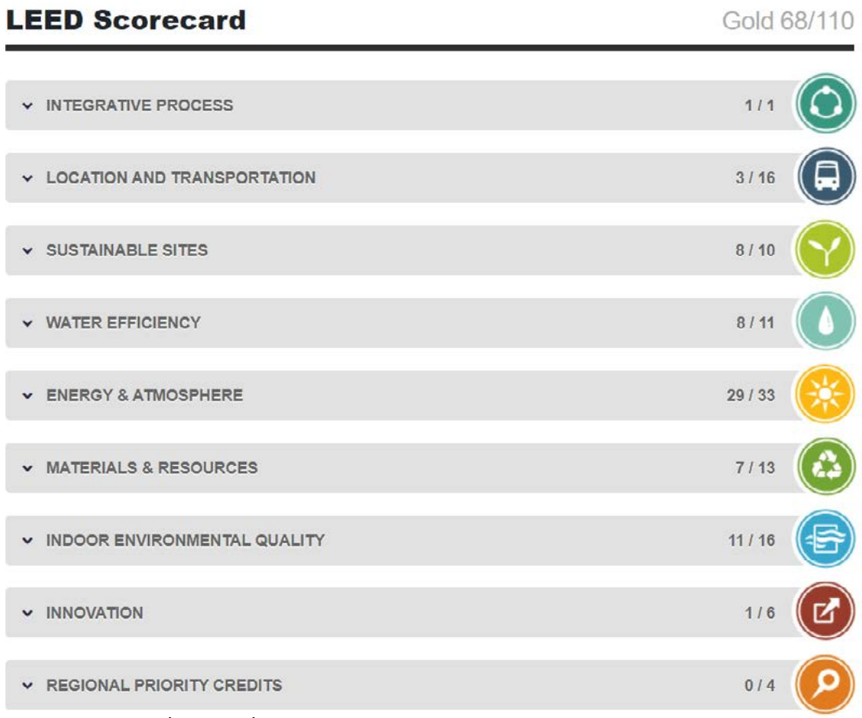
All Microsoft Data Centres are enrolled in the LEED programme, and while LEED is similar to BREEAM, which is more common in the UK, a LEED certification allows Microsoft to leverage the knowledge and solutions of its global portfolio.

LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world.

The system provides a framework for healthy, highly efficient, and cost-saving green buildings. LEED certification is a globally recognised symbol of sustainability achievement and leadership.

LEED certified buildings are proven to save money, improve efficiency, lower carbon emissions and create healthier places for people. They are a critical part of addressing the climate crisis, meeting ESG (Environmental, Social, and Governance) goals, enhancing resilience, and supporting more equitable communities.

To achieve LEED certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality.



LEED Scorecard Example

8.0 CONCLUSION

8.0 CONCLUSION

This document in association with drawings and reports attached to the planning application sets out in detail, the proposals for a Hyperscale Data Centre development on the site of the former Quinn Radiator Manufacturing Plant and highlights the significant amount of technical work that has gone into the proposals to demonstrate their acceptability in order to seek the detailed planning application approval.

The site is currently occupied by a large industrial building and several support buildings with portions now in a state of disrepair due to lack of maintenance and the depreciation of construction materials. The entirety of the existing structures will be demolished and replaced by two new Data Centre buildings along with support structures for daily operations.

The site is located on the Celtic Way, lying approximately 5 miles southwest of Newport City Centre. The site is a fully developed brownfield site, containing five units, historically in uses of B2 (General Industrial) and B8 (Storage and Distribution). Ancillary to the factory is an office space which was established as a B1 (Business) use. The site is located in a business district. Various site plans showing the existing buildings and the general location, are contained within this document.

The site lies within a wider strategic employment area that includes Airbus, R&D centres and Gocompare.com and so the proposed use is entirely consistent with the aspirations of the Council for the area. The site is level and can accommodate proposals of this scale and the excellent existing access conditions from both west and east side of the site can suitably serve the needs of the development both during construction and operation.

Directly to the south is undeveloped land, which has a designation of Area of Special Scientific Interest, and Area of Archaeological Interest. This does not extend to the site itself and the proposals fully respect this sensitive location. Consequently, the proposals currently seek a reduction in built surface area and includes a reduction in impermeable paved areas with additional storm water retention and so for the reasons set out in this document have the potential to greatly improve the current situation.

Imperial Park covers over 350 acres and comprises of offices, including a serviced research and development centres, small, modern production units, large manufacturing and warehousing operations and another, large data centre suggesting that the proposed use should be supported subject to further technical work. Other matters such as flood risk, air quality, noise, contamination and the approach to design and landscaping are covered seperate reports and demonstrate why the proposals should be viewed favourably at the application stage.

Gensler

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